List Manual 03/2006 Edition

sinamics

SINAMICS G

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SINAMICS G List Manual

Manual

Valid for

Drive	Firmware version
SINAMICS G	2.4

A5E00293701A

03/2006 Edition

Safety Guidelines

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring to property damage only have no safety alert symbol. These notices shown below are graded according to the degree of danger.

Danger

indicates that death or severe personal injury **will** result if proper precautions are not taken.

Warning

indicates that death or severe personal injury **may** result if proper precautions are not taken.

Caution

with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

Caution

without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

Notice

indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel**. Within the context of the safety notes in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

Prescribed Usage

Note the following:

Warning

This device may only be used for the applications described in the catalog or the technical description and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens. Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Technical data subject to change

Foreword

SINAMICS documentation

The SINAMICS documentation is sub-divided into 2 areas:

- General documentation/catalogs
- Manufacturer/service documentation

A current overview of the documentation in the available languages is provided in the Internet:

http://www.siemens.com/motioncontrol

Follow menu items – "Support" -> "Technical Documentation" -> "Overview of Publications".

The Internet edition of DOConCD, DOConWEB, are available in the Internet:

http://www.automation.siemens.com/doconweb

Information on the range of training courses and FAQs (Frequently Asked Questions) are available in the Internet:

http://www.siemens.com/motioncontrol

Follow the menu item "Support"

Phases of use and their tools/documents (example)

Table Foreword-1 Phases of use and the available tools/documents

Phases of use	Tools/documents
Orientation	SINAMICS G sales documentation
Planning/engineering	SIZER engineering tool Configuration Manuals, Motors
Select/order	SINAMICS G Catalogs
Configuring/installation	• SINAMICS G150 Operating Instructions • SINAMICS S150 Operating Instructions

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Table Foreword-1 Phases of use and the available tools/documents, Fortsetzung

Phases of use	Tools/documents
Commissioning	• STARTER Parameterizing and Commissioning Tool • SINAMICS G List Manual • SINAMICS G150 Operating Instructions • SINAMICS S150 Operating Instructions
Using/operating	• SINAMICS G List Manual • SINAMICS G150 Operating Instructions • SINAMICS S150 Operating Instructions
Service/maintenance	• SINAMICS G List Manual • SINAMICS G150 Operating Instructions • SINAMICS S150 Operating Instructions

Target group

This documentation is aimed at machine manufacturers, commissioning engineers, and service personnel who use SINAMICS.

Benefits

This documentation contains the comprehensive information about parameters, function diagrams and faults and alarms required to commission and service the system.

It must be used as a supplementary document to the other manuals and tools available for the product.

Standard scope

This documentation only describes the functionality of the standard version. Extensions or changes made by the machine tool manufacturer and documented by the machine tool manufacturer.

Other functions not described in this documentation might be able to be executed in the drive system. However, no claim can be made regarding the availability of these functions when the equipment is first supplied or in the event of servicing.

For reasons of clarity, this documentation does not contain all of the detailed information on all of the product types. This documentation cannot take into consideration every conceivable type of installation, operation and service/maintenance.

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Finding Your Way Around

The following guides are provided to help you locate information in this manual:

1. Table of Contents
   - General table of contents for complete manual (after the preface).
   - Table of contents for function diagrams (see Section 2.1).
2. List of Abbreviations
3. References
4. Index

Technical Support

If you have any questions, please get in touch with our Hotline:

European and African time zones

A&D Technical Support

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E-mail: adsupport@siemens.com

Note:

Country telephone numbers for technical support are provided under the following Internet address:

http://www.siemens.com/automation/service&support

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Internet address for SINAMICS

http://www.siemens.com/sinamics

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Parameters 1

Contents

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1.1 Overview of parameters

1.1.1 Explanation of list of parameters

Basic structure of parameter descriptions

The data in the following example has been chosen at random. The table below shows all the information which can be included in the description of a parameter. Some of the information is optional.

The structure of the parameter list (see Chapter 1.2) is as follows:

- Start of example- -

pxxxx[0...n]	**BICO: Full parameter name / Abbreviated name**			
Drive object (Function Module)	**Changeable in:** C1(x), C2(x), U, T			**Access level:** 2
	Data type: Integer16	**Dynamic index:** CDS, p0170		**Function diagram:** 2080
	P group: Cl.-Ip. control	**Unit group:** 7_1		**Unit selection:** p0505
	Min	**Max**		**Factory setting**
	0.00 [Nm]	10.00 [Nm]		2.00 [Nm]
Description:	Text			
Values:	0: Name and meaning of value 0 1: Name and meaning of value 1 2: Name and meaning of value 2 etc.			
Recommendation:	Text			
Index:	[0] = Name and meaning of index 0 [1] = Name and meaning of index 1 [2] = Name and meaning of index 2 etc.			

Bit array:	**Bit**	**Signal name**	**1-signal**	**0-signal**	**FP**
	00	Name and meaning of bit 0	Yes	No	8010
	01	Name and meaning of bit 1	Yes	No	-
	02	Name and meaning of bit 2	Yes	No	8012
		etc.			

Depends on:	Text See also: pxxxx, rxxxx See also: Fxxxxx, Axxxxx
Danger!	Corresponds to safety notice "Danger with warning triangle".
Warning!	Corresponds to safety notice "Warning with warning triangle".
Caution!	Corresponds to safety notice "Caution with warning triangle".
Caution:	Corresponds to safety notice "Caution without warning triangle".
Notice:	Corresponds to safety notice "Notice without warning triangle".
Note:	Information which might be useful.

- End of example- -

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pxxxx[0...n] Parameter number

The parameter number consists of a "p" or "r", followed by the parameter number and the index (optional).

Examples of number representation in the parameter list:

- p... Adjustable parameter (read and write parameter)
- r... Visualization parameters (read-only)
- p0918 Adjustable parameter 918
- p0099[0...3] Adjustable parameter 99, indices 0 to 3
- p1001[0...n] Adjustable parameter 1001, indices 0 to n (n = configurable)
- r0944 Visualization parameter 944

Other examples of notation in the documentation:

- p1070[1] Adjustable parameter 1070, index 1
- p2098[1].3 Adjustable parameter 2098, index 1 bit 3
- r0945[2](3) Visualization parameter 945, index 2 of drive object 3
- p0795.4 Adjustable parameter 795, bit 4

The following applies to adjustable parameters:

The "shipped" parameter value is specified under "Factory setting" with the relevant unit in square parenthesis. The value can be adjusted within the range defined by "Min" and "Max".

The term "linked parameterization" is used in cases where changes to adjustable parameters affect the settings of other parameters.

Linked parameterization can occur, for example, as a result of the following actions or parameters:

- Execute macros

  p0015, p0700, p1000, p1500
- Set PROFIBUS telegram (BICO interconnection)

  p0922
- Set component lists

  p0230, p0300, p0301, p0400
- Calculate and preset automatically

  p0112, p0340, p0578, p3900
- Restore factory settings

  p0970

The following applies to visualization parameters:

The fields "Min", "Max" and "Factory setting" are specified with a dash "-" and the relevant unit in square parenthesis.

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BICO: Full parameter name/Abbreviated name

Some parameters have the following abbreviations in front of their name:

- BI: Binector input
  This parameter is used for selecting the source of a digital signal.
- BO: Binector output
  This parameter is available as a digital signal for interconnection with other parameters.
- CI: Connector input
  This parameter is used for selecting the source of an analog signal.
- CO: Connector output
  This parameter is available as an "analog" signal for interconnection with other parameters.
- CO/BO: Connector/binector output
  This parameter is available as an "analog" and digital signal for interconnection with other parameters.

Drive object (Function Module)

A drive object (DO) is an independent, "self-contained" functional unit which possesses its own parameters and, in some cases, faults and warnings.

When carrying out commissioning using the commissioning software, you can select/deselect additional functions and their parameters by activating/deactivating Function Modules accordingly.

The parameter list specifies the associated drive object and Function Module for each individual parameter.

Examples:

- p1070 CI: Main setpoint
  VECTOR
  The parameter is available with drive object VECTOR irrespective of activated Function Modules.
- p1055 BI: Jog bit 0
  VECTOR
  The parameter is available in association with drive object VECTOR irrespective of activated Function Modules, i.e. it is available with every activated Function Module belonging to the drive object.

A parameter can belong to either one, several, or all drive objects.

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The following information relating to "Drive object" and "Function Module" can be displayed under the parameter number:

Table 1-1 Data in "Drive object (Function Module)" field

Drive object (Function Module)	Meaning
All objects	This parameter belongs to all drive objects.
CU	Control Unit, all versions.
CU(CAN)	Control Unit with "CAN" function module
CU_S	Control Unit SINAMICS S (SINAMICS S120/S150).
CU_S (CAN)	Control Unit SINAMICS S with "CAN" function module.
CU_LINK	Object for Controller Extension 32 (CX32).
TB30	Terminal Board 30.
TM31	Terminal Module 31.
VECTOR	Vector drive.
VECTOR (n/M)	Vector drive with "Closed-loop speed/torque control" function module (r0108.2).
VECTOR (ext. brake)	Vector drive with "Extended brake control" function module (r0108.14).
VECTOR (parallel)	Vector drive with "Parallel connection" function module (r0108.15).
VECTOR (Tech_ctrl)	Vector drive with "Technology controller" function module (r0108.16).
VECTOR (ext. mess.)	Vector drive with "Extended reports/monitors" function module (r0108.17).
VECTOR (CBE)	Vector drive with "CBE COMMUNICATION BOARD" Function Module (r0108.31).

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Changeable in

The "-" sign indicates that the parameter can be changed in any object state and that the change will be effective immediately.

The letters"C1(x), C2(x), T, U" ((x): mean that the parameter can be changed only in the specified drive object state and that the change will not take effect until the object switches to another state. This can be one or more states.

The following states may be specified:

- C1(x) Device commissioning C1: **C**ommissioning **1**

  Converter commissioning is in progress (p0009>0).

  Pulses cannot be enabled.

  The parameter can only be changed in the following device commissioning settings (p0009 > 0):

  - C1: Changeable for all settings p0009 > 0.
  - C1(x): Only changeable when p0009 = x.

  A modified parameter value does not take effect until converter commissioning mode is exited with p0009 = 0.

- C2(x) Drive object commissioning C2: **C**ommissioning **2**

  Drive commissioning is in progress (p0009 = 0 and p0010 > 0).

  Pulses cannot be enabled.

  The parameter can only be changed in the following drive commissioning settings (p0010 > 0):

  - C2: Changeable for all settings p0010 > 0.
  - C2(x): Only changeable when p0010 = x.

  A modified parameter value does not take effect until drive commissioning mode is exited with p0010 = 0.

- U Operation U: R**u**n

  Pulses are enabled.

- T Ready T: Ready **t**o run

  The pulses are not enabled and status "C1(x)" or "C2(x)" is not active.

Note:

Parameter p0009 is CU-specific (belongs to Control Unit).

Parameter p0010 is drive-specific (belongs to each drive object).

The operating status of individual drive objects is displayed in r0002.

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Access level (refers only to access via Basic Operator Panel)

Specifies the access level required to be able to display and change the relevant parameter. The required access level can be set via p0003.

The system uses the following access levels:

1. Standard
2. Extended
3. Expert
4. Service

   Please contact your local Siemens office for the password for parameters with access level 4 (service).
5. Macro (the parameter can only be changed via macro)

Note:

Parameter p0003 is CU-specific (belongs to Control Unit).

Data type

The possible data types of parameter values are as follows:

• I8	Integer8	8-bit integer
• I16	Integer16	16-bit integer
• I32	Integer32	32-bit integer
• U8	Unsigned8	8 bits without sign
• U16	Unsigned16	16 bits without sign
• U32	Unsigned32	32 bits without sign
• Float	FloatingPoint32	32-bit floating point number

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Dynamic index

For parameters with a dynamic index [0...n], the following information is specified here:

- Data set (if available).
- Parameters for the number of indices (n = number - 1).

The following information can be contained in this field:

- "CDS, p0170" (Command Data Set, CDS count)

  Example:

  p1070[0] → main setpoint [command data set 0]

  p1070[1] → main setpoint [command data set 1], etc.
- "DDS, p0180" (Drive Data Set, DDS count)
- "EDS, p0140" (Encoder Data Set, EDS count)
- "MDS, p0130" (Motor Data Set, MDS count)
- "PDS, p0120" (Power unit Data Set, PDS count)
- "p2615" (number of traversing blocks)

Function diagram

The parameter is included in this function diagram. The structure of the parameter function and its interrelationship with other parameters is shown in the specified function diagram.

Example:

Function diagram: 3060.3	3060:	Function diagram number
	3:	Signal path (optional)

P group (refers only to access via BOP (Basic Operator Panel))

Specifies the functional group to which the parameter belongs. The required parameter group can be set via p0004.

Note:

Parameter p0004 is CU-specific (belongs to Control Unit).

Unit, unit group and unit choice

The standard units of a parameter is specified in square brackets after the values for "Min", "Max" and "Factory setting".

For parameters where the units can be changed-over, for "Unit group" and "Unit choice" it is specified as to which group this parameter belongs and with which parameter the units can be changed over.

Example:

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Unit Group: 7_1, Unit Choice: p0505

The parameter belongs to Unit Group 7_1 and the units can be changed-over using p0505.

We have listed all possible unit groups together with the unit choice available in the following.

Table 1-2 Unit groups (p0100)

Unit group	Unit choice with p0100 =		Reference with %
	0	1	
7_4	Nm	lbf ft	-
8_4	N	lbf	-
14_2	W	HP	-
14_6	kW	HP	-
25_1	kgm^2	lb ft^2	-
27_1	kg	lb	-
28_1	Nm/A	lbf ft/A	-
29_1	N/Aeff	lbf/Aeff	-
30_1	m	ft	-

Table 1-3 Unit groups (p0349)

Unit group	Unit choice with p0349 =		Reference with %
	1	2	
15_1	mH	%	$\frac{1000 \cdot p0304}{2 \cdot \pi \cdot \sqrt{3} \cdot p0305 \cdot p0310}$
16_1	Ohm	%	$\frac{p0304}{\sqrt{3} \cdot p0305}$

Table 1-4 Unit groups (p0505)

Unit group	Unit choice with p0505 =				Reference with %
	1	2	3	4	
2_1	Hz	%	Hz	%	p2000
2_2	kHz	%	kHz	%	p2000
3_1	1/min	%	1/min	%	p2000
4_1	m/min	%	ft/min	%	p2000
4_2	m/min	m/min	ft/min	ft/min	-
5_1	Veff	%	Veff	%	p2001
5_2	V	%	V	%	p2001

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Table 1-4 Unit groups (p0505), Fortsetzung

Unit group	Unit choice with p0505 =				Reference with %
	1	2	3	4	
5_3	V	%	V	%	p2001
6_1	mAeff	%	mAeff	%	p2002
6_2	Aeff	%	Aeff	%	p2002
6_3	mA	%	mA	%	p2002
6_4	A	%	A	%	p2002
6_5	A	%	A	%	p2002
7_1	Nm	%	lbf ft	%	p2003
7_2	Nm	Nm	lbf ft	lbf ft	-
7_3	Nm	%	lbf ft	%	1.0
8_1	N	%	lbf	%	p2003
8_2	N	N	lbf	lbf	-
8_3	N	%	lbf	%	1.0
14_1	W	%	HP	%	r2004
14_3	W	%	HP	%	r2004
14_4	W	%	HP	%	r2004
14_5	kW	%	HP	%	r2004
14_7	kW	%	HP	%	r2004
14_8	kW	%	HP	%	r2004
14_9	W	W	HP	HP	-
14_10	kW	kW	HP	HP	-
17_1	Nms/rad	%	lbf ft s/rad	%	p2000/p2003
18_1	V/A	%	V/A	%	p2002/p2001
19_1	A/V	%	A/V	%	p2001/p2002
21_1	°C	°C	°F	°F	-
21_2	K	K	°F	°F	-
22_1	m/s^2	m/s^2	ft/s^2	ft/s^2	-
23_1	Veff s/m	Veff s/m	Veff s/ft	Veff s/ft	-
24_1	Ns/m	Ns/m	lbf s/ft	lbf s/ft	-
24_2	Ns/m	%	lbf s/ft	%	p2000/p2003
26_1	m/s^3	m/s^3	ft/s^3	ft/s^3	-

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Table 1-5 Unit group (p0595)

Unit group	Unit choice with p0595 =		Reference with %
	Value	Unit	
9_1	The settable values and technological units are displayed p0595 (see Chapter 1.2).		

Parameter values

Min	Minimum value of the parameter [unit]
Max	Maximum value of the parameter [unit]
Factory setting	Shipped value (default) [unit] A different value may be displayed for certain parameters (e.g. p1800) at the initial commissioning stage. Reason: The setting of these parameters is determined by the operating environment of the Control Unit (e.g. depending on converter type, macro, Power Module).

Note:

For SINAMICS G150/G130/S150, the macros and their settings are provided in the following documentation:

References: /BAx/ x = 1, 2, 3
SINAMICS G150/G130/S150 Operating Instructions

Description

Explanation of the function of a parameter.

Values

Lists the possible values of a parameter.

Recommendation

Information about recommended settings.

Index

The name and meaning of each individual index is specified for indexed parameters.

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The following applies to the values (min, max, factory setting) of indexed setting parameters:

- Min, Max:

  The setting range and unit apply to all indices.

- Factory setting:

  When all indices have the same factory setting, index 0 is specified with unit to represent all indices.

  When the indices have different factory settings, they are all listed individually with unit.

Bit field

For parameters with bit fields, the following information is provided about each bit:

- Bit number and signal name
- Meaning with signal states 0 and 1
- Function diagram (optional)

  The signal is shown on this function diagram.

Dependency

Conditions which need to be fulfilled in connection with this parameter. Also includes special effects which can occur between this parameter and others.

See also: List of other relevant parameters.

Safety-related information

Important information which must be heeded to avoid the risk of physical injury or property damage.

Information which must be observed to avoid problems.

Information which the user or operator may find useful.

Danger! Corresponds to  Danger

Warning! Corresponds to  Alarm

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Caution!	Corresponds to		Caution
Caution:	Corresponds to		Caution
Notice:	Corresponds to		Notice

Note:

A description of individual safety notices can be found in the appendix to this manual (see **Safety Guidelines**).

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1.1.2 Numerical ranges of parameters

Parameters are grouped into the following numerical ranges:

Table 1-6 Numerical Ranges of Parameters

Section		Description
from	**to**	
0000	0099	Operation and visualization
0100	0199	Commissioning
0200	0299	Power unit
0300	0399	Motor
0400	0499	Encoder
0500	0599	Technology and units
0600	0699	Thermal motor protection and motor model, maximum current
0700	0799	Command sources and terminals on Control Unit, measuring sockets
0800	0839	CDS, DDS data sets (e.g. switch over, copy)
0840	0879	Sequential control (e.g. source for ON/OFF1)
0880	0899	Control and status words
0900	0999	PROFIBUS/PROFIdrive
1000	1199	Setpoint Channel
1200	1299	Functions (e.g. motor holding brake)
1300	1399	V/f control
1400	1799	Closed-loop control
1800	1899	Gating unit
1900	1999	Power Module and motor identification
2000	2099	Communication (PROFIBUS)
2100	2199	Faults and alarms, monitoring functions
2200	2399	Technology controller
2900	2930	Fixed values (e.g. per cent, torque)
3900	3999	Management parameters
4000	4199	Terminal Boards, Terminal Modules (e.g. TB30, TM31)
6500	6599	External reports
7000	7499	Parallel connection of Power Modules
7800	7899	EEPROM read/write parameters
8600	8799	CAN bus
8800	8899	Communication Board
9400	9499	Parameter consistency and storage
9500	9899	Safety Integrated

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Table 1-6 Numerical Ranges of Parameters, Fortsetzung

Section		Description
from	**to**	
9900	9949	Topology
9950	9999	Diagnostics (internal)

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1.2 List of parameters

Product: SINAMICS G, Version: 2402300, Label: , Language: eng

r0002 Control Unit operating display / CU op_display

CU_G

Can be changed: -
Access level: 1
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	99	70

Description: Operating display for the Control Unit (CU).

Values:
0: [00] Operation
10: [10] Ready
20: [20] Wait for run-up
31: [31] Commissioning software download active
33: [33] Remove topology error / acknowledge
34: [34] Exit the commissioning mode
35: [35] Carry-out first commissioning
70: [70] Initialization
80: [80] Reset active
99: [99] Internal software error

r0002 Drive operating display / Drv op_display

VECTOR

Can be changed: -
Access level: 1
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	250	12

Description: Operating display for the drive.

The value provides information about the actual operating state and the conditions necessary to reach the next operating state.

The higher the numerical value, the greater the number of conditions that still have to be fulfilled in order to achieve the "Run" operating state.

Values:
0: [00] Operation - everything enabled
10: [10] Operation - set "enable setpoint" = "1" (p1142)
11: [11] Operation - set "enable speed controller" = "1" (p0856)
12: [12] Operation - RFG frozen, set "RFG start" = "1" (p1141)
13: [13] Operation - set "enable RFG" = "1" (p1140)
14: [14] Operation - MotID or excitation running and/or brake opens
15: [15] Operation - open brake (p1215)
16: [16] Oper - withdraw braking w/ OFF1 using "ON/OFF1" = "1"
17: [17] Oper - braking w/ OFF3 can only be interrupted w/ OFF2
18: [18] Operation - brake on fault, remove fault, acknowledge
19: [19] Operation - armature short-circuit active (p1230, p1231)
21: [21] Ready - set "enable operation" = "1" (p0852)
22: [22] Ready - de-magnetization running (p0347)
23: [23] Ready - set "infeed operation" = "1" (p0864)
31: [31] Ready to power-up - set "ON/OFF1" = "0/1" (p0840)
41: [41] Power-on inhibit - set "ON/OFF1" = "0" (p0840)
42: [42] Power-on inhibit - set "OC/OFF2" = "1" (p0844, p0845)
43: [43] Power-on inhibit - set "OC/OFF3" = "1" (p0848, p0849)
44: [44] Power-on inhibit - connect 24 V to terminal EP (hardware)
45: [45] Power-on inhib - remove fault cause, acknowledge fault
46: [46] Power-on inhibit - exit comm mode (p0009, p0010)
60: [60] Infeed de-activated/not operational
250: [250] Device signals a topology error

Dependency: Refer to: r0046

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Note: OC: Operating condition
EP: Enable Pulses (pulse enable)
RFG: Ramp-function generator
COMM: Commissioning
MotID: Motor data identification

r0002 TB30 operating display / TB30 op_display

TB30

Can be changed: -
Access level: 1
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	250	70

Description: Operating display for terminal board 30 (TB30).
The higher the numerical value, the greater the number of conditions that still have to be fulfilled in order to achieve the "Module in cyclic operation" operating state.

Values:
0: [00] Module in cyclic operation
40: [40] Module not in cyclic operation
60: [60] Fault
70: [70] Initialization
80: [80] Reset active
120: [120] Module de-activated
250: [250] Device signals a topology error

r0002 DMC operating display / DMC op_display

DMC20

Can be changed: -
Access level: 1
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	250	40

Description: Operating display for the DRIVE-CLiQ Hub Module Cabinet (DMC).
The higher the numerical value, the greater the number of conditions that still have to be fulfilled in order to achieve the "Module in cyclic operation" operating state.

Values:
0: [00] Module in cyclic operation
40: [40] Module not in cyclic operation
50: [50] Alarm
60: [60] Fault
70: [70] Initialization
120: [120] Module de-activated
250: [250] Device signals a topology error

r0002 TM31 operating display / TM31 op_display

TM31

Can be changed: -
Access level: 1
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	250	70

Description: Operating display for Terminal Module 31 (TM31).
The higher the numerical value, the greater the number of conditions that still have to be fulfilled in order to achieve the "Module in cyclic operation" operating state.

Values:
0: [00] Module in cyclic operation
40: [40] Module not in cyclic operation
50: [50] Alarm
60: [60] Fault
70: [70] Initialization
120: [120] Module de-activated
250: [250] Device signals a topology error

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p0003 BOP access level / BOP access level

CU_G	**Can be changed:** C1, U, T		**Access level:** 1
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	4	1

Description: Sets the access level for reading and writing parameters using the Basic Operator Panel (BOP) and Advanced Operator Panel (AOP).

Values:
0: User-defined
1: Standard
2: Extended
3: Expert
4: Service

Note: Access level 0 (user-defined):

Parameters from the user-defined list (p0013).

Access level 1 (standard):

Parameters for the simplest operator control possibility (e.g. p1120 = ramp-function generator, ramp-up time).

Access level 2 (extended):

Parameters to operate the basic functions of the drive unit.

Access level 3 (experts):

Expert know-how is required for these parameters (e.g. BICO parameterization).

Access level 4 (service):

For these parameters, it is necessary that authorized service personnel enter the appropriate password (p3950).

p0004 BOP display filter / BOP display filter

CU_G	**Can be changed:** C2(1), U, T		**Access level:** 1
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	99	0

Description: Sets the display filter for parameters for Basic Operator Panel (BOP) and Advanced Operator Panel (AOP).

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Values:
0: All parameters
1: Displays, signals
2: Power unit
3: Motor
4: Encoder/pos enc
5: Technology/units
7: Digital inputs/outputs, commands, sequence control
8: Analog inputs/outputs
10: Setpoint channel/ramp-fct generator
12: Functions
13: U/f control
14: Control
15: Data sets
17: Basic positioner
18: Gating unit
19: Motor identification
20: Communication
21: Faults, alarms, monitoring functions
25: Cl.-loop pos ctrl
28: Free function blocks
47: Trace and function generator
50: OA parameter
90: Topology
95: Safety Integrated
98: Command Data Sets (CDS)
99: Drive Data Sets (DDS)

Dependency: Refer to: p0003

Note: Example:
p0004 = 3: Only the parameters for the motor are displayed.

p0005 BOP operating display selection / BOP op_disp sel

All objects

Can be changed: U, T | **Access level:** 2
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	2

Description: Sets the parameter number for display for p0006 = 2, 4 for the Basic Operator Panel (BOP).
Examples for the SERVO drive object:
p0005 = 21: Speed actual value smoothed (r0021)
p0005 = 25: Drive output voltage smoothed (r0025)
p0005 = 26: Speed actual value smoothed (r0026)
p0005 = 27: Absolute current actual value, smoothed (r0027)

Dependency: Refer to: p0006

Note: Only the monitoring parameters (only read parameters) can be set, that actually exist for the actual drive object.

p0006 BOP operating display mode / BOP op_ disp mode

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
4	4	4

Description: Sets the mode of the operating display for the Basic Operator Panel (BOP) in the operating states "ready" and "operation".

Values:
4: p0005

Dependency: Refer to: p0005

Note: Mode 0 ... 3 can only be selected if also r0020, r0021 are available on the drive object.
Mode 4 is available for all drive objects.

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p0006 BOP operating display mode / BOP op_ disp mode

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	4	4

Description: Sets the mode of the operating display for the Basic Operator Panel (BOP) in the operating states "ready" and "operation".

Values:
0: Operation --> r0021, otherwise r0020 <--> r0021
1: Operation --> r0021, otherwise r0020
2: Operation --> p0005, otherwise p0005 <--> r0020
3: Operation --> r0002, otherwise r0002 <--> r0020
4: p0005

Dependency: Refer to: p0005

Note: Mode 0 ... 3 can only be selected if also r0020, r0021 are available on the drive object.
Mode 4 is available for all drive objects.

p0007 BOP background lighting / BOP lighting

CU_G

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [s]	2000 [s]	0 [s]

Description: Sets the delay time until the background lighting of the Basic Operator Panel (BOP) is switched-off.
If no keys are actuated, then the background lighting automatically switches itself off after this time has expired.

Note: p0007 = 0: Background lighting is always switched on (factory setting).

p0008 BOP drive object selection / BOP DO select

CU_G

Can be changed: U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	65535	1

Description: Sets the required drive object for reading and writing via the Basic Operator Panel (BOP).

Note: The value from p0008 is displayed at the top left on the Basic Operator Panel (BOP).
The drive object Control Unit is selected using the value 1.

p0009 Device commissioning parameter filter / Dev comm par_filt

CU_G

Can be changed: C1, T | **Access level:** 1
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	50	1

Description: Sets the device and basic drive commissioning.
By appropriately setting this parameter, those parameters are filtered that can be written into in the various commissioning steps.

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Values:
0: Ready
1: Device configuration
2: Defining the drive type / drive options
3: Drive basis configuration
4: Data set basis configuration
29: Device download
30: Parameter reset
50: OA application configuration

Note:
The drives can only be powered-up outside the device commissioning (the inverter enabled). In this case, p0009 must be 0 (Ready) and the individual drive objects must have already gone into operation (p0010).

p0009 = 1: Device configuration

At the first commissioning of the devices, after booting, the device is in the "device configuration" state. To start the internal automatic first commissioning of the drive unit, p0009 should be set to 0 (Ready) after the ID for the actual topology (r0098) was transferred into the ID for the target topology (p0099). To do this, it is sufficient to set a single index value of p0099[x] the same as r0098[x]. Before the device has been completely commissioned, no other parameter can be changed. After the first commissioning was carried-out, in this state, when required, other basic device configuration parameters can be adapted (e.g. the basic sampling time in p0110).

p0009 = 2: Defines the drive type / function module

In this state, the drive object types and/or the function modules can be changed or selected for the individual drive objects. To do this, the drive object type can be set using p0107[0...15] and the function can be set using p0108[0...15] (refer to p0101[0...15]).

p0009 = 3: Drive basis configuration

In this state, after the device has been commissioned for the first time, basic changes can be made for the individual drive objects (e.g. sampling times in p0111, p0112, p0115 and the number of data sets in p0120, p0130, p0140, p0170, p0180).

p0009 = 4: Data set basis configuration

In this state, after the device has been commissioned for the first time, for the individual drive objects changes can be made regarding the assignment of the components (p0121, p0131, p0141, p0151, p0161) to the individual data sets and the assignment of the power unit, motor and encoder to the drive data sets (p0185, ...).

p0009 = 29: Device download

If a download is made using the commissioning software, the device is automatically brought into this state. After the download has been completed, p0009 is automatically set to 0 (ready). It is not possible to manually set p0009 to this value.

p0009 = 30: Parameter reset

In order to bring the complete unit into the "first commissioning" state or to load the parameters saved using p0977, to start, p0009 must be set to this value. p0976 can then be changed to the required value.

p0009 = 50: OEM application configuration

In this state, after the device has been commissioned for the first time, changes can be made for the individual drive objects regarding the activity (p4956) of the OEM applications.

p0010 Drive, commissioning parameter filter / Drv comm. par_filt

VECTOR

Can be changed: C2(1), T | **Access level:** 1

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	95	1

Description:
Sets the parameter filter to commission a drive.

Setting this parameter filters-out the parameters that can be written into in the various commissioning steps.

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Values:
0: Ready
1: Quick commissioning
2: Power unit commissioning
3: Motor commissioning
4: Encoder commissioning
5: Technological application/units
15: Data sets
17: Basic positioning commissioning
25: Commissioning the position control
29: Download
30: Parameter reset
95: Safety Integrated commissioning

Note: The drive can only be powered-up outside the drive commissioning (inverter enable). To realize this, this parameter must be set to 0.

For p3900 not equal to 0, at the end of the quick commissioning, this parameter is automatically reset to 0.

Procedure for "Reset parameter": Set p0010 to 30 and p0970 to 1.

p0010 TB30 commissioning parameter filter / TB30 comm.par_filt

TB30

Can be changed: C2(1), T | **Access level:** 1

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	30	0

Description: Sets the parameter filter for commissioning a terminal board 30 (TB30).

Setting this parameter filters-out the parameters that can be written into in the various commissioning steps.

For the BOP, this setting also causes the read access operations to be filtered.

Values:
0: Ready
29: Download
30: Parameter reset

Dependency: Refer to: p0970

Note: Procedure for "Reset parameter": Set p0010 to 30 and p0970 to 1.

p0010 TM31 commissioning parameter filter / TM31 comm par_filt

TM31

Can be changed: C2(1), T | **Access level:** 1

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	30	0

Description: Sets the parameter filter for commissioning a Terminal Module 31 (TM31).

Setting this parameter filters-out the parameters that can be written into in the various commissioning steps.

For the BOP, this setting also causes the read access operations to be filtered.

Values:
0: Ready
29: Download
30: Parameter reset

Dependency: Refer to: p0970

Note: Only the following values are possible: p0010 = 0, 30

Procedure for "Reset parameter": Set p0010 to 30 and p0970 to 1.

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p0011 BOP password entry (p0013) / BOP passw ent p13

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	65535	0

Description: Sets the password for the Basic Operator Panel (BOP).

Dependency: Refer to: p0012, p0013

p0012 BOP password acknowledgment (p0013) / BOP passw ackn p13

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	65535	0

Description: Acknowledges the password for the Basic Operator Panel (BOP).

Dependency: Refer to: p0011, p0013

p0013[0...49] BOP user-defined list / BOP list

All objects	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	65535	0

Description: Sets the required parameters to read and write via the Basic Operator Panel (BOP).
Activation:
1. p0003 = 3 (expert).
2. p0013[0...49] = requested parameter number
3. If required, enter p0011 = password in order to prevent non-authorized de-activation.
4. p0003 = 0 --> activates the selected user-defined list.
De-activation/change:
1. p0003 = 3 (expert).
2. If required, p0012 = p0011, in order to be authorized to change or de-activate the list.
3. If required p0013[0...49] = required parameter number.
4. p0003 = 0 --> activates the modified user-defined list.
5. p0003 > 0 --> de-activates the user-defined list.

Dependency: Refer to: p0009, p0011, p0012, p0976

Note: The following parameters can be read and written on the Control Unit drive object:
- p0003 (access stage)
- p0009 (device commissioning, parameter filter)
- p0012 (BOP password acknowledgment (p0013))

The following applies for the user-defined list:
- password protection is only available on the drive object Control Unit and is valid for all of the drive objects.
- p0013 cannot be included in the user-defined list for all drive objects.
- p0003, p0009, p0011, p0012, p0976 cannot, for the drive object Control Unit, be included in the user-defined list.
- the user-defined list can be cleared and de-activated "restore factory setting".

A value of 0 means: Entry is empty.

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p0015 Macro drive unit / Macro drv unit

CU_G

Can be changed: C1 — **Access level:** 1
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	999999	0

Description: Runs the appropriate ACX file on the CompactFlash card.
The selected ACX file must be located in the following directory:
... /PMACROS/DEVICE/P15/PMxxxxxx.ACX
Example:
p0015 = 6 --> the file PM000006.ACX is run.

Dependency: The ACX file to be run must be created according to the definition for ACX macros and must be saved in the directory intended on the CompactFlash card.
Refer to: p0700, p1000, p1500, r8570

Note: The macros in the specified directory are displayed in r8570.
Macros available as standard are described in the technical documentation of the particular product.

p0015 Macro drive object / Macro DO

TM31, VECTOR

Can be changed: C2(1) — **Access level:** 1
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: Commands — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	999999	0

Description: Runs the appropriate ACX file on the CompactFlash card.
The selected ACX file must be located in the following directory:
... /PMACROS/<drive object>/P15/PMxxxxxx.ACX
Example:
p0015 = 6 --> the file PM000006.ACX is run.

Dependency: The ACX file to be run must be created according to the definition for ACX macros and must be saved in the directory intended on the CompactFlash card.
Refer to: p0700, p1000, p1500, r8570

Notice: No errors were issued during fast commissioning (p3900 = 1) when writing to parameters of the QUICK_IBN group!

Note: The macros in the specified directory are displayed in r8570.
Macros available as standard are described in the technical documentation of the particular product.

r0018 Control Unit firmware version / CU FW_version

CU_G

Can be changed: - — **Access level:** 1
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the firmware version of the Control Unit.

Dependency: Refer to: r0128, r0148, r0158, r0197, r0198

Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

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r0019 CO/BO: Control word BOP / STW BOP

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word for the Basic Operator Panel (BOP).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	ON / OFF (OFF1)	ON	OFF (OFF1)	-
01	No coast-down / coast-down (OFF2)	No coast down	Coast down (OFF2)	-
02	No fast stop / fast stop (OFF3)	No fast stop	Fast stop (OFF3)	-
07	Acknowledge fault (0 -> 1)	Yes	No	-
13	Motorized potentiometer, raise	Yes	No	-
14	Motorized potentiometer, lower	Yes	No	-

r0020 Speed setpoint, smoothed / n_set smth

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 5020, 6799
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the actual, smoothed speed setpoint at the input of the speed controller or U/f characteristic (after the interpolator).

Dependency: Refer to: r0060

Note: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The speed setpoint is available smoothed (r0020) and unsmoothed (r0060).

r0021 Actual speed, smoothed / n_act smooth

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 1580, 1680, 4710, 6799
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the smoothed actual value of the motor speed.

Dependency: Refer to: r0063

Note: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The value displayed in r0021 is the smoothed value of r0063.

r0024 Drive output frequency smoothed / Drv f_outp smooth

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 1690, 5300, 5730, 6799
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the smoothed converter frequency.

Dependency: Refer to: r0066

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Note: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The output frequency is available smoothed (r0024) and unsmoothed (r0066).

r0025 Drive, output voltage smoothed / Drv U_outp smooth

VECTOR

Can be changed: - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1690, 5730, 6799

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the smoothed output voltage of the power unit.

Dependency: Refer to: r0072

Note: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The output voltage is available smoothed (r0025) and unsmoothed (r0072).

r0026 CO: DC link voltage, smoothed / Vdc smooth

VECTOR

Can be changed: - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 6799, 8750, 8850, 8950

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the smoothed actual value of the DC link voltage.

Dependency: Refer to: r0070

Notice: For SINAMICS S120 AC Drive (AC/AC) the following applies:
When measuring a DC link voltage < 200 V, for the Power Module (e.g. PM340) a valid measured value is not supplied. In this case, a value of approx. 300 V is displayed in the display parameter.

Note: A_INF, B_INF, S_INF: smoothing time constant = 300 ms
SERVO, VECTOR: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The DC link voltage is available smoothed (r0026) and unsmoothed (r0070).

r0027 Absolute actual current, smoothed / I_act abs.val.smth

VECTOR

Can be changed: - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 5730, 6799, 8850, 8950

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the smoothed absolute actual current value.

Dependency: Refer to: r0068

Note: A_INF, S_INF, VECTOR: Smoothing time constant = 300 ms
SERVO: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The absolute current actual value is available smoothed (r0027) and unsmoothed (r0068).

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r0028 Modulation depth, smoothed / Modulat depth smth

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5730, 6799, 8950
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the smoothed actual value of the modulation depth.

Dependency: Refer to: r0074

Note: A_INF: Smoothing time constant = 300 ms

SERVO, VECTOR: Smoothing time constant = 100 ms

The signal is not suitable as process quantity and may only be used as display quantity.

The modulation depth is available smoothed (r0028) and unsmoothed (r0074).

r0029 Drive, smoothed field-generating current actual value / Drv Id_act smooth

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5730, 6799
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the smoothed field-generating actual current.

Dependency: Refer to: r0076

Note: SERVO: Smoothing time constant = 100 ms

VECTOR: Smoothing time constant = 300 ms

The signal is not suitable as process quantity and may only be used as display quantity.

The field-generating current actual value is available smoothed (r0029) and unsmoothed (r0076).

r0030 Current actual value, torque-generating, smoothed / Iq_act smooth

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5730, 6799
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the smoothed torque-generating actual current.

Dependency: Refer to: r0078

Note: SERVO: Smoothing time constant = 100 ms

VECTOR: Smoothing time constant = 300 ms

The signal is not suitable as process quantity and may only be used as display quantity.

The following applies for SERVO:

The torque-generating current actual value is available smoothed (r0030 with 100 ms, r0078[1] with p0045) and unsmoothed (r0078[0]).

For VECTOR, the following applies:

The torque-generating current actual value is available smoothed (r0030 with 300 ms) and unsmoothed (r0078).

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r0031 Actual torque smoothed / M_act smooth

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5730, 6799
	P-Group: Displays, signals	**Units group:** 7_2	**Unit selection:** p0505
	Min - [Nm]	**Max** - [Nm]	**Factory setting** - [Nm]

Description: Displays the smoothed torque actual value.

Dependency: Refer to: r0080

Note: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The active current actual value is available smoothed (r0031) and unsmoothed (r0080).

r0032 Active power actual value, smoothed / P_actv_act smth

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5730, 6799, 8850, 8950
	P-Group: Displays, signals	**Units group:** 14_10	**Unit selection:** p0505
	Min - [kW]	**Max** - [kW]	**Factory setting** - [kW]

Description: Displays the smoothed actual value of the active power.

Dependency: Refer to: r0082

Note: Significance for the drive: Power output at the motor shaft
Significance for the infeed: Line power drawn
For A_INF and S_INF the following applies:
The active power is available smoothed (r0032 with 300 ms) and unsmoothed (r0082).
The following applies for SERVO:
The active power is available smoothed (r0032 with 100 ms, r0082[1] with p0045) and unsmoothed (r0082[0]).
For VECTOR and VECTORMV, the following applies:
The active power is available smoothed (r0032 with 100 ms) and unsmoothed (r0082).

r0033 Torque utilization, smoothed / M_util smooth

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 8012
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the smoothed torque/force utilization as a percentage.
The torque/force utilization is obtained from the required smoothed torque/force referred to the torque/force limit.

Note: Smoothing time constant = 100 ms
The signal is not suitable as process quantity and may only be used as display quantity.
The torque utilization is available smoothed (r0033) and unsmoothed (r0081).
For M_set total (r0079) > M_max offset (p1532), the following applies:
- demanded torque = M_set total - M_max offset
- actual torque limit = M_max upper effective (r1538) - M_max offset
For M_set total (r0079) <= M_max offset (p1532), the following applies:
- demanded torque = M_max offset - M_set total
- actual torque limit = M_max offset - M_max lower effective (r1539)
For the actual torque limit = 0, the following applies: r0033 = 100 %
For the actual torque limit < 0, the following applies: r0033 = 0 %

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r0035 CO: Motor temperature / Motor temperature

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 8016
P-Group: Displays, signals
Units group: 21_1
Unit selection: p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the actual temperature in the motor.

Note: For r0035 not equal to -200.0 °C, the following applies:
- this temperature display is valid.
- a KTY sensor is connected.
- for induction motors, the thermal motor model is activated (p0600 = 0 or p0601 = 0).

For r0035 equal to -200.0 °C, the following applies:
- this temperature display is not valid (temperature sensor error).
- a PTC sensor is connected.
- for synchronous motors, the thermal motor model is activated (p0600 = 0 or p0601 = 0).

r0036 Power unit overload I2t / LT overload I2t

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 8014
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the power unit overload determined using the I2t calculation.

A current reference value is defined for the I2t monitoring of the power unit. It represents the current that can be conducted by the power unit without any influence of the switching losses (e.g. the continuously permissible current of the capacitors, inductances, busbars, etc.).

If the I2t reference current of the power unit is not exceeded, then an overload (0 %) is not displayed.

In the other case, the degree of thermal overload is calculated whereby 100% corresponds to the maximum permissible value and results in shutdown (trip).

Dependency: Refer to: p0290, p0294

Refer to: F30005

r0037[0...19] CO: Power unit temperatures / LT temperatures

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 8014
P-Group: Displays, signals
Units group: 21_1
Unit selection: p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the temperatures in the power unit.

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Index: [0] = Maximum inverter
[1] = Maximum depletion layer
[2] = Maximum rectifier
[3] = Air intake
[4] = Electronics unit in the power unit
[5] = Inverter 1
[6] = Inverter 2
[7] = Inverter 3
[8] = Inverter 4
[9] = Inverter 5
[10] = Inverter 6
[11] = Rectifier 1
[12] = Rectifier 2
[13] = Depletion layer 1
[14] = Depletion layer 2
[15] = Depletion layer 3
[16] = Depletion layer 4
[17] = Depletion layer 5
[18] = Depletion layer 6
[19] = Cooling system water intake

Dependency: Refer to: p0290

Note: A value of -200 indicates that there is no measuring signal.

r0038 Power factor, smoothed / Cos phi smooth

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 6799, 8850, 8950

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the smoothed actual power factor.

Note: Smoothing time constant = 300 ms
The signal is not suitable as process quantity and may only be used as display quantity.
Significance for the motor: Motor power factor
Significance for the infeed: Power factor at the connection point (p3470, p3471)

p0045 Smoothing time constant, display values / T_smth display

VECTOR

Can be changed: U, T **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 4715, 5610, 5730, 6714, 8012

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	200.00 [ms]	1.00 [ms]

Description: Sets the smoothing time constant for the following display values:
SERVO: r0078[1], r0079[1], r0081 (calculated from the quantities smoothed with p0045), r0082[1].
VECTOR: r0063[1], r0068[1], r0080[1], r0082[1].

r0046 CO/BO: Missing drive enable signals / Drv miss enable

VECTOR

Can be changed: - **Access level:** 1

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2634

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays missing enable signals that are preventing the closed-loop drive control from being commissioned.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	OFF1 enable missing	Yes	No	-
	01	OFF2 enable missing	Yes	No	-
	02	OFF3 enable missing	Yes	No	-
	03	Enable operation missing	Yes	No	-
	04	Armature short-circuit, enable missing	Yes	No	-
	05	STOP2 enable missing	Yes	No	-
	06	STOP1 enable missing	Yes	No	-
	08	EP terminals enable missing	Yes	No	-
	09	Infeed enable missing	Yes	No	-
	10	Ramp-function generator enable missing	Yes	No	-
	11	Ramp-function generator start missing	Yes	No	-
	12	Setpoint enable missing	Yes	No	-
	16	OFF1 enable internal missing	Yes	No	-
	17	OFF2 enable internal missing	Yes	No	-
	18	OFF3 enable internal missing	Yes	No	-
	19	Pulse enable internal missing	Yes	No	-
	20	Armature short-circuit, internal enable missing	Yes	No	-
	21	STOP2 enable internal missing	Yes	No	-
	22	STOP1 enable internal missing	Yes	No	-
	25	Function bypass active	Yes	No	-
	26	Drive inactive or not operational	Yes	No	-
	27	Demagnetization not completed	Yes	No	-
	28	Brake open missing	Yes	No	-
	29	Cooling system ready signal missing	Yes	No	-
	30	Speed controller inhibited	Yes	No	-
	31	Jog setpoint active	Yes	No	-

Dependency: Refer to: r0002

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Note:

The value r0046 = 0 indicates that all enable signals for this drive are present.
Bit 00 = 1 (enable signal missing), if:
- the signal source in p0840 is a 0 signal.
- there is a power-on inhibit.
Bit 01 = 1 (enable signal missing), if:
- the signal source in p0844 or p0845 is a 0 signal.
Bit 02 = 1 (enable signal missing), if:
- the signal source in p0848 or p0849 is a 0 signal.
Bit 03 = 1 (enable signal missing), if:
- the signal source in p0852 is a 0 signal.
Bit 04 =1 (armature short-circuit active), if:
- the signal source in p1230 has a 1 signal
Bit 05, Bit 06: Being prepared
Bit 08 = 1 (enable signal missing), if:
- the pulse enable via terminal EP is missing (booksize: X21, chassis: X41).
Bit 09 = 1 (enable signal missing), if:
- the signal source in p0864 is a 0 signal.
Bit 10 = 1 (enable signal missing), if:
- the signal source in p1140 is a 0 signal.
Bit 11 = 1 (enable signal missing) if the speed setpoint is frozen, because:
- the signal source in p1141 is a 0 signal.
or
- the speed setpoint is entered from jogging and the two signal sources for jogging, bit 0 (p1055) and bit 1 (p1056) have a 1 signal.
Bit 12 = 1 (enable signal missing), if:
- the signal source in p1142 is a 0 signal.
Bit 16 = 1 (enable signal missing), if:
- there is an OFF1 fault response. The system is only enable if the fault is removed and was acknowledged and the power-on inhibit withdrawn with OFF1 = 0.
Bit 17 = 1 (enable signal missing), if:
- the commissioning mode is selected (p0009 > 0 or p0010 > 0) or an OFF2 fault response is present.
Bit 18 = 1 (enable signal missing), if:
- OFF3 has still not be completed or an OFF3 fault response is present.
Bit 19 = 1 (internal pulse enable missing), if:
- synchronization is running between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle.
Bit 20 =1 (internal armature short-circuit active), if:
- the drive is not in the state "S4: Operation" or in "S5x" (refer to function chart 2610). - the
- the internal pulse enable is missing (r0046.19 = 0).
Bit 21 = 1 (enable signal missing), if:
The pulses have been enabled and the speed setpoint has still not been enabled, because:
- the holding brake opening time (p1216) has still not expired.
- The motor has still not been magnetized (induction motor).
Bit 22: Being prepared
Bit 26 = 1 (enable signal missing), if:
- the drive is inactive (p0105 = 0) or is not operational (r7850[DO-Index]=0).
Bit 27 = 1 (enable signal missing), if:
- de-magnetizing has still not been completed (only for vector).
Bit 28 = 1 (enable signal missing), if:
- the holding brake is closed or has still not been opened.
Bit 29 = 1 (enable signal missing), if:
- the cooling system ready signal via BI: p0266[1] missing.
Bit 30 = 1 (speed controller inhibited), if one of the following reasons is present:
- A 0 signal is available via BI: p0856.

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- the function generator with current input is active.
- the measuring function "current controller reference frequency characteristic" is active.
- the pole position identification is active.
- the motor data identification routine is

r0047 Motor data ident. routine and speed controller optimization / MotID and n_opt

VECTOR

Can be changed: - **Access level:** 1
Data type: Integer16 **Dynamic index:** - **Function diagram:** -
P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	300	200

Description: Displays the actual status for the motor data identification (standstill measurement) and the speed/velocity controller optimization (rotating measurement).

Values:
0: No measurement
120: Speed controller optimization, (vibration test)
140: Calculate speed controller setting
150: Measurement, moment of inertia
170: Measurement, magnetizing current and saturation characteristic
190: Speed encoder test
200: Rotating measurement selected
210: Pole position identification selected
220: identification, leakage inductance
230: Identification, rotor time constant
240: Identification, stator inductance
270: Identification, stator resistance
290: Identification, valve lockout time
300: Standstill measurement selected

r0049[0...3] Motor/encoder data set effective / MDS/EDS effective

VECTOR

Can be changed: - **Access level:** 2
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** 8565
P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the effective Motor Data Set (MDS) and the effective Encoder Data Sets (EDS).

Index:
[0] = Motor Data Set MDS effective
[1] = Encoder1 Encoder Data Set EDS effective
[2] = Encoder 2 Encoder Data Set EDS effective
[3] = Encoder 3 Encoder Data Set EDS effective

Dependency: Refer to: p0186, p0187, p0188, p0189, r0838

Note: Value 99 means the following: No encoder assigned (not configured).

r0050 CO/BO: Command Data Set CDS effective / CDS effective

VECTOR

Can be changed: - **Access level:** 2
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** 8560
P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the effective Command Data Set (CDS).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	CDS eff., bit 0	On	Off	-
01	CDS eff., bit 1	On	Off	-
02	CDS eff., bit 2	On	Off	-
03	CDS eff., bit 3	On	Off	-

Dependency: Refer to: p0810, p0811, r0836

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Note: The command data set selected via binector inputs p0810, p0811, p0812 and p0813 is displayed via r0836.

r0051 CO/BO: Drive Data Set DDS effective / DDS effective

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the effective Drive Data Set (DDS).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DDS eff., bit 0	On	Off	-
01	DDS eff., bit 1	On	Off	-
02	DDS eff., bit 2	On	Off	-
03	DDS eff., bit 3	On	Off	-
04	DDS eff., bit 4	On	Off	-

Dependency: Refer to: p0820, p0821, p0822, p0823, p0824, r0837

Note: The drive data set changeover is suppressed when selecting the motor identification, during the rotating measurement, the encoder calibration and the friction characteristic plot.

r0056 CO/BO: Status word, closed-loop control / ZSW cl-loop ctrl

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2526
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the closed-loop control.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Initialization completed	Yes	No	-
01	De-magnetizing completed	Yes	No	-
02	Pulse enable present	Yes	No	-
03	Soft starting present	Yes	No	-
04	Magnetizing completed	Yes	No	-
06	Accelerating voltage active	Yes	No	-
07	Frequency negative	Yes	No	6719
08	Field weakening active	Yes	No	-
09	Voltage limit active	Yes	No	-
10	Slip limit active	Yes	No	6310
11	Frequency limit active	Yes	No	6719
12	Current limiting controller voltage output active	Yes	No	-
13	Current/torque limiting	active	not active	-
14	Vdc_max controller active	Yes	No	6220, 6320
15	Vdc_min controller active	Yes	No	6220, 6320

r0060 CO: Speed setpoint before the setpoint filter / n_set before filt.

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 2701, 2704, 5020, 6030, 6799
P-Group: Displays, signals
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the actual speed setpoint at the input of the speed controller or U/f characteristic (after the interpolator).

Dependency: Refer to: r0020

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Note: The speed setpoint is available smoothed (r0020) and unsmoothed (r0060).

r0061[0...1] CO: Speed actual value motor encoder / n_act mot. encoder

VECTOR

Can be changed: - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1580, 4710, 4715

P-Group: Displays, signals **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed sensed by the motor encoder (unsmoothed).

Index: [0] = Sensor 0 actual value
[1] = Sensor 1 actual value

r0062 CO: Speed setpoint after the filter / n_set after filter

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1590, 1750, 5020, 5030, 5210, 6030

P-Group: Displays, signals **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the actual speed setpoint after the setpoint filters.

r0063[0...1] CO: Actual speed value / n_act

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1680, 4715

P-Group: Displays, signals **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the actual speed of the closed-loop speed control and the U/f control.

Index: [0] = Unsmoothed
[1] = Smoothed with p0045

Dependency: Refer to: r0021

Note: The speed actual value is calculated in sensorless operation and for U/f control. For operation with encoder, r0063 is smoothed with p1441.

The speed actual value r0063[0] is additionally displayed - smoothed with p0045 - in r0063[1].

r0064 CO: Speed controller system deviation / n_ctrl system dev

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 5040, 6040

P-Group: Displays, signals **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the actual system deviation of the speed controller.

Note: In the servo control mode with active reference model, the system deviation to the P component of the speed/velocity controller is displayed.

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r0065 Slip frequency / f_Slip

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6310, 6730
	P-Group: Displays, signals	**Units group:** 2_1	**Unit selection:** p0505
	Min - [Hz]	**Max** - [Hz]	**Factory setting** - [Hz]

Description: Displays the slip frequency for induction motors (ASM).

r0066 CO: Drive output frequency / Drv f_output

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1690, 5300, 5730, 6310, 6730, 6731, 6799
	P-Group: Displays, signals	**Units group:** 2_1	**Unit selection:** p0505
	Min - [Hz]	**Max** - [Hz]	**Factory setting** - [Hz]

Description: Displays the Motor Module output frequency.
Dependency: Refer to: r0024
Note: The output frequency is available smoothed (r0024) and unsmoothed (r0066).

r0067 Maximum drive output current / Drv I_output max

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5722, 6300, 6640, 6724
	P-Group: Displays, signals	**Units group:** 6_2	**Unit selection:** p0505
	Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the maximum output current of the Motor Module.
Dependency: The maximum output current is determined by the parameterized current limit and the motor and converter thermal protection.
Refer to: p0290, p0640

r0068[0...1] CO: Absolute current actual value / I_act abs.val.

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6714, 6799, 8014
	P-Group: Displays, signals	**Units group:** 6_2	**Unit selection:** p0505
	Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays actual absolute current.
Index: [0] = Unsmoothed
[1] = Smoothed with p0045
Dependency: Refer to: r0027
Notice: The value is updated with the current controller sampling time.
Note: The calculated RMS value is only applicable for alternating currents.
For DC current, a value is displayed that is too low by sqrt(2).
Absolute current value = sqrt(Iq^2 + Id^2)
The absolute value of the current actual value is available smoothed (r0027 with 300 ms, r0068[1] with p0045) and unsmoothed (r0068[0]).

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r0069[0...6] Phase current, actual value / I_Phase act value

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1630, 5730, 6714, 6730, 6731, 8850, 8950
	P-Group: Displays, signals	**Units group:** 6_5	**Unit selection:** p0505
	Min - [A]	**Max** - [A]	**Factory setting** - [A]

Description: Displays the measured actual phase currents as peak value.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W
[3] = Phase U offset
[4] = Phase V offset
[5] = Phase W offset
[6] = Total U, V, W

Note: In indices 3 ... 5, the offset currents of the 3 phases, which are added to correct the phase currents, are displayed.
The sum of the 3 corrected phase currents is displayed in index 6.

r0070 CO: Actual DC link voltage / Vdc_act

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6723, 6724, 6730, 6731, 6799
	P-Group: Displays, signals	**Units group:** 5_2	**Unit selection:** p0505
	Min - [V]	**Max** - [V]	**Factory setting** - [V]

Description: Displays the measured actual value of the DC link voltage.

Dependency: Refer to: r0026

Notice: For SINAMICS S120 AC Drive (AC/AC) the following applies:
When measuring a DC link voltage < 200 V, for the Power Module (e.g. PM340) a valid measured value is not supplied. In this case, a value of approx. 300 V is displayed in the display parameter.

Note: The DC link voltage is available smoothed (r0026) and unsmoothed (r0070).

r0071 Maximum output voltage / U_output max

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6300, 6724
	P-Group: Displays, signals	**Units group:** 5_1	**Unit selection:** p0505
	Min - [Veff]	**Max** - [Veff]	**Factory setting** - [Veff]

Description: Displays the maximum output voltage.

Dependency: The maximum output voltage depends on the actual DC link voltage (r0070) and the maximum modulation depth (p1803).

Note: As the (driven) motor load increases, the maximum output voltage drops as a result of the reduction in DC-link voltage.

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r0072 CO: Drive, output voltage / Drv U_output

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1630, 5730, 6730, 6731, 6799
	P-Group: Displays, signals	**Units group:** 5_1	**Unit selection:** p0505
	Min - [Veff]	**Max** - [Veff]	**Factory setting** - [Veff]

Description: Displays the actual power unit output voltage (Motor Module).
Dependency: Refer to: r0025
Note: The output voltage is available smoothed (r0025) and unsmoothed (r0072).

r0073 Maximum modulation depth / Modulat_depth max

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6724
	P-Group: Modulation	**Units group:** -	**Unit selection:** -
	Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the maximum modulation depth.
Dependency: Refer to: p1803

r0074 CO: Modulat_depth / Modulat_depth

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5730, 6730, 6731, 6799, 8940, 8950
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the actual modulation depth.
Dependency: Refer to: r0028
Note: For space vector modulation, 100% corresponds to the maximum output voltage without overcontrol.
Values above 100 % indicate an overcontrol condition - values below 100% have no overcontrol.
The phase voltage (phase-to-phase, rms) is calculated as follows:(r0074 * r0070) / (sqrt(2) * 100 %).
The modulation depth is available smoothed (r0028) and unsmoothed (r0074).

r0075 Current setpoint, field-generating / Id_set

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1630, 5714, 5722, 6714
	P-Group: Displays, signals	**Units group:** 6_2	**Unit selection:** p0505
	Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the field-generating current setpoint (Id_set).
Note: This value is irrelevant for the U/f control mode.

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r0076 Current actual value, field-generating / Id_act

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1630, 1710, 5714, 5730, 6714, 6799

P-Group: Displays, signals **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the field-generating current actual value (Id_act).

Dependency: Refer to: r0029

Note: This value is irrelevant for the U/f control mode.

The field-generating current actual value is available smoothed (r0029) and unsmoothed (r0076).

r0077 CO: Current setpoint, torque-generating / Iq_set

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1630, 1774, 5714, 6710, 6714, 6719

P-Group: Displays, signals **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the torque/force generating current setpoint.

Note: This value is irrelevant for the U/f control mode.

r0078 CO: Current actual value, torque-generating / Iq_act

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1710, 6310, 6714, 6799

P-Group: Displays, signals **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the torque-generating current actual value (Iq_act).

Dependency: Refer to: r0030

Note: This value is irrelevant for the U/f control mode.

The torque-generating current actual value is available smoothed (r0030 with 300 ms) and unsmoothed (r0078).

r0079 CO: Torque setpoint total / M_set total

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 1700, 1710, 6030, 6060, 6710, 8012

P-Group: Displays, signals **Units group:** 7_1 **Unit selection:** p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the torque setpoint at the output of the speed controller (before clock cycle interpolation).

r0080[0...1] CO: Torque actual value / M_act

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 6714, 6799

P-Group: Displays, signals **Units group:** 7_1 **Unit selection:** p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the actual torque value.

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Index: [0] = Unsmoothed
[1] = Smoothed with p0045

Dependency: Refer to: r0031

Note: The torque actual value is available smoothed (r0031 with 100 ms, r0080[1] with p0045) and unsmoothed (r0080[0]).

r0081 CO: Torque utilization / M_Utilization

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 8012

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the torque utilization as a percentage.
The torque utilization is obtained from the required smoothed torque referred to the torque limit.

Dependency: Refer to: r0033

Note: The torque utilization is available smoothed (r0033) and unsmoothed (r0081).
For SERVO, the following applies:
The calculation of the torque utilization depends on the selected smoothing time constant (p0045).

r0082[0...2] CO: Active power actual value / P_act

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 6714, 6799

P-Group: Displays, signals **Units group:** 14_5 **Unit selection:** p0505

Min	Max	Factory setting
- [kW]	- [kW]	- [kW]

Description: Displays the instantaneous active power.

Index: [0] = Unsmoothed
[1] = Smoothed with p0045
[2] = Power drawn

Dependency: Refer to: r0032

Note: The active power is available smoothed (r0032 with 100 ms, r0082[1] with p0045) and unsmoothed (r0082[0]). The unsmoothed, electric motor active power is displayed in r0082[2] without taking into account the motor losses.

r0083 CO: Flux setpoint / Flux setpoint

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 5722

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the flux setpoint.

r0084[0...1] CO: Actual flux / Actual flux

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 6726, 6730, 6731

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the actual flux.

Index: [0] = Unsmoothed
[1] = Smoothed

Note: The flux actual value Index 1 is only smoothed for separately-excited synchronous motors (p1585).

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r0087 CO: Actual power factor / Cos_phi_act val

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6730, 6731, 6799
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Displays the actual active power factor.

r0089[0...2] Actual phase voltage / U_phase act. val.

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6719
	P-Group: Displays, signals	**Units group:** 5_3	**Unit selection:** p0505
	Min - [V]	**Max** - [V]	**Factory setting** - [V]

Description: Displays the actual phase voltage.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

p0092 Clock synchronous PROFIBUS operation pre-assignment/check / Clock sync PB oper

CU_G	**Can be changed:** C1(1)		**Access level:** 1
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 0

Description: Setting to pre-assign/check the sampling times for the internal controller clock cycles for clock synchronous PROFIBUS operation.

p0092 = 1:

The controller clock cycles are set so that clock synchronous PROFIBUS operation is possible. If it is not possible to change the controller clock cycles of the clock synchronous PROFIBUS operation, then an appropriate message/signal is output.

The pre-setting of the controller clock cycles can result in a de-rating of the Motor Module (e.g. p0115[0] = 400 µs -> 375 µs).

p0092 = 0:

The controller clock cycles are set without any restrictions by the clock synchronous PROFIBUS operation (as for up to version V2.3).

Dependency: Refer to: r0110, p0115

Refer to: A01223, A01224

r0094 CO: Transformation angle / Transformat_angle

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1580, 4710, 4715, 6714, 6730
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [°]	**Max** - [°]	**Factory setting** - [°]

Description: Displays the transformation angle.

Dependency: Refer to: p0431, r1778

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Note: The transformation angle corresponds to the electrical commutation angle.
If no pole position identification is carried-out (p1982), and the encoder is adjusted, the following applies:
The encoder supplies the value and indicates the electrical angle of the flux position (d axis).

p0097 Select drive object type / Select DO type

CU_G

Can be changed: C1(1)		**Access level:** 1
Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
P-Group: Topology	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
0	14	0

Description: Executes an automatic device configuration.
In so doing, p0099, p0107 and p0108 are appropriately set.

Values:
0: No selection
1: Drive object type SERVO
2: Drive object type VECTOR
3: SINAMICS GM (DFEMV & VECTORMV)
4: SINAMICS SM (AFEMV & VECTORMV)
5: SINAMICS GL (VECTORGL)
12: Drive object type VECTOR parallel circuit
13: Drive object type VECTORMV - GM parallel circuit
14: Drive object type VECTORMV - SM parallel circuit

Dependency: Refer to: r0098, p0099
Refer to: A01330

Note: For p0097 = 0, p0099 is automatically set to the factor setting.
The setting p0097 = 1 is not possible for chassis-type power units as well as for SINAMICS G or SINAMICS GM.
The setting p0097 = 12 is not possible for booksize power units.

r0098[0...5] Actual device topology / Device_act topo

CU_G

Can be changed: -		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
P-Group: Topology	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays the automatically detected actual device topology in coded form.

Index:
[0] = DRIVE-CLiQ socket X100
[1] = DRIVE-CLiQ socket X101
[2] = DRIVE-CLiQ socket X102
[3] = DRIVE-CLiQ socket X103
[4] = DRIVE-CLiQ socket X104
[5] = DRIVE-CLiQ socket X105

Dependency: Refer to: p0097, p0099

Note: Topology coding: abcd efgh hex
a = number of Active Line Modules
b = number of Motor Modules
c = number of motors
d = number of encoders (or the line supply voltage sensing for Active Line Modules)
e = number of additional encoders (or the line supply voltage sensing for Active Line Modules)
f = number of Terminal Modules
g = number of terminal boards
h = reserved
if the value 0 is displayed in all indices, then components are not detected via DRIVE-CLiQ.
If a value F hex occurs at a position of the coding (abcd efgh hex), then an overflow has occurred.

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p0099[0...5] Device target topology / Device_target topo

CU_G

Can be changed: C1(1) **Access level:** 1

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Topology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the device target topology in coded form (refer to r0098). The setting is made during commissioning.

Index: [0] = DRIVE-CLiQ socket X100
[1] = DRIVE-CLiQ socket X101
[2] = DRIVE-CLiQ socket X102
[3] = DRIVE-CLiQ socket X103
[4] = DRIVE-CLiQ socket X104
[5] = DRIVE-CLiQ socket X105

Dependency: The parameter can only be written into for p0097 = 0.

To perform an automatic device configuration run, an index of the device target topology must be set to the value of the device actual topology in r0098 for acknowledgement. An index of the device actual topology with a value other than 0 must be selected.

Refer to: p0097, r0098

Refer to: A01330

Note: The parameter can only be set to the values 0, the value of the actual device topology, the value of the actual device target topology and FFFFFFFF hex.

If the value 0 is displayed in all of the indices, then the system has still not be commissioned.

The value FFFFFFFF hex indicates that the topology was not generated by the automatic device configuration but was commissioned using the commissioning software (e.g. using parameter download).

p0100 IEC/NEMA mot stds / IEC/NEMA mot stds

VECTOR

Can be changed: C2(1) **Access level:** 1

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Converter **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Defines whether the motor and drive converter power settings (e.g. rated motor power - p0307) are expressed in [kW] or [hp].

Depending on the selection, the rated motor frequency (p0310) is either set to 50 Hz or 60 Hz.

The following applies for IEC drives: The power factor (p0308) should be parameterized.

The following applies for NEMA drives: The efficiency (p0309) should be parameterized.

Values: 0: IEC-Motor (50Hz, SI units)
1: NEMA motor (60Hz, US units)

Dependency: If p0100 is changed, all of the rated motor parameters are reset.

Refer to: r0206, p0210, p0300, p0304, p0305, p0307, p0308, p0309, p0310, p0311, p0314, p0320, p0322, p0323, p0335, r0336, r0337, p1800

Note: The parameter can only be changed for closed-loop vector control (p0107).

The parameter value is not reset when the factory setting is restored (p0010 = 30, p0970).

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p0101[0...15] Drive object numbers / DO numbers

CU_G	**Can be changed:** C1(1)		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Topology	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	62	0

Description: The parameter contains the object number via which every drive object can be addressed.
The number of an existing drive object is entered into each index.
The numbers are automatically assigned once and cannot longer be changed as long as the object has not been deleted.
In the commissioning software, this object number cannot be entered using the Expert list, but is automatically assigned when inserting an object.

Index:
[0] = Drive object number, Control Unit
[1] = Drive object number, object 1
[2] = Drive object number, object 2
[3] = Drive object number, object 3
[4] = Drive object number, object 4
[5] = Drive object number, object 5
[6] = Drive object number, object 6
[7] = Drive object number, object 7
[8] = Drive object number, object 8
[9] = Drive object number, object 9
[10] = Drive object number, object 10
[11] = Drive object number, object 11
[12] = Drive object number, object 12
[13] = Drive object number, object 13
[14] = Drive object number, object 14
[15] = Drive object number, object 15

Note: Value = 0: No drive object is defined.

r0102 Number of drive objects / DO count

CU_G	**Can be changed:** -		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Topology	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the total number of available drive objects.

Note: The numbers of the drive objects are in p0101.

p0103[0...15] Application-specific view / Appl_spec view

CU_G	**Can be changed:** C1(2)		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	999	0

Description: The application-specific view of an existing drive object is entered into each index.
The parameter cannot be changed.

Dependency: Refer to: p0107, r0107
Refer to: F01051

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Note: The application-specific views are defined in files on the CompactFlash card with the following structure:
PDxxxyyy.ACX
xxx: Application-specific view (p0103)
yyy: Type of drive object (p0107)
Example:
PD052011.ACX
--> "011" stands for the drive object, type SERVO
--> "052" is the number of the view for this drive object

r0103 Application-specific view / Appl_spec view

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the application-specific view of the individual drive object.
Dependency: Refer to: p0107, r0107
Refer to: F01051

p0105 Activate/de-activate drive object / DO act/de-act

CU_G

Can be changed: U, T
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Setting to activate/de-activate a drive object.
Values:
0: De-activate drive object
1: Activate drive object
Dependency: Refer to: r0106
Notice: The following applies when activating:
If components are inserted for the first time and the appropriate drive object is activated, then the drive system is automatically booted. To do this, the pulses of all of the drive objects must be cancelled.

p0105 Activate/de-activate drive object / DO act/de-act

DMC20, TB30, TM31, VECTOR

Can be changed: T
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Setting to activate/de-activate a drive object.
Values:
0: De-activate drive object
1: Activate drive object
Dependency: Refer to: r0106
Notice: The following applies when activating:
If components are inserted for the first time and the appropriate drive object is activated, then the drive system is automatically booted. To do this, the pulses of all of the drive objects must be cancelled.
Note: Setting a drive object to de-activated principally corresponds to the "parking axis" function. however, here, all of the DRIVE-CLiQ components, assigned to the drive object, are in involved.

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r0106 Drive object active/inactive / DO act/inact

All objects

Can be changed: -
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Displays the "active/inactive" state of a drive object.

Values:
0: Drive object inactive
1: Drive object active

Dependency: Refer to: p0105

p0107[0...15] Drive object type / DO type

CU_G

Can be changed: C1(2)
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	254	0

Description: The type of an existing drive object is entered into each index.

Values:
0: -
1: SINAMICS S
2: SINAMICS G
3: SINAMICS I
4: SINAMICS CX32
5: SINAMICS GM
7: SINAMICS GL
10: ACTIVE LINE MODULE
11: SERVO
12: VECTOR
13: VECTORMV
14: VECTORGL
20: SMART LINE MODULE
30: BASIC LINE MODULE
40: ACTIVE LINE MODULEMV
41: BASIC LINE MODULEMV
100: TB30 (Terminal Board)
150: DMC (DRIVE-CLiQ Hub Module Cabinet)
200: TM31 (Terminal Module)
201: TM41 (Terminal Module)
202: TM17 High Feature (Terminal Module)
203: TM15 (Terminal Module)
204: TM15 (Terminal Module for SINAMICS)
254: CU-LINK

Index:
[0] = Drive object time, Control Unit
[1] = Drive object type, object 1
[2] = Drive object type, object 2
[3] = Drive object type, object 3
[4] = Drive object type, object 4
[5] = Drive object type, object 5
[6] = Drive object type, object 6
[7] = Drive object type, object 7
[8] = Drive object type, object 8
[9] = Drive object type, object 9
[10] = Drive object type, object 10
[11] = Drive object type, object 11
[12] = Drive object type, object 12
[13] = Drive object type, object 13
[14] = Drive object type, object 14
[15] = Drive object type, object 15

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Dependency: Refer to: p0103, r0103
Refer to: F01051

Caution: If you change this parameter and exit the device commissioning mode, then the complete software will be set up again and all of the previous drive parameter settings are deleted.

Note: The number (p0101) and the associated drive object type are in the same index.
For SINAMICS S a drive object type can only be changed between SERVO and VECTOR. If you change the parameter and exit drive start-up (p0009 from 2 to 0) the drive parameters are set up again.

r0107 Drive object type / DO type

VECTOR

Can be changed: - **Access level:** 2

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	254	12

Description: Displays the type of each drive object.

Values:

0: -
1: SINAMICS S
2: SINAMICS G
3: SINAMICS I
4: SINAMICS CX32
5: SINAMICS GM
7: SINAMICS GL
10: ACTIVE LINE MODULE
11: SERVO
12: VECTOR
13: VECTORMV
14: VECTORGL
20: SMART LINE MODULE
30: BASIC LINE MODULE
40: ACTIVE LINE MODULEMV
41: BASIC LINE MODULEMV
100: TB30 (Terminal Board)
150: DMC (DRIVE-CLiQ Hub Module Cabinet)
200: TM31 (Terminal Module)
201: TM41 (Terminal Module)
202: TM17 High Feature (Terminal Module)
203: TM15 (Terminal Module)
204: TM15 (Terminal Module for SINAMICS)
254: CU-LINK

Dependency: Refer to: p0103, r0103
Refer to: F01051

r0107 Drive object type / DO type

TB30

Can be changed: - **Access level:** 2

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	254	100

Description: Displays the type of each drive object.

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Values:
0: -
1: SINAMICS S
2: SINAMICS G
3: SINAMICS I
4: SINAMICS CX32
5: SINAMICS GM
7: SINAMICS GL
10: ACTIVE LINE MODULE
11: SERVO
12: VECTOR
13: VECTORMV
14: VECTORGL
20: SMART LINE MODULE
30: BASIC LINE MODULE
40: ACTIVE LINE MODULEMV
41: BASIC LINE MODULEMV
100: TB30 (Terminal Board)
150: DMC (DRIVE-CLiQ Hub Module Cabinet)
200: TM31 (Terminal Module)
201: TM41 (Terminal Module)
202: TM17 High Feature (Terminal Module)
203: TM15 (Terminal Module)
204: TM15 (Terminal Module for SINAMICS)
254: CU-LINK

Dependency: Refer to: p0103, r0103
Refer to: F01051

r0107 Drive object type / DO type

DMC20

Can be changed: -
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0	254	150

Description: Displays the type of each drive object.

Values:
0: -
1: SINAMICS S
2: SINAMICS G
3: SINAMICS I
4: SINAMICS CX32
5: SINAMICS GM
7: SINAMICS GL
10: ACTIVE LINE MODULE
11: SERVO
12: VECTOR
13: VECTORMV
14: VECTORGL
20: SMART LINE MODULE
30: BASIC LINE MODULE
40: ACTIVE LINE MODULEMV
41: BASIC LINE MODULEMV
100: TB30 (Terminal Board)
150: DMC (DRIVE-CLiQ Hub Module Cabinet)
200: TM31 (Terminal Module)
201: TM41 (Terminal Module)
202: TM17 High Feature (Terminal Module)
203: TM15 (Terminal Module)
204: TM15 (Terminal Module for SINAMICS)
254: CU-LINK

Dependency: Refer to: p0103, r0103
Refer to: F01051

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r0107 Drive object type / DO type

TM31

Can be changed: -
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0	254	200

Description: Displays the type of each drive object.

Values:
0: -
1: SINAMICS S
2: SINAMICS G
3: SINAMICS I
4: SINAMICS CX32
5: SINAMICS GM
7: SINAMICS GL
10: ACTIVE LINE MODULE
11: SERVO
12: VECTOR
13: VECTORMV
14: VECTORGL
20: SMART LINE MODULE
30: BASIC LINE MODULE
40: ACTIVE LINE MODULEMV
41: BASIC LINE MODULEMV
100: TB30 (Terminal Board)
150: DMC (DRIVE-CLiQ Hub Module Cabinet)
200: TM31 (Terminal Module)
201: TM41 (Terminal Module)
202: TM17 High Feature (Terminal Module)
203: TM15 (Terminal Module)
204: TM15 (Terminal Module for SINAMICS)
254: CU-LINK

Dependency: Refer to: p0103, r0103
Refer to: F01051

p0108[0...15] Drive object, function module / DO function module

CU_G

Can be changed: C1(2)
Access level: 2
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: The function module of an existing drive object is entered into each index.

Index:
[0] = Function module Control Unit
[1] = Function module object 1
[2] = Function module object 2
[3] = Function module object 3
[4] = Function module object 4
[5] = Function module object 5
[6] = Function module object 6
[7] = Function module object 7
[8] = Function module object 8
[9] = Function module object 9
[10] = Function module object 10
[11] = Function module object 11
[12] = Function module object 12
[13] = Function module object 13
[14] = Function module object 14
[15] = Function module object 15

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	18	Free function blocks	Activated	Not activated	-
	29	CAN	Activated	Not activated	-
	30	COMM BOARD	Activated	Not activated	-
	31	PROFINET	Activated	Not activated	-

Note: A "function module" is a functional expansion of a drive object that can be activated when commissioning.

r0108 Drive object, function module / DO function module

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the activated function module for the particular drive object.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	02	Closed-loop speed/torque control	Activated	Not activated	-
	03	Cl.-loop pos ctrl	Activated	Not activated	-
	04	Basic positioner	Activated	Not activated	-
	08	Extended setpoint channel	Activated	Not activated	-
	14	Extended brake control	Activated	Not activated	-
	15	Parallel cct. config.	Activated	Not activated	-
	16	Technology controller	Activated	Not activated	-
	17	Extended messages/monitoring	Activated	Not activated	-
	18	Free function blocks	Activated	Not activated	-
	28	Cooling system	Activated	Not activated	-
	29	CAN	Activated	Not activated	-
	31	PROFINET	Activated	Not activated	-

Note: A "function module" is a functional expansion of a drive object that can be activated when commissioning.

r0108 Drive object, function module / DO function module

TB30, TM31

Can be changed: - **Access level:** 2

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the activated function module for the particular drive object.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	18	Free function blocks	Activated	Not activated	-
	31	PROFINET	Activated	Not activated	-

Note: A "function module" is a functional expansion of a drive object that can be activated when commissioning.

r0110[0...2] DRIVE-CLiQ basis sampling times / DLQ t_basis

CU_G

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	10000.00 [µs]	[0] 125.00 [µs] [1] 250.00 [µs] [2] 250.00 [µs]

Description: Displays the basis sampling times.

The sampling times are set using p0112 and p0115. The values for the basis sampling times are determined as a result of these settings.

Index: [0] = Basis sampling time 0
[1] = Basis sampling time 1
[2] = Basis sampling time 2

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r0111 DRIVE-CLiQ basis sampling time selection / DLQ t_basis sel

All objects	**Can be changed:** -		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	2	0

Description: Displays the selected basis sampling time for this drive object.

Dependency: Refer to: r0110

p0112 Sampling times pre-setting p0115 / t_sample for p0115

VECTOR	**Can be changed:** C1(3)		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	5	3

Description: Pre-assignment of the sampling times in p0115.

The clock cycles for the current controller/speed controller/flux controller/setpoint channel / - / - / technology controller are pre-assigned as follows:

SINAMICS S, servo drive:

p0112 = 1: 250 / 250 / 250 / 4000 / 2000 / 8000 / 4000 µs (for chassis drive units)

p0112 = 2: 125 / 250 / 250 / 4000 / 2000 / 8000 / 4000 µs

p0112 = 3: 125 / 125 / 125 / 4000 / 1000 / 4000 / 4000 µs

p0112 = 4: 62.5 / 62.5 / 62.5 / 1000 / 1000 / 2000 / 1000 µs

p0112 = 5: Not possible

SINAMICS S, Active Infeed (p0112 = 1 not for p0092 = 1):

p0112 = 1: 400 / - / - / 1600 µs

p0112 = 2: 250 / - / - / 2000 µs

p0112 = 3: 125 / - / - / 2000 µs

p0112 = 4: 125 / - / - / 1000 µs

p0112 = 5: 125 / - / - / 500 µs

SINAMICS S, Smart Infeed (p0112 = 1 not for p0092 = 1):

p0112 = 1: 400 / - / - / 1600 µs

p0112 = 2: 250 / - / - / 2000 µs

p0112 = 3: 250 / - / - / 2000 µs

p0112 = 4: 250 / - / - / 1000 µs

p0112 = 5: Not possible

SINAMICS S, basic infeed:

p0112 = 1: 2000 / - / - / 2000 µs

p0112 = 2: 2000 / - / - / 2000 µs

p0112 = 3: 2000 / - / - / 2000 µs

p0112 = 4: 1000 / - / - / 1000 µs

p0112 = 5: 500 / - / - / 500 µs

SINAMICS S/G, vector drive (p0112 = 1 not for p0092 = 1 and not for PM340):

p0112 = 1: 400 / 1600 / 1600 / 1600 / 3200 / 3200 / 3200 µs (for a rated pulse frequency of 1.25 / 2.5 kHz)

p0112 = 2: 250 / 1000 / 2000 / 1000 / 2000 / 4000 / 4000 µs

p0112 = 3: 250 / 1000 / 1000 / 1000 / 2000 / 4000 / 4000 µs (for a rated pulse frequency of 2 / 4 kHz)

SINAMICS S, vector drive:

p0112 = 4: 250 / 500 / 1000 / 500 / 1000 / 2000 / 2000 µs

p0112 = 5: 250 / 250 / 1000 / 250 / 1000 / 2000 / 1000 µs

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Values:
0: Expert
1: xLow
2: Low
3: Standard
4: High
5: xHigh

Dependency: It is prohibited to select a parameter value from p0112 if the associated current controller clock cycle cannot set (e.g. p0112 = 1 is not possible for SINAMICS S and PM349 power unit).
Refer to: p0092

Note: For p0112 = 0 (expert) the individual sampling times in p0115 can be adjusted.
p0112 = 1 cannot be set for a power unit type PM340 (refer to r0203) for vector drives.

p0113 Pulse frequency, minimum selection / F_puls min sel

VECTOR

Can be changed: C1(3) **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1.000 [kHz]	2.000 [kHz]	2.000 [kHz]

Description: The current controller sampling time (p0115[0]) is pre-assigned by selecting the minimum pulse frequency.

Dependency: The parameter can only be changed with p0112 = 0 (expert).
The required pulse frequency can be set in p1800 after commissioning (p0009 = p0010 = 0).
Refer to: p0112, r0114, p0115, p1800

Note: The current controller sampling time (p0115[0]) is set to the inverse value of twice the minimum pulse frequency. For p0113 = 1.0 kHz, p0115[0] = 500 µs is set, for p0113 = 2.0 kHz, p0115[0] = 250 µs is set. The current controller sampling time (p0115[0]), calculated from the pulse frequency, is set in a grid of 1.25 µs.
For a power unit type PM340 (refer to r0203), only the values 1.0 and 2.0 kHz can be set. 1.0 kHz can be set in order to achieve a current controller clock cycle of 500µs. However, in this case, the minimum pulse frequency p1800 is limited to 2 kHz.

r0114[0...9] Pulse frequency, minimum recommended / F_puls min recom

VECTOR

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [kHz]	- [kHz]	- [kHz]

Description: Displays the recommended values for the minimum pulse frequency in indices 0 and 1. These are calculated if the system rejects a change in p0113 that does not lie within the permissible value range.

Index:
[0] = Only the actual drive is changed
[1] = All drives connected to the DRIVE-CLiQ line are changed
[2] = 2. possible pulse frequency
[3] = 3. possible pulse frequency
[4] = 4. possible pulse frequency
[5] = 5. possible pulse frequency
[6] = 6. possible pulse frequency
[7] = 7. possible pulse frequency
[8] = 8. possible pulse frequency
[9] = 9. possible pulse frequency

Dependency: Refer to: p0113

Note: After existing commissioning (p0009 = p0010 = 0), the pulse frequencies calculated from the sampling time p115[0] are displayed in indices 1 to 8. If additional restrictions do not apply (e.g. due to having selected an output filter), these can be entered into p1800. The maximum pulse frequency of the power units was already taken into account in r0114.
A value of 0 kHz does not define a recommended pulse frequency.

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p0115[0...0] Sampling time for supplementary functions / t_sample suppl fct

CU_G

Can be changed: C1(3) **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	16000.00 [µs]	4000.00 [µs]

Description: Sets the basis sampling time for supplementary functions on this object.
Index: [0] = Basis sampl. time

p0115[0...0] Sampling time for supplementary functions / t_sample suppl fct

TB30, TM31

Can be changed: C1(3) **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	16000.00 [µs]	4000.00 [µs]

Description: Sets the sampling times for supplementary functions on this object.
Index: [0] = Basis sampl. time

p0115[0...6] Sampling times for internal control loops / t_sample int ctrl

VECTOR

Can be changed: C1(3) **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	16000.00 [µs]	[0] 125.00 [µs] [1] 125.00 [µs] [2] 125.00 [µs] [3] 4000.00 [µs] [4] 1000.00 [µs] [5] 4000.00 [µs] [6] 4000.00 [µs]

Description: Sets the sampling times for the control loops.
The default setting is made using p0112 and can only be individually changed for p0112 = 0 (expert).

Index: [0] = Current controller
[1] = Speed controller
[2] = Flux controller
[3] = Setpoint channel
[4] = Pos controller
[5] = Positioning
[6] = Technology controller

Dependency: The sampling times can only be separately set if p0112 is 0 (expert). If a sampling time is modified in the expert mode, then all of the sampling times with higher indices are automatically changed in the same ratio as the sampling time itself was changed. Slower time slices are only taken if the calculated sampling time is also permitted. Upper limit is 8 ms.
Higher-level controls must be calculated in integral ratios to lower-level controls (e.g. p0115[1] = N * p0115[0]; where N is a whole number).
Refer to: r0110, r0111, p0112

Note: For function modules that can be activated (e.g. technology controller), the parameters values are pre-assigned.
For the Active Line Module (ALM), the currents and DC link voltage controllers operate with the same sampling time.
For the Basic Line Module (BLM), the DC link voltage measurement operates in the current controller sampling time.
For a power unit type PM340 (refer to r0203), only current controller sampling times of 62.5 µs, 125 µs, 250µs and 500µs can be set. The minimum current controller clock cycle for vector drives and the maximum current controller clock cycle for servodrives is 250 µs.

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r0116[0...1] Drive object clock cycle recommended / DO_clock recom

CU_G, TB30, TM31, VECTOR

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [µs]	- [µs]	- [µs]

Description: Displays the recommended sampling time for the drive objects.
r00116[0] = recommended sampling time:
Recommended value which would then make the complete system operational.
r00116[1] = recommended sampling time:
Recommended value, which after changing other clock cycles on the DRIVE-CLiQ line, would result in an operational system.

Index: [0] = Change, only for the actual drive object
[1] = Changing all objects on the DRIVE-CLiQ line

Dependency: Refer to: p0115

p0117 Current controller computation deadtime mode / I_ctrl t_dead mode

CU_G

Can be changed: U, T **Access level:** 4
Data type: Integer16 **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	6	6

Description: Sets the mode for the computation deadtime of the current controller.
0: Offset (shifted) clocking, minimum computation deadtime of each drive, automatic setting
1: Clocking at the same time, the deadtime aligns itself to the deadtime of the latest drive, automatic setting
2: Manual setting of the computation deadtime, early transfer
3: Manual setting of the computation deadtime, late transfer
4-6: As for 0-2, however, no early transfers are set for vectors

Dependency: Refer to: p0118
Refer to: A02100

Note: Re p0117 = 0:
The times when the setpoints become effective for the individual controls is automatically and individually determined. Another computation deadtime is set for each control (closed-loop) (p0118). Current is impressed for the individual controls without any offset with respect to time (improved EMC compatibility).
Re p0117 = 1:
The latest closed-loop control determines when the setpoints for each of the individual controls become active. The same computation deadtime is set for each control (p0118). Current is impressed (flows) for the individual controls without any offset with respect to time.
Re p0117 = 2:
The computation deadtime is manually set. The user must optimize the value in p0118.
Re p0117 = 3:
Only for internal Siemens use.
Re p0117 = 4 - 6:
Behavior as for p0117 = 0 - 2, however for vectors, the earliest times are not determined.
The modified computation deadtime mode is not effective until the drive unit is powered-up again.

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p0118 Current controller computation deadtime / I_ctrl t_dead

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	2000.00 [µs]	0.00 [µs]

Description: This parameter is preset as a function of the current controller sampling time (p0115[0]) and normally does not have to be changed.

Dependency: Refer to: p0117
Refer to: A02100

Note: For p0118 <= 0.005 µs, the current controller output is delayed by a complete current controller clock cycle (p0115[0]).
After p0118 has been changed, we recommend that the current controller is adapted (p1715).

p0120 Number of Power unit Data Sets (PDS) / PDS count

VECTOR

Can be changed: C1(3) | **Access level:** 2
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -
P-Group: Data sets | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	8	1

Description: Sets the number of Power unit Data Sets (PDS).
The value corresponds to the number of power units connected together for a parallel circuit configuration.

Dependency: Refer to: p0107, r0107

Note: This parameter is only significant for drive objects A_INFEED and VECTOR with a parallel circuit configuration.

p0121[0...n] Power unit component number / LT comp_no

VECTOR

Can be changed: C1(4) | **Access level:** 4
Data type: Unsigned8 | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Data sets | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	199	0

Description: The power unit data set is assigned to a power unit using this parameter.
This unique component number is assigned when parameterizing the topology.
Only component numbers can be entered into this parameter that correspond to a power unit.

Dependency: Refer to: p0107, r0107

Note: For parallel circuit configurations, the parameter index is assigned to a power unit.

p0124[0...15] Detection of main components using LED / Detection LED

CU_G

Can be changed: U, T | **Access level:** 2
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Detects the main components of the drive object selected via the index.

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p0124[0...n] Power unit detection via LED / LT detection LED

VECTOR

Can be changed: U, T
Access level: 2
Data type: Unsigned8
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Detects the power unit assigned to this drive and data set.
Note: While p0124 = 1, the READY LED flashes green/orange or red/orange with 2 Hz at the appropriate power unit.
For parallel circuit configurations, the parameter index is assigned to a power unit.

p0125[0...n] Activate/de-activate power unit components / LT_comp act/de-act

VECTOR

Can be changed: C1(4), T
Access level: 2
Data type: Integer16
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Setting to activate/de-activate a power unit component.
Values:
0: De-activate component
1: Activate component
Dependency: Refer to: r0126
Note: The activation of a component can be rejected if the component was inserted for the first time.
In this case, it is only possible to activate the component when the pulses for all of the drive objects are inhibited.

r0126[0...n] Power unit components active/inactive / LT comp act/inact

VECTOR

Can be changed: -
Access level: 2
Data type: Integer16
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Displays the "active/inactive" state of a power unit component.
Values:
0: Component inactive
1: Component active
Dependency: Refer to: p0105, p0125, p0897

r0127[0...n] Power unit version EPROM data / LT EPROM version

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the version of the EPROM data of the power unit.
Dependency: Refer to: r0147, r0157
Note: For parallel circuit configurations, the parameter index is assigned to a power unit.

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r0128[0...n] Power unit firmware version / LT FW_version

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the power unit firmware version.
Dependency: Refer to: r0018, r0148, r0158, r0197, r0198
Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.
For parallel circuit configurations, the parameter index is assigned to a power unit.

p0130 Number of Motor Data Sets (MDS) / MDS count

VECTOR

Can be changed: C1(3)
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: 8575
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
1	16	1

Description: Sets the number of Motor Data Sets (MDS).

p0131[0...n] Motor component number / Mot comp_no

VECTOR

Can be changed: C1(4)
Access level: 4
Data type: Unsigned8
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	199	0

Description: The motor data set is assigned to a motor using this parameter.
This unique component number is assigned when parameterizing the topology.
Only component numbers can be entered into this parameter that correspond to a motor.

p0139[0...2] Copy Motor Data Set MDS / Copy MDS

VECTOR

Can be changed: C2(15)
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: 8575
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	31	[0] 0 [1] 0 [2] 0

Description: Copying a Motor Data Set (MDS) into another.
Index: [0] = Source motor data set
[1] = Target motor data set
[2] = Start copying
Note: Procedure:
1. In Index 0, enter which motor data set should be copied.
2. In Index 1, enter the motor data set data that is to be copied into.
3. Start copying: Set index 2 from 0 to 1.
p0139[2] is automatically set to 0 when copying is completed.
When copying, p0131 is not taken into account.

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p0140 Number of Encoder Data Sets (EDS) / EDS count

VECTOR	**Can be changed:** C1(3)		**Access level:** 2
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min 1	**Max** 16	**Factory setting** 1

Description: Sets the number of Encoder Data Sets (EDS).

Note: When parameterizing the drive with "no encoder" there must be at least one encoder data set (p0140 >= 1).

p0141[0...n] Encoder interface (Sensor Module) component number / Enc_interf comp_no

VECTOR	**Can be changed:** C1(4)		**Access level:** 4
	Data type: Unsigned8	**Dynamic index:** EDS, p0140	**Function diagram:** 4704, 8570
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 199	**Factory setting** 0

Description: This parameter is used to assign the encoder data set to an encoder evaluation (e.g. SMC).
This unique component number is assigned when parameterizing the topology.
Only component numbers can be entered into this parameter that correspond to an encoder evaluation.

Note: If the encoder evaluation and encoder are integrated (motor with DRIVE-CLiQ), then their component numbers are identical.
For an SMC, different component numbers are assigned for the SMC (p0141) and the (actual) encoder (p0142).

p0142[0...n] Encoder component number / Encoder comp_no

VECTOR	**Can be changed:** C1(4)		**Access level:** 4
	Data type: Unsigned8	**Dynamic index:** EDS, p0140	**Function diagram:** 4704
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 199	**Factory setting** 0

Description: This parameter is used to assign the encoder data set to an encoder.
This assignment is made using the unique component number that was assigned when parameterizing the topology.
Only component numbers can be entered into this parameter that correspond to an encoder.

Note: If the encoder evaluation and encoder are integrated (motor with DRIVE-CLiQ), then their component numbers are identical.
For an SMC, different component numbers are assigned for the SMC (p0141) and the (actual) encoder (p0142).

p0144[0...n] Sensor Module detection via LED / SM detection LED

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Unsigned8	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 0

Description: Detects the Sensor Module assigned to this drive and data set.

Note: While p0144 = 1, the READY LED flashes green/orange or red/orange with 2 Hz at the appropriate Sensor Module.

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p0145[0...n] Activate/de-activate encoder interface / Enc_intf act/deact

VECTOR	**Can be changed:** C1(4), U, T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	1	1

Description: Setting to activate/de-activate an encoder interface (Sensor Module).

Values:
0: De-activate component
1: Activate component

Dependency: Refer to: r0146

Note: The de-activation of an encoder interface corresponds to the"parking encoder" function and has the same effect.
The activation of a component can be rejected if the component was inserted for the first time.
In this case, it is only possible to activate the component when the pulses for all of the drive objects are inhibited.

r0146[0...n] Encoder interface active/inactive / Enc_intf act/inact

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Integer16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	1	1

Description: Displays the "active" or "inactive" state of an encoder interface (Sensor Module).

Values:
0: Component inactive
1: Component active

Dependency: Refer to: p0105, p0145, p0480, p0897

r0147[0...n] Sensor Module EPROM data version / SM EEPROM version

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the version of the EPROM data of the Sensor Module.

Dependency: Refer to: r0127, r0157

r0148[0...n] Sensor Module firmware version / SM FW_version

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the Sensor Module firmware version.

Dependency: Refer to: r0018, r0128, r0158, r0197, r0198

Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

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p0150 Number of VSM data sets / VSM count

VECTOR

Can be changed: C1(3) **Access level:** 4
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1	2	1

Description: Sets the number of VSM data sets

p0151[0...n] Voltage Sensing Module component number / VSM comp_no

VECTOR

Can be changed: C1(4) **Access level:** 4
Data type: Unsigned8 **Dynamic index:** p0150 **Function diagram:** -
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	199	0

Description: The VSM data set is assigned to a VSM evaluation using this parameter.

p0151[0...1] DRIVE-CLiQ Hub component number / Hub comp_no

DMC20

Can be changed: C1(4) **Access level:** 4
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	199	0

Description: Using this parameter, the data set is assigned to a DRIVE-CLiQ Hub Module Cabinet (DMC).
This unique component number is assigned when parameterizing the topology.
Only component numbers of components that operate as hub can be entered into this parameter.
This parameter has two indices, because there are two DRIVE-CLiQ nodes in the DMC20.
[0] = 1. DRIVE-CLiQ node
[1] = 2. DRIVE-CLiQ node

p0151 Terminal Module component number / TM comp_no

TM31

Can be changed: C1(4) **Access level:** 4
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** 9550, 9552
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	199	0

Description: Sets the component number for the Terminal Module.
This unique component number is assigned when parameterizing the topology.
Only component numbers can be entered into this parameter that correspond to a Terminal Module.

p0154 DRIVE-CLiQ Hub detection via LED / Hub detection LED

DMC20

Can be changed: U, T **Access level:** 2
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Detecting any assigned DRIVE-CLiQ Hub Module Cabinet (DMC).

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p0154 Terminal Module detection via LED / TM detection LED

TM31

Can be changed: U, T
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Detects the Terminal Module assigned to this drive and data set.

Note: While p0154 = 1, the READY LED flashes green/orange or red/orange with 2 Hz at the appropriate Terminal Module.

p0155[0...n] Voltage Sensing Module, activate/de-activate / VSM act/deact

VECTOR

Can be changed: C1(4), T
Access level: 2
Data type: Integer16
Dynamic index: p0150
Function diagram: -
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Setting to activate/de-activate a Voltage Sensing Module (VSM).

Values:
0: De-activate component
1: Activate component

Dependency: Refer to: r0156

r0156[0...n] Voltage Sensing Module, active/inactive / VSM act/inact

VECTOR

Can be changed: -
Access level: 2
Data type: Integer16
Dynamic index: p0150
Function diagram: -
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Displays the "active" or "inactive" state of a Voltage Sensing Module (VSM).

Values:
0: Component inactive
1: Component active

Dependency: Refer to: p0155

r0157[0...n] Voltage sensing module, EPROM data version / VSM EPROM version

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: p0150
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the version of the EPROM data of the Voltage Sensing Module (VSM).

r0157 DRIVE-CLiQ Hub EPROM data version / Hub EPROM version

DMC20

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the version of the EPROM data of the DRIVE-CLiQ Hub Module Cabinet (DMC).

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r0157 Terminal Module EPROM data version / TM EPROM version

TM31

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the version of the EPROM data of the Terminal Module.
Dependency: Refer to: r0127, r0147

r0158[0...n] Voltage sensing module, firmware version / VSM FW_version

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: p0150
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the firmware version of the Voltage Sensing Module (VSM).
Dependency: Refer to: r0018, r0128, r0197, r0198
Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

r0158 DRIVE-CLiQ Hub, firmware version / Hub FW_version

DMC20

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the firmware version of the DRIVE-CLiQ Hub Module Cabinet (DMC).

r0158 Terminal Module firmware version / TM FW_version

TM31

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the Terminal Module firmware version.
Dependency: Refer to: r0018, r0128, r0148, r0197, r0198
Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

p0161 Option board, component number / OptBoard comp_no

TB30

Can be changed: C1(4)
Access level: 4
Data type: Unsigned8
Dynamic index: -
Function diagram: 9100
P-Group: Data sets
Units group: -
Unit selection: -

Min	Max	Factory setting
0	199	0

Description: Sets the component number for the option board (e.g. terminal board 30).
This unique component number is assigned when parameterizing the topology.
Only component numbers can be entered into this parameter that correspond to an option board.

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p0170 Number of Command Data Sets (CDS) / CDS count

VECTOR

Can be changed: C1(3) **Access level:** 2
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -
P-Group: Commands **Units group:** - **Unit selection:** -

Min	Max	Factory setting
2	4	2

Description: Sets the number of Command Data Sets (CDS).

Note: It is possible to toggle between command parameters (BICO parameters) using this data set changeover.

p0180 Number of Drive Data Sets (DDS) / DDS count

VECTOR

Can be changed: C1(3) **Access level:** 2
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** 8565
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1	32	1

Description: Sets the number of Drive Data Sets (DDS).

p0186[0...n] Motor Data Sets (MDS) number / MDS number

VECTOR

Can be changed: C1(4) **Access level:** 3
Data type: Unsigned8 **Dynamic index:** DDS, p0180 **Function diagram:** 8575
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	15	0

Description: Using the parameter, each Drive Data Set (= index) is assigned the associated Motor Data Set (MDS).
The parameter value therefore corresponds to the number of the assigned motor data set.

p0187[0...n] Encoder 1 encoder data set number / Enc 1 EDS number

VECTOR

Can be changed: C1(4) **Access level:** 3
Data type: Unsigned8 **Dynamic index:** DDS, p0180 **Function diagram:** 1580, 8570
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	99	99

Description: Using the parameter, each Drive Data Set (= index) is assigned the associated Encoder Data Set (EDS) for encoder 1.
The parameter value therefore corresponds to the number of the assigned encoder data set.
Example:
Encoder data set 0 should be assigned to encoder 1 in drive data set 2.
--> p0187[2] = 0

Note: A value of 99 means that no encoder has been assigned to this drive data set (not configured).

p0188[0...n] Encoder 2 encoder data set number / Enc 2 EDS number

VECTOR

Can be changed: C1(4) **Access level:** 3
Data type: Unsigned8 **Dynamic index:** DDS, p0180 **Function diagram:** 1580, 8570
P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	99	99

Description: Using the parameter, each Drive Data Set (= index) is assigned the associated Encoder Data Set (EDS) for encoder 2.
The parameter value therefore corresponds to the number of the assigned encoder data set.

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Note: A value of 99 means that no encoder has been assigned to this drive data set (not configured).

p0189[0...n] Encoder 3 encoder data set number / Enc 3 EDS number

VECTOR

Can be changed: C1(4) **Access level:** 3

Data type: Unsigned8 **Dynamic index:** DDS, p0180 **Function diagram:** 1580, 8570

P-Group: Data sets **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	99	99

Description: Using the parameter, each Drive Data Set (= index) is assigned the associated Encoder Data Set (EDS) for encoder 3.

The parameter value therefore corresponds to the number of the assigned encoder data set.

Note: A value of 99 means that no encoder has been assigned to this drive data set (not configured).

r0192 Power unit firmware properties / LT FW property

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Converter **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the properties supported by the power unit firmware.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Edge modulation possible	Yes	No	-
01	Free telegram can be selected	Yes	No	-
02	Smart mode possible for Active Line Module	Yes	No	-
03	Safety Integrated possible for VECTOR	Yes	No	-
06	Water cooling	Yes	No	-
07	SERVO pulse frequency changeover, DDS-dependent	Yes	No	-
08	Simulation operation possible	Yes	No	-
09	Internal armature short-circuit possible	Yes	No	-

Notice: This information represents the characteristics/features of the power unit firmware. It does not provide information/data about the characteristics/features of the hardware (e.g. bit 06 = 1 means that although the firmware supports "water cooling", a power unit with water cooling does not have to be used).

r0194[0...n] VSM properties / VSM properties

VECTOR

Can be changed: - **Access level:** 4

Data type: Unsigned32 **Dynamic index:** p0150 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the properties supported by the Voltage Sensing Module (VSM).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Reserved	Yes	No	-

r0197 Loader 1 version / Loader 1 version

CU_G

Can be changed: - **Access level:** 1

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the version of loader 1 (first level loader).

Dependency: Refer to: r0018, r0128, r0148, r0158, r0198

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Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

r0198 Loader 2 version / Loader 2 version

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the version of loader 2 (second level loader).
Dependency: Refer to: r0018, r0128, r0148, r0158, r0197
Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

p0199[0...24] Drive object name / DO name

All objects

Can be changed: C1
Access level: 2
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	65535	0

Description: Freely assignable name for a drive object.
In the commissioning software, this name cannot be entered using the expert list, but is specified in the configuration assistant. The object name can be subsequently modified in the Project Navigator using standard Windows resources.

r0200[0...n] Power unit, actual code number / LT code no. actual

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the unique code number of the power unit.
Note: r0200 = 0: No power unit found
For parallel circuit configurations, the parameter index is assigned to a power unit.

p0201[0...n] Power unit code number / LT code number

VECTOR

Can be changed: C2(2)
Access level: 3
Data type: Unsigned16
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
0	65535	0

Description: Sets the actual code number from r0200 to acknowledge the power unit being used.
When commissioned for the first time, the code number is automatically transferred from r0200 into p0201.
Note: The parameter is used to identify when the drive is being commissioned for the first time.
The power unit commissioning can only be exited (p0201 = r0200), if the actual and acknowledged code numbers are identical (p0010 = 2).
For parallel circuit configurations, the parameter index is assigned to a power unit.

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r0203[0...15] Card name / Card name

CU_G	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: This parameter indicates the card name.

r0203[0...n] Actual power unit type / LT actual type

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Integer16	**Dynamic index:** PDS, p0120	**Function diagram:** -
	P-Group: Converter	**Units group:** -	**Unit selection:** -
	Min 2	**Max** 300	**Factory setting** 100

Description: Displays the type of power unit found.

Values:

2: MICROMASTER 440
3: MICROMASTER 411
4: MICROMASTER 410
5: MICROMASTER 436
6: MICROMASTER 440 PX
7: MICROMASTER 430
100: SINAMICS S
120: PM340 (SINAMICS S120)
150: SINAMICS G
200: SINAMICS GM
250: SINAMICS SM
300: SINAMICS GL

Note: For parallel circuit configurations, the parameter index is assigned to a power unit.

r0204[0...n] Power unit hardware properties / LT HW property

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** PDS, p0120	**Function diagram:** -
	P-Group: Converter	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Displays the properties supported by the power unit hardware.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DC/AC device	DC/AC device	AC/AC device	-
01	RFI filter available	Yes	No	-
02	Active Line Module available	Yes	No	-
03	Smart Line Module available	Yes	No	-
04	Basic Line Module available with thyristor bridge	Yes	No	-
05	Basic Line Module available with diode bridge	Yes	No	-
06	Water cooling	Yes	No	-
12	Safe Brake Control (SBC) supported	No	Yes	-

Note: For parallel circuit configurations, the parameter index is assigned to a power unit.

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p0205 Power unit application / LT application

VECTOR

Can be changed: C2(1) **Access level:** 2

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Converter **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	7	6

Description: Overloading the load duty cycles applies under the prerequisite that before and after the overload, the drive converter is operated with its base load current - in this case, a load duty cycle of 300 s is used as basis.

For booksize drive units, the following applies:

Only the setting p0205 = 0 can be selected. In this particular case, the base load current has a load duty cycle of 150 % for 60 s and 176 % for 30 s.

For chassis drive units, the following applies:

The base load current for a slight overload condition is based on a load duty cycle 110 % for 60 s and 150 % for 10 s.

The base load current for a high overload condition is based on a load duty cycle 150 % for 60 s and 160 % for 10 s.

Values:

0: Load duty cycle with high overload for vector drives
1: Load duty cycle with low overload for vector drives
6: S1 duty cycle for servo drives (feed drive)
7: S6 duty cycle for servo drives (spindle drive)

Note: When the parameter is changed, all of the motor parameters and the control mode are pre-assigned according to the selected application. The parameter has not influence when calculating the thermal overload.

p0205 can only be changed to the settings that are saved in the power unit EEPROM.

Its value is not reset when factory values are restored (see p0010 = 30, p0970).

r0206[0...4] Rated power unit power / LT P_rated

VECTOR

Can be changed: - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Converter **Units group:** 14_6 **Unit selection:** p0100

Min	Max	Factory setting
- [kW]	- [kW]	- [kW]

Description: Displays the rated power unit power for various load duty cycles.

Index:

[0] = Rating plate
[1] = Load duty cycle with low overload
[2] = Load duty cycle with high overload
[3] = S1 load duty cycle
[4] = S6 load duty cycle

Dependency: The value is displayed in [kW] or [hp].

Refer to: p0100, p0205

r0207[0...4] Rated power unit current / LT PI_rated

VECTOR

Can be changed: - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 8014

P-Group: Converter **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the rated power unit power for various load duty cycles.

Index:

[0] = Rating plate
[1] = Load duty cycle with low overload
[2] = Load duty cycle with high overload
[3] = S1 load duty cycle
[4] = S6 load duty cycle

Dependency: Refer to: p0205

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r0208 Rated power unit line supply voltage / LT U_rated

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Converter	**Units group:** -	**Unit selection:** -
	Min - [Veff]	**Max** - [Veff]	**Factory setting** - [Veff]

Description: Displays the rated line supply voltage of the power unit.
r0208 = 400: 380 - 480 V +/-10 %
r0208 = 500: 500 - 600 V +/-10 %
r0208 = 690: 660 - 690 V +/-10 %
For the Basic Line Module (BLM) the following applies:
r0208 = 690 : 500 - 690 V +/-10 %

r0209[0...4] Power unit, maximum current / LT I_max

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 8750, 8850, 8950
	P-Group: Converter	**Units group:** -	**Unit selection:** -
	Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the maximum output current of the power unit.
Index: [0] = Catalog
[1] = Load duty cycle with high overload
[2] = Load duty cycle with low overload
[3] = S1 load duty cycle
[4] = S6 load duty cycle
Dependency: Refer to: p0205

p0210 Drive unit line supply voltage / Supply voltage

VECTOR	**Can be changed:** C2(2), T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Converter	**Units group:** -	**Unit selection:** -
	Min 1 [V]	**Max** 63000 [V]	**Factory setting** 600 [V]

Description: Sets the drive unit supply voltage.
AC/AC units: The rms value of the phase-to-phase line supply voltage should be entered.
DC/AC units: The rated DC voltage of the connection busbar should be entered.
Dependency: For VECTOR (p0107) the following applies:
Set p1254 to 0 (automatic detection of the Vdc switch-in levels).
The switch-in thresholds of the Vdc_max controller are then directly determined using p0210.
Cautiont: If the line supply voltage is higher than the entered value, the Vdc controller may be automatically de-activated in some cases to prevent the motor from accelerating. In this case, an appropriate alarm is output.

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Note: For VECTOR (p0107) the following applies:

If the line supply voltage is higher than the parameterized value, then the DC link voltage controller could be automatically de-activated in order to prevent the drive accelerating.

Setting ranges for p0210 as a function of the rated power unit voltage:

U_rated = 400 V:

- p0210 = 380 ... 480 V (AC/AC), 510 ... 650 V (DC/AC)

U_rated = 500 V:

- p0210 = 500 ... 600 V (AC/AC), 675 ... 810 V (DC/AC)

U_rated = 690 V:

- p0210 = 660 ... 690 V (AC/AC), 890 ... 1035 V (DC/AC)

The pre-charging switch-in threshold for the DC link voltage (Vdc) is calculated from p0210:

Vdc_pre = p0210 * 0.82 * 1.35 (AC/AC)

Vdc_pre = p0210 * 0.82 (DC/AC)

The undervoltage thresholds for the DC link voltage (Vdc) are calculated from p0210 as a function of the rated power unit voltage:

U_rated = 400 V:

- U_min = p0210 * 0.78 (AC/AC), p0210 * 0.60 (DC/AC)

U_rated = 500 V:

- U_min = p0210 * 0.76 (AC/AC)

U_rated = 690 V:

- U_min = p0210 * 0.74 (AC/AC), p0210 * 0.57 (DC/AC)

p0230 Drive filter type, motor side / Drv filt type

VECTOR

Can be changed: C2(1, 2) **Access level:** 1

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Converter **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	4	0

Description: Sets the type of the filter at the motor side.

Values:

0: No filter
1: Motor reactor
2: du/dt filter
3: Sinusoidal filter, Siemens
4: Sinusoidal filter, third-party

Dependency: The following parameters are influenced using p0230:

p0230 = 1:

--> p0233 (power unit, motor reactor) = filter inductance

p0230 = 3:

--> p0233 (power unit, motor reactor) = filter inductance

--> p0234 (power unit sinusoidal filter capacitance) = filter capacitance

--> p0290 (power unit overload response) = inhibit pulse frequency reduction

--> p1082 (maximum speed) = Fmax filter / pole pair number

--> p1800 (pulse frequency) >= nominal pulse frequency of the filter

--> p1802 (modulator modes) = space vector modulation without overcontrol

p0230 = 4:

--> p0290 (power unit overload response) = inhibit pulse frequency reduction

--> p1802 (modulator modes) = space vector modulation without overcontrol

The user must set the following parameters according to the data sheet of the sinusoidal filter and also the user must check whether they are permitted.

--> p0233 (power unit, motor reactor) = filter inductance

--> p0234 (power unit sinusoidal filter capacitance) = filter capacitance

--> p1082 (maximum speed) = Fmax filter / pole pair number

--> p1800 (pulse frequency) >= nominal pulse frequency of the filter

Refer to: p0233, p0234, p0290, p1082, p1800, p1802

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Note: if a filter type cannot be selected, then this filter type is not permitted for the Motor Module.
p0230 = 2:
Chassis-type power units with du/dt filter, depending on the rated pulse frequency, may only be operated with a maximum pulse frequency of p1800 = 2.5 kHz or 4 kHz. The output frequency is limited to 150 Hz.
p0230 = 3:
Sinusoidal filters with a rated pulse frequency of 1.25 or 2.5 kHz should only be operated with a current controller sampling rate p0115[0] = 400 µs, sinusoidal filters with a rated pulses frequency of 2 or 4 kHz with p0115[0] = 250 µs.
The sinusoidal filter cannot be selected if the current controller sampling rate hasn't been appropriately set.

p0233 Power unit motor reactor / LT mot reactor

VECTOR

Can be changed: C2(2), U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Converter — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.000 [mH]	1000.000 [mH]	0.000 [mH]

Description: Enter the inductance of a filter connected at the power unit output.
Dependency: The parameter is automatically pre-assigned when selecting a filter via p0230.
Refer to: p0230

p0234 Power unit sinusoidal filter capacitance / LT sine filter C

VECTOR

Can be changed: C2(2), U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Converter — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.000 [µF]	1000.000 [µF]	0.000 [µF]

Description: Enters the capacitance of a sinusoidal filter connected at the power unit output.
Dependency: The parameter is automatically pre-assigned when selecting a filter via (p0230).
Refer to: p0230
Note: The parameter value includes the sum of all of the capacitances of a phase connected in series (phase - ground).

p0235 Number of reactors connected in series / Qty L in series

VECTOR

Can be changed: C2(1, 2) — **Access level:** 1
Data type: Unsigned8 — **Dynamic index:** - — **Function diagram:** -
P-Group: Converter — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1	3	1

Description: Number of reactors connected at the power unit output.
Dependency: Refer to: p0230
Cautiont: If the number of motor reactors connected in series does not correspond to the parameter value, then this can result in an unfavorable control behavior.
Note: The parameter can only be changed for chassis drive units and for p0230 = 1.

p0251[0...n] Operating hours counter, power unit fan / LT fan t_oper

VECTOR

Can be changed: T — **Access level:** 3
Data type: Unsigned32 — **Dynamic index:** PDS, p0120 — **Function diagram:** -
P-Group: Modulation — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	4294967295	0

Description: Displays the power unit fan operating hours.
The number of hours operated can only be reset to 0 in this parameter (e.g. after a fan has been replaced).
Dependency: Refer to: p0252

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Note: The value is in the unit [h] (hours).

p0252 Maximum operating time, power unit fan / LT fan t_oper max

VECTOR

Can be changed: T | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	50000	40000

Description: Sets the maximum operating time of the power unit fan.
The pre-alarm (warning) is output 500 hours before this set value.
The monitoring is de-activated with p0252 = 0.

Dependency: Refer to: p0251

Note: The value is in the unit [h] (hours).
For chassis units, the maximum operating duration in the power unit parameter is set as default to 50000.

p0260 Cooling system, starting time 1 / RKA start time 1

VECTOR (RKA)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	60.0 [s]	5.0 [s]

Description: Sets starting time 1 to monitor the cooling system after power on command.
The following feedback signals are evaluated:
- "RKA powered-up"
- "RKA water flow OK"

Dependency: Refer to: F49152, F49153

Note: RKA: Cooling system

p0261 Cooling system, starting time 2 / RKA start time 2

VECTOR (RKA)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	1200.0 [s]	180.0 [s]

Description: Sets starting time 2 to monitor the cooling system after power on command.
The following feedback signals are evaluated:
- "RKA conductivity, no fault"
- "RKA conductivity, no alarm"

Dependency: Refer to: p0266
Refer to: F49151, A49171

p0262 Cooling system, fault conductivity delay time / RKA cond t_del

VECTOR (RKA)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	30.0 [s]	0.0 [s]

Description: Sets the delay time for the fault "RKA: Conductive limit value exceeded".
The fault is only output if the cause is present for a time longer than is set in this parameter.

Dependency: Refer to: F49151

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p0263 Cooling system fault water flow, delay time / RKA flow t_del

VECTOR (RKA)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	20.0 [s]	3.0 [s]

Description: Sets the delay time for the fault "RKA: Water flow too low".
The fault is only output if the cause is present for a time longer than is set in this parameter.

Dependency: Refer to: F49153

p0264 Cooling system, run-on time / RKA run-on time

VECTOR (RKA)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	180.0 [s]	30.0 [s]

Description: Sets the run-up time of the cooling system after a power-off command.

r0265 BO: Cooling system, control word / RKA ctrl word

VECTOR (RKA)

Can be changed: - | **Access level:** 3
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word for the cooling system.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Power-up cooling system	Power-up	Power-down	-
01	Message, converter off	Off	On	-
02	Acknowledge faults	Acknowledgment	No acknowledgment	-
03	Leakage water detection OK	No leakage water	Leakage water	-

p0266[0...7] BI: Cooling system, signal source feedback signals / RKA S_src fdbk

VECTOR (RKA)

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	[0] 1 [1] 1 [2] 1 [3] 1 [4] 1 [5] 1 [6] 1 [7] 1

Description: Sets the signal sources for the feedback signals from the cooling system.

Index:
[0] = Cooling system power-up
[1] = Cooling system ready to be powered-up
[2] = Cooling system, no alarm present
[3] = Cooling system, no fault present
[4] = Cooling system, no leakage water
[5] = Cooling system water flow OK
[6] = Cooling system, conductivity < fault threshold
[7] = Cooling system, conductivity < alarm threshold

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r0267 BO: Cooling system status word display / RKA ZSW display

VECTOR (RKA)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the cooling system.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	RKA powered-up	Yes	No	-
01	RKA ready to be powered-up	Yes	No	-
02	RKA no alarm present	Yes	No	-
03	RKA no fault present	Yes	No	-
04	RKA no leakage water	Yes	No	-
05	RKA water flow OK	Yes	No	-
06	RKA conductivity, no fault	Yes	No	9974
07	RKA conductivity, no alarm	Yes	No	9974

Dependency: Refer to: p0266

p0287[0...1] Ground fault monitoring thresholds / Grnd flt thresh

VECTOR

Can be changed: T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0 [%]	100.0 [%]	[0] 6.0 [%] [1] 16.0 [%]

Description: Sets the shutdown thresholds for the ground fault monitoring.
The setting is made as a percentage of the maximum power unit current (r0209).

Index: [0] = Threshold for pulse inhibit
[1] = Threshold for pulse enable

Dependency: Refer to: F30021

Note: De-activating the ground fault monitoring:
- Sequence: --> p0287[1] = 0 --> p0287[0] = 0
- independent of the firmware version of the power unit.
Sets the thresholds:
- the prerequisite is at least firmware version 2.2 of the power unit.

r0289 Maximum power unit output current / LT I_output max

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the actual, maximum output current of the power unit taking into account de-rating factors.

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p0290 Power unit overload response / LT overld response

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 8014
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Sets the response to a thermal overload condition of the power unit.
The following quantities can result in a response to thermal overload:
- heatsink temperature (r0037.0)
- chip temperature (r0037.1)
- power unit overload I2T (r0036)

Possible measures to avoid thermal overload:
- reduce the output current (closed-loop speed/velocity or torque/force control) or the output frequency (U/f control).
- reduce the pulse frequency (only for closed-loop vector control).

A reduction, if parameterized, is always realized after an appropriate alarm is output.

Values:
0: Reduce output current or output frequency
1: No reduction, shutdown when overload threshold is reached
2: Reduce I_output or f_output and f_pulse (not using I2t)
3: Reduce the pulse frequency (not using I2t)

Dependency: If a sinusoidal filter is parameterized as output filter (p0230 = 3, 4), then only responses can be selected without pulse frequency reduction (p0290 = 0, 1).
If a fault or alarm is present, then r2135.13 or r2135.15 is set.
Refer to: r0036, r0037, p0108, r0108, p0230, r2135
Refer to: A05000, A05001, A07805

Cautiont: If the thermal overload of the power unit is not sufficiently reduced by the actions taken, the drive is always shut down. This means that the power unit is always protected independent of the setting of this parameter.

Note: The setting p0290 = 0, 2 is only practical if the load decreases with decreasing speed (e.g. for applications with variable torque such as for pumps and fans).
Under overload conditions, the current and torque limit are reduced, and therefore the motor is braked and forbidden speed ranges (e.g. minimum speed p1080 and suppression [skip] speeds p1091 ... p1094) can be passed through.
For p0290 = 2, 3, the I2t overload detection of the power unit does not influence the responses.

p0294 Power unit alarm with I2t overload / LT I2t alrm thresh

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 8014
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
10.0 [%]	100.0 [%]	95.0 [%]

Description: Sets the alarm threshold for the I2t power unit overload.
Drive:
If this threshold is exceeded, an overload alarm is generated and the system responds as parameterized in p0290.
Infeed:
When the threshold value is exceeded, only an overload alarm is output.

Dependency: Refer to: r0036, p0290
Refer to: A07805

Note: The I2t fault threshold is 100 %. If this value is exceeded, fault F30005 is output.

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p0295 Fan run-on time / Fan run-on time

VECTOR	**Can be changed:** U, T		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Converter	**Units group:** -	**Unit selection:** -
	Min 0 [s]	**Max** 600 [s]	**Factory setting** 0 [s]

Description: Sets the fan run-on time after the power unit has been powered-down. If, after the selected fan run-on time, the heatsink temperature has not fallen below a permanently saved threshold value, then the run-on time is extended until this temperature threshold is actually reached.

p0300[0...n] Mot type selection / Mot type selection

VECTOR	**Can be changed:** C2(1, 3)		**Access level:** 1
	Data type: Integer16	**Dynamic index:** MDS, p0130	**Function diagram:** 6310
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 10000	**Factory setting** 0

Description: Selects the motor type or start to read-in the motor parameters for a motor with DRIVE-CLiQ (p0300 = 10000).

The following applies for p0300 < 10000: The first digit of the parameter value always defines the general motor type and corresponds to the unlisted motor belonging to a motor list:

1 = Rotating induction motor

2 = Rotating synchronous motor

3 = Linear induction motor (reserved)

4 = Linear synchronous motor

5 = Separately-excited synchronous motor (only VECTOR)

7 = SIEMOSYN motor (only VECTOR)

8 = Reluctance motor (only VECTOR)

The type information must be entered to filter motor-specific parameters and to optimize the operating characteristics and behavior. For example, for synchronous motors, power factor (p0308) is neither used nor displayed (in the BOP/AOP).

Values:

0: No motor selected
1: Induction motor (rotating)
2: Synchronous motor (rotating, permanent-magnet)
5: Synchronous motor (separately excited)
7: SIEMOSYN motor
8: Reluctance motor
11: 1LA1 standard induction motor
12: 1LE2 standard induction motor (NEMA)
15: 1LA5 standard induction motor
16: 1LA6 standard induction motor
17: 1LA7 standard induction motor
18: 1LA8 standard induction motor
102: 1PH2 induction motor
104: 1PH4 induction motor
107: 1PH7 induction motor
134: 1PM4 induction motor
136: 1PM6 induction motor
283: 1FW3 synchronous motor
10000: Motor with DRIVE-CLiQ

Dependency: VECTOR: Motors, selection 206, 236, 237 cannot be operated (also not as motor with DRIVE-CLiQ).

p0300 = 5 cannot be selected with SINAMICS G.

When the motor type is changed, the code number in p0301 may be reset to 0.

p0300 = 12 can only be selected for p0100 = 1 (NEMA).

Refer to: p0301

Notice: A list of motor/encoder codes can be found in the following literature:

SINAMICS S120 Commissioning Manual

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Note: For p0300 = 10000, the motor parameters are automatically downloaded for a motor with DRIVE-CLiQ.

If a motor type has not been selected (p0300 = 0), then the drive commissioning routine cannot be exited.

A motor type with a value above p0300 >= 100 describes motors for which a motor parameter list exists.

Motor types with a value below p0300 < 100 correspond to the selection of an unlisted motor. When appropriately selected, this means that the motor parameters are pre-assigned the settings for an unlisted motor.

If a catalog motor is selected (p0300 >= 100) and an associated motor code number (p0301), then the parameters, that are associated if this list, cannot be changed (write protection). The write protection is canceled if the motor type p0300 is set to a non-Siemens motor that matches p0301 (e.g. p0300 = 2 for p0301 = 2xxxx).

This also applies for parameters for a motor with DRIVE-CLiQ. In this case p0300 can only be set to p0300 = 10000 (read motor parameters) or to the corresponding non-Siemens motor (first digit of the motor code number) in order to be able to cancel the write protection.

p0301[0...n] Motor code number selection / Mot code No. sel

VECTOR

Can be changed: C2(1, 3), U | **Access level:** 1

Data type: Unsigned16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: The parameter is used to select a motor from a motor parameter list.

When changing the code number (with the exception to the value 0), all of the motor parameters are pre-assigned from the internally available parameter lists.

Dependency: Only code numbers for motor types can be selected that correspond to the motor type selected in p0300. For 1PH2, 1PH4, 1PH7, 1PM4, 1PM6, 1FT6 motors, code numbers are also possible, whose fourth decimal position is greater by a value of 1 or 2 than the matching motor type in p0300. For 1FE1 motors, the third decimal position can be higher by a value of 1.

Refer to: p0300

Notice: A list of motor/encoder codes can be found in the following literature:

SINAMICS S120 Commissioning Manual

Note: The motor code number can only be changed if the matching list motor was first selected in p0300.

For a motor with DRIVE-CLiQ, p0301 cannot be changed. In this case, p0301 is automatically written to the code number of the motor parameter read-in (r0302) if p0300 is set to 10000.

When selecting a list motor (p0300 >= 100), drive commissioning can only be exited if a code number is selected.

r0302[0...n] Motor code number of motor with DRIVE-CLiQ / Motor code Mot DLQ

VECTOR

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the motor code number from the saved motor data from a motor with DRIVE-CLiQ.

Note: Drive commissioning can only be exited if the code number that was downloaded (r0302) matches the stored code number (p0301). If the numbers differ, then the motor data set should be re-loaded using p0300 = 10000.

The motor data are always expected from the first encoder that is assigned to the drive data sets (refer to p0187 = encoder 1) data set number.

p0304[0...n] Rated motor voltage / Mot U_rated

VECTOR

Can be changed: C2(1, 3) | **Access level:** 1

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** 6300, 6724

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [Veff]	20000 [Veff]	0 [Veff]

Description: Sets the rated motor voltage (rating plate).

Dependency: Refer to: p0349

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Note: The parameter is automatically preset for motors from the motor list (p0301).
For synchronous motors (p0300 = 2xx), the parameter can be optionally input.
The following applies for SERVO:
For synchronous motors, the parameter is of no significance from a control-related perspective.
For VECTOR, the following applies:
if the rated voltage is entered for synchronous motors during the commissioning phase, then the stator leakage inductance (p0356, p0357) can be more accurately calculated (refer to p0340 and p3900).

p0305[0...n] Rated motor current / Mot I_rated

VECTOR

Can be changed: C2(1, 3) **Access level:** 1
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** 6300
P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [Aeff]	10000.00 [Aeff]	0.00 [Aeff]

Description: Sets the rated motor current (rating plate).
Dependency: Refer to: p0349
Notice: For VECTOR, the following applies:
If the rated motor current exceeds twice the maximum drive converter current (r0209), then the maximum current is reduced due to the current harmonics that increase overproportionally (r0067).
Note: The parameter is automatically preset for motors from the motor list (p0301).

p0307[0...n] Rated motor power / Mot P_rated

VECTOR

Can be changed: C2(1, 3) **Access level:** 1
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -
P-Group: Motor **Units group:** 14_6 **Unit selection:** p0100

Min	Max	Factory setting
-100000.00 [kW]	100000.00 [kW]	0.00 [kW]

Description: Sets the rated motor power (rating plate).
Dependency: IECdrives (p0100 = 0): Units kW
NEMA drives (p0100 = 1): Units hp
Refer to: p0100
Note: The parameter is automatically preset for motors from the motor list (p0301).
For generators, a negative rated power should be entered.

p0308[0...n] Rated motor power factor / Mot cos_phi_rated

VECTOR

Can be changed: C2(1, 3) **Access level:** 1
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -
P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000	1.000	0.000

Description: Sets the rated motor power factor (cos phi, rating plate).
For a parameter value of 0.000, the power factor is internally calculated and displayed in r0332.
Dependency: This parameter is only available for IEC motors (p0100 = 0).
Refer to: p0100, p0309, r0332
Note: The parameter is not used for synchronous motors (p0300 = 2xx).
The parameter is automatically preset for motors from the motor list (p0301).

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p0309[0...n] Rated motor efficiency / Mot eta_rated

VECTOR

Can be changed: C2(1, 3) **Access level:** 1

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	99.9 [%]	0.0 [%]

Description: Sets the rated motor efficiency (rating plate).

For a parameter value of 0.0, the power factor is internally calculated and displayed in r0332.

Dependency: This parameter is only available for NEMA motors (p0100 = 1).

Refer to: p0100, p0308, r0332

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

The parameter is automatically preset for motors from the motor list (p0301).

p0310[0...n] Rated motor frequency / Mot f_rated

VECTOR

Can be changed: C2(1, 3) **Access level:** 1

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** 6300

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [Hz]	3000.00 [Hz]	0.00 [Hz]

Description: Sets the rated motor frequency (rating plate).

Dependency: The number of pole pairs (r0313) is automatically re-calculated when the parameter is changed (together with p0311), if p0314 = 0.

Only for vector drives (refer to p0107):

The rated frequency is restricted to values between 1.00 Hz and 650.00 Hz.

Refer to: p0311, r0313, p0314

Note: The parameter is automatically pre-assigned for induction motors from the motor list (p0301).

For synchronous motors, the parameter is not required and must therefore be pre-assigned zero. For p0310 = 0, it is not possible to calculate the pole pair; instead, it must be entered in p0314.

p0311[0...n] Rated motor speed / Mot n_rated

VECTOR

Can be changed: C2(1, 3) **Access level:** 1

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.0 [1/min]	210000.0 [1/min]	0.0 [1/min]

Description: Sets the rated motor speed (rating plate).

For vector drives (refer to p0107):

For p0311 = 0, the rated motor slip of induction motors is internally calculated and displayed in r0330.

It is especially important to correctly enter the rated motor speed for closed-loop vector control and slip compensation for U/f control.

Dependency: If p0311 is changed and for p0314 = 0, the pole pair (r0313) is re-calculated automatically.

Refer to: p0310, r0313, p0314

Note: The parameter is automatically preset for motors from the motor list (p0301).

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r0313[0...n] Motor pole pair number, actual (or calculated) / Mot PolePairNo act

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: MDS, p0130
Function diagram: 5300
P-Group: Motor
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the number of motor pole pairs. The value is used for internal calculations.
Values:
r0313 = 1: 2-pole motor
r0313 = 2: 4-pole motor
etc.

Dependency: For p0314 > 0, the entered value is displayed in r0313.
For p0314 = 0, the pole pair number (r0313) is automatically calculated from the rated power (p0307), rated frequency (p0310) and rated speed (p0311).
Refer to: p0307, p0310, p0311, p0314

Note: For the automatic calculation, the pole pair number is set to the value of 2 if the rated speed or the rated frequency is zero.

p0314[0...n] Motor pole pair number / Mot pole pair No.

VECTOR

Can be changed: C2(1, 3)
Access level: 2
Data type: Unsigned8
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: -
Unit selection: -

Min	Max	Factory setting
0	127	0

Description: Sets the motor pole pair number.
Values:
p0314 = 1: 2-pole motor
p0314 = 2: 4-pole motor
etc.

Dependency: For p0314 = 0, the pole pair number is automatically calculated from the rated frequency (p0310) and the rated speed (p0311) and displayed in r0313.

Notice: For induction motors, the value need only be input if the rated data of a generator is entered therefore resulting in a negative rated slip. In this case, the number of pole pairs in r0313 is too low by 1 and must be manually corrected.

p0316[0...n] Motor torque constant / Mot kT

VECTOR

Can be changed: C2(1, 3), U, T
Access level: 2
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 28_1
Unit selection: p0100

Min	Max	Factory setting
0.00 [Nm/A]	100.00 [Nm/A]	0.00 [Nm/A]

Description: Sets the torque constant of the synchronous motor.
p0316 = 0: The torque constant is calculated from the motor data.
p0316 > 0: The selected value is used as torque constant.

Dependency: Refer to: r0334

Note: The parameter is automatically preset for motors from the motor list (p0301).
This parameter is not used for induction motors (p0300 = 1xx).

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p0320[0...n] Motor rated magnetization current/short-circuit current / Mot I_mag_rated

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 5722
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.000 [Aeff]	**Max** 5000.000 [Aeff]	**Factory setting** 0.000 [Aeff]

Description: Induction motors:
Sets the rated motor magnetizing current.
For p0320 = 0.000 the magnetizing current is internally calculated and displayed in r0331.
Synchronous motors:
Sets the rated motor short-circuit current.

Note: The parameter is automatically preset for motors from the motor list (p0301).
VECTOR: If, for induction motors, the magnetizing current p0320 is changed outside the commissioning phase (p0010 > 0), then the magnetizing inductance p0360 is changed so that the EMF r0337 remains constant.

p0322[0...n] Maximum motor speed / Mot n_max

VECTOR	**Can be changed:** C2(1, 3)		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.0 [1/min]	**Max** 210000.0 [1/min]	**Factory setting** 0.0 [1/min]

Description: Sets the maximum motor speed.

Dependency: Refer to: p1082

Note: The parameter is automatically preset for motors from the motor list (p0301).

p0323[0...n] Maximum motor current / Mot I_max

VECTOR	**Can be changed:** C2(1, 3)		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 5722
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.00 [Aeff]	**Max** 20000.00 [Aeff]	**Factory setting** 0.00 [Aeff]

Description: Set the maximum permissible motor current (e.g. de-magnetizing current for synchronous motors).

Note: The parameter is automatically preset for motors from the motor list (p0301).
For induction motors, the parameter has not effect if p0323 is set to 0.
For synchronous motors, a value must always be entered for the maximum motor current.
p0323 is a motor data. The user-selectable current limit is entered into p0640.

p0325[0...n] Motor pole position identification current, 1st phase / Mot PolID I 1st ph

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.000 [Aeff]	**Max** 10000.000 [Aeff]	**Factory setting** 0.000 [Aeff]

Description: Sets the current for the 1st phase of the two-stage technique for pole position identification routine.
The current of the 2nd phase is set in p0329.
A two-stage technique is selected with p1980 = 4, 5.

Dependency: Refer to: p0329, p1980, p1982, r1984, r1985, r1987, p1990

Notice: When the motor code (p0301) is changed, it is possible that p0325 is not pre-assigned.
p0325 can be pre-assigned using p0340 = 3.

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Note: The value is automatically pre-assigned for the following events:
- For p0325 = 0 and automatic calculation of the closed-loop control parameters (p0340 = 1, 2, 3).
- for quick commissioning (p3900 = 1, 2, 3).

p0327[0...n] Optimum motor load angle / Mot phi_load opt

VECTOR

Can be changed: C2(3), U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** 5722
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [°]	135.0 [°]	90.0 [°]

Description: Sets the optimum load angle for synchronous motors with reluctance torque (e.g. 1FE ... motors).
This parameter has no significance for induction motors.
SERVO: The load angle is measured at 150% rated motor current.
VECTOR: The load angle is measured at the rated motor current.

Note: For synchronous motors without reluctance torque, a angle of 90 degrees must be set.
The parameter is automatically preset for motors from the motor list (p0301).

p0328[0...n] Motor reluctance torque constant / Mot kT_reluctance

VECTOR

Can be changed: C2(3), U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [mH]	1000.00 [mH]	0.00 [mH]

Description: Sets the reluctance torque constant for synchronous motors with reluctance torque (e.g. 1FE ... motors).
This parameter has no significance for induction motors.

Note: For synchronous motors without reluctance torque, the value 0 must be set.
The parameter is automatically preset for motors from the motor list (p0301).

p0329[0...n] Motor pole position identification current / Mot PolID current

VECTOR

Can be changed: C2(3), U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [Aeff]	10000.00 [Aeff]	0.00 [Aeff]

Description: Sets the current for the pole position identification routine.
For a two-stage technique, the current is set for the second phase.

Dependency: Refer to: p0325, p1980, p1982, r1984, r1985, r1987, p1990

Note: The parameter is automatically preset for motors from the motor list (p0301).

r0330[0...n] Rated motor slip / Mot slip_rated

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the rated motor slip.

Dependency: The rated slip is calculated from the rated frequency, rated speed and number of pole pairs.
Refer to: p0310, p0311, r0313

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

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r0331[0...n] Motor magnetizing current/short-circuit current actual / Mot I_mag_ratedAct

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** 5722, 6722, 6724

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Induction motor:
Displays the rated magnetizing current from p0320.
For p0320 = 0, the internally calculated magnetizing current is displayed.
Synchronous motor:
Displays the rated shirt-circuit current from p0320.

Dependency: If p0320 was not entered, then the parameter is calculated from the rating plate parameters.

r0332[0...n] Rated motor power factor / Mot cos_phi_rated

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the rated power factor for induction motors.
For IEC motors, the following applies (p0100 = 0):
For p0308 = 0, the internally-calculated power factor is displayed.
For p0308 > 0, this value is displayed.
For NEMA motors, the following applies (p0100 = 1):
For p0309 = 0, the internally-calculated power factor is displayed.
For p0309 > 0, this value is converted into the power factor and displayed.

Dependency: If p0308 is not entered, the parameter is calculated from the rating plate parameters.

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

r0333[0...n] Rated motor torque / Mot M_rated

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -

P-Group: Motor **Units group:** 7_4 **Unit selection:** p0100

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the rated motor torque.

Note: For induction and reluctance motors, r0333 is calculated from p0307 and p0311.
For synchronous motors, r0333 is calculated from p0305, p0316, p0327 and p0328. The result can deviate from the input in p0312. If p0316 = 0, then r0333 = p0312 is displayed.

r0334[0...n] Motor-torque constant, actual / Mot kT act

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -

P-Group: Motor **Units group:** 28_1 **Unit selection:** p0100

Min	Max	Factory setting
- [Nm/A]	- [Nm/A]	- [Nm/A]

Description: Displays the torque constant of the synchronous motor used.

Dependency: Refer to: p0316

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Note: This parameter is not used for induction motors (p0300 = 1xx).
For synchronous motors, parameter r0334 = p0316 is displayed. if p0316 = 0, r0334 is calculated from p0305 and p0312.

p0335[0...n] Motor cooling type / Motor cooling type

VECTOR

Can be changed: C2(1, 3), T | **Access level:** 1
Data type: Integer16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	6	0

Description: Sets the motor cooling system used.

Values:
0: Non-ventilated
1: Forced cooling
2: Water cooling
4: Non-ventilated and internal fan
5: Forced cooling and internal fan
6: Water cooling and internal fan

Note: The parameter influences the thermal 3-mass motor model.
1LA1 and 1LA8 motors are characterized by the fact that they have an internal rotor fan. This "internal cooling" lies within the motor frame and is not visible. Air is not directly exchanged with the motor ambient air.
The parameter is automatically preset for motors from the motor list (p0301).

r0336[0...n] Rated motor frequency actual / Mot f_rated act

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the rated frequency of the motor.
For p0310 > 0, this value is displayed.

Dependency: Refer to: p0311, p0314

Note: For p0310 = 0 or for synchronous motors, the rated motor frequency r0336 is calculated from the rated speed and the pole pair number.
For p0310 > 0, this value is displayed (not for synchronous motors).

r0337[0...n] Rated motor EMF / Mot EMF_rated

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the rated EMF of the motor.

Note: EMF: Electromagnetic force

r0339[0...n] Rated motor voltage / Mot U_rated

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the rated motor voltage

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Note: For induction motors (p0300 = 1xx) the parameter is set to p0304.

For synchronous motors, parameter r0339 = p0304 is displayed. If p0304 = 0, then r0339 is calculated from p0305 and p0316.

p0340[0...n] Automatic calculation of motor/control parameters / Calc auto par

VECTOR	**Can be changed:** C2(3), T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	5	0

Description: Setting to automatically calculate motor parameters and U/f open-loop and closed-loop control parameters from the rating plate data.

Values:

0: No calculation
1: Complete calculation
2: Calculation of equivalent circuit diagram parameters
3: Calculation of closed-loop control parameters
4: Calculation of controller parameters
5: Calculation of technological limits and threshold values

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Notice:

The following parameters are influenced using p0340:

The parameters designated with (*) are, for list motors (p0300 > 100) not overwritten.

SERVO:

p0340 = 1:

--> All of the parameters influenced for p0340 = 2, 3, 4, 5

--> p0341 (*)

--> p0342, p0344, p0600, p0640, p1082, p2000, p2001, p2002, p2003

p0340 = 2:

--> p0350 (*), p0354 (*), p0356 (*), p0358 (*), p0360 (*)

--> p0625 (matching p0350)

p0340 = 3:

--> All of the parameters influenced for p0340 = 4, 5

--> p0325 (is only calculated for p0325 = 0)

--> p0348 (*) (is only calculated for p0348 = 0)

--> p0441, p0442, p0443, p0444, p0445 (only for 1FT6, 1FK6, 1FK7 motors)

--> p0492, p1082, p1980, p1319, p1326, p1327, p1612, p1752, p1755

p0340 = 4:

--> p1441, p1460, p1462, p1463, p1464, p1465, p1470, p1472, p1590, p1592, p1715, p1717

--> p1461 (for p0348 > p0322, p1461 is set to 100 %)

--> p1463 (for p0348 > p0322, p1463 is set to 400 %)

p0340 = 5:

--> p1037, p1038, p1520, p1521, p1530, p1531, p2140 ... p2142, p2148, p2150, p2155, p2161, p2162, p2163, p2164, p2175, p2177, p2194, p3820 ... p3829

VECTOR:

p0340 = 1:

--> All of the parameters influenced for p0340 = 2, 3, 4, 5

--> p0341 (*)

--> p0342, p0344, p0600, p0640, p1082, p1349, p1576, p1577, p1609, p1619, p1620, p1621, p1654, p1726, p1825, p1828 ... p1832, p1909, p1959, p2000, p2001, p2002, p2003, p3927, p3928

p0340 = 2:

--> p0350 (*), p0354 ... p0361 (*), p0652 ... p0660

--> p0625 (matching p0350)

p0340 = 3:

--> All of the parameters influenced for p0340 = 4, 5

--> p0346, p0347, p0492, p0622, p1262, p1320 ... p1327, p1582, p1584, p1616, p1744, p1755, p1756, p2178

p0340 = 4:

--> p1290, p1292, p1293, p1299, p1338, p1339, p1340, p1341, p1345, p1346, p1460, p1461, p1462, p1463, p1464, p1465, p1470, p1472, p1590, p1592, p1600, p1628, p1629, p1630, p1643, p1703, p1715, p1717, p1740, p1757, p1760, p1761, p1764, p1767, p1781, p1783, p1785, p1786, p1795, p7036, p7037, p7038

p0340 = 5:

--> p260 ... p264, p1037, p1038, p1520, p1521, p1530, p1531, p1802, p1803, p2140, p2142, p2148, p2150, p2161, p2162, p2163, p2164, p2175, p2177, p2194, p3207, p3208, p3815, p3820 ... p3829

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Note: p0340 = 1 contains the calculations of p0340 = 2, 3, 4, 5 without overwriting the motor parameters from the Siemens motor lists (p0301 > 0).

p0340 = 2 calculates the motor parameters (p0350 ... p0360), but only if it does involve a Siemens catalog motor (p0301 = 0).

p0340 = 3 contains the calculations of p0340 = 4, 5.

p0340 = 4 only calculates the controller parameters.

p0340 = 5 only calculates the controller limits.

When existing the quick commissioning using p3900 > 0, p0340 is automatically set to 1.

At the end of the calculations, p0340 is automatically set to 0.

If the STARTER commissioning software (start-up tool) writes a 3 into p0340 when "downloading into the target device", then this corresponds to a "complete calculation of the motor/control parameters without equivalent circuit diagram data". The same calculations are carried-out as for p0340 = 1, however, without the equivalent circuit diagram parameters of the motor (refer to p0340 = 2), the motor moment of inertia (p0341) and the motor weight (p0344).

For third-party linear synchronous motors (p300 = 4) equivalent circuit diagram data are not calculated (refer to p340 = 2).

p0341[0...n] Motor moment of inertia / Mot M_mom of inert

VECTOR

Can be changed: C2(3), U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** 5210

P-Group: Motor | **Units group:** 25_1 | **Unit selection:** p0100

Min	Max	Factory setting
0.00000 [kgm²]	100000.00000 [kgm²]	0.00000 [kgm²]

Description: Sets the motor moment of inertia (without load).

Dependency: This means that together with p0342, the rated starting time of the motor is calculated.

Refer to: p0342, r0345

Note: The parameter is automatically preset for motors from the motor list (p0301).

SERVO:

p0341 * p0342 + p1498 influence the speed/torque precontrol in sensorless operation.

VECTOR:

The product p0341 * p0342 is taken into account when automatically calculating the speed controller (p0340 = 4).

p0342[0...n] Ratio between the total and motor moment of inertia / Mot MomInert Ratio

VECTOR

Can be changed: C2(3), U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** 5210

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1.000	10000.000	1.000

Description: Sets the ratio between the total moment of inertia/mass (load + motor) and the intrinsic motor moment of inertia/mass (no load).

Dependency: This means that together with p0341, the rated starting (accelerating time) of the motor is calculated for a vector drive.

Refer to: p0341, r0345

Note: SERVO:

p0341 * p0342 + p1498 influence the speed/torque precontrol in sensorless operation.

VECTOR:

The product p0341 * p0342 is taken into account when automatically calculating the speed controller (p0340 = 4).

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p0344[0...n] Motor weight / Motor weight

VECTOR	**Can be changed:** C2(3), T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 27_1	**Unit selection:** p0100
	Min 0.0 [kg]	**Max** 50000.0 [kg]	**Factory setting** 0.0 [kg]

Description: Sets the motor weight.

The following applies for vector drives (refer to p0107):

The parameter influences the thermal 3 mass model of the induction motor.

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

The parameter is automatically preset for motors from the motor list (p0301).

r0345[0...n] Nominal motor starting time / Mot t_start_rated

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min - [s]	**Max** - [s]	**Factory setting** - [s]

Description: Displays the rated motor starting time. This time corresponds to the time from standstill up to reaching the motor rated speed and the acceleration with motor rated torque (r0333).

Dependency: Refer to: r0313, r0333, r0336, p0341, p0342

p0346[0...n] Motor excitation build-up time / Mot t_excitation

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 20.000 [s]	**Factory setting** 0.000 [s]

Description: Sets the excitation build-up time of the motor.

This involves the delay time between enabling the pulses and enabling the ramp-function generator. The induction motor is magnetized during this time.

Notice: If the parameter is set to 0 s for separately-excited synchronous motors (p0300 = 5), then an excitation current setpoint is generated even if the drive is powered-down. In the base speed range, this is the no-load excitation current (p0389). In the field-weakening range, the value is reduced with the inverse value of the actual speed. An excitation current setpoint is not generated during de-magnetization (p0347) and if an encoder fault is detected.

Note: The parameter is calculated using p0340 = 1, 3.

For induction motors, the result depends on the rotor time constant (r0384).

If this time is excessively reduced, this can result in an inadequate magnetization of the induction motor. This means that the parameter cannot be set less than 25% of the rotor time constant.

For permanent-magnet synchronous motors and vector control, the value depends on the stator time constant (r0386).

Here, it defines the time to establish the current for sensorless operation immediately after the pulses have been enabled.

p0347[0...n] Motor de-excitation time / Mot t_de-excitat.

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 20.000 [s]	**Factory setting** 0.000 [s]

Description: Sets the de-magnetizing time (for induction motors) after the inverter pulses have been cancelled.

The inverter pulses cannot be switched-in (enabled) within this delay time.

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Note: The parameter is calculated using p0340 = 1, 3.
For induction motors, the result depends on the rotor time constant (r0384).
if this time is shortened too much, then this can result in an inadequate de-magnetization of the induction motor and in an overcurrent condition when the pulses are subsequently enabled (only when the flying restart function is activated and the motor is rotating).

p0349 Selects system of units, motor equivalent circuit diagram data / Sel UnitSys MotESB

VECTOR

Can be changed: C2(3)		**Access level:** 1
Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
P-Group: Motor	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
1	2	1

Description: Setting parameter of the actual system of units for motor equivalent circuit diagram data

Values:
1: System of units, physical
2: System of units, referred

Dependency: Refer to: p0304, p0305, p0310

Note: The reference parameter for resistances of the rated motor impedance Z = p0304 / (1.732 * p0305) is in the % units system. Inductances are converted into a resistance using the factor 2 * Pi * p0310. If a reference parameter (p0304, p305, p0310) is zero, then it is not possible to make a changeover to per unit (referred) values.

p0350[0...n] Motor stator resistance, cold / Mot R_stator cold

VECTOR

Can be changed: C2(3), U, T		**Access level:** 2
Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
Min	**Max**	**Factory setting**
0.00000 [Ohm]	2000.00000 [Ohm]	0.00000 [Ohm]

Description: Sets the stator resistance of the motor at ambient temperature p0625.

Dependency: Refer to: p0625, r1912

Note: The parameter is automatically preset for motors from the motor list (p0301).
The motor identification routine determines the stator resistance from the total stator resistance minus the cable resistance (p0352).

p0352[0...n] Cable resistance / Mot R_cable cold

VECTOR

Can be changed: C2(3), U, T		**Access level:** 3
Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
Min	**Max**	**Factory setting**
0.00000 [Ohm]	120.00000 [Ohm]	0.00000 [Ohm]

Description: Resistance of the power cable between the Motor Module and motor.

Note: The parameter influences the temperature adaptation of the stator resistance.
The motor identification routine does not change the cable resistance. This is subtracted from the total measured stator resistance in order to calculate the stator resistance (p0350, p0352).

p0353[0...n] Motor series inductance / Mot L_series

VECTOR

Can be changed: C2(3), U, T		**Access level:** 2
Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
P-Group: Motor	**Units group:** 15_1	**Unit selection:** p0349
Min	**Max**	**Factory setting**
0.000 [mH]	1000000.000 [mH]	0.000 [mH]

Description: Sets the series inductance.

Note: For the automatic calculation with p0340 = 1 or 3, the calculation of p0348 is influenced by p0353 if p0348 was 0.
For the automatic calculation with p0340 = 1, 3 or 4, the calculation of p1715 is influenced by p0353.

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p0354[0...n] Motor rotor resistance cold / damping resistance d axis / Mot R_r cold / RDd

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
	Min	**Max**	**Factory setting**
	0.00000 [Ohm]	300.00000 [Ohm]	0.00000 [Ohm]

Description: Sets the rotor/secondary section resistance of the motor at the ambient temperature p0625.

For separately-excited synchronous motors: Sets the damping resistance in the rotor direction (d-axis).

This parameter value is automatically calculated using the motor model (p0340 = 1, 2) or using the motor identification routine (p1910) (not for separately-excited synchronous motors).

Dependency: Refer to: p0625

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

The parameter is automatically preset for motors from the motor list (p0301).

p0355[0...n] Motor damping resistance, q axis / Mot R_damping_q

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
	Min	**Max**	**Factory setting**
	0.00000 [Ohm]	300.00000 [Ohm]	0.00000 [Ohm]

Description: Sets the damping resistance of the separately-excited synchronous motor quadrature to the rotor direction (q axis).

This parameter value is automatically calculated using the motor model (p0340 = 1, 2).

p0356[0...n] Motor stator leakage inductance / Mot L_stator leak.

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 15_1	**Unit selection:** p0349
	Min	**Max**	**Factory setting**
	0.00000 [mH]	1000.00000 [mH]	0.00000 [mH]

Description: Induction motor, separately-excited synchronous motor: Sets the rotor leakage inductance of the motor.

Synchronous motor: Sets the stator quadrature axis inductance of the motor.

This parameter value is automatically calculated using the motor model (p0340 = 1, 2) or using the motor identification routine (p1910).

Note: The parameter is automatically preset for motors from the motor list (p0301).

If the stator leakage inductance p0356 for induction motors is changed outside the commissioning phase (p0010 > 0), then the magnetizing inductance p0360 is automatically adapted to the new EMF r0337. After this, we recommend that the saturation characteristic measurement (refer to rotating measurement p1960) should be repeated.

For permanent-magnet synchronous motors (p300=2), this is the non-saturated value and is therefore ideally applicable for a low current.

p0357[0...n] Motor stator inductance, d axis / Mot L_stator_d

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 15_1	**Unit selection:** p0349
	Min	**Max**	**Factory setting**
	0.00000 [mH]	1000.00000 [mH]	0.00000 [mH]

Description: Sets the stator direct-axis inductance of the synchronous motor.

This parameter value is automatically calculated using the motor model (p0340 = 1, 2) or using the motor identification routine (p1910).

Note: The parameter is not used for separately-excited synchronous motors (p0300 = 5).

For permanent-magnet synchronous motors (p300 = 2), this is the non-saturated value and is therefore ideally applicable for a low current.

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p0358[0...n] Motor rotor leakage inductance / damping inductance, d axis / Mot L_r leak / LDd

VECTOR

Can be changed: C2(3), U, T
Access level: 3
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 15_1
Unit selection: p0349

Min	Max	Factory setting
0.00000 [mH]	1000.00000 [mH]	0.00000 [mH]

Description: Sets the rotor/secondary section leakage inductance of the motor.

For separately-excited synchronous motors: Sets the damping inductance in the rotor direction (d-axis).

This value is automatically calculated using the motor model (p0340 = 1, 2) or using the motor identification routine (p1910) (not for separately-excited synchronous motors).

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

The parameter is automatically preset for motors from the motor list (p0301).

VECTOR: If the rotor leakage inductance p0358 for induction motors is changed outside the commissioning phase (p0010 > 0), then the magnetizing inductance p0360 is automatically adapted to the new EMF r0337. After this, we recommend that the saturation characteristic measurement (refer to rotating measurement p1960) should be repeated.

p0359[0...n] Motor damping inductance, q axis / Mot L_damping_q

VECTOR

Can be changed: C2(3), U, T
Access level: 3
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 15_1
Unit selection: p0349

Min	Max	Factory setting
0.00000 [mH]	1000.00000 [mH]	0.00000 [mH]

Description: Sets the damping inductance of the separately-excited synchronous motor quadrature to the rotor direction (q axis).

This parameter value is automatically calculated using the motor model (p0340 = 1, 2).

p0360[0...n] Motor magnetizing inductance/magn. inductance, d axis saturated / Mot Lh/Lh d sat

VECTOR

Can be changed: C2(3), U, T
Access level: 3
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 15_1
Unit selection: p0349

Min	Max	Factory setting
0.00000 [mH]	10000.00000 [mH]	0.00000 [mH]

Description: Sets the magnetizing inductance of the motor.

For separately-excited synchronous motors: Sets the saturated magnetizing inductance in the rotor direction (d-axis).

This parameter value is automatically calculated using the motor model (p0340 = 1, 2) or using the motor identification routine (p1910) (not for separately-excited synchronous motors).

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

The parameter is automatically preset for motors from the motor list (p0301).

p0361[0...n] Motor magnetizing inductance, q axis, saturated / Mot Lh q_sat

VECTOR

Can be changed: C2(3), U, T
Access level: 3
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 15_1
Unit selection: p0349

Min	Max	Factory setting
0.00000 [mH]	10000.00000 [mH]	0.00000 [mH]

Description: Sets the saturated magnetizing inductance of the separately-excited synchronous motor quadrature to the rotor direction (q axis).

This parameter value is automatically calculated using the motor model (p0340 = 1, 2).

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p0362[0...n] Saturation characteristic flux 1 / Mot saturat.flux 1

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 10.0 [%]	**Max** 300.0 [%]	**Factory setting** 60.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the y coordinate (flux) for the 1st value pair of the characteristic.
Sets the first flux value of the saturation characteristic as a [%] referred to the rated motor flux (100%).

Dependency: The following applies for the flux values:
p0362 < p0363 < p0364 < p0365
Refer to: p0366

Note: For induction motors, p0362 = 100 % corresponds to the rated motor flux.
For separately-excited synchronous motors p0362 = 100% corresponds to an induced terminal voltage with the magnitude of the rated motor voltage (under no-load conditions at the synchronous speed).

p0363[0...n] Saturation characteristic flux 2 / Mot saturat.flux 2

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 10.0 [%]	**Max** 300.0 [%]	**Factory setting** 85.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the y coordinate (flux) for the 2nd value pair of the characteristic.
Sets the second flux value of the saturation characteristic as a [%] referred to the rated motor flux (100%).

Dependency: The following applies for the flux values:
p0362 < p0363 < p0364 < p0365
Refer to: p0367

Note: For induction motors, p0363 = 100 % corresponds to the rated motor flux.
For separately-excited synchronous motors p0363 = 100% corresponds to an induced terminal voltage with the magnitude of the rated motor voltage (under no-load conditions at the synchronous speed).

p0364[0...n] Saturation characteristic flux 3 / Mot saturat.flux 3

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 10.0 [%]	**Max** 300.0 [%]	**Factory setting** 115.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the y coordinate (flux) for the 3rd value pair of the characteristic.
Sets the third flux value of the saturation characteristic as a [%] referred to the rated motor flux (100%).

Dependency: The following applies for the flux values:
p0362 < p0363 < p0364 < p0365
Refer to: p0368

Note: For induction motors, p0364 = 100 % corresponds to the rated motor flux.
For separately-excited synchronous motors p0364 = 100% corresponds to an induced terminal voltage with the magnitude of the rated motor voltage (under no-load conditions at the synchronous speed).

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p0365[0...n] Saturation characteristic flux 4 / Mot saturat.flux 4

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	10.0 [%]	300.0 [%]	125.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the y coordinate (flux) for the 4th value pair of the characteristic.
Sets the fourth flux value of the saturation characteristic as a [%] referred to the rated motor flux (100%).

Dependency: The following applies for the flux values:
p0362 < p0363 < p0364 < p0365
Refer to: p0369

Note: For induction motors, p0365 = 100 % corresponds to the rated motor flux.
For separately-excited synchronous motors p0365 = 100% corresponds to an induced terminal voltage with the magnitude of the rated motor voltage (under no-load conditions at the synchronous speed).

p0366[0...n] Saturation characteristic I_mag 1 / Mot sat. I_mag 1

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	5.0 [%]	800.0 [%]	50.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the x coordinate (magnetizing current) for the 1st value pair of the characteristic.
Sets the first magnetizing current of the saturation characteristic as a [%] referred to the rated magnetizing current (r0331), for separately-excited synchronous motors referred to the no-load excitation current.

Dependency: The following applies for the magnetizing currents:
p0366 < p0367 < p0368 < p0369
Refer to: p0362

p0367[0...n] Saturation characteristic I_mag 2 / Mot sat. I_mag 2

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	5.0 [%]	800.0 [%]	75.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the x coordinate (magnetizing current) for the 2nd value pair of the characteristic.
Sets the second magnetizing current of the saturation characteristic as a [%] referred to the rated magnetizing current (r0331), for separately-excited synchronous motors referred to the no-load excitation current.

Dependency: The following applies for the magnetizing currents:
p0366 < p0367 < p0368 < p0369
Refer to: p0363

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p0368[0...n] Saturation characteristic I_mag 3 / Mot sat. I_mag 3

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 5.0 [%]	**Max** 800.0 [%]	**Factory setting** 150.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the x coordinate (magnetizing current) for the 3rd value pair of the characteristic.
Sets the third magnetizing current of the saturation characteristic as a [%] referred to the rated magnetizing current (r0331), for separately-excited synchronous motors referred to the no-load excitation current.

Dependency: The following applies for the magnetizing currents:
p0366 < p0367 < p0368 < p0369
Refer to: p0364

p0369[0...n] Saturation characteristic I_mag 4 / Mot sat. I_mag 4

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 5.0 [%]	**Max** 800.0 [%]	**Factory setting** 210.0 [%]

Description: The saturation characteristics (flux as a function of the magnetizing current) is defined using 4 points.
This parameter specifies the x coordinate (magnetizing current) for the 4th value pair of the characteristic.
Sets the fourth magnetizing current of the saturation characteristic as a [%] referred to the rated magnetizing current (r0331), for separately-excited synchronous motors referred to the no-load excitation current.

Dependency: The following applies for the magnetizing currents:
p0366 < p0367 < p0368 < p0369
Refer to: p0365

r0370[0...n] Motor stator resistance, cold / Mot R_stator cold

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the motor stator resistance at an ambient temperature p0625. The value does not include the cable resistance.

Dependency: Refer to: p0625

r0372[0...n] Cable resistance / Mot R_cable

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the cable resistance between the Motor Module and motor.

Dependency: Refer to: p0352

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r0373[0...n] Motor rated stator resistance / Mot R_stator rated

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 16_1
Unit selection: p0349

Min	Max	Factory setting
- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the rated motor stator resistance at rated temperature (sum from p0625 and p0627).
Dependency: Refer to: p0627
Note: The parameter is not used for synchronous motors (p0300 = 2xx).

r0374[0...n] Motor rotor resistance cold / damping resistance d axis / Mot R_r cold / RDd

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 16_1
Unit selection: p0349

Min	Max	Factory setting
- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the rotor/secondary section resistance of the motor for the ambient temperature p0625.
For separately-excited synchronous motors: Displays the damping resistance in the rotor direction (d-axis).
Dependency: Refer to: p0625
Note: The parameter is not used for synchronous motors (p0300 = 2xx).

r0375[0...n] Motor damping resistance, q axis / Mot R_damping_q

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 16_1
Unit selection: p0349

Min	Max	Factory setting
- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the damping resistance of the separately-excited synchronous motor quadrature to the rotor direction (q axis).

r0376[0...n] Rated motor rotor resistance / Mot R_rotor rated

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: 16_1
Unit selection: p0349

Min	Max	Factory setting
- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the rated (nominal) rotor/secondary section resistance of the motor at the rated temperature (sum of p0625 and p0628).
Dependency: Refer to: p0628
Note: The parameter is not used for synchronous motors (p0300 = 2xx).

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r0377[0...n] Motor leakage inductance, total / Mot L_leak total

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** 6640
P-Group: Motor **Units group:** 15_1 **Unit selection:** p0349

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Induction motor, separately-excited synchronous motor:
Displays the stator leakage inductance of the motor including the series inductance (p0353) for servo drives and the motor reactor (p0233) for vector drives.
Synchronous motor:
Displays the stator quadrature axis inductance including the series inductance (p0353) for servo drives and the motor reactor (p0233) for vector drives.

r0378[0...n] Motor stator inductance, d axis / Mot L_stator_d

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -
P-Group: Motor **Units group:** 15_1 **Unit selection:** p0349

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the stator longitudinal inductance of the synchronous motor including the series inductance (p0353) and the motor reactor (p0233).

Note: The parameter is not used for separately-excited synchronous motors (p0300 = 5).

r0380[0...n] Motor damping inductance, d axis / Mot L_damping_d

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -
P-Group: Motor **Units group:** 15_1 **Unit selection:** p0349

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the damping inductance of the separately-excited synchronous motor in the rotor direction (d-axis).

r0381[0...n] Motor damping inductance, q axis / Mot L_damping_q

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -
P-Group: Motor **Units group:** 15_1 **Unit selection:** p0349

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the damping inductance of a separately-excited synchronous motor quadrature to the rotor direction (q axis).

r0382[0...n] Motor magnetizing inductance transformed / Lh d axis saturated / Mot Lh t. / Lh d_s

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** MDS, p0130 **Function diagram:** -
P-Group: Motor **Units group:** 15_1 **Unit selection:** p0349

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the magnetizing inductance of the motor.
For separately-excited synchronous motors: Displays the saturated magnetizing inductance in the rotor direction (d-axis).

Note: The parameter is not used for synchronous motors (p0300 = 2xx).

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r0383[0...n] Motor magnetizing inductance q axis, saturated / Mot Lh q_sat

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** 15_1	**Unit selection:** p0349
	Min - [mH]	**Max** - [mH]	**Factory setting** - [mH]

Description: Displays the saturated magnetizing inductance of a separately-excited synchronous motor quadrature to the rotor direction (q axis).

r0384[0...n] Motor rotor time constant / damping time constant d axis / Mot T_rot / T_Dd

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 6722
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min - [ms]	**Max** - [ms]	**Factory setting** - [ms]

Description: Displays the rotor time constant.

For separately-excited synchronous motors: Displays the damping time constant in the rotor direction (d-axis).

Note: The parameter is not used for synchronous motors.

The value is calculated from the sum of the inductances on the rotor side (p0358, p0360) divided by the rotor/damping resistance (p0354). The temperature adaptation of the rotor resistance for induction motors is not taken into account.

r0385[0...n] Motor damping time constant, q axis / Mot T_Dq

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min - [ms]	**Max** - [ms]	**Factory setting** - [ms]

Description: Displays the damping time constant of a separately-excited synchronous motor quadrature to the rotor direction (q axis).

Note: The value is calculated from the sum of the inductances on the damping side (p0359, p0361) divided by the damping resistance (p0355).

r0386[0...n] Motor stator leakage time constant / Mot T_stator leak

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min - [ms]	**Max** - [ms]	**Factory setting** - [ms]

Description: Displays the stator leakage time constant.

Note: The value is calculated from the sum of all leakage inductances (p0233*, p0353**, p0356, p0358) divided by the sum of all motor resistances (p0350, p0352*, p0354).

The temperature adaptation of the resistances is not taken into account.

* only applies for VECTOR (r0107).

** only applies for SERVO (r0107).

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r0387[0...n] Motor stator leakage time constant, q axis / Mot T_Sleak / T_Sq

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min - [ms]	**Max** - [ms]	**Factory setting** - [ms]

Description: Displays the stator leakage time constant quadrature to the rotor direction (q axis).

Note: The value is calculated from the sum of all leakage inductances (p0233, p0356, p0359) divided by the sum of all motor resistances (p0350, p0352, p0355).

The temperature adaptation of the resistances is not taken into account.

p0389[0...n] Motor no-load excitation current / Mot I_exc_no-load

VECTOR	**Can be changed:** C2(1, 3)		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 6727
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.00 [A]	**Max** 10000.00 [A]	**Factory setting** 0.00 [A]

Description: Sets the excitation no-load current I_F0

p0390[0...n] Motor rated excitation current / Mot I_exc_rated

VECTOR	**Can be changed:** C2(1, 3)		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 6727
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.00 [A]	**Max** 10000.00 [A]	**Factory setting** 0.00 [A]

Description: Sets the excitation rated current I_F.

r0395[0...n] Stator resistance, actual / R_stator active

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 6300, 6730, 6731
	P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the actual stator resistance (phase value).

The parameter is influenced by the temperature model and includes the temperature-independent cable resistance.

r0396[0...n] Rotor resistance, actual / R_rotor active

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 6730
	P-Group: Motor	**Units group:** 16_1	**Unit selection:** p0349
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the actual rotor/secondary section resistance (phase value).

The parameter is influenced by the temperature model.

Note: This parameter is not used for synchronous motors (p0300 = 2xx).

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p0400[0...n] Enc type selection / Enc type selection

VECTOR	**Can be changed:** C2(1, 4)		**Access level:** 1
	Data type: Integer16	**Dynamic index:** EDS, p0140	**Function diagram:** 1580, 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	10000	0

Description: Selects the encoder from the list of encoder types supported.

Values:

0: No encoder
1001: Resolver 1 speed
1002: Resolver 2 speed
1003: Resolver 3 speed
1004: Resolver 4 speed
2001: 2048, 1 Vpp, A/B C/D R
2002: 2048, 1 Vpp, A/B R
2003: 256, 1 Vpp, A/B R
2004: 400, 1 Vpp, A/B R
2005: 512, 1 Vpp, A/B R
2010: 18000, 1 Vpp, A/B R distance-coded
2050: Encoder with EnDat interface identified
2051: 2048, 1 Vpp, A/B, EnDat, Multiturn 4096
2052: 32, 1 Vpp, A/B, EnDat, Multiturn 4096
2053: 512, 1 Vpp, A/B, EnDat, Multiturn 4096
2054: 16, 1 Vpp, A/B, EnDat, Multiturn 4096
2055: 2048, 1 Vpp, A/B, EnDat, Singleturn
2081: 2048, 1 Vpp, A/B, SSI, Singleturn
2082: 2048, 1 Vpp, A/B, SSI, Multiturn 4096
2110: 4000 nm, 1 Vpp, A/B R distance-coded
2111: 20000 nm, 1 Vpp, A/B R distance-coded
2112: 40000 nm, 1 Vpp, A/B R distance-coded
2151: 16000 nm, 1 Vpp, A/B, EnDat, resolution 100 nm
3001: 1024 HTL A/B R
3002: 1024 TTL A/B R
3003: 2048 HTL A/B R
3005: 1024 HTL A/B
3006: 1024 TTL A/B
3007: 2048 HTL A/B
3008: 2048 TTL A/B
3009: 1024 HTL A/B unipolar
3011: 2048 HTL A/B unipolar
3020: 2048 TTL A/B R, with sense
3081: SSI, Singleturn, 24 V
3082: SSI, Multiturn 4096, 24 V
3090: 4096, HTL, A/B, SSI, Singleturn
9999: User-defined
10000: Identify encoder

Notice: A list of motor/encoder codes can be found in the following literature:

SINAMICS S120 Commissioning Manual

Note: The connected encoder can be identified by p0400 = 10000. This means that the encoder must support this and is possible in the following cases: Motor with DRIVE-CLiQ, encoder with EnDat interface.

If an identification is not possible, then p0400 is set to 0.

The encoder data (e.g. pulse number p0408) can only be changed when p0400 = 9999.

Using p0400 = 20000, the encoder type can be selected from the list of OEM encoders using p0401.

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p0401[0...n] Encoder type, OEM selection / Enc type OEM sel

VECTOR

Can be changed: C2(1, 4) **Access level:** 2

Data type: Integer16 **Dynamic index:** EDS, p0140 **Function diagram:** 1580, 4704

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	32767	0

Description: Selects the encoder from the list of encoder types that the OEM supports.

Note: The connected encoder can be identified by p0400 = 10000. This means that the encoder must support this and is possible in the following cases: Motor with DRIVE-CLiQ, encoder with EnDat interface.

If an identification is not possible, then p0400 is set to 0.

The encoder data (e.g. pulse number p0408) can only be changed when p0400 = 9999.

Using p0400 = 20000, the encoder type can be selected from the list of OEM encoders using p0401.

p0402[0...n] Gearbox type selection / Gearbox type

VECTOR

Can be changed: C2(1, 4) **Access level:** 1

Data type: Integer16 **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1	10000	1

Description: Selects the gearbox from the list of gearbox types that are actually supported.

Values:
1: 1:1 not inverted
2: 3.5:1 inverted
3: 4.25:1 inverted
9999: User-defined
10000: Identify gearbox

Note: The gearbox used can be identified by p0402 = 10000. This means that the encoder must support this and is possible in the following cases: Motor with DRIVE-CLiQ.

If an identification is not possible, then p0402 is set to 1.

p0404[0...n] Encoder configuration effective / Enc_config eff

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** 4704

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Settings for the basic encoder properties.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Linear encoder	Yes	No	-
01	Abs value encoder	Yes	No	-
02	Multiturn encoder	Yes	No	-
03	Track A/B sq-wave	Yes	No	-
04	Track A/B sinus	Yes	No	-
05	Track C/D	Yes	No	-
06	Hall sensor	Yes	No	-
08	EnDat encoder	Yes	No	-

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09	SSI encoder	Yes	No	-
12	Equidistant zero mark	Yes	No	-
13	Irregular zero mark	Yes	No	-
14	Distance-coded zero mark	Yes	No	-
15	Commutation with zero mark	Yes	No	-
16	Acceleration	Yes	No	-
20	Voltage level 5 V	Yes	No	-
21	Voltage level 24 V	Yes	No	-
22	Remote sense (only SMC30)	Yes	No	-
23	Resolver excit.	Yes	No	-

Note: ZM: Zero mark

SMC: Sensor Module Cabinet

If a technique to determine the commutation information/data has not been selected (e.g. track C/D, Hall sensor), and the encoder pulse number is an integer multiple of the pole number, then the following applies:

The track A/B is adjusted to match the magnetic position of the motor.

Re bit 1, 2 (absolute encoder, multi-turn encoder):

These bits can only be selected for EnDat or SSI encoders.

Re bit 12 (equidistant zero mark):

The zero marks occur at regular intervals (e.g. rotary encoder with 1 zero mark per revolution). The bit activates the monitoring of the zero mark clearance (p0425).

Re bit 13 (irregular zero mark):

The zero marks occur at irregular intervals (e.g. a linear scale with only 1 zero mark in the traversing range). The zero mark clearance is not monitored.

Re bit 14 (clearance-coded zero mark):

The distance (clearance) between two or several consecutive zero marks allows the absolute position to be calculated.

Re bit 15 (commutation with zero mark):

For clearance-coded zero marks, the following applies:

The phase sequence of the Hall signal (if available) must be the same as the phase sequence of the encoder.

The fine synchronization is only started after two zero marks have been passed.

p0405[0...n] Square-wave encoder track A/B / Sq-wave enc A/B

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** 4704

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	1111 bin

Description: Settings for the track A/B of a square-wave encoder. For square-wave encoders, p0404.3 must also be 1.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Signal	Bipolar	Unipolar	-
01	Level	TTL	HTL	-
02	Track monitoring	A/B <> -A/B	None	-
03	Zero pulse	Same as A/B track	24 V unipolar	-

p0407[0...n] Linear encoder grid division / Enc grid div

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** 4010, 4704

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0 [nm]	250000000 [nm]	16000 [nm]

Description: Sets the grid division for a linear encoder.

Note: The lowest permissible value is 250 nm.

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p0408[0...n] Rotary encoder pulse No. / Rot enc pulse No.

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** 4010, 4704

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	16777215	2048

Description: Sets the number of pulses for a rotary encoder.

Note: The number of pole pairs for a resolver is entered here.

The smallest permissible value is 1 pulse.

p0410[0...n] Encoder inversion actual value / Enc inv act value

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Setting to invert actual values.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Invert speed actual value	Yes	No	4710, 4715
01	Invert position actual value	Yes	No	4704

Note: The inversion influences the following parameters:

Bit 00: r0061, r0063 (exception: sensorless control), r0094

Bit 01: r0482, r0483

p0411[0...n] Measuring gearbox, configuration / Config

VECTOR

Can be changed: C2(4) **Access level:** 1

Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the configuration for position tracking of a measuring gearbox.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Measuring gearbox, activate position tracking	Yes	No	-
02	Measuring gearbox, reset position	Yes	No	-

Note: For the following events, the non-volatile, saved position values are automatically reset:

- when an encoder replacement has been identified.
- when changing the configuration of the Encoder Data Set (EDS).

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p0413[0...n] Measuring gearbox, position tracking tolerance window / Pos track window

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 4294967295	**Factory setting** 0

Description: Sets a tolerance window for position tracking.
After the system is powered-up, the difference between the saved position and the actual position is determined, and depending on this, the following is initiated:
Difference within the tolerance window --> The position is reproduced as a result of the encoder actual value.
Difference outside the tolerance window --> An appropriate message is output.

Dependency: Refer to: F31501, F32501, F33501

Caution: Rotation, e.g. through a complete encoder range is not detected.

Note: For p0411.0 = 1, the value is automatically pre-assigned half the encoder range.
Example: Half the encoder range = (p0408 * p0421) / 2

p0418[0...n] Fine resolution Gx_XIST1 (in bits) / Enc fine Gx_XIST1

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** EDS, p0140	**Function diagram:** 4010, 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 2	**Max** 18	**Factory setting** 11

Description: Sets the fine resolution in bits of the incremental position actual values.

Note: The parameter applies for the following process data:
- Gx_XIST1
- Gx_XIST2 for reference mark or flying measurement

p0419[0...n] Fine resolution absolute value Gx_XIST2 (in bits) / Enc fine Gx_XIST2

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** EDS, p0140	**Function diagram:** 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 2	**Max** 18	**Factory setting** 9

Description: Sets the fine resolution in bits of the absolute position actual values.

Note: This parameter applies to process data Gx_XIST2 when reading the absolute value.

p0420[0...n] Encoder connection / Encoder connection

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Selecting the encoder connection.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	SUB-D	Yes	No	-
01	Terminal	Yes	No	-

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p0421[0...n] Absolute encoder rotary multi-turn resolution / Enc abs multiturn

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** EDS, p0140	**Function diagram:** 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 4096

Description: Sets the number of rotations that can be resolved for a rotary absolute encoder.

p0422[0...n] Absolute encoder linear measuring step resolution / Enc abs meas step

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0 [nm]	**Max** 4294967295 [nm]	**Factory setting** 100 [nm]

Description: Sets the resolution of the absolute position for a linear absolute encoder.

Note: The serial protocol of an absolute encoder provides the position with a certain resolution , e.g. 100 nm. This value must be entered here.

p0423[0...n] Absolute encoder rotary single-turn resolution / Enc abs singleturn

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1073741823	**Factory setting** 8192

Description: Sets the number of measuring steps per revolution for a rotary absolute encoder. The resolution refers to the absolute position.

p0424[0...n] Encoder, linear zero mark distance / Enc lin ZM_dist

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0 [mm]	**Max** 65535 [mm]	**Factory setting** 20 [mm]

Description: Sets the distance between two zero marks for a linear encoder. This information is used for zero mark monitoring.

Note: For distance-coded zero marks, this means the basic distance.

p0425[0...n] Encoder, rotary zero mark distance / Enc rot dist ZM

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** 4704, 8570
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 16777215	**Factory setting** 2048

Description: Sets the distance in pulses between two zero marks for a rotary encoder. This information is used for zero mark monitoring.

Note: For distance-coded zero marks, this means the basic distance.

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p0427[0...n] Encoder SSI baud rate / Enc SSI baud rate

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Floating Point **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0 [kHz]	65535 [kHz]	100 [kHz]

Description: Sets the baud rate for an SSI encoder.
Note: SSI: Synchronous Serial Interface

p0428[0...n] Encoder SSI monoflop time / Enc SSI t_monoflop

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0 [µs]	65535 [µs]	30 [µs]

Description: Sets the minimum delay time between two data transfers of the absolute value for an SSI encoder.

p0429[0...n] Encoder SSI configuration / Enc SSI config

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the configuration for an SSI encoder.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Transfer code	Binary code	Gray code	-
02	Transfer absolute value twice	Yes	No	-
06	Data line during the monoflop time	High level	Low level	-

Note: Re bit 06:
The quiescent signal level of the data line corresponds to the inverted, set level.

p0430[0...n] Sensor Module configuration / SM config

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	1110 0000 0000 1000 0000 0000 0000 0000 bin

Description: Sets the configuration of the Sensor Module.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
17	Burst oversampling	Yes	No	-
19	Safety position actual value sensing	Yes	No	-
20	Speed calculation mode (only SMC30)	Incremental diff	Flank time meas	-
21	Zero mark tolerance	Yes	No	-
29	Phase correction	Yes	No	-
30	Amplitude correction	Yes	No	-
31	Offset correction	Yes	No	-

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p0431[0...n] Angular commutation offset / Ang_com offset

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Floating Point **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-180.00 [°]	180.00 [°]	0.00 [°]

Description: Sets the angular commutation offset.

Dependency: The value is taken into account in r0094.

Refer to: r0094, r1778

Notice: The angular commutation offset cannot be generally taken from other drive systems. As a minimum - the sign of the offset determined for SIMODRIVE 611 digital and SIMODRIVE 611 universal must be reversed for SINAMICS (p0431 (SINAMICS) = -p1016 (SIMODRIVE)).

Note: For p0404.5 = 1 (track C/D) the following applies:

The angular offset in p0431 acts on track A/B, the zero mark on track C/D.

For p0404.6 = 1 (Hall sensor) the following applies:

The angular offset in p0431 acts on track A/B and the zero mark.

p0432[0...n] Gearbox factor, encoder revolutions / Grbx_fact enc_rev

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Integer16 **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1	10000	1

Description: Sets the encoder revolutions for the gearbox factor of the encoder evaluation.

The gearbox factor specifies the ratio between the encoder shaft and motor shaft (for motor encoders) or between the encoder shaft and the load.

Dependency: Refer to: p0402, p0410, p0433

Note: Negative gearbox factors should be implemented with p0410.

p0433[0...n] Gearbox factor, motor/load revolutions / Grbx_fact mot_rev

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Integer16 **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1	10000	1

Description: Sets the motor and load revolutions for the gearbox factor of the encoder evaluation.

The gearbox factor specifies the ratio between the encoder shaft and motor shaft (for motor encoders) or between the encoder shaft and the load.

Dependency: Refer to: p0402, p0410, p0432

Note: Negative gearbox factors should be implemented with p0410.

p0434[0...n] Encoder SSI error bit / Enc SSI error bit

VECTOR

Can be changed: C2(4) **Access level:** 3

Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the position and level of the error bit in the SSI protocol.

Notice: The bit may only be positioned before (p0446) or after (p0448) the absolute value in the SSI protocol.

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Note: Value = dcba
ba: Position of the error bit in the protocol (0 ... 63).
c: Level (0: Low level, 1: High level).
d: State of the evaluation (0: Off, 1: On).
Example:
p0434 = 1013
--> The evaluation is switched-in and the error bit is at position 13 with a low level.
p0434 = 1113
--> The evaluation is switched-in and the error bit is at position 13 with a high level.

p0435[0...n] Encoder SSI alarm bit / Enc SSI alarm bit

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the position and level of the alarm bit in the SSI protocol.
Notice: The bit may only be positioned before (p0446) or after (p0448) the absolute value in the SSI protocol.
Note: Value = dcba
ba: Position of the alarm bit in protocol (0 ... 63).
c: Level (0: Low level, 1: High level).
d: State of the evaluation (0: Off, 1: On).
Example:
p0435 = 1014
--> The evaluation is switched-in and the alarm bit is at position 14 with a low level.
p0435 = 1114
--> The evaluation is switched-in and the alarm bit is at position 14 with a high level.

p0436[0...n] Encoder SSI parity bit / Enc SSI parity bit

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the position and parity of the parity bit in the SSI protocol.
Notice: The bit may only be positioned before (p0446) or after (p0448) the absolute value in the SSI protocol.
Note: Value = dcba
ba: Position of the parity bit in the protocol (0 ... 63).
c: Parity (0: even, 1: uneven).
d: State of the evaluation (0: Off, 1: On).
Example:
p0436 = 1015
--> The evaluation is switched-in and the parity bit is at position 15 with even parity.
p0436 = 1115
--> The evaluation is switched-in and the parity bit is at position 15 with uneven parity.

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p0440[0...n] Copy encoder serial number / Copy enc ser_no

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Integer16 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	0001 hex	0000 hex

Description: Copies the actual serial number of the encoder belong to this encoder data set to p0441 ... p0445.
Example:
For p0440[0] = 1, the serial number of the encoder belonging EDS0 is copied to p0441[0] ... p0445[0].

Values:
0: No action
1: Transfer serial number

Dependency: Refer to: p0441, p0442, p0443, p0444, p0445, r0460, r0461, r0462, r0463, r0464, p1990

Note: For encoders with serial number, encoder replacement is monitored in order to request angular commutation calibration (adjustment) for motor encoders and absolute calibration for direct measuring systems with absolute value data. The serial number, which from then onwards is used for monitoring purposes, can be transferred using p0440.
In the following cases, copying is automatically started in the following cases:
1.) When commissioning 1FT6, 1FK6, 1FK7 motors.
2.) When writing into p0431.
3.) For p1990 = 1.
p0440 is automatically set to 0 when the copying has been completed.
In order to permanently accept the copied values, it is necessary to save in a non-volatile fashion (p0977).

p0441[0...n] Encoder commissioning serial number part 1 / Enc comm ser_no 1

VECTOR

Can be changed: C2(4) **Access level:** 4
Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Serial number part 1 of the encoder for the commissioning.

Dependency: Refer to: p0440, p0442, p0443, p0444, p0445, r0460, r0461, r0462, r0463, r0464

Note: A value of zero is displayed if an encoder is not present.

p0442[0...n] Encoder commissioning serial number part 2 / Enc comm ser_no 2

VECTOR

Can be changed: C2(4) **Access level:** 4
Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Serial number part 2 of the encoder for the commissioning.

Dependency: Refer to: p0440, p0441, p0443, p0444, p0445, r0460, r0461, r0462, r0463, r0464

Note: A value of zero is displayed if an encoder is not present.

p0443[0...n] Encoder commissioning serial number part 3 / Enc comm ser_no 3

VECTOR

Can be changed: C2(4) **Access level:** 4
Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Serial number part 3 of the encoder for the commissioning.

Dependency: Refer to: p0440, p0441, p0442, p0444, p0445, r0460, r0461, r0462, r0463, r0464

Note: A value of zero is displayed if an encoder is not present.

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p0444[0...n] Encoder commissioning serial number part 4 / Enc comm ser_no 4

VECTOR	**Can be changed:** C2(4)		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0000 hex	**Max** FFFF FFFF hex	**Factory setting** 0000 hex

Description: Serial number part 4 of the encoder for the commissioning.
Dependency: Refer to: p0440, p0441, p0442, p0443, p0445, r0460, r0461, r0462, r0463, r0464
Note: A value of zero is displayed if an encoder is not present.

p0445[0...n] Encoder commissioning serial number part 5 / Enc comm ser_no 5

VECTOR	**Can be changed:** C2(4)		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0000 hex	**Max** FFFF FFFF hex	**Factory setting** 0000 hex

Description: Serial number part 5 of the encoder for the commissioning.
Dependency: Refer to: p0440, p0441, p0442, p0443, p0444, r0460, r0461, r0462, r0463, r0464
Note: A value of zero is displayed if an encoder is not present.

p0446[0...n] Encoder SSI number of bits before the absolute value / Enc SSI bit before

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 0

Description: Sets the number of bits before the absolute value in the SSI protocol.
Note: For example, error bit, alarm bit or parity bit can be positioned at these bits.

p0447[0...n] Encoder SSI number of bits absolute value / Enc SSI bit val

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 25

Description: Sets the number of bits for the absolute value in the SSI protocol.

p0448[0...n] Encoder SSI number of bits after the absolute value / Enc SSI bit after

VECTOR	**Can be changed:** C2(4)		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** EDS, p0140	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 0

Description: Sets the number of bits after the absolute value in the SSI protocol.
Note: For example, error bit, alarm bit or parity bit can be positioned at these bits.

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p0449[0...n] Encoder SSI number of bits, filler bits / Enc SSI fill bits

VECTOR

Can be changed: C2(4) **Access level:** 3
Data type: Unsigned16 **Dynamic index:** EDS, p0140 **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	65535	1

Description: Sets the number of filler bits for double absolute value transfer in the SSI protocol.
Dependency: Refer to: p0429
Note: This parameter is only of significance for p0429.2 = 1.

r0451[0...2] Commutation angle factor / Enc commut_factor

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 4710
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the relationship between the electrical and mechanical pole positions.
Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3
Note: A value of zero is displayed if an encoder is not present.

r0455[0...2] Encoder configuration recognized / Enc config act

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the detected encoder configuration.
In this case, the encoder must automatically support the function (e.g. encoder with EnDat interface).
Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Linear encoder	Yes	No	-
01	Abs value encoder	Yes	No	-
02	Multiturn encoder	Yes	No	-
03	Track A/B sq-wave	Yes	No	-
04	Track A/B sinus	Yes	No	-
05	Track C/D	Yes	No	-
06	Hall sensor	Yes	No	-
08	EnDat encoder	Yes	No	-
09	SSI encoder	Yes	No	-
12	Equidistant zero mark	Yes	No	-
13	Irregular zero mark	Yes	No	-
14	Distance-coded zero mark	Yes	No	-
15	Commutation with zero mark	Yes	No	-
16	Acceleration	Yes	No	-
20	Voltage level 5 V	Yes	No	-
21	Voltage level 24 V	Yes	No	-
22	Remote sense (only SMC30)	Yes	No	-
23	Resolver excit.	Yes	No	-

Dependency: Refer to: p0404

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Note: ZM: Zero mark
This parameter is only used for diagnostics.
A value of zero is displayed if an encoder is not present.

r0456[0...2] Encoder configuration supported / Enc config supp

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Contains the encoder configuration supported by the Sensor Module.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Linear encoder	Yes	No	-
01	Abs value encoder	Yes	No	-
02	Multiturn encoder	Yes	No	-
03	Track A/B sq-wave	Yes	No	-
04	Track A/B sinus	Yes	No	-
05	Track C/D	Yes	No	-
06	Hall sensor	Yes	No	-
08	EnDat encoder	Yes	No	-
09	SSI encoder	Yes	No	-
12	Equidistant zero mark	Yes	No	-
13	Irregular zero mark	Yes	No	-
14	Distance-coded zero mark	Yes	No	-
15	Commutation with zero mark	Yes	No	-
16	Acceleration	Yes	No	-
20	Voltage level 5 V	Yes	No	-
21	Voltage level 24 V	Yes	No	-
22	Remote sense (only SMC30)	Yes	No	-
23	Resolver excit.	Yes	No	-

Dependency: Refer to: p0404

Note: ZM: Zero mark
This parameter is only used for diagnostics.
A value of zero is displayed if an encoder is not present.

r0458[0...2] Sensor Module properties / SM properties

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 4704
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the Sensor Module configuration.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Encoder data available	Yes	No	-
	01	Motor data available	Yes	No	-
	02	KTY84 connection available	Yes	No	-
	03	PTC connection available	Yes	No	-
	04	Module temperature available	Yes	No	-
	05	Absolute encoder p0408/p0421, no power of 2	Yes	No	-
	06	Encoder module permits parking/unparking	Yes	No	-
	07	Hall sensor can be combined with actual value inversion	Yes	No	-
	08	External temperature evaluation being used	Yes	No	-
	09	Encoder fault and its associated information available	Yes	No	-
	10	Speed diagnostics in the sensor module	Yes	No	-
	16	Pole position identification	Yes	No	-
	17	Burst oversampling	Yes	No	-
	19	Safety position actual value sensing	Yes	No	-
	20	Extended speed calculation being used (only SMC30)	Yes	No	-
	21	Zero mark tolerance	Yes	No	-
	29	Phase correction	Yes	No	-
	30	Amplitude correction	Yes	No	-
	31	Offset correction	Yes	No	-

Dependency: Refer to: p0600, p0601

Note: A value of zero is displayed if an encoder is not present.

r0460[0...2] Encoder serial number part 1 / Enc ser_no 1

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the actual serial number part 1 of the appropriate encoder.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0441, p0442, p0443, p0444, p0445, r0461, r0462, r0463, r0464

r0461[0...2] Encoder serial number part 2 / Enc ser_no 2

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the actual serial number part 2 of the appropriate encoder.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0441, p0442, p0443, p0444, p0445, r0460, r0462, r0463, r0464

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r0462[0...2] Encoder serial number part 3 / Enc ser_no 3

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual serial number part 3 of the appropriate encoder.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0441, p0442, p0443, p0444, p0445, r0460, r0461, r0463, r0464

r0463[0...2] Encoder serial number part 4 / Enc ser_no 4

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual serial number part 4 of the appropriate encoder.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0441, p0442, p0443, p0444, p0445, r0460, r0461, r0462, r0464

r0464[0...2] Encoder serial number part 5 / Enc ser_no 5

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual serial number part 5 of the appropriate encoder.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0441, p0442, p0443, p0444, p0445, r0460, r0461, r0462, r0463

r0479[0...2] CO: Diagnostics encoder position actual value Gn_XIST1 / Diag Gn_XIST1

VECTOR

Can be changed: -
Access level: 3
Data type: Integer32
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the encoder actual position value Gn_XIST1 according to PROFIdrive for diagnostics. In contrast to p0482, the value is updated in each DRIVE-CLiQ basic clock cycle and displayed with sign.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

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p0480[0...2] CI: Signal source for encoder control word Gn_STW / Enc S_src Gn_STW

VECTOR

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1580, 4720

P-Group: Encoder | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the encoder control word Gn_STW according to PROFIdrive.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

r0481[0...2] CO: Encoder status word Gn_ZSW / Enc Gn_ZSW

VECTOR

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 4010, 4704, 4730

P-Group: Encoder | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the encoder status word Gn_ZSW according to PROFIdrive.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Function 1 active	Yes	No	-
01	Function 2 active	Yes	No	-
02	Function 3 active	Yes	No	-
03	Function 4 active	Yes	No	-
04	Value 1	Displayed in r0483	Does not exist	-
05	Value 2	Displayed in r0483	Does not exist	-
06	Value 3	Displayed in r0483	Does not exist	-
07	Value 4	Displayed in r0483	Does not exist	-
08	Measuring probe 1 deflected	Yes	No	-
09	Measuring probe 2 deflected	Yes	No	-
11	Encoder fault acknowledge active	Yes	No	-
13	Absolute value cyclically	Displayed in r0483	No	-
14	Parking encoder active	Yes	No	-
15	Encoder fault	Displayed in r0483	None	-

r0482[0...2] CO: Encoder actual position value Gn_XACT1 / Enc Gn_XIST1

VECTOR

Can be changed: - | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1580, 2450, 3090, 4010, 4704, 4740

P-Group: Encoder | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the encoder actual position value Gn_XIST1 according to PROFIdrive.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Note: This value is reset when de-selecting the function "parking axis".

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r0483[0...2] CO: Encoder actual position value Gn_XACT2 / Enc Gn_XIST2

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1580, 2450, 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the encoder actual position value Gn_XIST2 according to PROFIdrive.

Recommendation: Possible causes of the error codes:
Error code 4097 and 4098: Defective Control Unit hardware.
Error codes 4099 and 4100: Too many measuring pulses have occurred.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Note: If Gx_ZSW.14 = 0 and GxZSW.15 = 1 (r0481), then an error code with the following significance is located in Gx_XIST2 (r0483):
1: Encoder fault
2: Reserved
3: Reserved
4: Abort, reference mark search
5: Abort, retrieve reference value
6: Abort, flying measurement
7: Abort, retrieve measured value
8: Abort, absolute value transfer
3841: Function not supported
4097: Abort, reference mark search due to an initialization error
4098: Abort, flying measurement due to an initialization error
4099: Abort, reference mark search due to a measuring error
4100: Abort, flying measurement due to a measuring error

r0484[0...2] CO: Redundant coarse encoder position + CRC Gn_XIST1 / Enc red pos+CRC

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the redundant coarse encoder position including CRC (Cyclic Redundancy Check).
Upper 16 bits:
CRC over the redundant coarse encoder position.
Lower 16 bits:
Redundant coarse encoder position. The count direction is opposite to r0482 (encoder position actual value Gn_XIST1). The value contains 2 bit fine resolution.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: The values are valid when the safety position actual value sensing is activated (p0430.19 = 1).
Refer to: p0430

Note: This absolute value does not change, contrary to r0482, when de-selecting the function "parking axis".

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r0485[0...2] CO: Measuring gearbox, encoder raw value incremental / Enc raw val incr

VECTOR

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the raw value of the incremental encoder actual value before the measuring gearbox.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

r0486[0...2] CO: Measuring gearbox, encoder raw value absolute / Enc raw val abs

VECTOR

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the raw value of the absolute encoder actual value before the measuring gearbox.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

r0487[0...2] Diagnostic encoder control word Gn_STW / Enc Gn_STW

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 1580, 4704, 4720, 4740
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the encoder control word Gn_STW according to PROFIdrive for diagnostics.

Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Request function 1	Yes	No	-
01	Request function 2	Yes	No	-
02	Request function 3	Yes	No	-
03	Request function 4	Yes	No	-
04	Request command bit 0	Yes	No	-
05	Request command bit 1	Yes	No	-
06	Request command bit 2	Yes	No	-
07	Mode flying measurement / search for reference	Flying measurement	Reference marks	-
13	Request absolute value cyclic	Yes	No	-
14	Request parking encoder	Yes	No	-
15	Request acknowledge encoder fault	Yes	No	-

Note: The signal source for the encoder control word is set with p0480.

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p0488[0...2] Measuring probe 1 input terminal / Meas probe 1 input

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** 4740
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	6	0

Description: Sets the input terminal to connect probe 1.

Values:
0: No meas probe
1: DI/DO 9 (X122.8/X121.8)
2: DI/DO 10 (X122.10/X121.10)
3: DI/DO 11 (X122.11/X121.11)
4: DI/DO 13 (X132.8)
5: DI/DO 14 (X132.10)
6: DI/DO 15 (X132.11)

Index:
[0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0489, p0728

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI/DO: Bidirectional Digital Input/Output
The terminal must be set as input (p0728).
Refer to the encoder interface for PROFIdrive.

p0489[0...2] Measuring probe 2 input terminal / Meas probe 2 input

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** 4740
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	6	0

Description: Sets the input terminal to connect probe 2.

Values:
0: No meas probe
1: DI/DO 9 (X122.8/X121.8)
2: DI/DO 10 (X122.10/X121.10)
3: DI/DO 11 (X122.11/X121.11)
4: DI/DO 13 (X132.8)
5: DI/DO 14 (X132.10)
6: DI/DO 15 (X132.11)

Index:
[0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Dependency: Refer to: p0488, p0728

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI/DO: Bidirectional Digital Input/Output
The terminal must be set as input (p0728).
Refer to the encoder interface for PROFIdrive.

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p0491 Motor encoder fault response ENCODER / Fault resp ENCODER

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Encoder | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Sets the behavior for the ENCODER fault response (motor encoder).
This means, for example, if an encoder fault occurs, sensorless operation can be automatically selected with a shutdown behavior that can be selected.

Values:
0: Encoder fault results in OFF2
1: Enc fault results in sensorless oper. and oper. continues
2: Encoder fault results in sensorless operation and OFF1
3: Encoder fault results in sensorless operation and OFF3

Dependency: The following parameters are relevant for sensorless operation.
Refer to: p0341, p0342, p1470, p1472, p1517, p1755
Refer to: F07575

Note: For a value 1, 2, 3, the following applies:
Encoderless operation must have been commissioned.
Refer to the status display "sensorless operation due to a fault" (BO: r1407.13).
Not possible for separately excited synchronous motors (p0300 = 5).

p0492 Square-wave encoder, maximum speed difference per sampling cycle / n_dif max/samp_cyc

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Encoder | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [1/min]	210000.0 [1/min]	0.0 [1/min]

Description: Maximum permissible speed difference between two computation cycles when evaluating square-wave encoders.
When the value is exceeded, depending on p0491, either sensorless closed-loop speed/torque control is selected or the drive is powered-down.

Note: For a value of 0.0, the speed change monitoring is disabled.
When half of the parameter value is exceeded, an alarm is already generated and the speed limiting is limited to this.
The parameter is only pre-assigned for vector drives when selecting p0340 = 1, 3.

p0495[0...2] Equivalent zero mark, input terminal / Zero mark input

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 4735
P-Group: Encoder | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	6	0

Description: Selects the input terminal for connecting an equivalent zero mark (external encoder zero mark).

Values:
0: No equivalent zero mark (evaluation of the encoder zero mark)
1: DI/DO 9 (X122.8/X121.8)
2: DI/DO 10 (X122.10/X121.10)
3: DI/DO 11 (X122.11/X121.11)
4: DI/DO 13 (X132.8)
5: DI/DO 14 (X132.10)
6: DI/DO 15 (X132.11)

Index:
[0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

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Notice: To the terminal designation:

The first designation is valid for CU320, the second for CU310.

Note: Refer to the encoder interface for PROFIdrive.

The terminal must be set as input.

For p0495 = 0 (factory setting), the encoder zero mark is evaluated as zero mark.

For p0495 > 0, the following applies:

Depending on the direction of motion, the positive or negative edge at the appropriate input is evaluated.

- increasing position actual values (r0482) --> the 0/1 edge is evaluated.

- decreasing position actual values (r0482) --> the 1/0 edge is evaluated.

Only one zero mark is supported. If function 2, 3 or 4 is selected, this results in an error message in Gn_ZSW.

The inversion of the inputs via p0490 affects the function "referencing with equivalent zero mark". This is the reason that the edge evaluation is interchanged as a function of the direction of motion.

An input can only be assigned to one encoder as measuring probe 1, 2 or equivalent zero mark. Exception: The same encoder can be simultaneously used as measuring probe and equivalent zero mark as both functions cannot be simultaneously requested.

p0496[0...2] Encoder diagnostic signal selection / Enc diag selection

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** -

P-Group: Encoder — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	42	0

Description: Selects the trace signal to be output in r0497, r0498 and r0499 for encoder diagnostics.

Values:

0: not active
1: r0497: Mechanical revolution
10: r0498: Raw value, track A, r0499: Raw value, track B
11: r0498: Fine position X (-A/2), r0499: Fine position Y (-B/2)
12: r0498: Fine position Phi, r0499: -
13: r0498: Offset correction X, r0499: Offset correction Y
14: r0498: Phase correction X, r0499: Amplitude correction Y
20: r0498: Raw value, track C, r0499: Raw value, track D
21: r0498: CD position X (-D/2), r0499: CD position Y (C/2)
22: r0498: CD position Phi, r0499: CD pos. Phi - mech. revolution
23: r0497: Zero mark status
30: r0497: Absolute position serial
31: r0497: Absolute position, incremental
32: r0497: Zero mark position
40: r0498: Raw temperature, r0499: Temperature in 0.1 °C
41: r0498: Resistance in 0.1 Ohm, r0499: Temperature in 0.1 °C
42: r0497: Resistance 2500 Ohm

Index:

[0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

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Note: Re p0496 = 1: 360 ° <--> 2^32
Re p0496 = 10, 20 (resolver): 2900 mV <--> 26214 dec
Re p0496 = 10, 20 (sin/cos 1 Vpp, EnDat): 500 mV <--> 21299 dec
Re p0496 = 11, 21 (resolver): 2900 mV <--> 13107 dec, internal processor offset is corrected
Re p0496 = 13 (resolver): 2900 mV <--> 13107 dec
Re p0496 = 11, 21 (sin/cos 1 Vpp, EnDat): 500 mV <--> 10650 dec, internal processor offset is corrected
Re p0496 = 13 (sin/cos 1 Vpp, EnDat): 500 mV <--> 10650 dec
Re p0496 = 12: 180 ° fine position <--> 32768 dec
Re p0496 = 14: 100 % <--> 16384 dec
Re p0496 = 22: 180 ° <--> 32768 dec
Re p0496 = 23: Encoder zero mark <--> MSB set (detected during the zero mark or at least 1 current controller clock cycle)
Re p0496 = 30: Rotary: 1 single-turn measuring step <--> 1 dec, linear: 1 measuring step <--> 1 dec
Re p0496 = 31: Absolute position, incremental in 1/4 encoder pulses
Re p0496 = 32: Zero mark position in 1/4 encoder pulses
Re p0496 = 40: r0498 <--> (R_KTY/1 kOhm - 0.9) * 32768
Re p0496 = 42: 2500 Ohm <--> 2^32

r0497[0...2] Encoder diagnostic signal double word / Enc diag DW

VECTOR

Can be changed: - **Access level:** 4
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Trace signal for encoder diagnostics (double word representation). The output signal is selected in p0496.
Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

r0498[0...2] Encoder diagnostic signal word low / Enc diag word low

VECTOR

Can be changed: - **Access level:** 4
Data type: Integer16 **Dynamic index:** - **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Trace signal for encoder diagnostics (low component). The output signal is selected in p0496.
Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

r0499[0...2] Encoder diagnostic signal word high / Enc diag word high

VECTOR

Can be changed: - **Access level:** 4
Data type: Integer16 **Dynamic index:** - **Function diagram:** -
P-Group: Encoder **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Trace signal for encoder diagnostics (high component). The output signal is selected in p0496.
Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

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p0500 Technology application / Techn application

VECTOR

Can be changed: C2(1, 5), T | **Access level:** 2

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Applications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: Sets the technology application.

The parameter influences the calculation of open-loop and closed-loop control parameters that is e.g. initiated using p0578.

The calculation of the following parameters depends on p0500 (only for servo drives): p1520, p1521, p1530, p1531

Values:
0: Standard drive (VECTOR)
1: Pumps and fans

Note: The calculation of parameters, dependent on the technological application can be called-up as follows:

- when exiting the quick commissioning using p3900 > 0
- when writing p0340 = 1, 3, 5
- when writing p0578 = 1

p0505 Selecting the system of units / Select unit sys

VECTOR

Can be changed: C2(5) | **Access level:** 1

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Applications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	4	1

Description: Setting parameter of the actual system of units.

Values:
1: System of units SI
2: System of units, referred/SI
3: US system of units
4: System of units, referred/US

Note: Reference parameter for the unit system % are, for example, p2000 ... p2004. Depending on what has been selected, these are displayed using either SI or US units.

p0528 Units system for controller gains / Units for Kp

VECTOR

Can be changed: C2(5) | **Access level:** 4

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Applications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: For controller gains, changes-over the units system between physical and referred (without dimensions) representation types.

Values:
0: Physical representation
1: No dimensions (referred) representation type

Note: Controller gain factors are always saved as physical units.

For VECTOR (r0107) the following applies:

The parameter is pre-assigned a value of 1. The parameter cannot be changed.

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p0578[0...n] Calculate parameters that are dependent on the technology/units / Calc techn par

VECTOR	**Can be changed:** C2(5), T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Applications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	1	0

Description: This parameter is used to calculate all parameters that depend on the technology of the application (p0500).
All of the parameters are calculated that can also be determined using p0340 = 5.

Values:
0: No calculation
1: Complete parameterization

Note: At the end of the calculations, p0578 is automatically set to 0.

r0590[0...69] Units descriptor display / Unit descriptor

VECTOR	**Can be changed:** -		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Indicates the unit descriptors including the currently set units.

Dependency: Refer to: p0100, p0349, p0505, r0591, r0592, r0593, p0596

Note: All indices of r590, r592 and r593 designate the same conversion rule.
The unit descriptor is in r590[x], the actual factor for this in r592[x] and the actual offset for this in r593[x].

r0591 Number of unit descriptors / Qty unitDescriptor

VECTOR	**Can be changed:** -		**Access level:** 1
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Number of unit descriptors.

Dependency: Refer to: r0590, r0592, r0593

r0592[0...69] Unit descriptors factor / Unit descrip fac

VECTOR	**Can be changed:** -		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Factor for the unit descriptor. The factor is part of a calculation rule that allows conversion into the currently set units of the unit descriptor. The value -1.0 means that this calculation rule is not valid.

Dependency: Refer to: r0590, r0591, r0593

Note: All indices of r590, r592 and r593 designate the same conversion rule.
The unit descriptor is in r590[x], the actual factor for this in r592[x] and the actual offset for this in r593[x].

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r0593[0...69] Unit descriptor offset / UnitDescriptor off

VECTOR	**Can be changed:** -		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Offset to the the unit descriptor. The offset is part of a calculation rule that allows conversion into the currently set units of the unit descriptor.

Dependency: Refer to: r0590, r0591, r0592

Note: All indices of r590, r592 and r593 designate the same conversion rule.

The unit descriptor is in r590[x], the actual factor for this in r592[x] and the actual offset for this in r593[x].

p0595 Selecting technological units / Select tech units

VECTOR (Tech_ctrl)	**Can be changed:** C2(5)		**Access level:** 1
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Applications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1	32	1

Description: Selects the units for the parameters of the technology controller.

Values:

1: %
2: 1 referred, no dimensions
3: Bar
4: °C
5: Pa
6: ltr/s
7: m³/s
8: ltr/min
9: m³/min
10: ltr/h
11: m³/h
12: kg/s
13: kg/min
14: kg/h
15: t/min
16: t/h
17: N
18: kN
19: Nm
20: psi
21: °F
22: gallon/s
23: inch³/s
24: gallon/min
25: inch³/min
26: gallon/h
27: inch³/h
28: lb/s
29: lb/min
30: lb/h
31: lbf
32: lbf ft

Dependency: Refer to: p0596

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p0596 Reference quantity, technological units / Ref tech units

VECTOR (Tech_ctrl) **Can be changed:** T **Access level:** 1

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.01	340.28235E36	1.00

Description: Sets the reference quantity for the technological units. When changing-over using changeover parameter 595 to absolute units, all of the parameters involved refer to the reference quantity.

Dependency: Refer to: p0595

p0600[0...n] Motor temperature sensor for monitoring / Mot temp_sensor

VECTOR **Can be changed:** C2(3), U, T **Access level:** 2

Data type: Integer16 **Dynamic index:** MDS, p0130 **Function diagram:** 8016

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	11	0

Description: Sets the sensor to monitor the motor temperature.

Values:
0: No sensor
1: Temperature sensor via encoder 1
2: Temperature sensor via encoder 2
3: Temperature sensor via encoder 3
10: Temperature sensor via a BICO interconnection
11: Temperature sensor via Motor Module

Dependency: Refer to: r0458, p0601, p0603

Note: p0600 = 0: The temperature monitoring function is disabled for permanent magnet and separately excited synchronous motors.

p0600 = 10, the BICO interconnection should be executed via p0603.

p0601[0...n] Motor temperature sensor type / Mot temp_sensortyp

VECTOR **Can be changed:** C2(3), U, T **Access level:** 2

Data type: Integer16 **Dynamic index:** MDS, p0130 **Function diagram:** 8016

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	10	2

Description: Sets the sensor type for the motor temperature monitoring.

When evaluating using SME120 or SME125 (p0601 = 10), 4 temperature channels are available, which are parameterized using p4600, p4601, p4602, p4603. The selection is only possible if an SME120 or an SME125 is being used and bit 8 is set in r0458.

Values:
0: No sensor available
1: PTC thermistor
2: KTY84
3: KTY84 and PTC (only for temperature sensor via encoder)
10: SME120 or SME125

Dependency: Refer to: r0458, p0600

Note: PTC thermistor (p0601 = 1): Tripping resistance = 1650 Ohm.

The temperature sensor for the temperature evaluation is set in p0600.

For p0600 = 10 (temperature sensor via a BICO interconnection), the setting in p0601 has no significance.

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p0602 Par_circuit power unit number, temperature sensor / LT_no. temp_sensor

VECTOR (Parallel)	**Can be changed:** C2(3), U, T		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	10	0

Description: Sets the power unit number to which the temperature sensor is connected. The value corresponds to the Power unit Data Set number (PDS) of the power unit. The number of power unit data sets is defined in p0120.

p0603 CI: Motor temperature / Mot temperature

VECTOR	**Can be changed:** C2(3), T		**Access level:** 2
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 8016
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source to evaluate the motor temperature via a BICO interconnection.

Dependency: Refer to: p0600

Note: Temperature sensor KTY: Valid temperature range -48 °C ... 248 °C.

PTC temperature sensor:

For the -50 °C, the following applies: Motor temperature < nominal response temperature of the PTC.

For the 250 °C, the following applies: Motor temperature >= nominal response temperature of the PTC.

Note:

When using a Terminal Module 31 (TM31), the following applies:

- the sensor type used is set using p4100.
- the temperature signal is interconnected using CO: r4105.

p0604[0...n] Motor overtemperature alarm threshold / Mot TempAlrmThresh

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min	**Max**	**Factory setting**
	0.0 [°C]	200.0 [°C]	130.0 [°C]

Description: Sets the alarm threshold for monitoring the motor temperature.

Note: The parameter is automatically preset for motors from the motor list (p0301).

p0605[0...n] Motor overtemperature fault threshold / MotTempFaultThresh

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min	**Max**	**Factory setting**
	0.0 [°C]	200.0 [°C]	145.0 [°C]

Description: Sets the fault threshold to monitor the motor temperature.

Note: The parameter is automatically preset for motors from the motor list (p0301).

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p0606[0...n] Motor overtemperature timer / Mot TempTimeStage

VECTOR

Can be changed: C2(3), U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** 8016

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	600.000 [s]	0.000 [s]

Description: Sets the timer stage for the alarm threshold for the motor temperature monitoring function.

This timer stage is started when the temperature alarm threshold (p0604) is exceeded.

If the timer stage expires before the temperature in the meantime falls below the alarm threshold, the fault F07011 is output.

If the temperature fault threshold (p0605) is prematurely exceeded before the timer stage has expired, then fault F07011 is immediately output. As long as the motor temperature has still not exceeded the fault threshold, the fault can be acknowledged.

Dependency: Refer to: p0604, p0605

Refer to: F07011, A07910

Note: With p0606 = 0 s, the timer stage is de-activated and only the fault threshold is effective.

KTY sensor: When setting the minimum value, the timer is disabled and a fault is not output until p0605 is exceeded.

PTC sensor: The timer minimum value has no particular significance.

p0607[0...n] Temperature sensor fault timer / Sensor fault time

VECTOR

Can be changed: C2(3), U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	600.000 [s]	0.100 [s]

Description: Sets the timer stage between the output of alarm and fault for a temperature sensor fault.

If there is a sensor fault, this timer stage is started. If the sensor fault is still present after the timer stage has expired, a corresponding fault message is output.

Note: If the motor is an induction motor, the timer is switched off when setting the minimum value and no alarm is output. Temperature monitoring is then based on the thermal model.

p0610[0...n] Response to motor overtemperature condition / Mot temp response

VECTOR

Can be changed: C2(3), T | **Access level:** 2

Data type: Integer16 | **Dynamic index:** MDS, p0130 | **Function diagram:** 8016

P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	1

Description: Sets the system response when the motor temperature reaches the alarm threshold.

Values:
0: No response, only alarm, no reduction of I_max
1: Alarm and reduction of I_max and fault (F07011)
2: Alarm and fault (F07011), no reduction of I_max

Dependency: Refer to: p0601, p0604, p0605

Note: the I_max reduction is not executed for PTC (p0601 = 1).

The I_max reduction results in a lower output frequency.

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p0620[0...n] Thermal adaptation, stator and rotor resistance / Mot therm_adapt R

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	2	1

Description: Sets the thermal adaptation of the stator/primary section resistance and rotor/secondary section resistance according to r0395 and r0396.

Values:
0: No thermal adaptation of stator and rotor resistances
1: Resistances adapted to the temperatures of the thermal model
2: Resistances adapted to the measured stator winding temperature

Note: For p0620 = 1, the following applies:

The stator resistance is adapted using the temperature in r0035 and the rotor resistance together with the model temperature in r0633.

For p0620 = 2, the following applies:

The stator resistance is adapted using the temperature in r0035. The rotor temperature to adapt the rotor resistance is calculated as follows from the stator temperature (r0035).

theta_R = (r0628 + r0625) / (r0627 + r0625) * r0035

p0621[0...n] Temperature identification after restart / Temp_ident restart

VECTOR (n/M)	**Can be changed:** C2(3), T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	2	0

Description: Configuration of the temperature identification after powering-up again. If the identification is selected, when powering-up for the first time after the system run-up, the stator resistance is measured and from this the temperature determined. The thermal model is then suitably initialized.

Values:
0: No temperature identification
1: Temperature identification after restart
2: Temperature identification after each power-up

p0622[0...n] Motor excitation time for temp_ident after powering-up again / t_excit temp_id

VECTOR (n/M)	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.000 [s]	20.000 [s]	0.000 [s]

Description: Sets the excitation time of the motor during the temperature identification after powering-up again (restart).

r0623 Stator resistance after temperature identification / TempId R_stator

VECTOR (n/M)	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the identified stator resistance after the temperature identification run.

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p0625[0...n] Motor ambient temperature / Mot T_ambient

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min -40 [°C]	**Max** 80 [°C]	**Factory setting** 20 [°C]

Description: Defines the ambient temperature of the motor to calculate the temperature model.
Note: The parameters for stator and rotor resistance (p0350, p0354) refer to this temperature.

p0626[0...n] Motor overtemperature, stator core / Mot T_over core

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_2	**Unit selection:** p0505
	Min 20 [K]	**Max** 200 [K]	**Factory setting** 50 [K]

Description: Defines the rated overtemperature of the stator core referred to the ambient temperature.
Dependency: Refer to: p0625

p0627[0...n] Motor overtemperature, stator winding / Mot T_over stator

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_2	**Unit selection:** p0505
	Min 20 [K]	**Max** 200 [K]	**Factory setting** 80 [K]

Description: Defines the rated overtemperature of the stator winding referred to the ambient temperature.
Dependency: Refer to: p0625

p0628[0...n] Rotor winding overtemperature / Mot T_over rotor

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_2	**Unit selection:** p0505
	Min 20 [K]	**Max** 200 [K]	**Factory setting** 100 [K]

Description: Defines the rated overtemperature of the squirrel cage rotor referred to ambient temperature.
Dependency: Refer to: p0625

r0630[0...n] Motor temperature model ambient temperature / MotTMod T_amb.

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min - [°C]	**Max** - [°C]	**Factory setting** - [°C]

Description: Displays the ambient temperature of the motor temperature model.

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r0631[0...n] Motor temperature model, stator core temperature / MotTMod T_iron

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min - [°C]	**Max** - [°C]	**Factory setting** - [°C]

Description: Displays the stator core temperature of the motor temperature model.

r0632[0...n] Motor temperature model, stator winding temperature / MotTMod T_copper

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min - [°C]	**Max** - [°C]	**Factory setting** - [°C]

Description: Displays the stator winding temperature of the motor temperature model.

r0633[0...n] Motor temperature model, rotor temperature / MotTMod T_rotor

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** 8016
	P-Group: Motor	**Units group:** 21_1	**Unit selection:** p0505
	Min - [°C]	**Max** - [°C]	**Factory setting** - [°C]

Description: Displays the rotor temperature of the motor temperature model.

p0640[0...n] Current limit / Current limit

VECTOR	**Can be changed:** C2(1, 3), U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5722, 6640
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0.00 [Aeff]	**Max** 10000.00 [Aeff]	**Factory setting** 0.00 [Aeff]

Description: Sets the current limit.

Dependency: Refer to: r0209, p0323

Note: The parameter is part of the fast commissioning (p0010 = 1); this means that it is appropriately pre-assigned when changing p0304 and p0323.

The current limit p0640 is limited to r0209 and p0323. The limit to p0323 is not realized if a value of zero is entered there.

The following additionally applies for vector drives (refer to p0107): p0640 is limited to 4.0 * p0305.

The resulting current limit is displayed in r0067 and if required, r0067 is reduced by the thermal model of the Motor Module.

The torque and power limits (p1520, p1521, p1530, p1531) matching the current limit are automatically calculated when exiting the quick commissioning using p3900 > 0 or using the automatic parameterization with p0340 = 3, 5.

For servo drives, the following applies (refer to p0107):

p0640 is pre-assigned as follows using the automatic parameterization (p0340 = 1, p3900 > 0) taking into account the limits r0209 and r0323:

- for induction motors: p0640 = 1.5 * p0305
- for synchronous motors: p0640 = p0338

For vector drives (refer to p0107), the following applies:

p0640 is pre-assigned for the automatic self commissioning routine (e.g.to 1.5 * p0305, with p0305 = r0207[1]).

p0640 must be entered when commissioning the system. This is the reason that p0640 is not calculated by the automatic parameterization when exiting the fast commissioning (p3900 > 0).

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p0650[0...n] Actual motor operating hours / Mot t_oper act

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [h]	4294967295 [h]	0 [h]

Description: Displays the operating hours for the corresponding motor.
The motor operating time counter continues to run when the pulses are enabled. When the pulse enable is withdrawn, the counter is held and the value saved.

Dependency: The following prerequisites must be fulfilled in order to be able to save the operating hours counter in a non-volatile fashion:
- firmware with V2.2 or higher.
- Control Unit 320 (CU320) with hardware version C or higher (module with NVRAM).
Refer to: p0651
Refer to: A01590

Note: The value is in the unit [h] (hours).
The operating hours counter in p0650 can only be reset to 0. In this case, p0651 is automatically set to 0.
For p0651 = 0, the operating hours counter is disabled.
The operating hours counter only runs for MDS0 and MDS1 (Motor Data Set).

p0651[0...n] Motor operating hours maintenance interval / Mot t_op maint

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [h]	99999 [h]	0 [h]

Description: Sets the service/maintenance intervals in hours for the appropriate motor.
An appropriate fault is output when the operating hourse set here are reached.

Dependency: Refer to: p0650
Refer to: A01590

Note: The value is in the unit [h] (hours).
For p0651 = 0, the operating hours counter is disabled.
The operating hours counter only runs for MDS0 and MDS1 (Motor Data Set).

p0652[0...n] Motor stator resistance, scaling / Mot R_stator scal

VECTOR

Can be changed: C2(3), U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the stator resistance.

Dependency: Refer to: p0350, r0370

p0653[0...n] Motor stator leakage inductance, scaling / Mot L_S_leak scal

VECTOR

Can be changed: C2(3), U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the stator leakage inductance.

Dependency: Refer to: p0356, r0377

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p0655[0...n] Motor magnetizing inductance, d axis, saturated scaling / Mot Lhd_sat scal

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the magnetizing inductance in the direction of the rotor axis (d axis).
Dependency: Refer to: p0360, r0382

p0656[0...n] Motor magnetizing inductance, q axis, saturated scaling / Mot Lhq_sat scal

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the magnetizing inductance quadrature to the rotor axis (q axis).
Dependency: Refer to: p0361, r0383

p0657[0...n] Motor damping inductance, d axis scaling / Mot L_damp_d scal

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the damping inductance in the direction of the rotor axis (d axis).
Dependency: Refer to: p0358, r0380

p0658[0...n] Motor damping inductance, q axis scaling / Mot L_damp_q scal

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the damping inductance quadrature to the rotor axis (q axis).
Dependency: Refer to: p0359, r0381

p0659[0...n] Motor damping resistance, d axis scaling / Mot R_damp_d scal

VECTOR	**Can be changed:** C2(3), U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the damping resistance in the direction of the rotor axis (d axis).
Dependency: Refer to: p0354, r0374

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p0660[0...n] Motor damping resistance, q axis scaling / Mot R_damp_q scal

VECTOR

Can be changed: C2(3), U, T
Access level: 4
Data type: Floating Point
Dynamic index: MDS, p0130
Function diagram: -
P-Group: Motor
Units group: -
Unit selection: -

Min	Max	Factory setting
10.0 [%]	300.0 [%]	100.0 [%]

Description: Factor to evaluate the damping resistance quadrature to the rotor axis (q axis).

Dependency: Refer to: p0355, r0375

p0680[0...5] Central measuring probe, input terminal / Cen meas inpt

CU_G

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Encoder
Units group: -
Unit selection: -

Min	Max	Factory setting
0	6	0

Description: Sets the digital input used for the function "central measuring probe evaluation".
p0680[0]: Digital input, measuring probe 1
p0680[1]: Digital input, measuring probe 2
p0680[2]: Digital input, measuring probe 3
p0680[3]: Digital input, measuring probe 4
p0680[4]: Digital input, measuring probe 5
p0680[5]: Digital input, measuring probe 6

Values:
0: No meas probe
1: DI/DO 9 (X122.8/X121.8)
2: DI/DO 10 (X122.10/X121.10)
3: DI/DO 11 (X122.11/X121.11)
4: DI/DO 13 (X132.8)
5: DI/DO 14 (X132.10)
6: DI/DO 15 (X132.11)

Dependency: Refer to: p0728

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: Prerequisite: The DI/DO must be set as input (p0728.x = 0).
DI/DO: Bidirectional Digital Input/Output

p0681 BI: Central measuring probe, synchronizing signal, signal source / Cen meas sync_sig

CU_G

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the synchronizing signal (SYN) of the function "central measuring probe evaluation".
The signal is used to synchronize the common system time between the master and slave.

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p0682 CI: Central measuring probe, control word signal source / Cen meas STW S_src

CU_G	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the control word of the function "central measuring probe evaluation".

p0684 Central measuring probe evaluation technique / Cen meas eval

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	0	0

Description: Sets the evaluation technique for the function "central measuring probe evaluation".

Values:
0: Measurement with handshake

r0685 Central measuring probe, control word display / Cen meas STW disp

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0000 bin

Description: Displays the control word for the function "central measuring probe evaluation".

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Falling edge, measuring probe 1	Yes	No	-
01	Falling edge, measuring probe 2	Yes	No	-
02	Falling edge, measuring probe 3	Yes	No	-
03	Falling edge, measuring probe 4	Yes	No	-
04	Falling edge, measuring probe 5	Yes	No	-
05	Falling edge, measuring probe 6	Yes	No	-
08	Rising edge, measuring probe 1	Yes	No	-
09	Rising edge, measuring probe 2	Yes	No	-
10	Rising edge, measuring probe 3	Yes	No	-
11	Rising edge, measuring probe 4	Yes	No	-
12	Rising edge, measuring probe 5	Yes	No	-
13	Rising edge, measuring probe 6	Yes	No	-

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r0686[0...5] CO: Central measuring probe, measuring time rising edge / CenMeas t_meas 0/1

CU_G

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the measuring time for a rising edge at the digital input for the "central measuring probe evaluation" function.

The measuring time is specified as 16-bit value with a resolution of 0.25 µs.

r0686[0]: Measuring time, rising edge measuring probe 1

r0686[1]: Measuring time, rising edge measuring probe 2

r0686[2]: Measuring time, rising edge measuring probe 3

r0686[3]: Measuring time, rising edge measuring probe 4

r0686[4]: Measuring time, rising edge measuring probe 5

r0686[5]: Measuring time, rising edge measuring probe 6

r0687[0...5] CO: Central measuring probe, measuring time falling edge / CenMeas t_meas 1/0

CU_G

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the measuring time for a falling edge at the digital input for the "central measuring probe evaluation" function.

The measuring time is specified as 16-bit value with a resolution of 0.25 µs.

r0687[0]: Measuring time, falling edge measuring probe 1

r0687[1]: Measuring time, falling edge measuring probe 2

r0687[2]: Measuring time, falling edge measuring probe 3

r0687[3]: Measuring time, falling edge measuring probe 4

r0687[4]: Measuring time, falling edge measuring probe 5

r0687[5]: Measuring time, falling edge measuring probe 6

r0688 CO: Central measuring probe, status word display / Cen meas ZSW disp

CU_G

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the function "central measuring probe evaluation".

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Digital input, measuring probe 1	High	Low	-
01	Digital input, measuring probe 2	High	Low	-
02	Digital input, measuring probe 3	High	Low	-
03	Digital input, measuring probe 4	High	Low	-
04	Digital input, measuring probe 5	High	Low	-
05	Digital input, measuring probe 6	High	Low	-
08	Sub-sampling, measuring probe 1	High	Low	-
09	Sub-sampling, measuring probe 2	High	Low	-
10	Sub-sampling, measuring probe 3	High	Low	-
11	Sub-sampling, measuring probe 4	High	Low	-
12	Sub-sampling, measuring probe 5	High	Low	-
13	Sub-sampling, measuring probe 6	High	Low	-

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p0700[0...n] Macro Binector Input (BI) / Macro BI

VECTOR

Can be changed: C2(1), T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** -

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	999999	0

Description: Runs the appropriate ACX file on the CompactFlash card.

The binector inputs (BI) of the appropriate Command Data Set (CDS) are appropriately interconnected.

The selected ACX file must be located in the following directory:

... /PMACROS/<drive object>/P700/PMxxxxxx.ACX

Example:

p0700 = 6 --> the file PM000006.ACX is run.

Dependency: The ACX file to be run must be created according to the definition for ACX macros and must be saved in the directory intended on the CompactFlash card.

Refer to: p0015, p1000, p1500, r8571

Notice: No errors were issued during fast commissioning (p3900 = 1) when writing to parameters of the QUICK_IBN group!

Note: The macros in the specified directory are displayed in r8571.

Macros available as standard are described in the technical documentation of the particular product.

BI: Binector input

r0721 CU digital inputs, terminal actual value / CU DI actual value

CU_G

Can be changed: - | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1510, 2020, 2030, 2031, 2100, 2120, 2130, 2131, 2132, 2133

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the actual value at the digital inputs.

This means that the actual input signal can be checked at terminal DI x or DI/DO x prior to switching from the simulation mode (p0795.x = 1) to terminal mode (p0795.x = 0). The input signal at terminal DI x is displayed in bit x of r0721.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X122.1/X121.1)	High	Low	-
01	DI 1 (X122.2/X121.2)	High	Low	-
02	DI 2 (X122.3/X121.3)	High	Low	-
03	DI 3 (X122.4/X121.4)	High	Low	-
04	DI 4 (X132.1)	High	Low	-
05	DI 5 (X132.2)	High	Low	-
06	DI 6 (X132.3)	High	Low	-
07	DI 7 (X132.4)	High	Low	-
08	DI/DO 8 (X122.7/X121.7)	High	Low	-
09	DI/DO 9 (X122.8/X121.8)	High	Low	-
10	DI/DO 10 (X122.10/X121.10)	High	Low	-
11	DI/DO 11 (X122.11/X121.11)	High	Low	-
12	DI/DO 12 (X132.7)	High	Low	-
13	DI/DO 13 (X132.8)	High	Low	-
14	DI/DO 14 (X132.10)	High	Low	-
15	DI/DO 15 (X132.11)	High	Low	-

Notice: To the terminal designation:

The first designation is valid for CU320, the second for CU310.

Note: If a DI/DO is parameterized as output (p0728.x = 1), then r0721.x = 0 is displayed.

DI: Digital input

DI/DO: Bidirectional Digital Input/Output

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r0722 CO/BO: CU digital inputs, status / CU DI status

CU_G

Can be changed: -

Access level: 1

Data type: Unsigned32

Dynamic index: -

Function diagram: 1510, 2020, 2030, 2031, 2100, 2120, 2130, 2131, 2132, 2133

P-Group: Commands

Units group: -

Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the digital inputs.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X122.1/X121.1)	High	Low	-
01	DI 1 (X122.2/X121.2)	High	Low	-
02	DI 2 (X122.3/X121.3)	High	Low	-
03	DI 3 (X122.4/X121.4)	High	Low	-
04	DI 4 (X132.1)	High	Low	-
05	DI 5 (X132.2)	High	Low	-
06	DI 6 (X132.3)	High	Low	-
07	DI 7 (X132.4)	High	Low	-
08	DI/DO 8 (X122.7/X121.7)	High	Low	-
09	DI/DO 9 (X122.8/X121.8)	High	Low	-
10	DI/DO 10 (X122.10/X121.10)	High	Low	-
11	DI/DO 11 (X122.11/X121.11)	High	Low	-
12	DI/DO 12 (X132.7)	High	Low	-
13	DI/DO 13 (X132.8)	High	Low	-
14	DI/DO 14 (X132.10)	High	Low	-
15	DI/DO 15 (X132.11)	High	Low	-

Dependency: Refer to: r0723

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI: Digital input
DI/DO: Bidirectional Digital Input/Output

r0723 BO: CU digital inputs, status inverted / CU DI status inv

CU_G

Can be changed: -

Access level: 1

Data type: Unsigned32

Dynamic index: -

Function diagram: 1510, 2020, 2030, 2031, 2100, 2120, 2130, 2131 2132, 2133

P-Group: Commands

Units group: -

Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the inverted status of the digital inputs.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X122.1/X121.1)	High	Low	-
01	DI 1 (X122.2/X121.2)	High	Low	-
02	DI 2 (X122.3/X121.3)	High	Low	-
03	DI 3 (X122.4/X121.4)	High	Low	-
04	DI 4 (X132.1)	High	Low	-
05	DI 5 (X132.2)	High	Low	-

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06	DI 6 (X132.3)	High	Low	-
07	DI 7 (X132.4)	High	Low	-
08	DI/DO 8 (X122.7/X121.7)	High	Low	-
09	DI/DO 9 (X122.8/X121.8)	High	Low	-
10	DI/DO 10 (X122.10/X121.10)	High	Low	-
11	DI/DO 11 (X122.11/X121.11)	High	Low	-
12	DI/DO 12 (X132.7)	High	Low	-
13	DI/DO 13 (X132.8)	High	Low	-
14	DI/DO 14 (X132.10)	High	Low	-
15	DI/DO 15 (X132.11)	High	Low	-

Dependency: Refer to: r0722

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI: Digital input
DI/DO: Bidirectional Digital Input/Output

p0728 CU, set input or output / CU DI or DO

CU_G

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1510, 2030, 2031, 2130, 2131, 2132, 2133

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the bidirectional digital inputs/outputs as an input or output.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
08	DI/DO 8 (X122.7/X121.7)	Output	Input	-
09	DI/DO 9 (X122.8/X121.8)	Output	Input	-
10	DI/DO 10 (X122.10/X121.10)	Output	Input	-
11	DI/DO 11 (X122.11/X121.11)	Output	Input	-
12	DI/DO 12 (X132.7)	Output	Input	-
13	DI/DO 13 (X132.8)	Output	Input	-
14	DI/DO 14 (X132.10)	Output	Input	-
15	DI/DO 15 (X132.11)	Output	Input	-

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI/DO: Bidirectional Digital Input/Output

p0738 BI: CU, signal source for terminal DI/DO 8 / CU S_src DI/DO 8

CU_G

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1510, 2030, 2130

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 8 (X122.7).

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: Prerequisite: The DI/DO must be set as an output (p0728.8 = 1).
DI/DO: Bidirectional Digital Input/Output

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p0739 BI: CU, signal source for terminal DI/DO 9 / CU S_src DI/DO 9

CU_G	**Can be changed:** U, T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2030, 2130
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for terminal DI/DO 9 (X122.8).

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: Prerequisite: The DI/DO must be set as an output (p0728.9 = 1).
DI/DO: Bidirectional Digital Input/Output

p0740 BI: CU, signal source for terminal DI/DO 10 / CU S_src DI/DO 10

CU_G	**Can be changed:** U, T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2031, 2131
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for terminal DI/DO 10 (X122.10).

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: Prerequisite: The DI/DO must be set as an output (p0728.10 = 1).
DI/DO: Bidirectional Digital Input/Output

p0741 BI: CU, signal source for terminal DI/DO 11 / CU S_src DI/DO 11

CU_G	**Can be changed:** U, T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1510, 2031, 2131
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for terminal DI/DO 11 (X122.11).

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: Prerequisite: The DI/DO must be set as an output (p0728.11 = 1).
DI/DO: Bidirectional Digital Input/Output

p0742 BI: CU, signal source for terminal DI/DO 12 / CU S_src DI/DO 12

CU_G	**Can be changed:** U, T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1510, 2132
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for terminal DI/DO 12 (X132.7).

Note: Prerequisite: The DI/DO must be set as an output (p0728.12 = 1).
DI/DO: Bidirectional Digital Input/Output

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p0743 BI: CU, signal source for terminal DI/DO 13 / CU S_src DI/DO 13

CU_G

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 2132
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 13 (X132.8).

Note: Prerequisite: The DI/DO must be set as an output (p0728.13 = 1).
DI/DO: Bidirectional Digital Input/Output

p0744 BI: CU, signal source for terminal DI/DO 14 / CU S_src DI/DO 14

CU_G

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 2133
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 14 (X132.10).

Note: Prerequisite: The DI/DO must be set as an output (p0728.14 = 1).
DI/DO: Bidirectional Digital Input/Output

p0745 BI: CU, signal source for terminal DI/DO 15 / CU S_src DI/DO 15

CU_G

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 1510, 2133
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 15 (X132.11).

Note: Prerequisite: The DI/DO must be set as an output (p0728.15 = 1).
DI/DO: Bidirectional Digital Input/Output

r0747 CU, digital outputs status / CU DO status

CU_G

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 2130, 2131, 2132, 2133
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of digital outputs.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
08	DI/DO 8 (X122.7/X121.7)	High	Low	-
09	DI/DO 9 (X122.8/X121.8)	High	Low	-
10	DI/DO 10 (X122.10/X121.10)	High	Low	-
11	DI/DO 11 (X122.11/X121.11)	High	Low	-
12	DI/DO 12 (X132.7)	High	Low	-
13	DI/DO 13 (X132.8)	High	Low	-
14	DI/DO 14 (X132.10)	High	Low	-
15	DI/DO 15 (X132.11)	High	Low	-

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

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Note: Inversion using p0748 has been taken into account.
The setting of the DI/DO as either input or output is of no significance (p0728).
DI/DO: Bidirectional Digital Input/Output

p0748 CU, invert digital outputs / CU DO invert

CU_G

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2030, 2031, 2130, 2131, 2132, 2133

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Setting to invert the signals at the digital outputs.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
08	DI/DO 8 (X122.7/X121.7)	Inverted	Not inverted	-
09	DI/DO 9 (X122.8/X121.8)	Inverted	Not inverted	-
10	DI/DO 10 (X122.10/X121.10)	Inverted	Not inverted	-
11	DI/DO 11 (X122.11/X121.11)	Inverted	Not inverted	-
12	DI/DO 12 (X132.7)	Inverted	Not inverted	-
13	DI/DO 13 (X132.8)	Inverted	Not inverted	-
14	DI/DO 14 (X132.10)	Inverted	Not inverted	-
15	DI/DO 15 (X132.11)	Inverted	Not inverted	-

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI/DO: Bidirectional Digital Input/Output

p0771[0...2] CI: Test sockets signal source / TestSktsSigSrce

CU_G

Can be changed: U, T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 8134

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the signal to be output at the test sockets.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Can only be set when p0776 = 99.
Refer to: r0772, r0774, p0776, p0777, p0778, p0779, p0780, p0783, p0784, r0786

r0772[0...2] Test sockets output signal / TestSktsSignalVal

CU_G

Can be changed: - | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 8134

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the actual value of the signal to be output.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Refer to: p0771, r0774, p0776, p0777, p0778, p0779, p0780, p0783, p0784, r0786

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r0774[0...2] Test sockets output voltage / TestSkts U_output

CU_G

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 8134
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual output voltage for the test sockets.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Refer to: p0771, r0772, p0776, p0777, p0778, p0779, p0780, p0783, p0784, r0786

p0776[0...2] Test socket mode / Test skt mode

CU_G

Can be changed: U, T
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: 8134
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
96	99	99

Description: Sets the mode for the test sockets.

Values:
96: Physical address (32-bit integer signal, unsigned)
97: Physical address (32-bit integer signal)
98: Physical address (32-bit floating-point signal)
99: BICO signal

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Refer to: p0771, r0772, r0774, p0777, p0778, p0779, p0780, p0783, p0784, r0786, p0788, p0789, r0790

p0777[0...2] Test socket characteristic value x1 / Test skt char x1

CU_G

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 8134
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-100000.00 [%]	100000.00 [%]	0.00 [%]

Description: The normalization characteristic for the test sockets is defined using two points. This parameter specifies the x coordinate (percentage) of the first point on the characteristic.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Can only be set when p0776 = 99.
Refer to: p0778, p0779, p0780, r0786

Note: The value 0.00 % corresponds to 2.49 V.

p0778[0...2] Test socket characteristic value y1 / Test skt char y1

CU_G

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 8134
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [V]	4.98 [V]	2.49 [V]

Description: The normalization characteristic for the test sockets is defined using two points. This parameter specifies the y coordinate (output voltage) of the first point on the characteristic.

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Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Can only be set when p0776 = 99.
Refer to: p0777, p0779, p0780, r0786

p0779[0...2] Test socket characteristic value x2 / Test skt char x2

CU_G

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 8134
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-100000.00 [%]	427.9E9 [%]	100.00 [%]

Description: The normalization characteristic for the test sockets is defined using two points. This parameter specifies the x coordinate (percentage) of the second point on the characteristic.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Can only be set when p0776 = 99.
Refer to: p0777, p0778, p0780, r0786

Note: The value 100.00 % corresponds to 4.98 V.

p0780[0...2] Test socket characteristic value y2 / Test skt char y2

CU_G

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 8134
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [V]	4.98 [V]	4.98 [V]

Description: The normalization characteristic for the test sockets is defined using two points. This parameter specifies the y coordinate (output voltage) of the second point on the characteristic.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Can only be set when p0776 = 99.
Refer to: p0777, p0778, p0779, r0786

p0783[0...2] Test sockets offset / Test skt offset

CU_G

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 8134
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-4.98 [V]	4.98 [V]	0.00 [V]

Description: Sets an additional offset for the test sockets.

Index: [0] = T0
[1] = T1
[2] = T2

p0784[0...2] Test socket limit on/off / TestSktLim on/off

CU_G

Can be changed: U, T — **Access level:** 2
Data type: Integer16 — **Dynamic index:** - — **Function diagram:** 8134
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the limit for a signal to be output via test sockets.

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Values: 0: Limiting off
1: Limiting on

Index: [0] = T0
[1] = T1
[2] = T2

Note: Limiting on:
If signals are output outside the permissible measuring range, the signal is limited to 4.98 V or to 0 V.
Limiting off:
If signals are output outside the permissible measuring range, this causes signal overflow. In the case of signal overflow, the signal jumps from 0 V to 4.98 V or from 4.98 V to 0 V.

r0786[0...2] Test socket normalization per volt / TestSktNorm/Volt

CU_G | **Can be changed:** - | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 8134
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the normalization of the signal to be output. A change in the output voltage by 1 volt corresponds to the value in this parameter. The units are determined by the interconnected test signal.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Refer to: p0771, r0772, r0774, p0777, p0778, p0779, p0780, p0783, p0784

Note: Example:
r0786[0] = 1500.0 and the measuring signal is r0063 (CO: Speed actual value smoothed [RPM]).
A change of 1 V at the output of test socket T0 corresponds to 1500.0 [RPM].

p0788[0...2] Test sockets physical address / Test skt PhyAddr

CU_G | **Can be changed:** U, T | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the physical address to output signals via the test sockets.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Changes only become effective if p0776 does not equal 99.
Refer to: p0789, r0790

p0789[0...2] Test sockets physical address gain / TestSktPhyAddrGain

CU_G | **Can be changed:** U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-340.28235E36	340.28235E36	1.00000

Description: Sets the gain of a signal output of a physical address via test sockets.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Changes only become effective if p0776 does not equal 99.
Refer to: p0788

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r0790[0...2] Test sockets physical address signal value / TestSktsPhyAddrVal

CU_G

Can be changed: -
Access level: 4
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual value of a signal determined via a physical address.

Index: [0] = T0
[1] = T1
[2] = T2

Dependency: Only effective when p0776 = 97 or p0776 = 96.
Refer to: p0788

p0795 CU digital inputs simulation mode / CU DI simulation

CU_G

Can be changed: U, T
Access level: 2
Data type: Unsigned32
Dynamic index: -
Function diagram: 1510, 2020, 2030, 2031, 2100, 2120, 2130, 2131, 2132, 2133
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the simulation mode for digital inputs.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X122.1/X121.1)	Simulation	Terminal eval.	-
01	DI 1 (X122.2/X121.2)	Simulation	Terminal eval.	-
02	DI 2 (X122.3/x121.3)	Simulation	Terminal eval.	-
03	DI 3 (X122.4/X121.4)	Simulation	Terminal eval.	-
04	DI 4 (X132.1)	Simulation	Terminal eval.	-
05	DI 5 (X132.2)	Simulation	Terminal eval.	-
06	DI 6 (X132.3)	Simulation	Terminal eval.	-
07	DI 7 (X132.4)	Simulation	Terminal eval.	-
08	DI/DO 8 (X122.7/X121.7)	Simulation	Terminal eval.	-
09	DI/DO 9 (X122.8/X121.8)	Simulation	Terminal eval.	-
10	DI/DO 10 (X122.10/X121.10)	Simulation	Terminal eval.	-
11	DI/DO 11 (X122.11/X121.11)	Simulation	Terminal eval.	-
12	DI/DO 12 (X132.7)	Simulation	Terminal eval.	-
13	DI/DO 13 (X132.8)	Simulation	Terminal eval.	-
14	DI/DO 14 (X132.10)	Simulation	Terminal eval.	-
15	DI/DO 15 (X132.11)	Simulation	Terminal eval.	-

Dependency: The setpoint for the input signals is specified using p0796.
Refer to: p0796, p9620

Notice: It is not permissible to select the simulation of a digital input using the Safety SH (p9620) and this is rejected.
To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI: Digital input
DI/DO: Bidirectional Digital Input/Output
This parameter is not saved when data is backed-up (p0971, p0977).

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p0796 CU digital inputs simulation mode setpoint / CU DI simul setpt

CU_G

Can be changed: U, T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1510, 2020, 2030, 2031, 2100, 2120, 2130, 2131, 2132, 2133

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the setpoint for the input signals in the digital input simulation mode.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X122.1/X121.1)	High	Low	-
01	DI 1 (X122.2/X121.2)	High	Low	-
02	DI 2 (X122.3/X121.3)	High	Low	-
03	DI 3 (X122.4/X121.4)	High	Low	-
04	DI 4 (X132.1)	High	Low	-
05	DI 5 (X132.2)	High	Low	-
06	DI 6 (X132.3)	High	Low	-
07	DI 7 (X132.4)	High	Low	-
08	DI/DO 8 (X122.7/X121.7)	High	Low	-
09	DI/DO 9 (X122.8/X121.8)	High	Low	-
10	DI/DO 10 (X122.10/X121.10)	High	Low	-
11	DI/DO 11 (X122.11/X121.11)	High	Low	-
12	DI/DO 12 (X132.7)	High	Low	-
13	DI/DO 13 (X132.8)	High	Low	-
14	DI/DO 14 (X132.10)	High	Low	-
15	DI/DO 15 (X132.11)	High	Low	-

Dependency: The simulation of a digital input is selected using p0795.
Refer to: p0795

Notice: To the terminal designation:
The first designation is valid for CU320, the second for CU310.

Note: DI: Digital input
DI/DO: Bidirectional Digital Input/Output
This parameter is not saved when data is backed-up (p0971, p0977).

p0799 CU inputs/outputs, sampling time / CU I/O t_sampl

CU_G

Can be changed: C1(3) | **Access level:** 3

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2020, 2030, 2031, 2120, 2121, 2130, 2131, 2132, 2133

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	5000.00 [µs]	4000.00 [µs]

Description: Sets the sampling time for the inputs and outputs.

Dependency: The parameter can only be modified for p0009 = 3, 29.
The sampling times can only be set as an integer multiple of the basic sampling time (p0110, p0111).
Refer to: p0009, r0110, r0111

Note: The modified sampling time is not effective until the drive unit is powered-up again.

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p0806 BI: Inhibit master control / PcCtrl inhibit

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to block the master control.

Dependency: Refer to: r0807

Note: The master control is used from the commissioning software (drive control panel) and from the Advanced Operator Panel (AOP, LOCAL mode).

r0807 BO: Master control active / PcCtrl active

VECTOR

Can be changed: - | **Access level:** 2
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -
P-Group: Displays, signals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays what has the master control.

The drive can be controlled via the BICO interconnection or from external (e.g. the commissioning software).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Master control active	Yes	No	5030

Dependency: Refer to: p0806

Notice: The master control only influences control word 1 and speed setpoint 1. Other control words/setpoints can be transferred from another automation device.

Note: Bit 0 = 0: BICO interconnection active

Bit 0 = 1: Master control for PC/AOP

The master control is used from the commissioning software (drive control panel) and from the Advanced Operator Panel (AOP, LOCAL mode).

p0809[0...2] Copy Command Data Set CDS / Copy CDS

VECTOR

Can be changed: T | **Access level:** 2
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** 8560
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	15	0

Description: Copies one Command Data Set (CDS) into another.

Index: [0] = Source Command Data Set
[1] = Target command data set
[2] = Start copying

Note: Procedure:

1. In Index 0, enter which command data set should be copied.
2. In Index 1, enter the command data set that is to be copied into.
3. Start copying: Set index 2 from 0 to 1.

p0809[2] is automatically set to 0 when copying is completed.

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p0810 BI: Command Data Set selection CDS bit 0 / CDS select., bit 0

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 8560
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source to select the Command Data Set bit 0 (CDS bit 0).
Dependency: Refer to: r0050, p0811, r0836
Note: Command data sets are selected using the binector inputs p0810, p0811, p0812 and p0813.
For a command data set, selected using the binector inputs, is displayed in r0836.
The currently effective command data set is displayed in r0050.
A command data set can be copied using p0809.

p0811 BI: Command data set selection CDS bit 1 / CDS select., bit 1

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 8560
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source to select the Command Data Set bit 1 (CDS bit 1).
Dependency: Refer to: r0050, p0810, r0836
Note: Command data sets are selected using the binector inputs p0810, p0811, p0812 and p0813.
For a command data set, selected using the binector inputs, is displayed in r0836.
The currently effective command data set is displayed in r0050.
A command data set can be copied using p0809.

p0819[0...2] Copy Drive Data Set DDS / Copy DDS

VECTOR	**Can be changed:** C2(15)		**Access level:** 2
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** 8565
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	31	[0] 0 [1] 0 [2] 0

Description: Copies a Drive Data Set (DDS) into another.
Index: [0] = Source drive data set
[1] = Target drive data set
[2] = Start copying
Note: Procedure:
1. In Index 0, enter which drive data set is to be copied.
2. In Index 1, enter the drive data set data that is to be copied into.
3. Start copying: Set index 2 from 0 to 1.
p0819[2] is automatically set to 0 when copying is completed.

p0820[0...n] BI: Drive data set selection DDS bit 0 / DDS select., bit 0

VECTOR	**Can be changed:** C2(15), T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 8565
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source to select the Drive Data Set, bit 0 (DDS, bit 0).

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Dependency: Refer to: r0051, r0837

p0821[0...n] BI: Drive data set selection DDS bit 1 / DDS select., bit 1

VECTOR	**Can be changed:** C2(15), T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 8565
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select the Drive Data Set, bit 1 (DDS, bit 1).
Dependency: Refer to: r0051, r0837

p0822[0...n] BI: Drive data set selection DDS bit 2 / DDS select., bit 2

VECTOR	**Can be changed:** C2(15), T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 8565
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select the Drive Data Set, bit 2 (DDS, bit 2).
Dependency: Refer to: r0051, r0837

p0823[0...n] BI: Drive data set selection DDS bit 3 / DDS select., bit 3

VECTOR	**Can be changed:** C2(15), T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 8565
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select the Drive Data Set, bit 3 (DDS, bit 3).
Dependency: Refer to: r0051, r0837

p0824[0...n] BI: Drive data set selection DDS bit 4 / DDS select., bit 4

VECTOR	**Can be changed:** C2(15), T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 8565
	P-Group: Data sets	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select the Drive Data Set, bit 4 (DDS, bit 4).
Dependency: Refer to: r0051, r0837

p0826[0...n] Motor changeover, motor number / Mot_chng mot No.

VECTOR	**Can be changed:** C2(3), U		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** MDS, p0130	**Function diagram:** 8575
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 15	**Factory setting** 0

Description: Sets the freely-assignable motor number for the motor changeover.
Dependency: Refer to: p0827
Cautiont: When changing over motor data sets with the same motor number (e.g. star/delta changeover) and for a motor with brake, the motor brake remains open during the changeover.
Note: When the motor data sets are changed-over, the following applies:
The same motor number signifies the same thermal model.

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p0827[0...n] Motor changeover status word bit number / Mot_chg ZSW bitNo.

VECTOR

Can be changed: C2(3), U | **Access level:** 2
Data type: Unsigned16 | **Dynamic index:** MDS, p0130 | **Function diagram:** 8575
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	15	0

Description: Sets the bit number for every motor data set.
Example:
p0827[0] = 0: For MDS0, r0830.0 is switched.
p0827[1] = 5: For MDS1, r0830.5 is switched.

Dependency: Refer to: p0826, r0830

Note: A motor is only changed over (a new motor selected) after the pulses have been cancelled.
When the motor data sets are changed-over, the following applies:
Bit numbers that are not identical, signify that the motor must be changed over.

p0828[0...n] BI: Motor changeover, feedback signal / Mot_chng fdbk sig

VECTOR

Can be changed: C2(3), T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 8575
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the feedback signal when changing over the motor.
For p0833.0 = 1 the following applies:
This feedback signal (0/1 edge) is required after a motor changeover to enable the pulses.

Dependency: Refer to: p0833

r0830 CO/BO: Motor changeover, status word / Mot_chngov ZSW

VECTOR

Can be changed: - | **Access level:** 2
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 8575
P-Group: Displays, signals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the motor changeover.
These signals can be connected to digital outputs to change over the motor.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Motor selection, bit 0	High	Low	-
01	Motor selection, bit 1	High	Low	-
02	Motor selection, bit 2	High	Low	-
03	Motor selection, bit 3	High	Low	-
04	Motor selection, bit 4	High	Low	-
05	Motor selection, bit 5	High	Low	-
06	Motor selection, bit 6	High	Low	-
07	Motor selection, bit 7	High	Low	-
08	Motor selection, bit 8	High	Low	-
09	Motor selection, bit 9	High	Low	-
10	Motor selection, bit 10	High	Low	-
11	Motor selection, bit 11	High	Low	-
12	Motor selection, bit 12	High	Low	-
13	Motor selection, bit 13	High	Low	-
14	Motor selection, bit 14	High	Low	-
15	Motor selection, bit 15	High	Low	-

Dependency: Refer to: p0827

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p0831[0...15] BI: Motor changeover, contactor feedback / Mot_chg cont fdbk

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 8575
	P-Group: Motor	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the feedback signal of the contactors when changing over motors.

There is a fixed inter-relationship between energizing the contactor and the feedback signal.

Example:

A changeover is to be made between MDS0 (motor 0) and MDS1 (motor 1). The contactors should be switched using bit 4 (contactor 0) and 5 (contactor 1). The changeover should be made with an interconnection of the feedback signal.

Implementation:

MDS0: p0827[0] = 4, interconnect output to switch contactor 0 to r0830.4, p0831[4] = "input, feedback signal, contactor 0"

MDS1: p0827[1] = 5, interconnect output to switch contactor 1 to r0830.5, p0831[5] = "input, feedback signal, contactor 1"

The following sequence applies when changing over from MDS0 to MDS1:

1. The status bit p0830.4 is deleted. When the feedback signal (p0831[4]) is connected, the system waits until the feedback signal "contactor open" is displayed. If the feedback signal is not connected, then the system waits for the switch-off interlocking time of 320 ms.

2. The status bit p0830.5 is set. If the feedback signal (p0831[5]) is connected, the system waits until the feedback signal "contactor closed" is displayed. If the feedback signal is not connected, then the system waits for the switch-on interlocking time of 160 ms.

Index:
[0] = Feedback signal, contactor 0
[1] = Feedback signal, contactor 1
[2] = Feedback signal, contactor 2
[3] = Feedback signal, contactor 3
[4] = Feedback signal, contactor 4
[5] = Feedback signal, contactor 5
[6] = Feedback signal, contactor 6
[7] = Feedback signal, contactor 7
[8] = Feedback signal, contactor 8
[9] = Feedback signal, contactor 9
[10] = Feedback signal, contactor 10
[11] = Feedback signal, contactor 11
[12] = Feedback signal, contactor 12
[13] = Feedback signal, contactor 13
[14] = Feedback signal, contactor 14
[15] = Feedback signal, contactor 15

r0832 CO/BO: Mot. changeover, contactor feedback sig. status word / Mot_chng fdbk ZSW

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 8575
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0000 bin

Description: Displays the status word of the contactor feedback signals when changing over a motor.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Feedback signal, contactor 0	Closed	Opened	-
	01	Feedback signal, contactor 1	Closed	Opened	-
	02	Feedback signal, contactor 2	Closed	Opened	-
	03	Feedback signal, contactor 3	Closed	Opened	-
	04	Feedback signal, contactor 4	Closed	Opened	-
	05	Feedback signal, contactor 5	Closed	Opened	-
	06	Feedback signal, contactor 6	Closed	Opened	-
	07	Feedback signal, contactor 7	Closed	Opened	-
	08	Feedback signal, contactor 8	Closed	Opened	-
	09	Feedback signal, contactor 9	Closed	Opened	-
	10	Feedback signal, contactor 10	Closed	Opened	-
	11	Feedback signal, contactor 11	Closed	Opened	-
	12	Feedback signal, contactor 12	Closed	Opened	-
	13	Feedback signal, contactor 13	Closed	Opened	-
	14	Feedback signal, contactor 14	Closed	Opened	-
	15	Feedback signal, contactor 15	Closed	Opened	-

Dependency: Refer to: p0831

p0833 Data set changeover configuration / DS_chng config

VECTOR

Can be changed: C2(15), U — **Access level:** 2

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** 8575

P-Group: Data sets — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0010 bin

Description: Sets the configuration for the motor and encoder changeover.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Contactor changeover from the application/drive	application	Drive	-
	01	Pulse cancellation by application/drive	application	Drive	-
	02	Suppress drive parking for EDS changeover	Yes	No	-

Note: For VECTOR, the following applies:

The "flying restart" function should be activated (p1200) when changing-over to a motor that is already running.

Re bit 00:

When the bit is set and the motor has to be changed over, then p0827 must be set differently in the appropriate motor data sets.

Re bit 02:

The bit defines whether, for an EDS changeover, the status signal Gn_ZSW.14 is suppressed (parking encoder active).

r0835 CO/BO: Motor data set changeover status word / MDS_chngov ZSW

VECTOR

Can be changed: - — **Access level:** 2

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** 8575

P-Group: Displays, signals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the motor data set changeover.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Motor data set changeover active	active	Not active	8575

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r0836 CO/BO: Command Data Set CDS selected / CDS selected

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: 1530, 8560
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the Command Data Set (CDS) selected using p0810 ... p0813.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	CDS select. bit 0	On	Off	-
01	CDS select. bit 1	On	Off	-
02	CDS select. bit 2	On	Off	-
03	CDS select. bit 3	On	Off	-

Dependency: Refer to: r0050, p0810, p0811

Note: The currently effective command data set is displayed in r0050.

r0837 CO/BO: Drive Data Set DDS selected / DDS selected

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: 8565
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the Drive Data Set (DDS) selected using p0820 ... p0824.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DDS select. bit 0	On	Off	-
01	DDS select. bit 1	On	Off	-
02	DDS select. bit 2	On	Off	-
03	DDS select. bit 3	On	Off	-
04	DDS select. bit 4	On	Off	-

Dependency: Refer to: r0051, p0820, p0821, p0822, p0823, p0824

Note: If there is only one data set, then a value of 0 is displayed in this parameter and not the selection via binector inputs.

r0838[0...3] Motor/encoder data set selected / MDS/EDS selected

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: 8565
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the selected Motor Data Set (MDS) and the selected Encoder Data Sets (EDS).

Index: [0] = Motor Data Set MDS selected
[1] = Encoder 1 Encoder Data Set EDS selected
[2] = Encoder 2 Encoder Data Set EDS selected
[3] = Encoder 3 Encoder Data Set EDS selected

Dependency: Refer to: r0049, p0186, p0187, p0188, p0189

Note: Value 99 means the following: No encoder assigned (not configured).

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p0840[0...n] BI: ON/OFF1 / ON/OFF1

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 2610, 8720, 8920
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for control word 1 bit 0 (ON/OFF1).

Recommendation: When the signal source is set, this does not trigger a response - but only a signal change of the source.

Dependency: Refer to: p1055, p1056

Notice: For BI: p0840 = 0 signal, the motor can be moved, jogging using BI: p1055 or BI: p1056.
The command "ON/OFF1" can be issued using BI: p0840 or using BI: p1055/p1056.
Only the signal source that was used to power-up can also be used to power-down again.

Note: For drives with closed-loop speed control (p1300 = 20, 21), the following applies:
Bit 0 = 0: OFF1 (braking with the ramp-function generator, then pulse cancellation and power-on inhibit)
For drives with closed-loop torque control (p1300 = 22, 23), the following applies:
Bit 0 = 0: Immediate pulse cancellation
For drives with closed-loop torque control (activated using p1501), the following applies:
Bit 0 = 0: No dedicated braking response, but pulse cancellation when standstill is detected (p1226, p1227)
For drives with closed-loop speed/torque control, the following applies:
Bit 0 = 0/1: ON (pulses can be enabled)
For active infeeds (Active Line Module and Smart Line Module) the following applies:
Bit 0 = 0: OFF1 (reduce Vdc along the ramp, then pulse cancellation and pre-charging contactor/line contactor open)
Bit 0 = 0/1: ON (pre-charging contactor/line contactor closed, pulses can be enabled)
For passive infeeds (Basic Line Module) the following applies:
Bit 0 = 0: OFF1 (pre-charging contactor/line contactor open)
Bit 0 = 0/1: ON (pre-charging contactor/line contactor closed)
r0863.1 of a drive can also be selected as signal source.

p0844[0...n] BI: 1. OFF2 / 1. OFF2

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 8720, 8920
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for the 1st OC/OFF2.
The AND logic operation of the 1st OC/OFF2 and 2nd OC/OFF2 results in control word 1, bit 1 (OC/OFF2).

Caution: When "master control from PC" is activated, this binector input is ineffective.

Note: For drives, the following applies:
Bit 1 = 0: OFF2 (immediate pulse cancellation and power-on inhibit)
Bit 1 = 1: No OFF2 (enable is possible)
For infeed units, the following applies:
Bit 1 = 0: OFF2 (immediate pulse cancellation for active infeed modules and Smart Line Modules, pre-charging contactor/line contactor open and power-on inhibit)
Bit 1 = 1: No OFF2 (enable is possible)
OC: Operating condition

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p0845[0...n] BI: 2. OFF2 / 2. OFF2

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 8720, 8920
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for the 2nd OC/OFF2.
The AND logic operation of the 1st OC/OFF2 and 2nd OC/OFF2 results in control word 1, bit 1 (OC/OFF2).

Note: For drives, the following applies:
Bit 1 = 0: OFF2 (immediate pulse cancellation and power-on inhibit)
Bit 1 = 1: No OFF2 (enable is possible)
For infeed units, the following applies:
Bit 1 = 0: OFF2 (immediate pulse cancellation for active infeed modules and Smart Line Modules, pre-charging contactor/line contactor open and power-on inhibit)
Bit 1 = 1: No OFF2 (enable is possible)
OC: Operating condition

p0848[0...n] BI: 1. OFF3 / 1. OFF3

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for the 1st OC/OFF3.
The AND logic operation of the 1st OC/OFF3 and 2nd OC/OFF3 results in control word 1, bit 2 (OC/OFF3).

Caution: When "master control from PC" is activated, this binector input is ineffective.

Note: Bit 2 = 0: OFF3 (braking along the OFF3 ramp (p1135), then pulse cancellation and power-on inhibit)
Bit 2 = 1: No OFF3 (enable is possible)
OC: Operating condition

p0849[0...n] BI: 2. OFF3 / 2. OFF3

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for the 2nd OC/OFF3.
The AND logic operation of the 1st OC/OFF3 and 2nd OC/OFF3 results in control word 1, bit 2 (OC/OFF3).

Note: Bit 2 = 0: OFF3 (braking along the OFF3 ramp (p1135), then pulse cancellation and power-on inhibit)
Bit 2 = 1: No OFF3 (enable is possible)
OC: Operating condition

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p0852[0...n] BI: Enable operation / Enable operation

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2442, 2443, 2501, 8920
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for control word 1 bit 3 (enable operation)

Caution: When "master control from PC" is activated, this binector input is ineffective.

Note: Bit 3 = 0: Inhibit operation (cancel pulses)

Bit 3 = 1: Enable operation (pulses can be enabled)

p0854[0...n] BI: Master ctrl by PLC / Master ctrl by PLC

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 2442, 2443, 8720, 8920
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for control word 1 bit 10 (PLC control).

Note: Bit 10 = 0: No control from PLC

Bit 10 = 1: Control from PLC

This bit is used to initiate a response for the drives when the control fails (F07220). If there is not control available, then BI: p0854 should be set to a 1 signal.

p0855[0...n] BI: Unconditionally release holding brake / Uncond open brake

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 2701, 2707
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the command "unconditionally open holding brake".

Dependency: Refer to: p0858

Note: The signal via BI: p0858 (unconditionally close holding brake) has a higher priority than via BI: p0855 (unconditionally open holding brake).

p0856[0...n] BI: Enable speed controller / Enable n_ctrl

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 2701
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for the command "enable speed controller" (r0898.12).

0 signal: Set the I component and speed controller output to zero.

1 signal: Enable speed controller.

Dependency: Refer to: r0898

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Note: If "enable speed controller" is withdrawn, then if a brake being used, then it is closed.
If "speed controller enable" is withdrawn, the pulses are not cancelled.

p0857 Power unit monitoring time / LT t_monit

VECTOR

Can be changed: T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2610, 8932, 8964

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
100.0 [ms]	60000.0 [ms]	6000.0 [ms]

Description: Sets the monitoring time for the power unit.
The following applies for infeeds and drives:
The monitoring time is started after an 0/1 edge of the ON/OFF1 command. If the power unit does not return a READY signal within the monitoring time, then fault F06000 (infeeds) or F07802 (drives) is output.
For drives, the following also applies:
After the pulse enable (operation enabled, p0852), the monitoring time is re-started. If the infeed does not signal ready to the drive within the monitoring time (using BI: p0864 of the drive), fault F07840 is initiated.

Dependency: Refer to: F07802, F07840, F30027

Notice: The time to pre-charge the DC link is monitored in the power unit and cannot be changed. The maximum duration of the pre-charging depends on the power class and the power unit design. The monitoring time for the pre-charging is started after the 0/1 edge of the ON/OFF1 command. Fault F30027 is output when the maximum pre-charging duration is exceeded.

Note: The pre-assignment (default) value for p0857 depends on the power class and the design of the power unit.
The monitoring time for the ready signal of the power unit includes the time to pre-charge the DC link and, if relevant, the de-bounce time of the contactors.
If an excessively low value is entered into p0857, then after enable, this results in a fault.

p0858[0...n] BI: Unconditionally close holding brake / Uncond close brake

VECTOR

Can be changed: T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2501, 2701, 2707

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the command "unconditionally close holding brake".

Dependency: Refer to: p0855

Note: The signal via BI: p0858 (unconditionally close holding brake) has a higher priority than via BI: p0855 (unconditionally open holding brake).
For a 1 signal via BI: p0858, the command "unconditionally close the holding brake" is executed and internally a zero setpoint is entered.

p0860 BI: Line cont. fdbk sig / Line contact feedb

VECTOR

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 8734, 8934

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	863.1

Description: Sets the signal source for the feedback signal from the line contactor.

Recommendation: When the monitoring is activated (BI: p0860 not equal to r0863.1), then to control the line contactor, signal BO: r0863.1 of its own drive object should be used.

Dependency: Refer to: p0861, r0863
Refer to: F07300

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Notice: The line contactor monitoring is de-activated if the control signal of the particular drive object is set as the signal source for the feedback signal of the line contactor (BI: p0860 = r0863.1).

Note: The state of the line contactor is monitored depending on signal BO: r0863.1.

When the monitoring is activated (BI: p0860 not equal to r0863.1), fault F07300 is then also output if the contactor is closed before it is controlled using r0863.1.

p0861 Line contactor monitoring time / LineContact. t_mon

VECTOR

Can be changed: T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 8734, 8934

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	5000 [ms]	100 [ms]

Description: Sets the monitoring time of the line contactor.

This time starts each time that the line contactor switches (r0863.1). If a feedback signal is not received from the line contactor within the time, a message is output.

Dependency: Refer to: p0860, r0863

Refer to: F07300

Note: The monitoring function is disabled for the factory setting of p0860.

p0862 Power unit ON delay / LT t_on

VECTOR

Can be changed: T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2610, 8932

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	65000 [ms]	0 [ms]

Description: Sets the delay time for the control command of the power unit and a line contactor, if used.

Note: This means that it is possible to realize a shifted (delayed) pre-charging or power-on using a single ON command.

When the infeed units are active, before the line contactor is closed, an offset adjustment of the current measurement is carried-out for a duration of 120 ms (p3491).

r0863 CO/BO: Drive coupling status word/control word / CoupleZSW/STW

VECTOR

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1773, 1774

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status and control words of the drive coupling.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Closed-loop control operation	Yes	No	8732, 8932
01	Energize contactor	Yes	No	2610, 8734, 8934
02	Infeed line supply failure	Yes	No	-

Dependency: Refer to: p0864

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Note: Bit 0 signals that the infeed is ready.
Bit 1 is used to control an external line contactor.
When the operating signal is transferred via BO: r0863.0 this allows several drives to start (run-up) staggered over time when they are simultaneously powered-up.
To realize this, the following connections/interconnections are required:
Drive 1: Internconnect BI: p0864 with BO: r0863.0 of the infeed
Drive 2: Internconnect BI: p0864 with BO: r0863.0 of drive 1
Drive 3: Internconnect BI: p0864 with BO: r0863.0 of drive 2, etc.
The first drive only transfers the operating signal to the next drive after it has reached its ready condition.

p0864 BI: Infeed operation / INF operation

VECTOR

Can be changed: T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1773, 1774, 2610

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the operating signal of the infeed (e.g. BO: r0863.0).

Dependency: Refer to: r0863

Note: The sequence control of a servo/vector drive requires this signal.
The following applies for an infeed without DRIVE-CLiQ:
For these infeeds, the "ready" signal is available via an output terminal. This signal must be connected to a digital input. The drives supplied from this infeed must use this signal as ready signal (BI: p0864 = digital input).

p0895[0...n] BI: Activate/de-activate power unit components / LT_comp act/de-act

VECTOR

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** PDS, p0120 | **Function diagram:** -

P-Group: Displays, signals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source to activate/de-activate a power unit component.

Dependency: Refer to: p0125, r0126
Refer to: A05054

Note: The power unit is only de-activated when the pulses are cancelled.

r0896 BO: Parking axis, status word / Parking axis, ZSW

VECTOR

Can be changed: - | **Access level:** 2

Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -

P-Group: Displays, signals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the "parking axis" function.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Parking axis active	Yes	No	-

Dependency: Refer to: p0897

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p0897 BI: Parking axis selection / Parking axis sel

VECTOR	**Can be changed:** T		**Access level:** 2
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select the "parking axis" function.

Dependency: Refer to: r0896

Note: After it has been selected the "parking axis" function only becomes active when the pulses are cancelled.

r0898 CO/BO: Control word drive object 1 / STW DO1

CU_G	**Can be changed:** -		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Displays the control word of drive object 1 (Control Unit).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Synchronization signal SYN	Yes	No	-
01	Real time synchronization PING	Yes	No	-
07	Acknowledge fault	Yes	No	-
12	Master sign-of-life bit 0	Yes	No	-
13	Master sign-of-life bit 1	Yes	No	-
14	Master sign-of-life bit 2	Yes	No	-
15	Master sign-of-life bit 3	Yes	No	-

r0898 CO/BO: Control word sequence control / STW seq ctrl

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1530, 2501
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Displays the control word for the sequence control.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	ON/OFF1	Yes	No	-
01	OC / OFF2	Yes	No	-
02	OC / OFF3	Yes	No	-
03	Enable operation	Yes	No	-
04	Enables the ramp-function generator	Yes	No	-
05	Freeze ramp-function generator	No	Yes	-
06	Enable speed setpoint	Yes	No	-
07	Command, open brake	Yes	No	-
08	Jog 1	Yes	No	-
09	Jog 2	Yes	No	-
10	Master ctrl by PLC	Yes	No	-
12	Speed controller enable	Yes	No	-
14	Command, close brake	Yes	No	-

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r0899 CO/BO: Status word drive object 1 / ZSW DO1

CU_G

Can be changed: -
Access level: 2
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word from drive object 1 (Control Unit).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
03	Fault present	Yes	No	-
07	Alarm present	Yes	No	-
08	System time synchronized	Yes	No	-
12	Slave sign-of-life bit 0	Yes	No	-
13	Slave sign-of-life bit 1	Yes	No	-
14	Slave sign-of-life bit 2	Yes	No	-
15	Slave sign-of-life bit 3	Yes	No	-

r0899 CO/BO: Status word sequence control / ZSW seq_ctrl

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned16
Dynamic index: -
Function diagram: 1530, 2503
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the sequence control.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Ready to power up	Yes	No	-
01	Ready	Yes	No	-
02	Operation enabled	Yes	No	-
03	Jog active	Yes	No	-
04	No coasting active	OFF2 inactive	OFF2 active	-
05	No fast stop active	OFF3 inactive	OFF3 active	-
06	Power-on inhibit active	Yes	No	-
07	Drive ready	Yes	No	-
08	Controller enable	Yes	No	-
09	Control requested	Yes	No	-
11	Pulses enabled	Yes	No	-
12	Holding brake open	Yes	No	-
13	Command, close holding brake	Yes	No	-
14	Pulse enable from the brake control	Yes	No	-
15	Setpoint enable from the brake control	Yes	No	-

Note: Re bit 0, 1, 2, 4, 5, 6, 9:

For PROFIdrive, these signals are used for status word 1.

Re bit 13:

When the "Safe Brake Control" (SBC) is activated and selected, the brake is no longer controlled using this signal.

Re bit 14, 15:

These signals are only of significance when the "extended brake control" function module is activated (r0108.14 = 1).

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p0918 PROFIBUS address / PROFIBUS address

CU_G	**Can be changed:** T		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1520, 2410
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1	126	126

Description: Displays or sets the PROFIBUS address for PROFIBUS interface (X126) on the Control Unit. The address can be set as follows:
1) Using the DIP switch power-up the Control Unit.
--> p0918 can then only be read and displays the selected address.
--> A change only becomes effective after a POWER ON.
2) Using p0918
--> only if all of the DIP switches - from S1 to S7 - are either set to ON or OFF.
--> The address is saved in a non-volatile fashion using the function "copy from RAM to ROM".
--> A change only becomes effective after a POWER ON.

Note: Permissible PROFIBUS addresses: 1 ... 126
Address 126 is intended for commissioning.
Every PROFIBUS address change only becomes effective after a POWER ON.

p0922 PROFIBUS PZD telegram selection / PB PZD telegr_eval

CU_G	**Can be changed:** C2(1), T		**Access level:** 1
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	390	999	999

Description: Sets the send and receive telegram for PROFIBUS.
Either standard telegrams according to PROFIdrive can be selected or a telegram can be freely configured.

Values:
390: SIEMENS telegram 390, PZD-1/1
391: SIEMENS telegram 391, PZD-3/7
392: SIEMENS telegram 392, PZD-3/15
999: Free telegram configuration with BICO

p0922 PROFIBUS PZD telegram selection / PB PZD telegr_eval

VECTOR	**Can be changed:** C2(1), T		**Access level:** 1
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1520, 2420, 2460, 2470
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1	999	999

Description: Sets the send and receive telegram for PROFIBUS.
Either a standard telegram 1 according to PROFIdrive can be selected or a telegram can be freely configured.

Values:
1: Standard telegram 1, PZD-2/2
2: Standard telegram 2, PZD-4/4
20: Standard telegram 20, PZD-2/6
352: SIEMENS telegram 352, PZD-6/6
999: Free telegram configuration with BICO

Dependency: Refer to: F01505, F01506

Cautiont: Telegrams 2, 3 and 4 are not suitable for sensorless closed-loop vector control (p1300 = 20). For sensorless closed-loop vector control, it is necessary that the setpoint speed is entered at the ramp-function generator input (e.g. p1070) and not after the ramp-function generator (p1155).

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Note: If a value is not equal to 999, a telegram is set and the automatically set interconnections in the telegram are inhibited.
The inhibited interconnections can only be changed again if a value of 999 was set.

p0922 PROFIBUS PZD telegram selection / PB PZD telegr_eval

VECTOR (n/M)

Can be changed: C2(1), T | **Access level:** 1

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1520, 2420, 2460, 2470

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	999	999

Description: Sets the send and receive telegram for PROFIBUS.
Either a standard telegram 1 according to PROFIdrive can be selected or a telegram can be freely configured.

Values:
1: Standard telegram 1, PZD-2/2
2: Standard telegram 2, PZD-4/4
3: Standard telegram 3, PZD-5/9
4: Standard telegram 4, PZD-6/14
20: Standard telegram 20, PZD-2/6
352: SIEMENS telegram 352, PZD-6/6
999: Free telegram configuration with BICO

Dependency: Refer to: F01505, F01506

Cautiont: Telegrams 2, 3 and 4 are not suitable for sensorless closed-loop vector control (p1300 = 20). For sensorless closed-loop vector control, it is necessary that the setpoint speed is entered at the ramp-function generator input (e.g. p1070) and not after the ramp-function generator (p1155).

Note: If a value is not equal to 999, a telegram is set and the automatically set interconnections in the telegram are inhibited.
The inhibited interconnections can only be changed again if a value of 999 was set.

p0922 PROFIBUS PZD telegram selection / PB PZD telegr_eval

VECTOR (Pos ctrl)

Can be changed: C2(1), T | **Access level:** 1

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1520, 2420, 2460, 2470

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
2	999	999

Description: Sets the send and receive telegram for PROFIBUS.
Either a standard telegram 1 according to PROFIdrive can be selected or a telegram can be freely configured.

Values:
2: Standard telegram 2, PZD-4/4
999: Free telegram configuration with BICO

Dependency: Refer to: F01505, F01506

Cautiont: Telegrams 2, 3 and 4 are not suitable for sensorless closed-loop vector control (p1300 = 20). For sensorless closed-loop vector control, it is necessary that the setpoint speed is entered at the ramp-function generator input (e.g. p1070) and not after the ramp-function generator (p1155).

Note: If a value is not equal to 999, a telegram is set and the automatically set interconnections in the telegram are inhibited.
The inhibited interconnections can only be changed again if a value of 999 was set.

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p0922 PROFIBUS PZD telegram selection / PB PZD telegr_eval

VECTOR (EPOS)

Can be changed: C2(1), T | **Access level:** 1

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1520, 2420, 2460, 2470

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
7	999	999

Description: Sets the send and receive telegram for PROFIBUS.

Either a standard telegram 1 according to PROFIdrive can be selected or a telegram can be freely configured.

Values:
7: Standard telegram 7, PZD-2/2
110: SIEMENS telegram 110, PZD-12/7
999: Free telegram configuration with BICO

Dependency: Refer to: F01505, F01506

Cautiont: Telegrams 2, 3 and 4 are not suitable for sensorless closed-loop vector control (p1300 = 20). For sensorless closed-loop vector control, it is necessary that the setpoint speed is entered at the ramp-function generator input (e.g. p1070) and not after the ramp-function generator (p1155).

Note: If a value is not equal to 999, a telegram is set and the automatically set interconnections in the telegram are inhibited.

The inhibited interconnections can only be changed again if a value of 999 was set.

p0925 PROFIBUS clock synchronous sign-of-life tolerance / Master SoL_tol

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 2410

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	1

Description: Number of tolerated consecutive sign-of-life errors of the clock synchronous PROFIBUS master. The sign-of-life signal is normally received in PZD4 (control word 2) from the master.

Dependency: Refer to: p2045, r2065

Refer to: F01912

Note: The sign-of-life monitoring is disabled for p0925 = 65535.

r0930 PROFIBUS operating mode / PB operating mode

VECTOR

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the operating mode.

1: Closed-loop speed controlled operation with ramp-function generator

2: Closed-loop position controlled operation

3: Closed-loop speed controlled operation without ramp-function generator

r0944 Counter for fault buffer changes / Fault buff change

All objects

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 8060

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays fault buffer changes. This counter is incremented every time the fault buffer changes.

Recommendation: Used to check whether the fault buffer has been read out consistently.

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Dependency: Refer to: r0945, r0947, r0948, r0949, r2109

r0945[0...63] Fault code / Fault code

All objects

Can be changed: -		**Access level:** 2
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1750, 8060
P-Group: Messages	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays the numbers of faults that have occurred.
Dependency: Refer to: r0947, r0948, r0949, r2109, r2130, r2133, r2136
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).
Fault buffer structure (general principle):
r0945[0], r0949[0], r0948[0], r2109[0] --> actual fault case, fault 1
.
.
.
r0945[7], r0949[7], r0948[7], r2109[7] --> actual fault case, fault 8
r0945[8], r0949[8], r0948[8], r2109[8] --> 1st acknowledged fault case, fault 1
.
.
.
r0945[15], r0949[15], r0948[15], r2109[15] --> 1st acknowledged fault case, fault 8
.
.
.
r0945[56], r0949[56], r0948[56], r2109[56] --> 7th acknowledged fault case, fault 1
.
.
.
r0945[63], r0949[63], r0948[63], r2109[63] --> 7th acknowledged fault case, fault 8

r0946[0...65534] Fault code list / Fault code list

All objects

Can be changed: -		**Access level:** 3
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 8060
P-Group: Messages	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Lists the fault codes stored in the drive unit.
The indices can only be accessed with a valid fault code.
Dependency: The parameter assigned to the fault code is entered in r0951 under the same index.
Refer to: r0951

r0947[0...63] Fault number / Fault number

All objects

Can be changed: -		**Access level:** 3
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1750, 8060
P-Group: Messages	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: This parameter is identical to r0945.

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r0948[0...63] Fault time received in milliseconds / t_fault recv ms

All objects	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1750, 8060
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min - [ms]	**Max** - [ms]	**Factory setting** - [ms]

Description: Displays the system runtime in milliseconds when the fault occurred.
Dependency: Refer to: r0945, r0947, r0949, r2109, r2114, r2130, r2133, r2136
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r0949[0...63] Fault value / Fault value

All objects	**Can be changed:** -		**Access level:** 3
	Data type: Integer32	**Dynamic index:** -	**Function diagram:** 1750, 8060
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Displays additional information about the fault that occurred (as integer number).
Dependency: Refer to: r0945, r0947, r0948, r2109, r2130, r2133, r2136
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r0951[0...65534] Fault number list / Fault number list

All objects	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 8060
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Lists parameters assigned to a fault.
Dependency: Refer to: r0946

p0952 Fault cases, counter / Fault cases qty

All objects	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1710, 8060
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 0

Description: Number of fault situations that have occurred since the last reset.
Dependency: The fault buffer is deleted (cleared) by setting p0952 to 0.
Refer to: r0945, r0947, r0948, r0949, r2109, r2130, r2133, r2136

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r0963 PROFIBUS baud rate / PROFIBUS baud rate

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0	255	3

Values:

0: 9.6 kbit/s
1: 19.2 kbit/s
2: 93.75 kbit/s
3: 187.5 kbit/s
4: 500 kbit/s
6: 1.5 Mbit/s
7: 3 Mbit/s
8: 6 Mbit/s
9: 12 Mbit/s
10: 31.25 kbit/s
11: 45.45 kbit/s
255: Unknown

r0964[0...6] Device identification / Device ident.

CU_G

Can be changed: -
Access level: 2
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the device identification.

Index:
[0] = Company (Siemens = 42)
[1] = Device type
[2] = Firmware version
[3] = Firmware date (year)
[4] = Firmware date (day/month)
[5] = Number of drive objects
[6] = Firmware patch/hot fix

Note:
Example:
r0964[0] = 42 --> SIEMENS
r0964[1] = 5000 --> SINAMICS S CU320
r0964[1] = 5200 --> SINAMICS G CU320
r0964[2] = 102 --> first part of the firmware version V01.02 (second part, refer under index 6)
r0964[3] = 2003 --> year 2003
r0964[4] = 1401 --> 14th of January
r0964[5] = 4 --> 4 drive objects
r0964[6] = 600 --> second part, firmware version (complete version: V01.02.06.00)

r0965 PROFIBUS profile number / PB profile number

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the PROFIBUS profile number and profile version. Constant value = 0303 hex.
Byte 1: Profile number = 03 hex = PROFIdrive profile
Byte 2: Profile version = 03 hex = Version 3

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p0969 System runtime relative / t_System relative

CU_G	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1750, 8060
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min 0 [ms]	**Max** 4294967295 [ms]	**Factory setting** 0 [ms]

Description: Displays the system runtime in ms since the last POWER ON.

Note: The value in p0969 can only be reset to 0.

The value overflows after approx. 49 days.

p0970 Reset drive parameters / Drive par reset

VECTOR	**Can be changed:** C2(30)		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Factory settings	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 100	**Factory setting** 0

Description: The parameter is used to initiate that the parameters of an individual drive unit are reset.

Parameters p0100, p0205 (only for VECTOR) and the parameters of the basic drive commissioning (p0009) are not reset (p0107, p0108, p0111, p0112, p0115, p0121, p0130, p0131, p0140, p0141, p0142, p0170, p0186 ... p0189). These can only be reset using the factory setting of the complete drive unit (p0976).

Values:
0: not active
1: Starts a parameter reset
100: Starts a BICO interconnection reset

Note: A factory setting run can only be started if p0010 was first set to 30 (parameter reset).

At the end of the calculations, p0970 is automatically set to 0.

p0970 TB30 reset parameters / TB30 par reset

TB30	**Can be changed:** C2(30)		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Factory settings	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 100	**Factory setting** 0

Description: The parameter is used to initiate that the parameters are reset on Terminal Board 30 (TB30).

The sampling time p4099 is not reset if in so doing a conflict occurs with the basic clock cycle.

Parameter p0161 is not reset. It is only reset if the entire drive unit is reset to the factory settings (p0976).

Values:
0: not active
1: Starts a parameter reset
100: Starts a BICO interconnection reset

Note: A factory setting run can only be started if p0010 was first set to 30 (parameter reset).

At the end of the calculations, p0970 is automatically set to 0.

p0970 TM31 reset parameters / TM31 par reset

TM31	**Can be changed:** C2(30)		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Factory settings	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 100	**Factory setting** 0

Description: The parameter is used to initiate that the parameters are reset on Terminal Module 31 (TM31).

The sampling time p4099 is not reset if in so doing a conflict occurs with the basic clock cycle.

Parameter p0151 is not reset. It is only reset if the entire drive unit is reset to the factory settings (p0976).

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Values: 0: not active
1: Starts a parameter reset
100: Starts a BICO interconnection reset

Dependency: Refer to: p0010

Note: A factory setting run can only be started if p0010 was first set to 30 (parameter reset).
At the end of the calculations, p0970 is automatically set to 0.

p0971 Save drive object parameters / Save drv_obj

All objects

Can be changed: U, T | **Access level:** 1
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Factory settings | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Saves the parameters of the particular drive object in the non-volatile memory (CompactFlash card).

Values: 0: not active
1: Save drive object

Dependency: Refer to: p0977, p1960, p3845

Cautiont: The Control Unit power supply may only be powered-down after data has been saved (i.e. after data save has been started, wait until the parameter again has the value 0).

Note: Starting from the particular drive object, the following parameters are saved:
CU3xx: Device-specific parameters and PROFIBUS device parameters.
Other objects: Parameters of the actual object and PROFIBUS device parameters.
Prerequisite:
In order that the parameter of a drive object, saved with p0971 = 1, is read the next time that the Control Unit is booted, then all parameters must, as a minimum, have first been saved once with p0977 = 1.

r0975[0...10] Drive object identification / DO identification

All objects

Can be changed: - | **Access level:** 2
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the identification of the drive object.

Index: [0] = Company (Siemens = 42)
[1] = Drive object type
[2] = Firmware version
[3] = Firmware date (year)
[4] = Firmware date (day/month)
[5] = PROFIdrive drive object, type class
[6] = PROFIdrive drive object, sub-type Class 1
[7] = Reserved
[8] = Reserved
[9] = Reserved
[10] = Firmware patch/hot fix

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Note: Example:
r0975[0] = 42 --> SIEMENS
r0975[1] = 11 --> SERVO drive object type
r0975[2] = 102 --> first part, firmware version V01.02 (second part, refer to index 10)
r0975[3] = 2003 --> year 2003
r0975[4] = 1401 --> 14th of January
r0975[5] = 1 --> PROFIdrive drive object, type class
r0975[6] = 9 --> PROFIdrive drive object sub-type class 1
r0975[7] = 0 (reserved)
r0975[8] = 0 (reserved)
r0975[9] = 0 (reserved)
r0975[10] = 600 --> second part, firmware version (complete version: V01.02.06.00)

p0976 Reset and load all parameters / Reset load all par

CU_G

Can be changed: C1(30) **Access level:** 2

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Factory settings **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1013	0

Description: Resets or downloads all parameters of the drive system.

Values:
0: not active
1: Starts to reset all parameters to factory setting
2: Starts to download param. saved in non-volatile way w/ p0977 = 1
3: Start to download the volatile parameters from RAM
10: Starts to download param. saved in non-volatile way w/ p0977=10
11: Starts to download param. saved in non-volatile way w/ p0977=11
12: Starts to download param. saved in non-volatile way w/ p0977=12
20: Starts to download Siemens internal setting 20
21: Starts to download Siemens internal setting 21
22: Starts to download Siemens internal setting 22
23: Starts to download Siemens internal setting 23
24: Starts to download Siemens internal setting 24
25: Starts to download Siemens internal setting 25
26: Starts to download Siemens internal setting 26
100: Starts to reset all BICO interconnections
1011: Starts to download param. saved in volatile way w/ p0977 = 1011
1012: Starts to download param. saved in volatile way w/ p0977 = 1012
1013: Starts to download param. saved in volatile way w/ p0977 = 1013

Note: After all of the parameters have been reset to their factory setting, the system must commissioned for the first time again.
Resetting or loading is realized in the non-volatile memory.
Procedure:
1. Set p0009 = 30 (parameter reset).
2. Set p0976 to "required value". The system is rebooted.
p0976 is automatically set to 0 and p0009 is automatically set to 1 after this has been carried-out.

p0977 Save all parameters / Save all par

CU_G

Can be changed: U, T **Access level:** 1

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Factory settings **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1013	0

Description: Saves all parameters of the drive system to the non-volatile memory (CompactFlash card).

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Values:
0: not active
1: Save in non-volatile fashion - downloaded at POWER ON
10: Save as opt. in non-vol. fashion - downloaded w/ p0976=10
11: Save as opt. in non-vol. fashion - downloaded w/ p0976=11
12: Save as opt. in non-vol. fashion - downloaded w/ p0976=12
20: Save in a non-volatile fashion as setting 20 (reserved)
21: Save in a non-volatile fashion as setting 21 (reserved)
22: Save in a non-volatile fashion as setting 22 (reserved)
23: Save in a non-volatile fashion as setting 23 (reserved)
24: Save in a non-volatile fashion as setting 24 (reserved)
25: Save in a non-volatile fashion as setting 25 (reserved)
26: Save in a non-volatile fashion as setting 26 (reserved)
1011: Save in volatile fashion, loaded with p0976=1011
1012: Save in volatile fashion, loaded with p0976=1012
1013: Save in volatile fashion, loaded with p0976=1013

Dependency: Refer to: p0976, p1960, p3845

Cautiont: The Control Unit power supply may only be powered-down after data has been saved (i.e. after data save has been started, wait until the parameter again has the value 0).

Note: Parameters saved with p0977 = 10, 11 or 12 can be downloaded again with p0976 = 10, 11 or 12.

p0978[0...16] List of drive objects / List of the DO

CU_G

Can be changed: C1(1) **Access level:** 2

Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -

P-Group: Topology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	255	[0] 1 [1] 0 [2] 0 [3] 0 [4] 0 [5] 0 [6] 0 [7] 0 [8] 0 [9] 0 [10] 0 [11] 0 [12] 0 [13] 0 [14] 0 [15] 0 [16] 0

Description: This parameter is an image of p0101 in conformance with PROFIdrive.

Parameters p0101 and p0978 contain the following information:

1) The same number of drive objects

2) The same drive objects

In this sense, they are consistent.

Difference between p0101 and p0978:

p0978 can be re-sorted and a zero inserted in order to identify those drive objects that participate in the process data exchange and to define their sequence in the process data exchange. Drive objects that are listed after the first zero, are excluded from the process data exchange.

For p0978, in addition, the value 255 can be inserted a multiple number of times.

p0978[n] = 255 means: The drive object is visible for the PROFIBUS master and is empty (without any actual process data exchange). This allows cyclic communications of a PROFIBUS master with unchanged configuring to the drive units with a lower number of drive objects.

Dependency: Refer to: p0101, p0971, p0977

Note: p0978 cannot be changed when the drive system is first commissioned. The reason for this is that at this time the actual topology has still not been acknowledged (p0099 is still not equal to r0098 and p0009 is set to 0).

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r0979[0...30] Encoder format PROFIdrive / Encoder format

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 4010, 4704
	P-Group: Encoder	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the actual position encoder used according to PROFIdrive.

Index:
[0] = Header
[1] = Type, encoder 1
[2] = Resolution encod 1
[3] = Shift factor G1_XACT1
[4] = Shift factor G1_XACT2
[5] = Distinguishable revolutions encoder 1
[6] = Reserved
[7] = Reserved
[8] = Reserved
[9] = Reserved
[10] = Reserved
[11] = Type, encoder 2
[12] = Resolution encod 2
[13] = Shift factor G2_XACT1
[14] = Shift factor G2_XACT2
[15] = Distinguishable revolutions encoder 2
[16] = Reserved
[17] = Reserved
[18] = Reserved
[19] = Reserved
[20] = Reserved
[21] = Type, encoder 3
[22] = Resolution encod 3
[23] = Shift factor G3_XACT1
[24] = Shift factor G3_XACT2
[25] = Distinguishable revolutions encoder 3
[26] = Reserved
[27] = Reserved
[28] = Reserved
[29] = Reserved
[30] = Reserved

Note: Information on the individual indices should be taken from the PROFIdrive Profile Drive Technology.

r0980[0...99] List of existing parameters 1 / List avail par 1

All objects	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the parameters that exist for this drive.

Dependency: Refer to: r0981, r0989

Note: The existing parameters are displayed in indices 0 to 98. If an index contains the value 0, then the list ends here. In a long list, index 99 contains the parameter number at which position the list continues.

This list completely comprises the following parameters:

r0980[0...99], r0981[0...99] ... r0989[0...99]

The parameters in this list are not displayed in the expert list of the commissioning software. However, they can be read from a higher-level control system (e.g. PROFIBUS master).

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r0981[0...99] List of existing parameters 2 / List avail par 2

All objects

Can be changed: -		**Access level:** 4
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
P-Group: -	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays the parameters that exist for this drive.

Dependency: Refer to: r0980, r0989

Note: The existing parameters are displayed in indices 0 to 98. If an index contains the value 0, then the list ends here. In a long list, index 99 contains the parameter number at which position the list continues.

This list completely comprises the following parameters:

r0980[0...99], r0981[0...99] ... r0989[0...99]

The parameters in this list are not displayed in the expert list of the commissioning software. However, they can be read from a higher-level control system (e.g. PROFIBUS master).

r0989[0...99] List of existing parameters 10 / List avail par 10

All objects

Can be changed: -		**Access level:** 4
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
P-Group: -	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays the parameters that exist for this drive.

Dependency: Refer to: r0980, r0981

Note: The existing parameters are displayed in indices 0 to 98. If an index contains the value 0, then the list ends here.

This list completely comprises the following parameters:

r0980[0...99], r0981[0...99] ... r0989[0...99]

The parameters in this list are not displayed in the expert list of the commissioning software. However, they can be read from a higher-level control system (e.g. PROFIBUS master).

r0990[0...99] List of modified parameters 1 / List chang. par 1

All objects

Can be changed: -		**Access level:** 3
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
P-Group: -	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays those parameters with a value other than the factory setting for this drive.

Dependency: Refer to: r0991, r0999

Note: Modified parameters are displayed in indices 0 to 98. If an index contains the value 0, then the list ends here. In a long list, index 99 contains the parameter number at which position the list continues.

This list completely comprises the following parameters:

r0990[0...99], r0991[0...99] ... r0999[0...99]

The parameters in this list are not displayed in the expert list of the commissioning software. However, they can be read from a higher-level control system (e.g. PROFIBUS master).

r0991[0...99] List of modified parameters 2 / List chang. par 2

All objects

Can be changed: -		**Access level:** 3
Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
P-Group: -	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays those parameters with a value other than the factory setting for this drive.

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Dependency: Refer to: r0990, r0999

Note: Modified parameters are displayed in indices 0 to 98. If an index contains the value 0, then the list ends here. In a long list, index 99 contains the parameter number at which position the list continues.

This list completely comprises the following parameters:

r0990[0...99], r0991[0...99] ... r0999[0...99]

The parameters in this list are not displayed in the expert list of the commissioning software. However, they can be read from a higher-level control system (e.g. PROFIBUS master).

r0999[0...99] List of modified parameters 10 / List chang. par 10

All objects

Can be changed: -

Access level: 3

Data type: Unsigned16

Dynamic index: -

Function diagram: -

P-Group: -

Units group: -

Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays those parameters with a value other than the factory setting for this drive.

Dependency: Refer to: r0990, r0991

Note: Modified parameters are displayed in indices 0 to 98. If an index contains the value 0, then the list ends here.

This list completely comprises the following parameters:

r0990[0...99], r0991[0...99] ... r0999[0...99]

The parameters in this list are not displayed in the expert list of the commissioning software. However, they can be read from a higher-level control system (e.g. PROFIBUS master).

p1000[0...n] Macro Connector Inputs (CI) for speed setpoints / Macro CI n_set

VECTOR

Can be changed: C2(1), T

Access level: 1

Data type: Unsigned32

Dynamic index: CDS, p0170

Function diagram: -

P-Group: Commands

Units group: -

Unit selection: -

Min	Max	Factory setting
0	999999	0

Description: Runs the appropriate ACX file on the CompactFlash card.

The Connector Inputs (CI) for the speed setpoints of the appropriate Command Data Set (CDS) are appropriately interconnected.

The selected ACX file must be located in the following directory:

... /PMACROS/<drive object>/P1000/PMxxxxxx.ACX

Example:

p1000 = 6 --> the file PM000006.ACX is run.

Dependency: The ACX file to be run must be created according to the definition for ACX macros and must be saved in the directory intended on the CompactFlash card.

Refer to: p0015, p0700, p1500, r8572

Notice: No errors were issued during fast commissioning (p3900 = 1) when writing to parameters of the QUICK_IBN group!

Note: The macros in the specified directory are displayed in r8572.

Macros available as standard are described in the technical documentation of the particular product.

CI: Connector Input

p1001[0...n] CO: Fixed speed setpoint 1 / n_set_fixed 1

VECTOR

Can be changed: U, T

Access level: 2

Data type: Floating Point

Dynamic index: DDS, p0180

Function diagram: 3010

P-Group: Setpoints

Units group: 3_1

Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 1.

Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

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p1002[0...n] CO: Fixed speed setpoint 2 / n_set_fixed 2

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 2.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1003[0...n] CO: Fixed speed setpoint 3 / n_set_fixed 3

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 3.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1004[0...n] CO: Fixed speed setpoint 4 / n_set_fixed 4

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 4.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1005[0...n] CO: Fixed speed setpoint 5 / n_set_fixed 5

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 5.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1006[0...n] CO: Fixed speed setpoint 6 / n_set_fixed 6

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 6.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

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p1007[0...n] CO: Fixed speed setpoint 7 / n_set_fixed 7

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 7.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1008[0...n] CO: Fixed speed setpoint 8 / n_set_fixed 8

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 8.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1009[0...n] CO: Fixed speed setpoint 9 / n_set_fixed 9

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 9.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1010[0...n] CO: Fixed speed setpoint 10 / n_set_fixed 10

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 10.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1011[0...n] CO: Fixed speed setpoint 11 / n_set_fixed 11

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 11.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

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p1012[0...n] CO: Fixed speed setpoint 12 / n_set_fixed 12

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 12.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1013[0...n] CO: Fixed speed setpoint 13 / n_set_fixed 13

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 13.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1014[0...n] CO: Fixed speed setpoint 14 / n_set_fixed 14

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 14.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1015[0...n] CO: Fixed speed setpoint 15 / n_set_fixed 15

VECTOR

Can be changed: U, T — **Access level:** 2
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3010
P-Group: Setpoints — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets a value for the fixed speed / velocity setpoint 15.
Dependency: Refer to: p1020, p1021, p1022, p1023, r1024, r1197
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p1020[0...n] BI: Fixed speed setpoint selection Bit 0 / n_set_fixed Bit 0

VECTOR

Can be changed: T — **Access level:** 3
Data type: Unsigned32 — **Dynamic index:** CDS, p0170 — **Function diagram:** 2505
P-Group: Setpoints — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed speed setpoint.

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Dependency: Selects the required fixed speed setpoint using p1020 ... p1023.
Displays the number of the actual fixed speed setpoint in r1197.
Sets a value for the fixed speed setpoints 1 ... 15 using p1001 ... p1015.
Refer to: p1021, p1022, p1023, r1197
Note: If a fixed speed setpoint has not been selected (p1020 ... p1023 = 0, r1197 = 0), then r1024 = 0 (setpoint = 0).

p1021[0...n] BI: Fixed speed setpoint selection Bit 1 / n_set_fixed Bit 1

VECTOR | **Can be changed:** T | | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2505
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed speed setpoint.
Dependency: Selects the required fixed speed setpoint using p1020 ... p1023.
Displays the number of the actual fixed speed setpoint in r1197.
Sets a value for the fixed speed setpoints 1 ... 15 using p1001 ... p1015.
Refer to: p1020, p1022, p1023, r1197
Note: If a fixed speed setpoint has not been selected (p1020 ... p1023 = 0, r1197 = 0), then r1024 = 0 (setpoint = 0).

p1022[0...n] BI: Fixed speed setpoint selection Bit 2 / n_set_fixed Bit 2

VECTOR | **Can be changed:** T | | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2505
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed speed setpoint.
Dependency: Selects the required fixed speed setpoint using p1020 ... p1023.
Displays the number of the actual fixed speed setpoint in r1197.
Sets a value for the fixed speed setpoints 1 ... 15 using p1001 ... p1015.
Refer to: p1020, p1021, p1023, r1197
Note: If a fixed speed setpoint has not been selected (p1020 ... p1023 = 0, r1197 = 0), then r1024 = 0 (setpoint = 0).

p1023[0...n] BI: Fixed speed setpoint selection Bit 3 / n_set_fixed Bit 3

VECTOR | **Can be changed:** T | | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2505
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed speed setpoint.
Dependency: Selects the required fixed speed setpoint using p1020 ... p1023.
Displays the number of the actual fixed speed setpoint in r1197.
Sets a value for the fixed speed setpoints 1 ... 15 using p1001 ... p1015.
Refer to: p1020, p1021, p1022, r1197
Note: If a fixed speed setpoint has not been selected (p1020 ... p1023 = 0, r1197 = 0), then r1024 = 0 (setpoint = 0).

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r1024 CO: Fixed speed setpoint effective / n_set_fixed eff

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 1550, 3010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the selected and effective fixed speed setpoint.
This setpoint is the output value for the fixed speed setpoints and must be appropriately interconnected (e.g. with the main setpoint).

Recommendation: Interconnect the signal with main setpoint (p1070).

Dependency: Selects the required fixed speed setpoint using p1020 ... p1023.
Displays the number of the actual fixed speed setpoint in r1197.
Sets a value for the fixed speed setpoints 1 ... 15 using p1001 ... p1015.
Refer to: p1070, r1197

Note: If a fixed speed setpoint has not been selected (p1020 ... p1023 = 0, r1197 = 0), then r1024 = 0 (setpoint = 0).

p1030[0...n] Motorized potentiometer, configuration / Mop configuration

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned16
Dynamic index: DDS, p0180
Function diagram: 3020
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0110 bin

Description: Sets the configuration for the motorized potentiometer.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Data save active	Yes	No	-
01	Automatic mode, ramp-function generator active	Yes	No	-
02	Initial rounding-off active	Yes	No	-
03	Save in NVRAM active	Yes	No	-

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Note: Re bit 00:

0: The setpoint for the motorized potentiometer is not saved and after ON is entered using p1040.

1: The setpoint for the motorized potentiometer is saved after OFF and after ON set to the saved value. In order to save in a non-volatile fashion, bit 03 should be set to 1.

Re bit 01:

0: Without ramp-function generator in the automatic mode (ramp-up/ramp-down time = 0).

1: With ramp-function generator in the automatic mode.

For manual operation (0 signal via BI: p1041), the ramp-function generator is always active.

Re bit 02:

0: Without initial rounding-off

1: With initial rounding-off. The selected ramp-up/down time is correspondingly exceeded. The initial rounding-off is a sensitive way of specifying small changes (progressive reaction when keys are pressed).

The jerk for the initial rounding-off is independent of the ramp-up time and only depends on the selected maximum speed (p1082). It is calculated as follows:

r = 0.01 % * p1082 [1/s] / 0.13^2 [s^2]

The jerk acts up until the maximum acceleration is reached (a_max = p1082 [1/s] / p1047 [s]), and then the drive continues to run linearly with a constant rate of acceleration. The higher the maximum acceleration (the lower that p1047 is), the longer the ramp-up time increases with respect to the set ramp-up time.

Re bit 03:

0: Non-volatile data save de-activated.

1: The setpoint for the motorized potentiometer is saved in a non-volatile fashion (for bit 00 = 1).

The following prerequisites must be fulfilled in order to be able to save the setpoint in a non-volatile fashion:

- Firmware with V2.3 or higher.
- Control Unit 320 (CU320) with hardware version C or higher (module with NVRAM).

p1035[0...n] BI: Motorized potentiometer, setpoint, raise / Mop raise

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2442, 2505
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to increase the setpoint for the motorized potentiometer

Dependency: Refer to: p1036

p1036[0...n] BI: Motorized potentiometer, lower setpoint / Mop lower

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2442, 2505
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to reduce the setpoint for the motorized potentiometer.

Dependency: Refer to: p1035

p1037[0...n] Motorized potentiometer, maximum speed / Mop n_max

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min -210000.000 [1/min]	**Max** 210000.000 [1/min]	**Factory setting** 0.000 [1/min]

Description: Sets the maximum speed/velocity for the motorized potentiometer.

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Note: This parameter is automatically pre-assigned in the commissioning phase.
The setpoint output from the motorized potentiometer is limited to this value.

p1038[0...n] Motorized potentiometer, minimum speed / Mop n_min

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 3020
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the minimum speed/velocity for the motorized potentiometer.
Note: This parameter is automatically pre-assigned in the commissioning phase.
The setpoint output from the motorized potentiometer is limited to this value.

p1039[0...n] BI: Motorized potentiometer, inversion / Mop inversion

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 3020
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to invert the maximum or minimum speed/velocity for the motorized potentiometer.
Dependency: Refer to: p1037, p1038
Note: The inversion is only active during "motorized potentiometer raise" or "motorized potentiometer lower".

p1040[0...n] Motorized potentiometer, starting value / Mop start value

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 3020
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the starting value for the motorized potentiometer. This starting value becomes effective after the drive has been powered-up.
Dependency: Only effective if p1030.0 = 0.
Refer to: p1030

p1041[0...n] BI: Motorized potentiometer, manual/automatic / Mop manual/auto

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 3020
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to change over from manual to automatic when using a motorized potentiometer.
In the manual mode, the setpoint is changed using two signals - raise and lower. In the automatic mode, the setpoint must be interconnected via a connector input.
Dependency: Refer to: p1030, p1035, p1036, p1042
Note: The effectiveness of the internal ramp-function generator can be set in automatic mode.

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p1042[0...n] CI: Motorized potentiometer, automatic setpoint / Mop auto setpoint

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the setpoint of the motorized potentiometer in the automatic mode.
Dependency: Refer to: p1041

p1043[0...n] BI: Motorized potentiometer, accept setpoint / Mop accept set val

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the setting command to accept the setting value for the motorized potentiometer.
Dependency: Refer to: p1044

p1044[0...n] CI: Motorized potentiometer, setting value / Mop setting value

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the setting value for the motorized potentiometer.
Dependency: Refer to: p1043
Note: The value becomes effective for a 0/1 edge of the setting command.

r1045 CO: Mot. potentiometer, speed setp. in front of ramp-fct. gen. / Mop n_set bef. RFG

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min	**Max**	**Factory setting**
	- [1/min]	- [1/min]	- [1/min]

Description: Sets the effective setpoint in front of the internal motorized potentiometer ramp-function generator.

p1047[0...n] Motorized potentiometer, ramp-up time / Mop ramp-up time

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.000 [s]	1000.000 [s]	10.000 [s]

Description: Sets the ramp-up time for the internal ramp-function generator for the motorized potentiometer.
The setpoint is changed from the zero up to the speed/velocity limit (p1082) within this time (if no initial rounding-off has been activated).
Dependency: Refer to: p1030, p1048, p1082
Note: When the initial rounding-off is activated (p1030.2) the ramp-up time is correspondingly extended.

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p1048[0...n] Motorized potentiometer, ramp-down time / Mop ramp-down time

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3020
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 1000.000 [s]	**Factory setting** 10.000 [s]

Description: Sets the ramp-down time for the internal ramp-function generator for the motorized potentiometer.
The setpoint is changed from the speed/velocity limit (p1082) to zero within this time (if no initial rounding-off has been activated).

Dependency: Refer to: p1030, p1047, p1082

Note: The deceleration time is extended corresponding to the activated initial rounding-off (p1030.2).

r1050 CO: Motor. potentiometer, setpoint after the ramp-function generator / Mop setp after RFG

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1550, 3020
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Sets the effective setpoint after the internal motorized potentiometer ramp-function generator.
This setpoint is the output value of the motorized potentiometer and must be appropriately interconnected onwards (e.g. with the main setpoint).

Recommendation: Interconnect the signal with main setpoint (p1070).

Dependency: Refer to: p1070

Note: For "With ramp-function generator", after an OFF1, OFF2, OFF3 or for a 0 signal via BI: p0852 (inhibit operation, cancel pulses) the ramp-function generator output (r1050) is set to the starting value (configuration via p1030.0).

p1055[0...n] BI: Jog bit 0 / Jog bit 0

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 2610, 3030
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for jog 1.

Recommendation: When the signal source is set, this does not trigger a response - but only a signal change of the source.

Dependency: Refer to: p0840, p1058

Notice: The drive is enabled for jogging using BI: p1055 or BI: p1056.
The command "ON/OFF1" can be issued using BI: p0840 or using BI: p1055/p1056.
Only the signal source that was used to power-up can also be used to power-down again.

p1056[0...n] BI: Jog bit 1 / Jog bit 1

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2501, 2610, 3030
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for jog 2.

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Recommendation: When the signal source is set, this does not trigger a response - but only a signal change of the source.

Dependency: Refer to: p0840, p1059

Notice: The drive is enabled for jogging using BI: p1055 or BI: p1056.
The command "ON/OFF1" can be issued using BI: p0840 or using BI: p1055/p1056.
Only the signal source that was used to power-up can also be used to power-down again.

p1058[0...n] Jog 1 speed setpoint / Jog 1 n_set

VECTOR

Can be changed: T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 3030

P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the speed/velocity for jog 1. Jogging is level-triggered and allows the motor to be incrementally moved.

Dependency: Refer to: p1055, p1056

p1059[0...n] Jog 2 speed setpoint / Jog 2 n_set

VECTOR

Can be changed: T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 3030

P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
-210000.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the speed/velocity for jog 2. Jogging is level-triggered and allows the motor to be incrementally moved.

Dependency: Refer to: p1055, p1056

p1063[0...n] Speed limit, setpoint channel / n_limit setp.

VECTOR

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	210000.000 [1/min]

Description: Sets the speed limit/velocity limit effective in the setpoint channel.

Dependency: Refer to: p1082, p1083, p1085, p1086, p1088

p1070[0...n] CI: Main setpoint / Main setpoint

VECTOR

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 1550, 3030

P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1024[0]

Description: Sets the signal source for the main setpoint.
Examples:
r1024: Fixed speed setpoint effective
r1050: Motor. potentiometer, setpoint after the ramp-function generator

Dependency: Refer to: p1071, r1073, r1078

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p1071[0...n] CI: Main setpoint scaling / Main setpt scal

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 3030
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for scaling the main setpoint.

r1073 CO: Main setpoint effective / Main setpoint eff

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3030
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the effective main setpoint. The value shown is the main setpoint after scaling.

p1075[0...n] CI: Suppl setpoint / Suppl setpoint

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 1550, 3030
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the supplementary setpoint.
Dependency: Refer to: p1076, r1077, r1078

p1076[0...n] CI: Supplementary setpoint scaling / Suppl setpt scal

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 3030
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for scaling the supplementary setpoint.

r1077 CO: Supplementary setpoint effective / Suppl setpoint eff

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3030
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the effective supplementary setpoint. The value shown is the additional setpoint after scaling.

r1078 CO: Total setpoint effective / Total setpoint eff

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3030
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the total effective setpoint. The value indicates the sum of the effective main setpoint and supplementary setpoint.

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p1080[0...n] Minimum speed / Minimum speed

VECTOR	**Can be changed:** C2(1), T		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3050
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min 0.000 [1/min]	**Max** 19500.000 [1/min]	**Factory setting** 0.000 [1/min]

Description: Sets the lowest possible speed/velocity. This value is not fallen below in operation.

Note: The parameter value applies for both motor directions of rotation.

In exception cases, the motor can operate below this value (e.g. when reversing).

p1082[0...n] Maximum speed / Maximum speed

VECTOR	**Can be changed:** C2(1), T		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3020, 3050, 3060, 3070, 3095, 5300
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min 0.000 [1/min]	**Max** 210000.000 [1/min]	**Factory setting** 1500.000 [1/min]

Description: Sets the highest possible speed.

Dependency: Refer to: p0115, p0230, r0313, p0322, r0336

Note: The parameter applies for both motor directions. The parameter has a limiting effect and is the reference quantity for all ramp-up and ramp-down times (e.g. down ramps, ramp-function generator, motor potentiometer).

The parameter is part of the fast commissioning (p0010 = 1); this means that it is appropriately pre-assigned when changing p0311 and p0322.

The following limits are always effective for p1082:

p1082 <= p0322, if p0322 > 0

p01082 <= Maximum(15 * r0336, 650 Hz) / r0313

p01082 <= maximum power unit pulse frequency / (k * r0313)

k = 12 for closed-loop vector control (r0108 bit2 = 1), k = 6.5 for U/f control (r0108 bit2 = 0)

If a sinusoidal filter (p0230 = 3) is parameterized as output filter, then the maximum speed is limited corresponding to the maximum permissible filter output frequency (refer to the filter data sheet). For reactors and du/dt filters, it is limited to 150 Hz / r0313 (for chassis power units) or 120Hz / r0313 (for booksize power units).

For the automatic calculation (p0340 = 1) the value of the parameter is pre-assigned the maximum motor speed (p0322). If p0322 = 0, the rated motor speed (p0311) is used as default (pre-assignment) value. For induction motors that are not catalog motors (p0301 = 0), the synchronous no-load speed is used as default (pre-assignment) value (p0310 * 60 / r0313).

For synchronous motors, the following additionally applies:

In the automatic calculation (p0340), p1082 is limited to speeds where the EMF does not exceed the DC link voltage.

The effective assignment of the motor data set parameter (e.g. p0311) to the drive data set parameter p1082 when pre-assigning should be taken from p186.

Parameter p1082 is also available in the fast commissioning (p0010=1); this means that when exiting via p3900 > 0, the value is not changed.

p1083[0...n] CO: Speed limit in positive direction of rotation / n_limit pos

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3050
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min 0.000 [1/min]	**Max** 210000.000 [1/min]	**Factory setting** 210000.000 [1/min]

Description: Sets the maximum speed for the positive direction.

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

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r1084 Speed limit positive effective / n_limit pos eff

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 3050, 5030, 5210, 6640, 7020, 8010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the effective positive speed limit.

p1085[0...n] CI: Speed limit in positive direction of rotation / n_limit pos

VECTOR

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 3050
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1083[0]

Description: Sets the signal source for the speed limit of the positive direction.

p1086[0...n] CO: Speed limit negative direction of rotation / n_limit neg

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3050
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
-210000.000 [1/min]	0.000 [1/min]	-210000.000 [1/min]

Description: Sets the speed limit for the negative direction.
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

r1087 Speed limit negative effective / n_limit neg eff

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 3050, 5030, 5210, 6640, 7020, 8010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the effective negative speed limit.

p1088[0...n] CI: Speed limit negative direction of rotation / n_limit neg

VECTOR

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 3050
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1086[0]

Description: Sets the signal source for the speed/velocity limit of the negative direction.

p1091[0...n] Skip speed 1 / Skip speed 1

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3050
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the skip speed/velocity 1.

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Dependency: Refer to: p1092, p1093, p1094, p1101
Note: The skip (suppression) speeds can be used to prevent the effects of mechanical resonance.

p1092[0...n] Skip speed 2 / Skip speed 2

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3050
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the skip speed/velocity 2.
Dependency: Refer to: p1091, p1093, p1094, p1101

p1093[0...n] Skip speed 3 / Skip speed 3

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3050
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the skip speed/velocity 3.
Dependency: Refer to: p1091, p1092, p1094, p1101

p1094[0...n] Skip speed 4 / Skip speed 4

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3050
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the skip speed/velocity 4.
Dependency: Refer to: p1091, p1092, p1093, p1101

p1101[0...n] Skip speed bandwidth / Skip_n bandwidth

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3050
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	0.000 [1/min]

Description: Sets the bandwidth for the skip speeds/velocities 1 to 4.
Dependency: Refer to: p1091, p1092, p1093, p1094
Note: The setpoint (reference) speeds are skipped (suppressed) in the range of the skip speed +/-p1101.
Steady-state operation is not possible in the skipped (suppressed) speed range. The skip (suppression) range is skipped.
Example:
p1091 = 600 and p1101 = 20 --> setpoint speeds of between 580 and 620 [RPM] are skipped.

p1110[0...n] BI: Inhibit negative direction / Inhib neg dir rot

VECTOR

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 2505
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to disable the negative direction.

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Dependency: Refer to: p1111

p1111[0...n] BI: Inhibit positive direction / Inhib pos dir rot

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2505
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to disable the positive direction.
Dependency: Refer to: p1110

r1112 CO: Speed setpoint after minimum limiting / n_set n. min_lim

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3050
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed / velocity setpoint after the minimum limiting.
Dependency: Refer to: p1091, p1092, p1093, p1094, p1101

p1113[0...n] BI: Direction reversal / Direction reversal

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2442, 2505
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to reverse the motor direction (of rotation).
Dependency: Refer to: r1198

r1114 CO: Setpoint after the direction of rotation limit / Setpt after limit

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 1550, 3040, 3050
P-Group: Setpoints | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed/velocity setpoint after the changeover and limiting the direction.

p1115 Ramp-function generator selection / RFG selection

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 1550, 3080
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the ramp-function generator type.
Values:
0: Basic ramp-function generator
1: Extended ramp-function generator
Note: Another ramp-function generator type can only be selected when the motor is at a standstill.

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r1119 CO: Ramp-function generator setpoint at the input / RFG setpt at input

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 1550, 1750, 3050, 3060, 3070, 8010
P-Group: Setpoints
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the setpoint at the input of the ramp-function generator.
Note: The setpoint is influenced by other functions, e.g. skip (suppressed) speeds, minimum and maximum limits.

p1120[0...n] Ramp-function generator ramp-up time / RFG ramp-up time

VECTOR

Can be changed: C2(1), U, T
Access level: 1
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3060, 3070
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
0.000 [s]	999999.000 [s]	10.000 [s]

Description: The drive is accelerated from standstill (setpoint = 0) up to the maximum speed (p1082) in this time.
Dependency: Refer to: p1082
Note: The parameter is adapted during the rotating measurement (p1960 > 0). This is the reason that during the rotating measurement, the motor can accelerate faster than was originally parameterized.

p1121[0...n] Ramp-function generator ramp-down time / RFG ramp-down time

VECTOR

Can be changed: C2(1), U, T
Access level: 1
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3060, 3070
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
0.000 [s]	999999.000 [s]	10.000 [s]

Description: The drive is decelerated from the maximum speed (p1082) down to standstill (setpoint = 0) in this time.
Dependency: Refer to: p1082

p1122[0...n] BI: Bypass ramp-function generator / Bypass RFG

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 2505
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for bypassing the ramp generator (ramp-up and ramp-down times = 0).
Note: For VECTOR in sensorless operation, it is not permissible that the ramp-function generator is bypassed.

p1130[0...n] Ramp-function generator initial rounding-off time / RFG t_start_round

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 3070
P-Group: Setpoints
Units group: -
Unit selection: -

Min	Max	Factory setting
0.000 [s]	30.000 [s]	0.000 [s]

Description: Sets the initial rounding-off time for the extended ramp generator. The value applies to ramp-up and ramp-down.
Note: Rounding-off times avoid an abrupt response and prevent damage to the mechanical system.

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p1131[0...n] Ramp-function generator final rounding-off time / RFG t_end_delay

VECTOR

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3070

P-Group: Setpoints — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	30.000 [s]	0.000 [s]

Description: Sets the final rounding-off time for the extended ramp generator. The value applies to ramp-up and ramp-down.

Note: Rounding-off times avoid an abrupt response and prevent damage to the mechanical system.

p1134[0...n] Ramp-function generator rounding-off type / RFG round-off type

VECTOR

Can be changed: U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** DDS, p0180 — **Function diagram:** 3070

P-Group: Setpoints — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the smoothed response to the OFF1 command or the reduced setpoint for the extended ramp-function generator.

Values:
0: Cont. smoothing
1: Discont smoothing

Dependency: No effect up to initial rounding-off time (p1130) > 0 s.

Note: p1134 = 0 (continuous smoothing)

If the setpoint is reduced while ramping-up, initially a final rounding-off is carried-out and then the ramp-up completed. During the final rounding-off, the output of the ramp-function generator continues to go in the direction of the previous setpoint (overshoot). After the final rounding-off has been completed, the output goes toward the new setpoint.

p1134 = 1 (discontinuous smoothing)

If the setpoint is reduced while ramping-up, then the output goes immediately in the direction of the new setpoint. For the setpoint change there is no rounding-off.

p1135[0...n] OFF3 ramp-down time / RFG OFF3 t_ramp-dn

VECTOR

Can be changed: C2(1), U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3060, 3070

P-Group: Setpoints — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	600.000 [s]	0.000 [s]

Description: Sets the ramp-down time from the maximum speed down to zero speed for the OFF3 command.

Note: This time can be exceeded if the DC-link voltage reaches its maximum value.

p1136[0...n] OFF3 initial rounding-off time / RFGOFF3 t_strt_rnd

VECTOR

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 3070, 3080

P-Group: Setpoints — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	30.000 [s]	0.000 [s]

Description: Sets the initial rounding-off time for OFF3 for the extended ramp generator.

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p1137[0...n] OFF3 final rounding-off time / RFG OFF3 t_end_del

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3070
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 30.000 [s]	**Factory setting** 0.000 [s]

Description: Sets the final rounding-off time for OFF3 for the extended ramp generator.

p1140[0...n] BI: Enables the ramp-function generator / Enable RFG

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2442, 2443, 2501
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for control word 1 bit 4 (operating condition/disable ramp-function generator).
Dependency: Refer to: p1141, p1142
Note: Bit 4 = 0: Inhibits the ramp-function generator (the ramp-function generator output is set to zero)
Bit 4 = 1: Operating condition (the ramp-function generator can be enabled)

p1141[0...n] BI: Start ramp-function generator / Start RFG

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2442, 2443, 2501
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for control word 1 bit 5 (enables ramp-function generator/ stops ramp-function generator)
Dependency: Refer to: p1140, p1142
Notice: The ramp-function generator is, independent of the status of the signal source, active in the following cases:
- OFF1/OFF3.
- ramp-function generator output within the suppression bandwidth.
- ramp-function generator output below the minimum speed.

Note: Bit 5 = 0: Stop the ramp-function generator (the ramp-function generator output is frozen)
Bit 5 = 1: Enable ramp-function generator

p1142[0...n] BI: Enable speed setpoint / Enable n_set

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2442, 2443, 2501
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for control word 1 bit 6 (enables setpoint/disable setpoint).
Dependency: Refer to: p1140, p1141
Note: Bit 6 = 0: Inhibits the setpoint (the ramp-function generator input is set to zero)
Bit 6 = 1: Enable setpoint

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p1143[0...n] BI: Ramp-function generator, accept setting value / Accept RFG set val

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 3070
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for accepting the setting value of the ramp-function generator.

Dependency: The signal source for the ramp-function generator setting value is set using parameters.

Refer to: p1144

Note: 0/1 signal:

The ramp-function generator output is immediately (without delay) set to the setting value of the ramp-function generator.

1 signal:

The setting value of the ramp-function generator is effective.

1/0 signal:

The input value of the ramp-function generator is effective. The ramp-function generator output is adapted to the input value using the ramp-up time or the ramp-down time.

0 signal:

The input value of the ramp-function generator is effective.

p1144[0...n] CI: Ramp-function generator setting value / RFG setting value

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 3070
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the ramp-function generator setting value.

Dependency: The signal source for accepting the setting value is set using parameters.

Refer to: p1143

p1145[0...n] Ramp-function generator tracking intensity. / RFG track intens

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3080
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.0	50.0	1.3

Description: Sets the ramp-function generator tracking.

The output value of the ramp-function generator is tracked (corrected) corresponding to the maximum possible drive acceleration. The reference value is the deviation at the speed/velocity controller input that is necessary to ensure that the motor accelerates at the torque/force limit.

Recommendation: p1145 = 0.0:

This value de-activates the ramp-function generator tracking.

p1145 = 0.0 ... 1.0:

Generally, these values are not practical. They cause the motor to accelerate below its torque limit. The lower the selected value, the greater the margin between the controller and torque limit when accelerating.

p1145 > 1.0:

The greater the value, the higher the permissible deviation between the speed setpoint and speed actual value.

Note: In the U/f mode, the ramp-function generator tracking is not active.

For SERVO with U/f operation, the following applies:

The complete ramp-function generator is not active, i.e. ramp-up and ramp-down time = 0.

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p1148[0...n] Ramp-function gen., tolerance for ramp-up and ramp-down active / RFG tol HL/RL act

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 3060, 3070
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min 0.00 [1/min]	**Max** 1000.00 [1/min]	**Factory setting** 19.80 [1/min]

Description: Sets the tolerance value for the status of the ramp-function generator (ramp-up active, ramp-down active).

If the input of the ramp-function generator does not change in comparison to the output by more than the entered tolerance time, then the status bits "ramp-up active" and "ramp-down active" are not influenced.

Dependency: Refer to: r1199

r1150 CO: Ramp-function generator speed setpoint at the output / RFG n_set at outp

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1550, 3060, 3070, 3080
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Displays the setpoint at the output of the ramp-function generator.

p1151[0...n] Ramp-function generator configuration / RFG config

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** DDS, p0180	**Function diagram:** 3070
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Sets the configuration for the expanded ramp-function generator.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Disable rounding-off at the zero cross-over	Yes	No	3070

Notice: Re bit 00:

If the ramp-up time is longer than the ramp-down time (p1120 > p1121), then there is an acceleration step after the zero crossover.

Note: Re bit 00:

When the bit is set, at the direction change there is no rounding-off before and after the zero crossover.

p1152 BI: Setpoint 2 enable / Setpt 2 enable

VECTOR (Extended brk)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2711
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 899.15

Description: Sets the signal source for "setpoint 2 enable".

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p1155[0...n] CI: Speed controller speed setpoint 1 / n_ctrl n_set 1

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 1550, 3080
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for speed setpoint 1 of the speed controller.

Dependency: The effectiveness of this setpoint depends on, e.g. STW1.4 and STW1.6.
Refer to: r0898, p1140, p1142, p1160, r1170

p1160[0...n] CI: Speed controller speed setpoint 2 / n_ctrl n_set 2

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 1550, 3080
	P-Group: Setpoints	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for speed setpoint 2 of the speed controller.

Dependency: Refer to: p1155, r1170

Note: For OFF1/OFF3, the ramp-function generator ramp is effective.
The ramp-function generator is set (SERVO: to the actual value, VECTOR: To the setpoint (r1170)) and stops the drive corresponding to the ramp-downtime (p1121 or p1135). While stopping via the ramp-function generator, STW1.4 is effective (enable ramp-function generator).

r1169 CO: Speed controller, speed setpoints 1 and 2 / n_ctrl n_set 1/2

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 3080
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Displays the speed setpoint after the addition of the speed setpoint 1 (p1155) and speed setpoint 2 (p1160).

Dependency: Refer to: p1155, p1160

Note: The value is only correctly displayed when the drive has been enabled.

r1170 CO: Speed controller, setpoint sum / n_ctr setp sum

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1550, 1590, 3080, 5020
	P-Group: Setpoints	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Displays the speed setpoint after selecting the ramp-function generator and adding the speed setpoint 1 (p1155) and speed setpoint 2 (p1160).

Dependency: Refer to: r1150, p1155, p1160

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p1189[0...n] Speed setpoint configuration / n_ctrl config

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** DDS, p0180 | **Function diagram:** 3080

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0011 bin

Description: Sets the configuration for the speed setpoint.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Interpolation ramp-fct gen/speed controller active	Yes	No	3080
01	Interpol. op-loop ctrl /speed controller active	Yes	No	3080

Note: Re bit 01:

The interpolator is only effective for clock-cycle synchronous PROFIBUS operation and when the master receives a sign of life (STW 2.12 ... STW 2.15).

r1197 Fixed speed setpoint, actual number / n_set_fixed No act

VECTOR

Can be changed: - | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3010

P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of the selected fixed speed/velocity setpoint.

Dependency: Refer to: p1020, p1021, p1022, p1023

Note: If a fixed speed setpoint has not been selected (p1020 ... p1023 = 0, r1197 = 0), then r1024 = 0 (setpoint = 0).

r1198 CO/BO: Control word setpoint channel / STW setpoint chan

VECTOR

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1530, 2505

P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word for the setpoint channel.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Fixed setp. bit 0	Yes	No	-
01	Fixed setp. bit 1	Yes	No	-
02	Fixed setp. bit 2	Yes	No	-
03	Fixed setp. bit 3	Yes	No	-
05	Inhibit negative direction	Yes	No	-
06	Inhibit positive direction	Yes	No	-
11	Direction reversal	Yes	No	-
13	Motorized potentiometer, raise	Yes	No	-
14	Motorized potentiometer, lower	Yes	No	-
15	Bypass ramp-function generator	Yes	No	-

r1199 CO/BO: Ramp-function generator status word / RFG ZSW

VECTOR

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1550, 3080, 8010

P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the ramp-function generator (RFG).

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Ramp-up active	Yes	No	-
	01	Ramp-down active	Yes	No	-
	02	Ramp-function generator active	Yes	No	-
	03	Ramp-function generator set	Yes	No	-
	04	Ramp-function generator held	Yes	No	-
	05	Ramp-function generator tracking active	Yes	No	-
	06	Maximum limit active	Yes	No	-

Note: Re bit 02:

The bit is an OR logic operation - bit 00 and bit 01.

p1200[0...n] FlyRest oper mode / FlyRest oper mode

VECTOR

Can be changed: U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** DDS, p0180 — **Function diagram:** 1690

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	6	0

Description: Sets the operating mode for flying restart.

The flying restart allows the drive converter to be powered-up while the motor is still rotating. In so doing, the drive converter output frequency is changed until the actual motor speed/velocity is found.. The motor then accelerates up to the setpoint at the ramp generator setting.

Values:

0: Flying restart inactive
1: Flying restart always active (start in setpoint direction)
2: FlyRestart active after on, fault, OFF2 (start in setp. dir.)
3: FlyRestart active after fault, OFF2 (start in setp. direction)
4: Flying restart always active (start only in setpoint direction)
5: FlyRestart active after on, fault, OFF2 (start only in setp_dir)
6: FlyRestart active after fault, OFF2 (start only in setp. dir.)

Dependency: A differentiation is made between flying restart for U/f control and for vector control (p1300).

Flying restart, U/f control: p1202, p1203, r1204

Flying restart for vector control: p1202, p1203, r1205

Notice: The "flying restart" function must be used in cases where the motor is possibly still running (e.g. after a brief line supply interruption) or is being driven by the load. The system might otherwise shut down as a result of overcurrent.

It does not make sense to use "flying restart" together with the "motor holding brake function" (p1215 > 0) because then the flying restart will always be realized with the motor stationary.

Note: For p1202 = 100 % and p1203 = 100 %, the following applies:

The flying restart takes, as a maximum, twice as long as the motor excitation time (p0346).

For p1200 = 1, 4, the following applies:

Flying restart is active after faults, OFF1, OFF2, OFF3.

For p1200 = 2, 5, the following applies:

The "power-on" is the first power-on operation after the drive system has been booted. This is practical for motors with a high-inertia load.

For p1200 = 1, 2, 3, the following applies: The search is made in both directions.

For p1200 = 4, 5, 6, the following applies: The search is only made in the setpoint direction.

For operation with encoder, the following applies:

p1200 = 1, 4 as well as p1200 = 2, 5 and p1200 = 3, 6 have the same meaning.

For U/f control (p1300 > 20), the following applies:

The speed can only be sensed for values above approx. 5% of the rated motor speed. At lower speeds, it is assumed that the motor is at a standstill (zero speed).

If p1200 is changed while commissioning (p0009, p0010 > 0), then it is possible that the old value will no longer be able to be set. The reason for this is that the dynamic limits of p1200 have been changed by a parameter that was set when the drive was commissioned (e.g. p0300).

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p1202[0...n] FlyRest srch curr / FlyRest srch curr

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
10 [%]	400 [%]	100 [%]

Description: Sets the search current for the "flying restart" function. The value is referred to the motor magnetizing current.

Dependency: Refer to: r0331

Caution: An unfavorable parameter value can result in the motor behaving in an uncontrollable fashion.

Note: Reducing the search current can improve the flying restart performance (if the system moment of inertia is not very high).

p1203[0...n] Flying restart search rate factor / FlyRst v_Srch Fact

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
10 [%]	400 [%]	100 [%]

Description: The value influences the rate at which the output frequency is changed during a flying restart . A higher value results in a longer search time.

Caution: An unfavorable parameter value can result in the motor behaving in an uncontrollable fashion.

Notice: For vector control, a value that is too low or too high can cause flying restart to become unstable.

r1204 CO/BO: Flying restart, U/F control status / FlyRestrt Uf stat

VECTOR

Can be changed: - | **Access level:** 4

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status for checking and monitoring flying restart states in the U/f control mode.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Current impressed	Yes	No	-
01	No current flow	Yes	No	-
02	Voltage input	Yes	No	-
03	Voltage reduced	Yes	No	-
04	Start ramp-function generator	Yes	No	-
05	Wait for execution	Yes	No	-
06	Slope filter act	Yes	No	-
07	Positive gradient	Yes	No	-
08	Current < thresh	Yes	No	-
09	Current minimum	Yes	No	-
10	Search in the positive direction	Yes	No	-
11	Stop after positive direction	Yes	No	-
12	Stop after negative direction	Yes	No	-
13	No result	Yes	No	-

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r1205 CO/BO: Flying restart, vector control status / FlyRestrtVectStat

VECTOR

Can be changed: -
Access level: 4
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status for checking and monitoring flying restart states in the vector control mode.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Save the angle of the speed adaptation circuit	Yes	No	-
01	Set speed adaptation circuit gain to 0	Yes	No	-
02	Enable Isd channel	Yes	No	-
03	Speed control switched-in	Yes	No	-
04	Quadrature arm switched-in	Yes	No	-
05	Special transformation active	Yes	No	-
06	Set I comp of the speed adaptation circuit to 0	Yes	No	-
07	Current control on	Yes	No	-
08	Isd_set = 0 A	Yes	No	-
09	Reserved	Yes	No	-
10	Search in the positive direction	Yes	No	-
11	Search Started	Yes	No	-
12	Current impressed	Yes	No	-
13	Search interrupted	Yes	No	-
14	Deviation of the speed adaptation circuit = 0	Yes	No	-
15	Speed control activated	Yes	No	-

Note: Bits 0..9: Used by the control in internal sequences during the flying restart.
Depending on the machine type (p0300), the number of active bits differs.
Bits 10..15: Are used to monitor the flying restart sequence.
For PEM, only bits 10, 11 and 15 are supported.

p1208[0...1] BI: AR infeed fault / AR infeed fault

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Modifying the automatic restart.
By interconnecting the binector output of the infeed "Infeed fault" to this binector input Index 0 (p1208[0] = r2139.3), the automatic restart function of the subsequent DOs - in mode p1210 = 6 - can respond to infeed faults.
By interconnecting the binector output of the infeed "Infeed line supply failure" to this binector input Index 1 (p1208[1] = r0863.2), the automatic restart function of the subsequent DOs, in the mode p1210 = 4, can respond to the line supply failure of the infeed.

Index: [0] = Infeed fault
[1] = Fault

Dependency: Refer to: r0863, r2139

p1210 Automatic restart, mode / AR mode

VECTOR

Can be changed: U, T
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0	6	0

Description: Sets the automatic restart mode (AR).

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Values:
0: Disables automatic restart
1: Acknowledges all faults without restarting
4: Restart after power failure without additional start attempts
6: Restart after fault with additional start attempts

Dependency: The automatic restart requires an active ON command, e.g. that is available at a digital input.

If, for p1210 = 4, 6 there is no active ON command, then the automatic restart is interrupted.

When using an Advanced Operator Panel (AOP) in the LOCAL Mode, then there is no automatic restart.

Refer to: p0840, p0857, p1267

Refer to: F30003

Cautiont: A change is only accepted and made if the state "initialization" (r1214.0) and "wait for alarm" (r1214.1).

For p1210 > 1, the motor is automatically started.

Note: For brief line supply failures, the motor shaft can still be rotating when restarting. In order to restart while the motor shaft is still rotating, the "flying restart" function should be activated using p1200.

p1210 = 4:

An automatic restart is only carried-out if Fault F30003 occurred at the Motor Module or a high signal is present at the binector input p1208[1]. If additional faults are present, then these faults are also acknowledged and when successful, starting continues. If the 24 V CU power supply fails, then this is interpreted as a line supply failure.

p1210 = 6:

An automatic restart is carried-out if any fault has occurred and there is a high signal at binector input p1208[0].

p1210 = 1:

Faults that are present are automatically acknowledged. If new faults occur after a successful fault acknowledgement, then these are also automatically acknowledged again. A minimum time of p1212 + 1s must expire between a successful fault acknowledgement and a fault re-occurring if the signal ON/OFF1 (control word 1, bit 0) is at a HIGH signal level. If the signal ON/OFF1 is at a LOW signal level, then the time between a successful fault acknowledgement and a new fault must be at least 1s.

For p1210 = 1, fault F07320 is not generated if the acknowledgement attempt was not successful, for example, due to frequently occurring faults.

p1211 Automatic restart, start attempts / AR start attempts

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	10	3

Description: Sets the absolute number of start attempts for the automatic restart function when any faults are automatically acknowledged (p1210 = 6).

Dependency: The setting of this parameter is always effective for p1210 = 6. For p1210 = 4, the parameter only has an influence if an additional undervoltage fault occurs at the start attempt.

Refer to: p1210, r1214

Refer to: F07320

Cautiont: A change is only accepted and made if the state "initialization" (r1214.0) and "wait for alarm" (r1214.1).

Notice: After fault F07320 occurs, the power-on command must be withdrawn and all of the faults acknowledged so that the automatic restart function is re-activated.

Note: A starting attempt starts immediately when a fault occurs. The start attempt is considered to been completed if the motor was magnetized (r0056.4 = 1) and an additional delay time of 1 s has expired.

As long as a fault is present, an acknowledge command is generated in the time intervals of p1212 / 2. When successfully acknowledged, the start counter is decremented. If, after this, a fault re-occurs before a restart has been completed, then acknowledgement starts again from the beginning.

Fault F07320 is output if, after several faults occur, the number of parameterized start attempts has been reached. After a successful start attempt, i.e. a fault/error has no longer occurred up to the end of the magnetizing phase, the start counter is again reset to the parameter value after 1 s. If a fault re-occurs - the parameterized number of start attempts is again available.

At least one start attempt is always carried-out.

After a line supply failure, acknowledgement is immediate and when the line supply returns, the system is powered-up. If, between successfully acknowledging the line fault and the line supply returning, another fault occurs, then its acknowledgement also causes the start counter to be decremented.

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p1212 Automatic restart, delay time start attempts / AR t_wait start

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.1 [s]	600.0 [s]	1.0 [s]

Description: Sets the delay time up to restart.

Dependency: This parameter setting is active for p1210 = 1, 4, 6.
Refer to: p1210, r1214

Cautiont: A change is only accepted and made if the state "initialization" (r1214.0) and "wait for alarm" (r1214.1).

Note: The faults are automatically acknowledged after half of the waiting time has expired and the full waiting time.
if the cause of a fault is not removed in the first halves of the delay time, then it is no longer possible to acknowledge in this time slice.

p1213 Automatic restart, monitoring time line supply return / AR t_mon line sup

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	1999.0 [s]	0.0 [s]

Description: Sets the monitoring time of the automatic restart (AR).

Dependency: Refer to: p1210, r1214

Cautiont: A change is only accepted and made if the state "initialization" (r1214.0) and "wait for alarm" (r1214.1).

Notice: After fault F07320 occurs, the power-on command must be withdrawn and all of the faults acknowledged so that the automatic restart function is re-activated.

Note: The monitoring time starts when the faults are detected. If the automatic acknowledgements are not successful, the monitoring time runs again. If, after the monitoring time has expired, the drive has still not successfully started again (flying restart and magnetization of the motor must have been completed: r0056.4 = 1), then fault F07320 is output.
The monitoring is de-activated with p1213 = 0. If p1213 is set lower than the sum of p1212, the magnetizing time p0346 and the additional delay time due to the flying restart, then fault F07320 is generated at each restart. If, for p1210 = 1, the time in p1213 is set lower than in p1212, then fault F07320 is also generated at each restart.
The monitoring time must extended, if the faults that occur cannot be immediately and successfully acknowledged (e.g. for faults that are permanently present).

r1214 CO/BO: Automatic restart, status / AR status

VECTOR

Can be changed: - — **Access level:** 4
Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -
P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Automatic restart (AR) status word.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Initialization	Yes	No	-
01	Wait for alarm	Yes	No	-

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02	Auto restart act.	Yes	No	-
03	Setting the acknowledgement command	Yes	No	-
04	Acknowledge alarms	Yes	No	-
05	Restart	Yes	No	-
06	Delay time running after automatic power-up	Yes	No	-
07	Fault	Yes	No	-
12	Start count. bit 0	On	Off	-
13	Start count. bit 1	On	Off	-
14	Start count. bit 2	On	Off	-
15	Start count. bit 3	On	Off	-

Note: Re bit 00:

Status to display the single initialization after power on.

Re bit 01:

State in which the automatic restart function waits for faults (initial state).

Re bit 02:

General display that a fault has been identified and that the restart or acknowledgement has been initiated.

Re bit 03:

Displays the acknowledge command within the 'acknowledge alarms' status (bit 04 = 1). For bit 05 = bit 06 = 1, the acknowledge command is continually displayed.

Re bit 04:

State in which the faults that are present are acknowledged. The status is exited again after successful acknowledgement. A change is only made into the next state if it is signaled that a fault is no longer present after an acknowledgement command (bit 3 = 1).

Re bit 05:

State in which the drive is automatically powered-up (only for p1210 = 4, 6).

Re bit 06:

State in which the system waits after having been powered-up, to the end of the start attempt (to the end of the magnetization process).

For p1210 = 1, this signal is directly set after the faults have been successfully acknowledged.

Re bit 07:

State, which is assumed after a fault occurs within the automatic restart function.

Re bits 12 ... 15:

Actual state of the start counter (binary coded).

p1215 Motor holding brake configuration / Brake config

VECTOR

Can be changed: U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** 2701, 2707, 2711

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Sets the holding brake configuration.

Values:
0: No motor holding brake being used
1: Motor holding brake acc. to sequence control
2: Motor holding brake always open
3: Motor holding brake like sequence control, connection via BICO

Dependency: Refer to: p1216, p1217, p1226, p1227, p1228

Cautiont: For the setting p1215 = 0, if a brake is used, it remains closed. If the motor moves, this will destroy the brake.

Notice: If p1215 was set to 1 or if p1215 was set to 3, then when the pulses are cancelled, the brake is closed even if the motor is still rotating. Pulse cancellation can either be caused by a 0 signal at p0844, p0845 or p0852 or as a result of a fault with OFF2 response. If this is not desirable (e.g. for a flying restart), then the brake can be kept open using a 1 signal at p0855.

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Note: If the configuration is set to "no holding brake present" when booting, then the motor holding brake will be automatically identified. If a motor holding brake is detected, the configuration is set to "motor holding brake as for sequence control".

if an external motor holding brake is being used, then p1215 should be set to 3 and r0899.12 should be interconnected as control signal.

When the function module "extended brake control" is activated (r0108.14 = 1), r1229.1 should be interconnected as control signal.

The parameter can only be set to zero when the pulses are inhibited.

The parameterization "no motor holding brake available" and "Safe Brake Control" enabled (p1215 = 0, p9602 = 1, p9802 = 1) is not practical if there is no motor holding brake.

The parameterization "motor holding brake the same as sequence control, connection via BICO" and "Safe Brake Control" enabled (p1215 = 3, p9602 = 1, p9802 = 1) is not practical.

p1216 Motor holding brake, opening time / Brake t_open

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2701, 2711

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	10000 [ms]	100 [ms]

Description: Sets the time to open the motor holding brake.

After controlling the holding brake (opens), the speed/velocity setpoint remains at zero for this time. After this, the speed/velocity setpoint is enabled.

Recommendation: This time should be set longer than the actual opening time of the brake. This ensures that the drive cannot accelerate when the brake is applied.

Dependency: Refer to: p1215, p1217

p1217 Motor holding brake closing time / Brake t_close

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2701, 2711

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	10000 [ms]	100 [ms]

Description: Sets the time to apply the motor holding brake.

After OFF1 or OFF3 and the holding brake is controlled (the brake closes), then the drive remains closed-loop controlled for this time stationary with a speed setpoint/velocity setpoint of zero. The pulses are cancelled when the time expires.

Recommendation: This time should be set longer than the actual closing time of the brake. This ensures that the pulses are only canceled after the brake has closed.

Dependency: Refer to: p1215, p1216

Notice: If the selected closing time is too short with respect to the actual closing time of the brake, then the load can sag.

If the closing time is selected to be too long with respect to the actual closing time of the brake, the control works against the brake and therefore reduces its lifetime.

p1218[0...1] BI: Open motor holding brake / Open brake

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2707

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for a conditional opening of the motor holding brake.

Dependency: Refer to: p1215

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Note: [0]: Signal, open brake, AND logic operation, input 1
[1]: Signal, open brake, AND logic operation, input 2

p1219[0...3] BI: Immediately close motor holding brake / Close brake

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2707
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	[0] 0 [1] 0 [2] 0 [3] 1229.9

Description: Sets the signal source for an unconditional (immediate) closing of the motor holding brake.
Dependency: Refer to: p1215, p1275
Note: [0]: Signal, immediately close brake, inversion via p1275.0
[1]: Signal, immediately close brake, inversion via p1275.1
[2]: Signal, immediately close brake
[3]: Signal, immediately close brake - refer to the factory setting
These four signals form an OR logic operation.

p1220 CI: Open motor holding brake, signal source, threshold / Open brake thresh

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2707
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the command "open brake".
Dependency: Refer to: p1215, p1221, r1229, p1277

p1221 Open motor holding brake, threshold / Open brake thresh

VECTOR (Extended brk)

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2707
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	200.00 [%]	0.00 [%]

Description: Sets the threshold value for the command "open brake".
Dependency: Refer to: p1220, r1229, p1277

p1222 BI: Motor holding brake, feedback signal, brake closed / Brake feedb closed

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2711
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the feedback signal "brake closed".
For motor holding brakes with feedback signal, the signal "brake closed" can be activated using p1275.5 = 1.
Dependency: Refer to: p1223, p1275
Note: 1 signal: Brake closed.
When braking with 1 feedback signal, the inverted feedback signal is connected to the BICO input for the second feedback signal (p1223).

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p1223 BI: Motor holding brake, feedback signal, brake open / Brake feedb open

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2711
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the feedback signal "brake open".
For motor holding brakes with feedback signal, the signal "brake open" can be activated using p1275.5 = 1.

Dependency: Refer to: p1222, p1275

Note: 1 signal: Brake open.
When braking with 1 feedback signal, the inverted feedback signal is connected to the BICO input for the second feedback signal (p1222).

p1224[0...3] BI: Close motor holding brake at standstill / Brk close standst

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2704
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for close brake at standstill.

Dependency: Refer to: p1275

Note: [0]: Signal, close brake at standstill, inversion via p1275.2
[1]: Signal, close brake at standstill, inversion via p1275.3
[2]: Signal, close brake at standstill
[3]: Signal, close brake at standstill
These four signals form an OR logic operation.

p1225 CI: Standstill detection, threshold value / Standstill thresh

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2704
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	63[0]

Description: Sets the signal source "threshold value" for the standstill identification.

Dependency: Refer to: p1226, p1228, r1229

p1226 Threshold for zero speed detection / n_standst n_thresh

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2701, 2704
P-Group: Functions | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.0 [1/min]	210000.0 [1/min]	20.0 [1/min]

Description: Sets the speed threshold for the standstill identification.
Acts on the actual value and setpoint monitoring.
When braking with OFF1 or OFF3, when the threshold is fallen below, standstill is identified.
The following applies when the braking signal is activated:
When the threshold is fallen below, the braking signal is started and the system waits for the brake closing time in p1217. The pulses are then canceled.
if the braking signal is not activated, the following applies:
When the threshold is fallen below, the pulses are cancelled and the drive coasts down.

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Dependency: Refer to: p1215, p1216, p1217, p1227

Note: Standstill is detected if the actual speed drops below the speed threshold in p1226 or if the monitoring time (p1227) - started when speed setpoint <= speed threshold (p1226) - has expired.

The actual value sensing is subject to measuring noise. For this reason, standstill cannot be detected if the speed threshold is too low.

p1227 Zero speed detection monitoring time / n_standst t_monit

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2701, 2704

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	300.000 [s]	4.000 [s]

Description: Sets the monitoring time for the standstill identification.

When braking with OFF1 or OFF3, standstill is identified after this time has expired, after the setpoint speed has fallen below p1226 (also refer to p1145).

After this, the braking signal is started, the system waits for the closing time in p1217 and then the pulses are cancelled.

Dependency: Refer to: p1215, p1216, p1217, p1226

Note: Standstill (zero speed) is detected if, during the complete monitoring time (p1227), the speed setpoint falls below the speed threshold (p1226).

For p1227 = 300.000 s, the following applies:

The monitoring is deactivated.

For p1227 = 0.000 s, the following applies:

With OFF1 or OFF3 and a ramp-down time = 0, the pulses are immediately cancelled and the motor "coasts" down.

p1228 Pulse cancellation delay time / Pulse canc t_del

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2701, 2704

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	10.000 [s]	0.000 [s]

Description: Sets the delay time for pulse cancellation.

After OFF1 or OFF3 and zero speed detection, the system waits for this time to expire and the pulses are then canceled.

Dependency: Refer to: p1226, p1227

Note: Standstill (zero speed) is detected if, during the complete delay time (p1228), the speed actual value falls below the speed threshold (p1226).

r1229 CO/BO: Motor holding brake status word / Brake ZSW

VECTOR (Extended brk)

Can be changed: - | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the motor holding brake.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	01	Command, open brake (continuous signal)	Yes	No	2711
	03	Pulse enable, expanded brake control	Yes	No	2711
	04	Brake does not open	Yes	No	2711
	05	Brake does not close	Yes	No	2711
	06	Brake threshold exceeded	Yes	No	2707
	07	Brake threshold fallen below	Yes	No	2704
	08	Brake monitoring time expired	Yes	No	2704
	09	Pulse enable request missing/n_ctrl inhibited	Yes	No	2707
	10	Brake OR logic operation result	Yes	No	2707
	11	Brake AND logic operation result	Yes	No	2707

p1230[0...n] BI: Activating armature short-circuit / ASC act

VECTOR

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to activate the armature short-circuit.

Dependency: Refer to: p1231, p1235, p1236, p1237, r1239

Note: 0 signal: Armature short-circuit is de-activated.

1 signal: Armature short-circuit is activated.

p1231[0...n] Configuration, armature short-circuit / ASC config

VECTOR

Can be changed: U, T | **Access level:** 1

Data type: Integer16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Setting to activate various types of armature short-circuit configurations.

Values:
0: No function
1: External armature short-circuit with contactor feedback signal
2: Ext. armature short-circuit without contactor feedback signal
3: Internal voltage protection

Dependency: Refer to: p0300, p1230, p1235, p1236, p1237, r1239

Danger:

Re p1231 = 1, 2:

- only short-circuit proof motors may be used and suitable resistors must be used to short-circuit the motor.

Re p1231 = 3:

- when the internal voltage protection is active, after pulse cancellation, all of the motor terminals are at half of the DC link voltage (without an internal voltage protection, the motor terminals are at zero potential)!
- it is only permissible to use motors that are short-circuit proof (p0320<p0323).
- the Motor Module must be able to continually conduct 180% short-circuit current (r0331) of the motor (r0289).
- the internal voltage protection cannot be interrupted due to a fault response. If an overcurrent condition occurs during the active, internal voltage protection, then this can destroy the Motor Module and/or the motor.
- in order to ensure safe function of IVP when the power fails, an external 24 V power supply

(UPS) must be used for all of the components.

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Note: Re p1231 = 1, 2:

The external armature short-circuit can only be selected for synchronous motors (p0300). In this case, control bit BO: r1239.0 must be interconnected to control the external contactor (e.g. to a digital input).

Re p1231 = 3:

The internal voltage protection (using an internal armature short-circuit) can only be selected for synchronous motors (p0300) and Booksize Motor Modules. Further, it is not permissible that Safety is active (i.e. p9501 = 0 and p9601 = 0). The internal voltage protection prevents the DC link capacitance from being charged if there is no possibility of regenerating the EMF of a motor operated in the field-weakening mode.

Note:

ASC: Armature Short-Circuit

IVP: Internal Voltage Protection

UPS: Uninterruptible Power Supply

p1235[0...n] BI: External armature short-circuit, contactor feedback signal / ASC ext feedback

VECTOR

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the contactor feedback signal for external armature short-circuit.

Dependency: Refer to: p1230, p1231, p1236, p1237, r1239

Notice: In order that the pulses are not enabled when the contactor is closed, the contactor feedback signal must lag by a sufficiently long time when opening the contactor.

Note: 1 signal: The contactor is closed.

0 signal: The contactor is open.

p1236[0...n] Ext. armature short-cct., contactor feedback signal monit. time / ASC ext t_monit

VECTOR

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000 [ms]	200 [ms]

Description: Sets the monitoring time of the contactor feedback signal for the external armature short-circuit configuration.

If the contactor feedback signal (p1235) is parameterized, then the appropriate feedback signal (r1239.1) is expected within this monitoring time after either opening or closing the contactor.

Dependency: Refer to: p1230, p1231, p1235, p1237, r1239

Refer to: A07904, F07905

p1237[0...n] External armature short-circuit, waiting time when opening / ASC ext t_wait

VECTOR

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000 [ms]	200 [ms]

Description: Sets the delay time when opening the contactor of the external armature short-circuit.

If no contactor feedback signal has been selected (p1235), then the system waits for this time before the pulses are switched-in.

Dependency: Refer to: p1230, p1231, p1235, p1236, r1239

Notice: This delay time must be at least long enough so that the contactor contacts reliably open before the pulses are switched-in. The delay time must be greater than the contactor response time. The Motor Module can be damaged if the delay time is too short.

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r1238 CO: Armature short-circuit, external state / EASC state

VECTOR

Can be changed: -
Access level: 1
Data type: Integer16
Dynamic index: -
Function diagram: 2610
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0	6	0

Description: Displays the state for the external armature short-circuit.

Values:
0: Powered-down
1: Ready
2: active
3: Active - feedback signal "closed" OK
4: Active - feedback signal "closed" missing
5: Prompt to remove the armature short-circuit
6: Active - feedback signal "open" missing

Dependency: Refer to: p1230, p1231, p1235, p1236, p1237, r1239

Refer to: A07904, F07905

Note: Activation criteria (one of the following criteria is fulfilled):

- the signal at BI: p1230 (armature short-circuit activation) is 0.
- the drive is not in the state "S4: Operation" or in S5x (refer to function chart 2610).
- the internal pulse enable is missing (r0046.19 = 0).

Re state "switched-out" (r1238 = 0):

- the external armature short-circuit can be selected with p1231 = 1.

Re state "ready" (r1238 = 1):

- as soon as the activation criteria is fulfilled, then a transition is made into the state "active" (r1238 = 2).

Regarding the state "active" (r1238 = 2), "active - feedback signal "closed" OK" (r1238 = 3)", "active - feedback signal "closed" missing" (r1238 = 4)":

- the control signal to close contactor r1239.0 is set to "1" (closed) and the pulses are cancelled.
- if a contactor feedback signal is not connected (BI: p1235 = 0), then a transition is immediately made into state 3.
- if a contactor feedback signal is connected, then a transition is made into state 3 if the feedback signal at BI: p1235 goes to "1" (closed) within the monitoring time (p1236).
- otherwise, a transition is made into state 4.

Re state "prompt to remove the armature short-circuit" (r1238 = 5):

- the activation criteria is no longer fulfilled. An attempt is made to again remove the armature short circuit.
- the control signal to close the contactor r1239.0 is set to "0" (open) and the pulses remain cancelled.
- if a contactor feedback signal is not connected (BI: p1235 = 0), the system waits for the delay time (p1237) to expire until a transition is made into state 1.
- if a contactor feedback signal is connected, the system waits until the feedback signal at BI:p1235 goes to "0" (open) until a transition is made into state 1. If this does not occur within the monitoring time (p1236), then a transition is made into state 6.

Re state "active - feedback signal "open" missing" (r1238 = 6):

- this error state can be exited by de-selecting the external armature short-circuit (p1231 = 0).

r1239 CO/BO: Armature short-circuit status word / ASC ZSW

VECTOR

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for armature short-circuit.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	External armature short-circuit	active	not active	-
	01	External armature short-circuit, contactor feedback signal	Closed	Open	-
	02	External armature short-circuit ready	Yes	No	-
	03	External armature short-circuit with contactor feedback signal	Yes	No	-
	04	Internal armature short-circuit	active	not active	-
	05	Int. armature short-circuit, feedback signal from power unit	active	not active	-
	06	Internal armature short-circuit ready	Yes	No	-

Dependency: Refer to: p1230, p1231, p1235, p1236, p1237

Note: External armature short-circuit, bits 0 ... 3:

Re bit 00:

Using this signal, the motor is short-circuited through an external contactor circuit. This means that this BO: p1239.0 must be interconnected e.g. to a digital output.

Re bit 01:

This signal indicates the state of the contactor to establish the armature short-circuit. To do this, BI: p1235 must be interconnected to a digital input.

Re bit 02:

The external armature short-circuit configuration is ready and is activated as soon as the activation criteria is fulfilled.

Re bit 03:

1: A feedback signal from an external contactor was parameterized in BI: p1235.

Internal voltage protection, bits 4 ... 6:

Re bit 04:

The Control Unit issues the command to the Motor Module to short-circuit the motor through the power semiconductors.

Re bit 05:

The Motor Module signals that the motor is short-circuited in the Motor Module through the power semiconductors.

Re bit 06:

The internal voltage protection short-circuit is ready and is activated as soon as the activation criteria is fulfilled.

Activation criteria (one of the following criteria is fulfilled):

- the signal at BI: p1230 (armature short-circuit activation) is 0.
- the drive is not in the state "S4: Operation" or in S5x (refer to function chart 2610).
- the internal pulse enable is missing (r0046.19 = 0).

p1240[0...n] Vdc controller configuration / Vdc_ctrl config

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3

Data type: Integer16 — **Dynamic index:** DDS, p0180 — **Function diagram:** -

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	3	1

Description: Sets the controller configuration of the DC link voltage (Vdc controller) in the closed-loop control mode.

Values:

0: Inhib Vdc ctrl
1: Enables Vdc_max controller
2: Enables Vdc_min controller (kinetic buffering)
3: Enables Vdc_min controller and Vdc_max controller

Recommendation: If fault F07403 is output, then proceed as follows:

- increase the dynamic factor (p1247).
- if this fault is still output: Increase the switch-in level (p1245).

Dependency: Refer to: p1245

Notice: An excessively high value in p1245 can possibly negatively influence the normal operation of the drive.

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Note: p1240 = 1, 3:
When the DC link voltage limit, specified for the Motor Module is reached, the following applies:
- the Vdc_max controller limits the regenerative energy in order that the DC link voltage is kept below the maximum DC link voltage when braking.
- the ramp-down times are automatically increased.

p1240 = 2, 3:
When the switch-in threshold of the Vdc_min controller is reached (p1245), the following applies:
- the Vdc_min controller limits the energy taken from the DC link in order to keep the DC link voltage above the minimum DC link voltage when accelerating.
- the motor is braked in order to use its kinetic energy to buffer the DC link.

r1242 Vdc_min controller switch-in level / Vdc_max on_level

VECTOR (n/M)

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 6220

P-Group: Functions **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the switch-in level for the Vdc_max controller.
If p1254 = 0 (automatic sensing of the switch-in level = off), then the following applies:
AC/AC devices: r1242 = 1.15 * sqrt(2) * V_line supply = 1.15 * sqrt(2) * p0210 (supply voltage)
DC/AC devices: r1242 = 1.15 * Vdc = 1.15 * p0210 (supply voltage)
If p1254 = 1 (automatic sensing of the switch-in level = on), then the following applies:
r1242 = Vdc_max - 50.0 V (Vdc_max: Overvoltage threshold of the power unit)

p1243[0...n] Vdc_max controller dynamic factor / Vdc_max dyn_factor

VECTOR (n/M)

Can be changed: U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 6220

P-Group: Functions **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1 [%]	10000 [%]	100 [%]

Description: Sets the dynamic factor for the DC link voltage controller (Vdc_max controller).
100 % means that p1250, p1251 and p1252 (gain, integral time and rate time) are used corresponding to their basic settings and based on a theoretical controller optimization.
If subsequent optimization is required, then this can be realized using the dynamic factor. In this case p1250, p1251, p1252 are weighted with the dynamic factor p1243.
If several modules are connected to the DC link, then the dynamic factor must be increased corresponding to the ratio of the additional capacitances to the capacitance of the module involved.

Note: The pre-setting of the dynamic factor is based on the power units connected at DRIVE-CLiQ. It is assumed that the power unit, connected via DRIVE-CLiQ is also electrically connected to the DC link. If this is not the case, then the dynamic factor must be optimized manually.

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p1245[0...n] Vdc_min controller switch-in level (kinetic buffering) / Vdc_min on_level

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 65 [%]	**Max** 115 [%]	**Factory setting** 76 [%]

Description: Sets the switch-in level for the Vdc-min controller (kinetic buffering).

The value is obtained as follows:

AC/AC devices: p1245[V] = p1245[%] * sqrt(2) * p0210

DC/AC devices: p1245[V] = p1245[%] * p0210

Notice:

For SINAMICS GM/SM, the following applies:

Minimum value = 0.75

Maximum value = 0.90

Dependency: Refer to: p0210

Warning: An excessively large value may adversely influence normal drive operation.

r1246 Vdc_min controller switch-in level (kinetic buffering) / Vdc_min on_level

VECTOR (n/M)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6220
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min - [V]	**Max** - [V]	**Factory setting** - [V]

Description: Displays the switch-in level for the Vdc_min controller (kinetic buffering).

p1247[0...n] Vdc_min controller dynamic factor (kinetic buffering) / Vdc_min dyn_factor

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6220
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 1 [%]	**Max** 10000 [%]	**Factory setting** 100 [%]

Description: Sets the dynamic factor for the Vdc-min controller (kinetic buffering).

100 % means that p1250, p1251 and p1252 (gain, integral time and rate time) are used corresponding to their basic settings and based on a theoretical controller optimization.

If subsequent optimization is required, then this can be realized using the dynamic factor. In this case p1250, p1251, p1252 are weighted with the dynamic factor p1247.

If several modules are connected to the DC link, then the dynamic factor must be increased corresponding to the ratio of the additional capacitances to the capacitance of the module involved.

Note: The pre-setting of the dynamic factor is based on the power units connected at DRIVE-CLiQ. It is assumed that the power unit, connected via DRIVE-CLiQ is also electrically connected to the DC link. If this is not the case, then the dynamic factor must be optimized manually.

p1250[0...n] Vdc controller proportional gain / Vdc_ctrl Kp

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0.00	**Max** 100.00	**Factory setting** 1.00

Description: Sets the proportional gain for the Vdc controller (DC link voltage controller).

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Dependency: The effective proportional gain is obtained taking into account p1243 (Vdc_max controller dynamic factor).

Note: The gain factor is proportional to the capacitance of the DC link. The parameter is preset to a value that is optimally adapted to the capacitance of the individual Motor Module. The capacitances of the other power units, which are connected to the DC link, can be taken into account using the dynamic factor (p1247 or p1243).

p1251[0...n] Vdc controller integral time / Vdc_ctrl Tn

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6220

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	10000 [ms]	0 [ms]

Description: Sets the integral time for the Vdc controller (DC link voltage controller).

Dependency: The effective integral time is obtained taking into account p1243 (Vdc_max controller dynamic factor).

Note: An integral time is normally not required for single axis drives. For multi-axis drives on the other hand, it may be possible to compensate for interference from other axes using the integral time (integral component) . An integral time of 0 (default) de-activates the controller.

p1252[0...n] Vdc controller rate time / Vdc_ctrl t_rate

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6220

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000 [ms]	0 [ms]

Description: Sets the rate time constant for the Vdc controller (DC link voltage controller).

Dependency: The effective rate time is obtained taking into account p1243 (Vdc_max controller dynamic factor).

Note: During controlled operation this parameter has no effect.

p1254 Vdc_max controller automatic ON level detection / Vdc_max SenseOnLev

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: Activates/de-activates the automatic sensing of the switch-in level for the Vdc_max controller.

Values:
0: Automatic detection disabled
1: Automatic detection enabled

p1255[0...n] Vdc_min controller time threshold / Vdc_min t_thresh

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	10000.000 [s]	0.000 [s]

Description: Sets the time threshold for the Vdc_min controller (kinetic buffering). If this value is exceeded a fault is output; the required response can be parameterized .

Prerequisite: p1256 = 1.

Dependency: Refer to: F07406

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p1256[0...n] Vdc_min controller response (kinetic buffering) / Vdc_min response

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Sets the response for the Vdc_min controller (kinetic buffering).

Values:
0: Buffer Vdc until undervoltage, n<p1257 -> F07405
1: Buff. Vdc until undervolt., n<p1257 -> F07405, t>p1255 -> F07406

Dependency: Refer to: F07405, F07406

p1257[0...n] Vdc_min controller speed threshold / Vdc_min n_thresh

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Functions
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.0 [1/min]	210000.0 [1/min]	50.0 [1/min]

Description: Sets the speed threshold for the Vdc-min controller (kinetic buffering). If this value is exceeded a fault is output; the required response can be parameterized .

r1258 CO: Vdc controller output / Vdc_ctrl output

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6220
P-Group: Functions
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the actual output of the Vdc controller (DC link voltage controller)

Note: The regenerative power limit p1531 is used for closed-loop vector control to pre-control the Vdc_max controller. The lower the power limit is set, the lower the correction signals of the controller when the voltage limit is reached.

p1260 Bypass configuration / Bypass config

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	3	0

Description: Selecting the bypass functionality.

Values:
0: Bypass function de-activated
1: Bypass with synchronization and overlap
2: Bypass with synchronization without overlap
3: Bypass without synchronization

Dependency: The bypass functionality is enabled together with the technology controller function module (refer to p0108 bit 16).

When selecting p1260 = 2 (bypass with synchronization without overlap) and p1260 = 3 (bypass without synchronization), then the flying restart function must be activated (refer to p1200).

Note: If the bypass function is selected ((p1260 > 0), then when the power unit restarts after POWER OFF, the state of the bypass switch is evaluated. This means that after the ramp-up, it is possible to directly change into the standby mode. This is only possible for p1267 = 0 (bypass using the control signal) and if the control command after the system has been motor is still available (refer to p1266). This function has a high priority than the automatic restart function (refer to p1210).

The bypass function can only be switched-out again (p1260 = 0) if the bypass is not active or the bypass function has a fault.

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r1261 CO/BO: Bypass control/status word / Bypass STW / ZSW

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 2
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Control and feedback signals of the bypass switch.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Command switch motor - drive	Close	Open	-
01	Command switch motor - line supply	Close	Open	-
02	Synchronization requested	Yes	No	-
03	Staging status	active	Not active	-
05	Feedback signal, switch motor - drive	Closed	Opened	-
06	Feedback signal, switch motor - line supply	Closed	Opened	-
07	Bypass command (from p1266)	Yes	No	-
08	Feedback signal synchronization completed (from p1268)	Yes	No	-
09	Staging requested (from p2369)	Yes	No	-

Dependency: Refer to: p2369
Note: Control bits 0 and 1 should be interconnected to the signal outputs via which the switches in the motor feeder cables should be controlled. These should be selected/dimensioned for switching under load.

p1262[0...n] Bypass deadtime / Bypass t_dead

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	20.000 [s]	1.000 [s]

Description: Sets the deadtime for non-synchronized bypass.
Note: This parameter is used to define the changeover time of the contactors. It should not be shorter than the de-magnetization time of the motor (p0347).

p1263 Debypass delay time / Debypass t_del

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	300.000 [s]	1.000 [s]

Description: Delay time when changing back to drive converter operation with a non-synchronized bypass.

p1264 Bypass delay time / Bypass t_del

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	300.000 [s]	1.000 [s]

Description: Delay time when changing over to drive converter operation with a non-synchronized bypass.

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p1265 Bypass speed threshold / Bypass n_thresh

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
0 [1/min]	210000 [1/min]	1480 [1/min]

Description: Sets the bypass speed threshold.

Note: When selecting p1260 = 3 and p1267.1, the bypass is automatically activated when this motor speed is reached.

p1266 BI: Bypass, control command / Bypass command

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Input for the command to the bypass.

p1267 Bypass changeover source configuration / Chngov_src config

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2

Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the cause that should initiate the bypass.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bypass using control signal (from 1266)	Yes	No	-
01	Bypass when reaching the speed threshold	Yes	No	-

Note: The parameter only has an effect for a non-synchronized bypass.

p1267 = 0:

The bypass is initiated by setting a binary signal. When the command is reset, after the debypass delay time has expired, operation at the Motor Module is re-selected.

p1267 = 1:

When the speed threshold entered in p1265 is reached, the bypass is switched-in. The system only switches back when the speed setpoint again falls below the threshold value.

p1268 BI: Bypass, feedback synchronization completed / FdbkSig sync compl

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	3819.2

Description: Input for the feedback signal that synchronization was successfully completed.

Dependency: Refer to: r3819

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p1269[0...1] BI: Bypass switch feedback signal / Bypass FS

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the feedback signal of the bypass switch.

Index: [0] = Switch motor - drive
[1] = Switch motor - line supply

p1272 Simulation mode / Simulation mode

VECTOR

Can be changed: T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: In the simulation mode, the closed-loop control or U/f control can be operated without motor.

The simulation mode is used to test the power unit. Even though the DC link voltage is missing, the pulses are enabled when powering-up. The DC link pre-charging is bypassed and the undervoltage detection is disabled.

Closed-loop speed control with an encoder is possible if the torque setpoint (r0079) is used in order to operate a second drive in the closed-loop torque controlled mode.

Values:
0: Off
1: On

Dependency: The following functions are de-activated in the simulation mode:

- motor data identification routine
- motor data identification routine, rotating without encoder
- pole position identification routine

For U/f control and sensorless vector control, flying restart is not carried-out (refer to p1200).

Refer to: r0192, p1900, p1910, p1960, p1990

Refer to: A07825, F07826

Note: Simulation operation is only possible for DC link voltages below 40 V. In order that the closed-loop control can be calculated, the displayed DC link voltage (r0026, r0070) is set to the rated DC link voltage (refer to p0210). Closed-loop current control and motor model are switched-out (disabled) - the same is true for the speed controller for sensorless closed-loop speed control.

When fault messages occur, the parameter is not automatically reset. This function is not implemented for SINAMICS GM.

p1274[0...1] Bypass switch monitoring time / Switch t_monit

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [ms]	5000 [ms]	1000 [ms]

Description: Sets the bypass switch monitoring time.

Index: [0] = Switch motor - drive
[1] = Switch motor - line supply

Note: The monitoring is de-activated with p1274 = 0 ms.

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p1275 Motor holding brake control word / Brake STW

VECTOR (Extended brk)

Can be changed: U, T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the control word for the motor holding brake.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Inverting BI: 1219[0]	Yes	No	2707
01	Inverting BI: 1219[1]	Yes	No	2707
02	Inverting BI: 1224[0]	Yes	No	2704
03	Inverting BI: 1224[1]	Yes	No	2704
05	Brake with feedback	Yes	No	2711

p1276 Motor holding brake, standstill detection, bypass / Brk standst bypass

VECTOR (Extended brk)

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2704
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	300.000 [s]	300.000 [s]

Description: Sets the delay time for closing the brake at standstill.

After this time has expired, if the "close brake at standstill" or OFF1/OFF3 is present, the brake is closed and the pulses are cancelled.

For p1276 = 300.000 s, the timer is de-activated - this means that the timer output is always zero.

p1277 Motor holding brake, braking threshold delay exceeded / Del thresh exceed.

VECTOR (Extended brk)

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 2707
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	300.000 [s]	0.000 [s]

Description: Sets the delay time for the signal "braking threshold exceeded" (BO: r1229.6).

Dependency: Refer to: p1220, p1221, r1229

p1278 Motor holding brake type / Brake type

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the motor holding brake type.

Values:
0: Motor holding brake with feedback signals
1: Motor holding brake without feedback signals

Note: If the configuration of the motor holding brake (p1215) is set to "no holding brake present" when booting, then an automatic identification of the motor holding brake will be carried-out. If a motor holding brake is identified without feedback signals (e.g. Relay Brake Module), then the parameter is set to "motor holding braking without feedback signals".

It is not permissible to parameterize "motor holding brake without feedback signals" and also enable "safe brake control" (p1278 = 1, p9602 = 1, p9802 = 1).

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p1279[0...3] BI: Motor holding brake, OR/AND logic operation / Brake OR AND

VECTOR (Extended brk)

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2707
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the OR/AND logic operation.

Dependency: Refer to: r1229

Note: [0]: OR logic operation, input 1 --> the result is displayed in r1229.10.
[1]: OR logic operation, input 2 --> the result is displayed in r1229.10.
[2]: AND logic operation, input 1 --> the result is displayed in r1229.11.
[3]: AND logic operation, input 2 --> the result is displayed in r1229.11.

p1280[0...n] Vdc controller configuration (U/f) / Vdc_ctrl config

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** DDS, p0180 | **Function diagram:** 1690, 6320
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	1

Description: Sets the configuration of the controller for the DC link voltage (Vdc controller) in the U/f operating mode.

Values:
0: Inhib Vdc ctrl
1: Enables Vdc_max controller
2: Enables Vdc_min controller (kinetic buffering)
3: Enables Vdc_min controller and Vdc_max controller

r1282 Vdc_max controller switch-in level (U/f) / Vdc_max on_level

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6320
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the switch-in level for the Vdc_max controller.
If p1294 = 0 (automatic sensing of the switch-in level = off), then the following applies:
AC/AC devices: r1282 = 1.15 * sqrt(2) * V_mains = 1.15 * sqrt(2) * p0210 (supply voltage)
DC/AC devices: r1282 = 1.15 * Vdc = 1.15 * p0210 (supply voltage)
If p1294 = 1 (automatic sensing of the switch-in level = on), then the following applies:
r1282 = Vdc_max - 50.0 V (Vdc_max: Overvoltage threshold of the power unit)

p1283[0...n] Vdc_max controller dynamic factor (U/f) / Vdc_max dyn_factor

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1 [%]	10000 [%]	100 [%]

Description: Sets the dynamic factor for the DC link voltage controller (Vdc_max controller).
100 % means that p1290, p1291 and p1292 (gain, integral time and rate time) are used corresponding to their basic settings and based on a theoretical controller optimization.
If subsequent optimization is required, then this can be realized using the dynamic factor. In this case p1290, p1291, p1292 are weighted with the dynamic factor p1283.
If several modules are connected to the DC link, then the dynamic factor must be increased corresponding to the ratio of the additional capacitances to the capacitance of the module involved.

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Note: The pre-setting of the dynamic factor is based on the power units connected at DRIVE-CLiQ. It is assumed that the power unit, connected via DRIVE-CLiQ is also electrically connected to the DC link. If this is not the case, then the dynamic factor must be optimized manually.

p1285[0...n] Vdc_min controller switch-in level (kinetic buffering) (U/f) / Vdc_min on_level

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
65 [%]	115 [%]	76 [%]

Description: Sets the switch-in level for the Vdc-min controller (kinetic buffering).

The value is obtained as follows:

AC/AC devices: p1285[V] = p1245[%] * sqrt(2) * p0210

DC/AC devices: p1285[V] = p1245[%] * p0210

r1286 Vdc_min controller switch-in level (kinetic buffering) (U/f) / Vdc_min on_level

VECTOR

Can be changed: - — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 6320

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the switch-in level for the Vdc_min controller (kinetic buffering).

p1287[0...n] Vdc_min controller dynamic factor (kinetic buffering) (U/f) / Vdc_min dyn_factor

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1 [%]	10000 [%]	100 [%]

Description: Sets the dynamic factor for the Vdc-min controller (kinetic buffering).

100 % means that p1290, p1291 and p1292 (gain, integral time and rate time) are used corresponding to their basic settings and based on a theoretical controller optimization.

If subsequent optimization is required, then this can be realized using the dynamic factor. In this case p1290, p1291, p1292 are weighted with the dynamic factor p1287.

If several modules are connected to the DC link, then the dynamic factor must be increased corresponding to the ratio of the additional capacitances to the capacitance of the module involved.

Note: The pre-setting of the dynamic factor is based on the power units connected at DRIVE-CLiQ. It is assumed that the power unit, connected via DRIVE-CLiQ is also electrically connected to the DC link. If this is not the case, then the dynamic factor must be optimized manually.

p1290[0...n] Vdc controller proportional gain (U/f) / Vdc_ctrl Kp

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6320

P-Group: Functions — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00	100.00	1.00

Description: Sets the proportional gain for the Vdc controller (DC link voltage controller).

Note: The gain factor is proportional to the capacitance of the DC link. The parameter is preset to a value that is optimally adapted to the capacitance of the individual Motor Module. The capacitances of the other power units, which are connected to the DC link, can be taken into account using the dynamic factor (p1287 or p1283).

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p1291[0...n] Vdc controller integral time (U/f) / Vdc_ctrl Tn

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6320
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0 [ms]	**Max** 10000 [ms]	**Factory setting** 40 [ms]

Description: Sets the integral time for the Vdc controller (DC link voltage controller).

p1292[0...n] Vdc controller rate time (U/f) / Vdc_ctrl t_rate

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6320
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0 [ms]	**Max** 1000 [ms]	**Factory setting** 10 [ms]

Description: Sets the rate time constant for the Vdc controller (DC link voltage controller).

p1293[0...n] Vdc controller output limit (U/f) / Vdc_ctrl outp_lim

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6320
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0.0 [Hz]	**Max** 600.0 [Hz]	**Factory setting** 10.0 [Hz]

Description: Sets the output limit for the Vdc controller (DC link voltage controller).

p1294 Vdc_max controller automatic detection ON signal level (U/f) / Vdc_max SenseOnLev

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 1

Description: Activates/de-activates the automatic sensing of the switch-in level for the Vdc_max controller.

Values:
0: Automatic detection disabled
1: Automatic detection enabled

p1295[0...n] Vdc_min controller time threshold (U/f) / Vdc_min t_thresh

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 10000.000 [s]	**Factory setting** 0.000 [s]

Description: Sets the time threshold for the Vdc_min controller (kinetic buffering). If this value is exceeded a fault is output; the required response can be parameterized .

Prerequisite: p1296 = 1.

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p1296[0...n] Vdc_min controller response (kinetic buffering) (U/f / Vdc_min response

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 0

Description: Sets the response for the Vdc_min controller (kinetic buffering).

Values:
0: Buffer Vdc until undervoltage, n<p1257 -> F07405
1: Buff. Vdc until undervolt., n<p1257 -> F07405, t>p1255 -> F07406

p1297[0...n] Vdc_min controller speed threshold (U/f) / Vdc_min n_thresh

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Functions	**Units group:** 3_1	**Unit selection:** p0505
	Min 0.0 [1/min]	**Max** 210000.0 [1/min]	**Factory setting** 50.0 [1/min]

Description: Sets the speed threshold for the Vdc-min controller (kinetic buffering). If this value is exceeded a fault is output; the required response can be parameterized .

r1298 CO: Vdc controller output (U/f) / Vdc_ctrl output

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6320
	P-Group: Functions	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Displays the actual output of the Vdc controller (DC link voltage controller)

p1300[0...n] Open-loop/closed-loop control operating mode / Control mode

VECTOR	**Can be changed:** C2(1), T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** DDS, p0180	**Function diagram:** 1590, 1690, 5060, 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 23	**Factory setting** 20

Description: Sets the open and closed loop control mode of a drive.

Values:
0: U/f control with linear characteristic
1: U/f control with linear characteristic and FCC
2: U/f control with parabolic characteristic
3: U/f control with parameterizable characteristic
5: U/f control for drives requiring a precise freq. (e.g. textiles)
6: U/f control for drives requiring a precise frequency with FCC
18: I/f control with fixed current
19: U/f control with independent voltage setpoint
20: Speed control (sensorless)
21: Speed control (with encoder)
22: Torque control (sensorless)
23: Torque control (with encoder)

Dependency: Closed-loop speed or torque control (with encoder) cannot be selected if the encoder type is not entered (p0400).

Closed-loop speed or torque control can be selected if the closed-loop speed/torque control was selected as operating mode (p0108 bit 2).

Only operation with U/f characteristic is possible if the rated motor speed is not entered (p0311).

A reluctance motor can only be operated in a U/f control mode (p1300 < 20).

Refer to: p0108, r0108, p0300, p0311, p0400, p1501

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Note: The closed-loop torque control can only be changed over in operation (p1300 = 20 or 21) by selecting the closed-loop speed control (p1501). At the changeover, the setting of p1300 does not change. In this case, the actual state is displayed in r1407, bit 2 and bit 3.

For the open-loop control modes p1300 = 5 and 6 (textile sector), the slip compensation p1335 and the resonance damping p1338 are internally switched-out (disabled) in order to be able to precisely set the output frequency.

Separately-excited synchronous motors can only be operated in the modes p1300 = 21 and 23 - or for diagnostic purposes in the modes p1300 = 0, 3 and 18. For I/f control (p1300 = 18), the current amplitude can be set using p1609. Both for U/f as well as for I/f control only a small load may be applied to the separately-excited synchronous motor because the excitation current is not calculated as a function of the load.

During operation (the pulses enabled) the open-loop/closed-loop control mode cannot be changed by changing-over drive data sets.

p1310[0...n] Voltage boost permanent / U_boost perm

VECTOR

Can be changed: U, T		**Access level:** 2
Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690, 6300
P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
0.0 [%]	250.0 [%]	50.0 [%]

Description: Defines the voltage boost as a [%] referred to the rated motor current (p0305).

The magnitude of the permanent voltage boost is reduced with increasing frequency so that at the rated motor frequency, the rated motor voltage is present.

The magnitude of the boost in Volt at a frequency of zero is defined as follows:

Voltage boost [V] = p0305 (rated motor current [A]) x p0350 (stator/primary section resistance [ohm]) x p1310 (permanent voltage boost [%]) / 100 %

At low output frequencies, there is only a low output voltage in order to maintain the motor flux. However, the output voltage can be too low in order to achieve the following:

- magnetize the induction motor.
- hold the load.
- compensate for losses in the system.

This is the reason that the output voltage can be increased using p1310.

The voltage boost can be used for both linear as well as square-law U/f characteristics and is calculated as follows:

Voltage boost = p0305 (rated motor current x p0350 (stator/primary section resistance) x p1310 (permanent voltage boost)

Dependency: Setting in p0640 (motor overload factor [%] limits the boost.

For closed-loop vector control, the permanent voltage boost (p1310) has no effect as the drive converter automatically sets the optimum operating conditions.

Refer to: p1300, p1311, r1315

Notice: The voltage boost increases the motor temperature (particularly at zero speed).

Note: The voltage boost is only effective for U/f control (p1300).

The boost values are combined with one another if the permanent voltage boost (p1310) is used in conjunction with other boost parameters (acceleration boost (p1311)).

However, these parameters are assigned the following priorities: p1310 > p1311

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p1311[0...n] Voltage boost at acceleration / U_boost accelerate

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690, 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 250.0 [%]	**Factory setting** 0.0 [%]

Description: p1311 only results in a voltage boost when accelerating and generates a supplementary torque/force to accelerate the load.

The voltage boost becomes effective for a positive setpoint increase and disappears as soon as the setpoint has been reached.

The magnitude of the boost in Volt at a frequency of zero is defined as follows:

Voltage boost [V] = p0305 (rated motor current [A]) x p0350 (stator/primary section resistance [ohm]) x p1310 (permanent voltage boost [%]) / 100 %

Dependency: Setting in p0640 (motor overload factor [%] limits the boost.

Refer to: p1300, p1310, r1315

Notice: The voltage boost results in a higher motor temperature increase.

Note: The voltage boost when accelerating can improve the response to small, positive setpoint changes.

Assigning priorities for the voltage boosts: refer to p1310

r1315 Voltage boost total / U_boost total

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min - [Veff]	**Max** - [Veff]	**Factory setting** - [Veff]

Description: Displays the total resulting voltage boost in volt (p1310 + p1311).

p1320[0...n] U/f control programmable characteristic frequency 1 / Uf char f1

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.00 [Hz]	**Max** 3000.00 [Hz]	**Factory setting** 0.00 [Hz]

Description: The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.

This parameter specifies the voltage of the first point along the characteristic.

Dependency: Selects the freely programmable characteristic using p1300 = 3.

The following applies to the frequency values: p1320 <= p1322 <= p1324 <= p1326. Otherwise, a standard characteristic is used that contains the rated motor operating point.

Refer to: p1300, p1310, p1311, p1321, p1322, p1323, p1324, p1325, p1326, p1327

Note: Linear interpolation is carried-out between the points 0 Hz / p1310, p1320 / p1321 ... p1326 / p1327.

The voltage boost when accelerating (p1311) is also applied to the freely programmable V/Hz characteristic.

p1321[0...n] U/f control programmable characteristic voltage 1 / Uf char U1

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [Veff]	**Max** 10000.0 [Veff]	**Factory setting** 0.0 [Veff]

Description: The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.

This parameter specifies the voltage of the first point along the characteristic.

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Dependency: Selects the freely programmable characteristic using p1300 = 3.
Refer to: p1310, p1311, p1320, p1322, p1323, p1324, p1325, p1326, p1327

Note: Linear interpolation is carried-out between the points 0 Hz / p1310, p1320 / p1321 ... p1326 / p1327.
The voltage boost when accelerating (p1311) is also applied to the freely programmable V/Hz characteristic.

p1322[0...n] U/f control programmable characteristic frequency 2 / Uf char f2

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6300
P-Group: V/f open-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [Hz]	3000.00 [Hz]	0.00 [Hz]

Description: The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.
This parameter specifies the voltage of the second point along the characteristic.

Dependency: The following applies to the frequency values: p1320 <= p1322 <= p1324 <= p1326. Otherwise, a standard characteristic is used that contains the rated motor operating point.
Refer to: p1310, p1311, p1320, p1321, p1323, p1324, p1325, p1326, p1327

p1323[0...n] U/f control programmable characteristic voltage 2 / Uf char U2

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6300
P-Group: V/f open-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [Veff]	10000.0 [Veff]	0.0 [Veff]

Description: The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.
This parameter specifies the voltage of the second point along the characteristic.

Dependency: Refer to: p1310, p1311, p1320, p1321, p1322, p1324, p1325, p1326, p1327

p1324[0...n] U/f control programmable characteristic frequency 3 / Uf char f3

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6300
P-Group: V/f open-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [Hz]	3000.00 [Hz]	0.00 [Hz]

Description: The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.
This parameter specifies the voltage of the third point along the characteristic.

Dependency: The following applies to the frequency values: p1320 <= p1322 <= p1324 <= p1326. Otherwise, a standard characteristic is used that contains the rated motor operating point.
Refer to: p1310, p1311, p1320, p1321, p1322, p1323, p1325, p1326, p1327

p1325[0...n] U/f control programmable characteristic voltage 3 / Uf char U3

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6300
P-Group: V/f open-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [Veff]	10000.0 [Veff]	0.0 [Veff]

Description: The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.
This parameter specifies the voltage of the third point along the characteristic.

Dependency: Refer to: p1310, p1311, p1320, p1321, p1322, p1323, p1324, p1326, p1327

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p1326[0...n] U/f control programmable characteristic frequency 4 / Uf char f4

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5300, 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.00 [Hz]	**Max** 10000.00 [Hz]	**Factory setting** 0.00 [Hz]

Description: In the servo control mode the following applies:
The linear characteristic for the U/f control is defined by 0 Hz / p1319 and p1326 / p1327.
For closed-loop vector control, the following applies:
The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.
This parameter specifies the voltage of the fourth point along the characteristic.

Dependency: In the servo control mode the following applies:
Activates the U/f control using p1317.
For closed-loop vector control, the following applies:
Selects the freely programmable characteristic using p1300 = 3.
The following applies to the frequency values: p1320 <= p1322 <= p1324 <= p1326. Otherwise, a standard characteristic is used that contains the rated motor operating point.
Refer to: p1310, p1311, p1320, p1321, p1322, p1323, p1324, p1325, p1327

Note: In the servo control mode the following applies:
Linear interpolation is carried-out between the points 0 Hz / p1319 and p1326 / p1327.
For closed-loop vector control, the following applies:
Linear interpolation is carried-out between the points 0 Hz / p1310, p1320 / p1321 ... p1326 / p1327.
The voltage boost when accelerating (p1311) is also applied to the freely programmable V/Hz characteristic.

p1327[0...n] U/f control programmable characteristic voltage 4 / Uf char U4

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5300, 6300
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [Veff]	**Max** 10000.0 [Veff]	**Factory setting** 0.0 [Veff]

Description: In the servo control mode the following applies:
The linear characteristic for the U/f control is defined by 0 Hz / p1319 and p1326 / p1327.
For closed-loop vector control, the following applies:
The programmable characteristic for the U/f control is defined using 4 points and 0 Hz/p1310.
This parameter specifies the voltage of the fourth point along the characteristic.

Dependency: In the servo control mode the following applies:
Activates the U/f control using p1317.
For closed-loop vector control, the following applies:
Selects the freely programmable characteristic using p1300 = 3.
Refer to: p1310, p1311, p1320, p1321, p1322, p1323, p1324, p1325, p1326

Note: In the servo control mode the following applies:
Linear interpolation is carried-out between the points 0 Hz / p1319 and p1326 / p1327.
For closed-loop vector control, the following applies:
Linear interpolation is carried-out between the points 0 Hz / p1310, p1320 / p1321 ... p1326 / p1327.
The voltage boost when accelerating (p1311) is also applied to the freely programmable V/Hz characteristic.

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p1330[0...n] CI: V/Hz control independent voltage setpoint / Uf U_set independ.

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** -
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the voltage setpoint for U/f control with an independent voltage setpoint (p1300 = 19).

Dependency: Selects the U/f control with independent voltage setpoint via p1300 = 19.
Refer to: p1300

p1335[0...n] Slip compensation, scaling / Slip comp scal

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690, 6310
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 600.0 [%]	**Factory setting** 0.0 [%]

Description: Sets the setpoint for slip compensation in [%] referred to r0330 (motor rated slip).
p1335 = 0.0 %: Slip compensation de-activated.
p1335 = 100.0 %: The slip is completely compensated.

Dependency: Prerequisite for a precise slip compensation for p1335 = 100 % are the precise motor parameters (p0350 ... p0360).
If the parameters are not precisely known, a precise compensation can be achieved by varying p1335.

Note: The purpose of slip compensation is to maintain a constant motor speed regardless of the applied load. The fact that the motor speed decreases with increasing load is a typical characteristic of induction motors.
For synchronous motors, this effect does not occur and the parameter has no effect in this case.
For the open-loop control modes p1300 = 5 and 6 (textile sector), the slip compensation is internally disabled in order to be able to precisely set the output frequency.
If p1335 is changed while commissioning (p0009, p0010 > 0), then it is possible that the old value will no longer be able to be set. The reason for this is that the dynamic limits of p1335 have been changed by a parameter that was set when the drive was commissioned (e.g. p0300).

p1336[0...n] Slip compensation limit value / Slip comp lim val

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6310
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.00 [%]	**Max** 600.00 [%]	**Factory setting** 250.00 [%]

Description: Sets the limit value for slip compensation in [%] referred to r0330 (motor rated slip).

r1337 Actual slip compensation / Slip comp act.val.

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6310
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the actual compensated slip [%] referred to r0330 (rated motor slip).

Dependency: p1335 > 0 %: Slip compensation active.
Refer to: p1335

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p1338[0...n] U/f mode resonance damping gain / Uf Res_damp gain

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690, 6310
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.00	**Max** 100.00	**Factory setting** 0.00

Description: Sets the controller gain for resonance damping for U/f control.

Dependency: Refer to: p1300, p1339, p1349

Note: The resonance damping function dampens active current oscillations that frequency occur under no-load conditions.

The resonance damping is active in a range of approximately 5 ... 90 % of the rated motor frequency (p0310), but up to a maximum of 45 Hz.

For the open-loop control modes p1300 = 5 and 6 (textile sectors), the resonance damping is internally disabled in order that the output frequency can be precisely set.

p1339[0...n] U/f mode resonance damping filter time constant / Uf Res_damp T

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6310
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 1.00 [ms]	**Max** 1000.00 [ms]	**Factory setting** 20.00 [ms]

Description: Sets the filter time constant of the controller for resonance damping with U/f control.

Dependency: Refer to: p1300, p1338, p1349

p1340[0...n] I_max frequency controller proportional gain / I_max_ctrl Kp

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.000	**Max** 0.500	**Factory setting** 0.000

Description: Proportional gain of the I_max voltage controller.

The I_max controller reduces the drive converter/inverter output current if the maximum current (r0067) is exceeded.

In the U/f operating modes (refer to p1300) for the I_max control, one controller is used that acts on the output frequency and one controller that acts on the output voltage. The frequency controller reduces the current by decreasing the converter output frequency. The frequency is reduced down to a minimum value (equaling twice rated slip). If the overcurrent condition cannot be successfully resolved using this measure, then the drive converter output voltage is reduced using the I_max voltage controller. Once the overcurrent condition has been resolved, the drive is accelerated along the ramp set in p1120 (ramp-up time).

Dependency: In the U/f modes (p1300) for textile applications and for external voltage setpoints, only the I_max voltage controller is used.

Notice: When de-activating the I_max controller, the following must be carefully observed:

When the maximum current (r0067) is exceeded, the output current is no longer reduced, however, overcurrent alarm messages are generated. The drive is shut down if the overcurrent limit (r0209) is exceeded.

Note: The I_max limiting controller becomes ineffective if the ramp-function generator is de-activated with p1122 = 1.

p1341 = 0: I_max frequency controller de-activated and I_max voltage controller activated over the complete speed range.

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p1341[0...n] I_max frequency controller integral time / I_max_ctrl Tn

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 50.000 [s]	**Factory setting** 0.300 [s]

Description: Sets the integral time for the I_max frequency controller.
Dependency: Refer to: p1340

r1343 I_max controller frequency output / I_max_ctrl f_outp

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Displays the effective frequency limit.
Dependency: Refer to: p1340

r1344 I_max controller voltage output / I_max_ctrl U_outp

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** 5_1	**Unit selection:** p0505
	Min - [Veff]	**Max** - [Veff]	**Factory setting** - [Veff]

Description: Displays the amount by which the converter output voltage is reduced.
Dependency: Refer to: p1340

p1345[0...n] I_max voltage controller proportional gain / I_max_U_ctrl Kp

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.000	**Max** 100000.000	**Factory setting** 0.000

Description: Sets the proportional gain for the I_max voltage controller.
Dependency: Refer to: p1340

p1346[0...n] I_max voltage controller integral time / I_max_U_ctrl Tn

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 50.000 [s]	**Factory setting** 0.030 [s]

Description: Sets the integral time for the I_max voltage controller.
Dependency: Refer to: p1340
Note: p1346 = 0: I_max voltage controller de-activated.

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p1349[0...n] U/f mode resonance damping maximum frequency / Uf res_damp F_max

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6310
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [Hz]	3000.00 [Hz]	0.00 [Hz]

Description: Sets the maximum output frequency above which the resonance damping for U/f control is de-activated.

Dependency: Refer to: p1338, p1339

p1350[0...n] Soft starting / Soft starting

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** DDS, p0180	**Function diagram:** 1690
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	1	0

Description: Sets whether the voltage is continuously increased during the magnetizing phase (p1350 = 1, On) or whether it jumps directly to the voltage boost (p1350 = 0, Off).

Values:
0: Off
1: On

Note: The settings for this parameter have the following advantages and disadvantages:
0 = off (jump directly to voltage boost)
Advantage: Flux is established quickly -> torque is quickly available
Disadvantage: The motor can move while it is being magnetized
1 = on (voltage is continually established)
Advantage: The motor is unlikely to rotate
Disadvantage: The flux is established slower -> torque is available later

p1356[0...n] CI: U/f control, angular setpoint / Uf ang setpoint

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** -
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the differential angular generation for U/f control.

p1358[0...n] Angular difference, symmetrizing, actual angle / Sym act angle

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: V/f open-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	1	0

Description: Sets the deadtime for the symmetrizing of the actual angle value for the differential angular generation.
The selected multiplier refers to the current controller clock cycle (deadtime= p1358 * p0115[0]).

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r1359 CO: Angular difference / Angular difference

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: V/f open-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [°]	- [°]	- [°]

Description: Displays the output of the differential angular generation.

Note: The difference between the setpoint angle, read-in in p1356 and the actual value of the U/f control delayed with p1358 is displayed.

p1400[0...n] Speed control configuration / n_ctrl config

VECTOR (n/M)

Can be changed: U, T
Access level: 2
Data type: Unsigned16
Dynamic index: DDS, p0180
Function diagram: 6490
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1000 0000 0010 0001 bin

Description: Sets the configuration for the closed-loop speed control.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Automatic Kp/Tn adaptation active	Yes	No	-
01	Sensorless closed-loop vector ctrl freeze I comp	Yes	No	-
02	Acceleration pre-control source	External (p1495)	Internal (n_set)	6031
03	Reference model speed setpoint, I component	On	Off	6031
05	Kp/Tn adaptation active	Yes	No	-
06	Free Tn adaptation active	Yes	No	-
14	Torque precontrol	Always active	For n_ctrl enab	-
15	Sensorless vector control, speed precontrol	Yes	No	-

Note: Re bit 01:

When the bit is set, the I component of the speed controller is kept when changing into the open-loop controlled mode.

p1401[0...n] Flux control configuration / F_ctrl config

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Unsigned16
Dynamic index: DDS, p0180
Function diagram: 6491, 6722
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1110 bin

Description: Sets the configuration for flux setpoint control

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Flux setpoint soft starting active	Yes	No	-
01	Flux setpoint differentiation active	Yes	No	-
02	Flux build-up control active	Yes	No	-
03	Flux characteristic, load-dependent	Yes	no	-

Note: The load-dependent calculation of the flux characteristic is only available for separately-excited synchronous motors.

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p1402[0...n] Closed-loop current control and motor model configuration / I_ctrl config

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0001 bin

Description: Sets the configuration for the closed-loop control and the motor model.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Speed-following error correction active	Yes	No	-

Note: Re bit 01:

When the bit is set, the speed following error is compensated that is obtained as a result of the smoothing time constant in p1441.

r1406 CO/BO: Control word speed controller / STW n_ctrl

VECTOR (n/M)

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word of the speed controller.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
04	Holds speed controller I component	Yes	No	-
05	Sets speed controller I component	Yes	No	-
11	Enables droop	Yes	No	6030
12	Torque control active	Yes	No	-

r1407 CO/BO: Status word speed controller / ZSW n_ctrl

VECTOR (n/M)

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1530, 2522

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the speed controller.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	U/f control active	Yes	No	-
01	Sensorless operation active	Yes	No	-
02	Torque control active	Yes	No	6030
03	Speed control active	Yes	No	6040
05	Speed controller I component held	Yes	No	6040
06	Speed controller I component set	Yes	No	6040
07	Torq limit reached	Yes	No	6060
08	Upper torque limit active	Yes	No	-
09	Lower torque limit active	Yes	No	-
10	Droop enabled	Yes	No	6030
11	Speed setpoint limited	Yes	No	6030
12	Ramp-function generator set	Yes	No	-
13	Sensorless operation due to a fault	Yes	No	-
14	I/f control active	Yes	No	-

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r1408 CO/BO: Status word closed-loop current control / ZSW curr ctrl

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2530
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the closed-loop current control.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Current ctrl act	active	Not active	-
01	Id control, I-component limiting	active	Not active	-
03	Voltage limiting	active	Not active	-
10	Speed adaptation, limiting	active	Not active	-
11	Speed adaptation, speed deviation	Out tolerance	In tolerance	6719
12	Motor stalled	Yes	No	6719, 8018

p1416[0...n] Speed setpoint filter 1 time constant / n_set_filt 1 T

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 5020, 6030
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	5000.00 [ms]	0.00 [ms]

Description: Sets the time constant for the speed setpoint filter 1 (PT1).

Note: For SERVO (p0107) the following applies:
This parameter is only effective if the speed filter is set as a PT1 low pass.

p1428[0...n] Speed precontrol symmetrizing deadtime / n_prectrSym t_dead

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 5030, 6031
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0	2.0	0.0

Description: Sets the deadtime to symmetrize the speed setpoint for active torque precontrol.
The selected multiplier refers to the speed controller clock cycle (deadtime= p1428 * p0115[1]).

Dependency: In conjunction with p1429, this parameter can simulate the characteristics of how the torque is established (dynamic response of closed current control loop).
For VECTOR (r0107) the following applies:
The parameter is only effective if the acceleration model is supplied using external acceleration signals (p1400.2 = 1). For p1400.2 = 0, a fixed deadtime is used.
Refer to: p1429, p1511

p1429[0...n] Speed precontrol symmetrizing time constant / n_prectr sym T

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 5030, 6031
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	10000.00 [ms]	0.00 [ms]

Description: Sets the time constant (PT1) for symmetrizing the speed setpoint for active torque precontrol.

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Dependency: In conjunction with p1428, this parameter can simulate the characteristics of how torque is established (dynamic response of the closed current control loop).
For VECTOR (r0107) the following applies:
The parameter is only effective if the acceleration model is supplied using external acceleration signals (p1400.2 = 1). For p1400.2 = 0, time constant p1442 (or p1452 for sensorless closed-loop vector control) is used.
Refer to: p1428, p1511

p1433[0...n] Speed controller reference model natural frequency / n_ctrl RefMod fn

VECTOR (n/M)

Can be changed: U, T		**Access level:** 3
Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5030, 6031
P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
Min 0.0 [Hz]	**Max** 8000.0 [Hz]	**Factory setting** 0.0 [Hz]

Description: Sets the natural frequency of a PT2 element for the reference model of the speed controller.

Recommendation: The reference model is correctly set when the characteristics of p1439 (reference model output) and p1445 (actual speed value) are virtually identical when the I-component of the speed controller is disabled.

Dependency: Together with p1434 and p1435, the characteristics (in the time domain) of the closed-loop speed control (P) can be emulated.
For VECTOR (r0107) the following applies:
The reference model is activated with p1400.3 = 1.
Refer to: p1434, p1435

p1434[0...n] Speed controller reference model damping / n_ctrl RefMod D

VECTOR (n/M)

Can be changed: U, T		**Access level:** 3
Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5030, 6031
P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
Min 0.000	**Max** 5.000	**Factory setting** 1.000

Description: Sets the damping of a PT2 element for the reference model of the speed controller.

Recommendation: The reference model is correctly set when the characteristics of p1439 (reference model output) and p1445 (actual speed value) are virtually identical when the I-component of the speed controller is disabled.

Dependency: In conjunction with p1433 and p1435, the characteristics (in time) of the P-controlled speed control loop can be emulated.
For VECTOR (r0107) the following applies:
The reference model is activated with p1400.3 = 1.
Refer to: p1433, p1435

p1435[0...n] Speed controller reference model deadtime / n_ctrRefMod t_dead

VECTOR (n/M)

Can be changed: U, T		**Access level:** 2
Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5030, 6031
P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
Min 0.00	**Max** 2.00	**Factory setting** 0.00

Description: Sets the "fractional" deadtime for the reference model of the speed controller.
This parameter emulates the computation deadtime of the proportionally controlled speed control loop.
The selected multiplier refers to the speed controller clock cycle (deadtime= p1435 * p0115[1]).

Recommendation: The reference model is correctly set when the characteristics of p1439 (reference model output) and p1445 (actual speed value) are virtually identical when the I-component of the speed controller is disabled.

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Dependency: In conjunction with p1433 and p1434, the characteristics (in time) of the P-controlled speed control loop can be emulated.
For VECTOR (r0107) the following applies:
The reference model is activated with p1400.3 = 1.
Refer to: p0115, p1433, p1434

r1436 CO: Speed controller reference model speed setpoint output / RefMod n_set outpt

VECTOR (n/M) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 5030, 6031
P-Group: Closed-loop control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed setpoint at the output of the reference model.
Dependency: For VECTOR (r0107) the following applies:
The reference model is activated with p1400.3 = 1.

p1437[0...n] CI: Speed controller, reference model I component input / n_ctrRefMod I_comp

VECTOR (n/M) **Can be changed:** T **Access level:** 3
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 6031
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	1436[0]

Description: Sets the signal source for speed setpoint for the integral component of the speed controller.
Dependency: The reference model is activated with p1400.3 = 1.
Refer to: p1400
Cautiont: In should be ensured that a speed setpoint is selected as signal source that corresponds to the setpoint for the P component of the speed controller.

r1438 CO: Speed controller, speed setpoint / n_ctrl n_set

VECTOR (n/M) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 1550, 1590, 3080, 5030, 5040, 5060, 5210, 5300, 6040
P-Group: Closed-loop control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed setpoint after setpoint limiting for the P component of the speed controller.
For U/f operation, the value that is displayed is of no relevance.
Dependency: Refer to: r1439
Note: In the standard state (the reference model is de-activated), r1438 = r1439.

r1439 Speed setpoint, I component / n_set I_comp

VECTOR (n/M) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 5030, 5040, 6031
P-Group: Closed-loop control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed setpoint for the I component of the speed controller (output of the reference model after the setpoint limiting).
Dependency: Refer to: r1438
Note: In the standard state (the reference model is de-activated), r1438 = r1439.

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p1441[0...n] Actual speed smoothing time / n_act T_smooth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 4710, 4715
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	1000.00 [ms]	0.00 [ms]

Description: Sets the smoothing time constant (PT1) for the speed actual value.

Dependency: Refer to: r0063

Notice: Smoothing times above 20 ms are only possible if the drive is accelerated or braked with the appropriately long ramp-up/ramp-down times. Otherwise, significant torque errors can occur and there is the danger that the drive is powered-down (tripped) with F07902 (motor stalled).

Note: The speed actual value should be smoothed for encoders with a low pulse number or for resolvers.

After this parameter has been changed, we recommend that the speed controller is adapted and/or the speed controller settings checked Kp (p1460) and Tn (p1462).

p1442[0...n] Speed controller speed actual value smoothing time / n_ctr n_act T_smth

VECTOR (n/M)

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6040
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	32000.00 [ms]	4.00 [ms]

Description: Sets the smoothing time for the actual speed value of the speed controller for closed-loop control with encoder.

Note: The smoothing must be increased if there is gear backlash. For longer smoothing times, the integral time of the speed controller must also be increased (e.g. using p0340 = 4).

r1444 Speed controller, speed setpoint steady-state (static) / n_ctrl n_set stat

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 5030
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the sum of all speed setpoints that are present.

The following sources are available for the displayed setpoint:

- setpoint at the ramp-function generator input (r1119).
- speed setpoint 1 (p1155).
- speed setpoint 2 (p1160).
- speed setpoint for the speed precontrol (p1430).
- setpoint from DSC (for DSC active).
- setpoint via PC (for master control active, p3983).

Dependency: Refer to: r1119, p1155, p1160

r1445 CO: Actual speed, smoothed / n_act smooth

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6040
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the smoothed actual speed for speed control.

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p1452[0...n] Speed controller speed actual value smoothing time (SLVC) / n_C n_act T_s SLVC

VECTOR (n/M)

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6040
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	32000.00 [ms]	10.00 [ms]

Description: Sets the smoothing time for the actual speed of the speed controller for sensorless closed-loop speed control.

Note: The smoothing must be increased if there is gear backlash. For longer smoothing times, the integral time of the speed controller must also be increased (e.g. using p0340 = 4).

r1454 CO: Speed controller system deviation I component / n_ctrl sys_dev Tn

VECTOR (n/M)

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6040
P-Group: Closed-loop control | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the system deviation of the I component of the speed controller.

When the reference model is inactive (p1433 = 0 Hz), this parameter corresponds to the system deviation of the complete PI controller (r1454 = r0064).

p1455[0...n] CI: Speed controller P gain adaptation signal / n_ctrl Adpt_sig Kp

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 6050
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the source for the adaptation signal to additionally adapt the P gain of the speed controller.

Dependency: Refer to: p1456, p1457, p1458, p1459

p1456[0...n] Speed controller P gain adaptation lower starting point / n_ctrl AdaptKpLow.

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6050
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	400.00 [%]	0.00 [%]

Description: Sets the lower starting point of the adaptation range for the additional adaptation of the P gain of the speed controller.

The values are in % and refer to the set source of the adaptation signal.

Dependency: Refer to: p1455, p1457, p1458, p1459

Note: If the upper transition point p1457 of the speed controller adaptation is set to lower values than the lower transition p1456, then the controller gain below p1457 is adapted with p1459 and above p1456, with p1458.

p1457[0...n] Speed controller P gain adaptation upper starting point / n_ctrl AdaptKp up.

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6050
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	400.00 [%]	0.00 [%]

Description: Sets the upper starting point of the adaptation range for the additional adaptation of the P gain of the speed controller.

The values are in % and refer to the set source of the adaptation signal.

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Dependency: Refer to: p1455, p1456, p1458, p1459

Note: If the upper transition point p1457 of the speed controller adaptation is set to lower values than the lower transition p1456, then the controller gain below p1457 is adapted with p1459 and above p1456, with p1458.

p1458[0...n] Adaptation factor, lower / Adapt_factor lower

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6050

P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200000.0 [%]	100.0 [%]

Description: Sets the adaptation factor before the adaptation range (0 % ... p1456) to additionally adapt the P gain of the speed/velocity controller.

Dependency: Refer to: p1455, p1456, p1457, p1459

Note: If the upper transition point p1457 of the speed controller adaptation is set to lower values than the lower transition p1456, then the controller gain below p1457 is adapted with p1459 and above p1456, with p1458.

p1459[0...n] Adaptation factor, upper / Adapt_factor upper

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6050

P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200000.0 [%]	100.0 [%]

Description: Sets the adaptation factor after the adaptation range (> p1457) to additionally adapt the P gain of the speed/velocity controller.

Dependency: Refer to: p1455, p1456, p1457, p1458

Note: If the upper transition point p1457 of the speed controller adaptation is set to lower values than the lower transition p1456, then the controller gain below p1457 is adapted with p1459 and above p1456, with p1458.

p1460[0...n] Speed controller P gain adaptation speed, lower / n_ctrl Kp n lower

VECTOR (n/M)

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6040

P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.000	999999.000	0.300

Description: Sets the P gain of the speed controller before the adaptation speed range (0 ... p1464). This value corresponds to the basic setting of the P gain of the speed controller without adaptation (p1461 = 100 %).

Dependency: For p0528 = 1, the speed controller gain is represented without any dimensions.
Refer to: p1461, p1464, p1465

p1461[0...n] Speed controller Kp adaptation speed, upper scaling / n_ctrl Kp n upper

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 6050

P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200000.0 [%]	100.0 [%]

Description: Sets the P gain of the speed controller for the upper adaptation speed range (> p1465). The entry is made referred to the P gain for the lower adaptation speed range of the speed controller (% referred to p1460).

Dependency: Refer to: p1460, p1464, p1465

Note: If the upper transition point p1465 of the speed controller adaptation is set to lower values than the lower transition p1464, then the controller gain below p1465 is adapted with p1461. This means that an adaptation can be implemented for low speeds without having to change the controller parameters.

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p1462[0...n] Speed controller integral time adaptation speed, lower / n_ctrl Tn n lower

VECTOR (n/M)

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6040, 6050

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	100000.00 [ms]	20.00 [ms]

Description: Sets the integration time of the speed controller before the adaptation speed range (0 ... p1464). This value corresponds to the basic setting of the integral time of the speed controller without adaptation (p1461 = 100 %).

Dependency: Refer to: p1463, p1464, p1465

p1463[0...n] Speed controller Tn adaptation speed, upper scaling / n_ctrl Tn n upper

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6050

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200000.0 [%]	100.0 [%]

Description: Sets the integral time of the speed controller after the adaptation speed range (> p1465). The entry is made referred to the integral time for the lower adaptation speed range of the speed controller (% referred to p1462).

Dependency: Refer to: p1462, p1464, p1465

Note: If the upper transition point p1465 of the speed controller adaptation is set to lower values than the lower transition point p1464, then the controller integral time below p1465 is adapted with p1463. This means that an adaptation can be implemented for low speeds without having to change the controller parameters.

p1464[0...n] Speed controller adaptation speed, lower / n_ctrl n lower

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6050

P-Group: Closed-loop control | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	0.00 [1/min]

Description: Sets the lower adaptation speed of the speed controller. No adaptation is effective below this speed.

Dependency: Refer to: p1460, p1461, p1462, p1463, p1465

Note: If the upper transition point p1465 of the speed controller adaptation is set to values less than the lower transition point p1464, then the controller below p1465 is adapted with p1461 or p1463. This means that an adaptation can be implemented for low speeds without having to change the controller parameters.

p1465[0...n] Speed controller adaptation speed, upper / n_ctrl n upper

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6050

P-Group: Closed-loop control | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	210000.00 [1/min]

Description: Sets the upper adaptation speed of the speed controller. No adaptation is effective above this speed.

For P gain, p1460 * p1461 is effective. For the integral time, p1462 * p1463 is effective.

Dependency: Refer to: p1460, p1461, p1462, p1463, p1464

Note: If the upper transition point p1465 of the speed controller adaptation is set to values less than the lower transition point p1464, then the controller below p1465 is adapted with p1461 or p1463. This means that an adaptation can be implemented for low speeds without having to change the controller parameters.

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p1466[0...n] CI: Speed controller P-gain scaling / n_ctrl Kp Scal

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 6050
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the scaling of the P gain of the speed controller. This also makes the effective P gain (including adaptations) scalable.

r1468 CO: Speed controller P-gain effective / n_ctrl Kp eff

VECTOR (n/M)

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6040
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the effective P gain of the speed controller.
Dependency: For p0528 = 1, the speed controller gain is represented without any dimensions. In this case, connector output signal r1468 is increased by a factor of 100 in order to improve the resolution.

r1469 Speed controller integral time effective / n_ctrl Tn eff

VECTOR (n/M)

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6040
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [ms]	- [ms]	- [ms]

Description: Displays the effective integral time of the speed controller.

p1470[0...n] Speed controller sensorless operation P-gain / n_ctrl SLVC Kp

VECTOR (n/M)

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6040, 6050
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000	999999.000	0.300

Description: Sets the P gain for sensorless operation for the speed controller.
Dependency: For p0528 = 1, the speed controller gain is represented without any dimensions.
Note: The product p0341 * p0342 is taken into account when automatically calculating the speed controller (p0340 = 1, 3, 4).

p1472[0...n] Speed controller sensorless operation integral time / n_ctrl SLVC Tn

VECTOR (n/M)

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6040, 6050
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	100000.0 [ms]	20.0 [ms]

Description: Set the integral time for sensorless operation for the speed controller.

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p1476[0...n] BI: Speed controller hold integrator / n_ctrl integ stop

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 5040
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to hold the integrator for the speed controller.

p1477[0...n] BI: Speed controller set integrator value / n_ctrl integ set

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 5040, 5210
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to set the integrator setting value (p1478).
Note: For the interface mode "SIMODRIVE 611 universal" (p2038 = 1), p1477 and p1478 are used for the signal STW2.6 (integrator inhibit, speed controller).

p1478[0...n] CI: Speed controller integrator setting value / n_ctr integ_setVal

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 5040, 5210
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the integrator setting value for the velocity controller.
The signal to set this integrator setting value is interconnected via p1477.
Dependency: For VECTOR (r0107) the following applies:
The setting value of the speed controller integrator is weighted with the scaling factor of the signal source in p1479.
Note: For the interface mode "SIMODRIVE 611 universal" (p2038 = 1), p1477 and p1478 are used for the signal STW2.6 (integrator inhibit, speed controller).

p1479[0...n] CI: Speed controller integrator setting value scaling / n_ctrl I_val scal

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for scaling the integrator setting value (p1478) of the speed controller.
Dependency: Refer to: p1478

r1482 CO: Speed controller I torque output / n_ctrl I-M_output

VECTOR (n/M)

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 5040, 5210, 6040
P-Group: Closed-loop control | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the torque setpoint at the output of the I speed controller.

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p1488[0...n] Droop input source / Droop input,source

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: DDS, p0180
Function diagram: 6030
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0	3	0

Description: Sets the source for droop feedback.

Values:
0: Droop feedback not connected
1: Droop from torque setpoint
2: Droop from speed controller output
3: Droop from integral output, speed controller

Dependency: Refer to: p1489, r1490, p1492

p1489[0...n] Droop feedback scaling / Droop scaling

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6030
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.000	0.500	0.050

Description: Sets the scaling for the droop feedback

Dependency: Refer to: p1488, r1490, p1492

Note: Example:
A value of 0.05 means that for a torque equal to the rated motor torque, the rated motor speed is reduced by 5 %.

r1490 CO: Droop feedback speed reduction / Droop n_reduction

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6030
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the output signal of the droop calculation. The droop feedback result is subtracted from the speed setpoint when activated (p1492).

Dependency: Refer to: p1488, p1489, p1492

p1492[0...n] BI: Droop feedback enable / Enables droop

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Enables the droop to be applied to the speed/velocity setpoint.

Dependency: Refer to: p1488, p1489, r1490

Note: Even when not enabled, the droop speed is calculated but not subtracted from the setpoint speed. This makes it possible to subtract the result of this calculation from the speed of another drive.

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p1495[0...n] CI: Acceleration pre-control, speed change each 1 s / a_prectrl dn/1s

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 6031
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the speed change per second for the acceleration pre-control.

Dependency: The signal source for the acceleration is activated with p1400.2 = 1.

For p1400.2 = 0, the acceleration pre-control is calculated from the speed setpoint change from r0062.

For p1400.2 = 0 and activate reference model (p1400.3 = 1) the acceleration pre-control is switched-out.

Refer to: p1400, p1496

Note: If the acceleration is entered as external signal, then the accelerating torque is calculated as follows (r1518):

r1518 = acceleration (% of p2000) / 100 % * p2000 / p0311 * r0345 / 1 s * r0333

p1496[0...n] Acceleration pre-control scaling / a_before scaling

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6031
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 10000.0 [%]	**Factory setting** 0.0 [%]

Description: Sets the scaling for the acceleration pre-control of the speed/velocity controller.

Dependency: When the reference model is activate (p1400.3 = 1) and for an internal acceleration pre-control (p1400.2 = 0), the acceleration pre-control is switched-out (disabled). The reference model (p1400.3 = 1) and external acceleration pre-control (p1400.2 = 1) can be operated together.

Refer to: p0341, p0342

Note: The parameter is set to 100% by the rotating measurement (refer to p1960).

The acceleration pre-control may not be used if the speed setpoint manifests significant ripple (e.g. analog setpoint) and the rounding-off in the speed ramp-function generator is disabled.

We also recommend that the pre-control mode is not used if there is gearbox backlash.

p1499[0...n] Accelerating for torque control, scaling / a for M_ctrl scal

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 400.0 [%]	**Factory setting** 100.0 [%]

Description: Sets the scaling for the acceleration integrator at low speeds (only for sensorless torque control).

Dependency: Refer to: p0341, p0342

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p1500[0...n] Macro Connector Inputs (CI) for torque setpoints / Macro CI M_set

VECTOR	**Can be changed:** C2(1), T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** -
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	999999	0

Description: Runs the appropriate ACX file on the CompactFlash card.

The Connector Inputs (CI) for the torque setpoints of the appropriate Command Data Set (CDS) are appropriately interconnected.

The selected ACX file must be located in the following directory:

... /PMACROS/<drive object>/P1500/PMxxxxxx.ACX

Example:

p1500 = 6 --> the file PM000006.ACX is run.

Dependency: The ACX file to be run must be created according to the definition for ACX macros and must be saved in the directory intended on the CompactFlash card.

Refer to: p0015, p0700, p1000, r8573

Notice: No errors were issued during fast commissioning (p3900 = 1) when writing to parameters of the QUICK_IBN group!

Note: The macros in the specified directory are displayed in r8573.

Macros available as standard are described in the technical documentation of the particular product.

CI: Connector Input

p1501[0...n] BI: Change over between closed-loop speed/torque control / Changeov n/M_ctrl

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2520, 5060, 6060
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for toggling between speed and torque control.

Dependency: The input connectors to enter the torque are provided using p1511, p1512 and p1513.

Refer to: p1300

Cautiont: If the closed-loop torque control is not activated (p1300) and a change is made to closed-loop torque control (p1501), OFF1 (p0840) does not have its own braking response but pulse cancellation when standstill is detected (p1226, p1227).

Note: 0 signal: Closed-loop speed control

1 signal: Closed-loop torque control

p1503[0...n] CI: Torque setpoint / M_set

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the torque setpoint for torque control.

Note: A change is made to closed-loop torque control if, in p1300, closed-loop torque control was selected or if the selection was made using the changeover source in p1501.

it is also possible to change over in operation using p1501.

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r1508 CO: Torque setpoint before supplementary torque / M_set bef. M_suppl

VECTOR (n/M)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 6060, 6722
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the torque setpoint before entering the supplementary torque.
For closed-loop speed control, r1508 corresponds to the speed controller output; for closed-loop torque control, r1508 corresponds to the torque setpoint of the signal source assigned in p1503.

p1511[0...n] CI: Supplementary torque 1 / M_suppl 1

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 5060, 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for supplementary torque 1.

p1512[0...n] CI: Supplementary torque 1 scaling / M_suppl 1 scal

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 5060, 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for scaling the supplementary torque 1.

p1513[0...n] CI: Supplementary torque 2 / M_suppl 2

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 5060, 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for supplementary torque 2.

p1514[0...n] Supplementary torque 2 scaling / M_suppl 2 scal

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-2000.0 [%]	2000.0 [%]	100.0 [%]

Description: Sets the scaling for supplementary torque 2.

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r1515 Supplementary torque total / M_suppl total

VECTOR (n/M)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 5040, 5060
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the total supplementary torque.
The displayed value is the sum of supplementary torque values 1 and 2 (refer to p1511, p1512, p1513, p1514).

r1516 Supplementary and accelerating torque / M_suppl + M_accel

VECTOR (n/M)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 5060
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the total supplementary torque and the accelerating torque.
The displayed value is the sum of the smoothed supplementary torque and the accelerating torque (p1516 = p1518[1] + p1515).

p1517[0...n] Accelerating torque smoothing time constant / M_accel T_smooth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	100.00 [ms]	4.00 [ms]

Description: Sets the smoothing time constant of the accelerating torque.
Note: For servo drives, the parameter is only effective in sensorless operation.
For vector drives, the acceleration pre-control is inhibited if the smoothing is set to the maximum value.

r1518[0...1] CO: Accelerating torque / M_accel

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6060
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the accelerating torque for pre-control of the speed controller.
Index: [0] = Unsmoothed
[1] = Smoothed
Dependency: Refer to: p0341, p0342, p1496

p1520[0...n] CO: Torque limit, upper/motoring / M_max upper/mot

VECTOR (n/M)

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 5620, 5630, 6630
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
-1000000.00 [Nm]	10000000.00 [Nm]	0.00 [Nm]

Description: Sets the fixed upper torque limit or the torque limit when motoring.

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Dependency: p1400 bit 4 = 0: Upper / lower
p1400 bit 4 = 1: Motoring / generating
The factory setting depends on p0500.
p0500 = 101 --> set to the maximum value
Otherwise --> set to the rated value
Refer to: p1521, p1522, p1523, r1538, r1539

Danger: For p1400.4 = 0 (torque limiting, upper/lower) the following applies:

Negative values when setting the upper torque limit (p1520 < 0) can result in the motor accelerating in an uncontrollable fashion.

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

Note: For vector drives (refer to p0107):
The torque limit is limited to 400% of the rated motor torque. When automatically calculating the motor/closed-loop control parameters (refer to p0340), the torque limit is set so that it matches the current limit p0640.

p1521[0...n] CO: Torque limit, lower/regenerative / M_max lower/regen

VECTOR (n/M)

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5620, 5630, 6630

P-Group: Closed-loop control | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	10000000.00 [Nm]	0.00 [Nm]

Description: Sets the fixed lower torque limit or the torque limit when regenerating.

Dependency: p1400 bit 4 = 0: Upper / lower
p1400 bit 4 = 1: Motoring / generating
The factory setting depends on p0500.
p0500 = 101 --> set to the maximum value
Otherwise --> set to the rated value
Refer to: p1520, p1522, p1523

Danger: For p1400.4 = 0 (torque limiting, upper/lower) the following applies:

Positive values when setting the lower torque limit (p1521 < 0) can result in the motor accelerating in an uncontrollable fashion.

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

Note: For vector drives (refer to p0107):
The torque limit is limited to 400% of the rated motor torque. When automatically calculating the motor/closed-loop control parameters (refer to p0340), the torque limit is set so that it matches the current limit p0640.

p1522[0...n] CI: Torque limit, upper/motoring / M_max upper/mot

VECTOR (n/M)

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 1610, 5620, 5630, 6630

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1520[0]

Description: Sets the signal source for the upper or torque/force limit when motoring.

Dependency: p1400 bit 4 = 0: Upper / lower
p1400 bit 4 = 1: Motoring / generating
Refer to: p1520, p1521, p1523

Danger: For p1400.4 = 0 (torque limiting, upper/lower) the following applies:

Negative values. that are obtained as a result of the signal source and the scaling can cause the motor to accelerate in an uncontrollable fashion.

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p1523[0...n] CI: Torque limit, lower/regenerative / M_max lower/regen

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 1610, 5620, 5630, 6630
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1521[0]

Description: Sets the signal source for the lower or torque/force limit when regenerating.

Dependency: p1400 bit 4 = 0: Upper / lower

p1400 bit 4 = 1: Motoring / generating

Refer to: p1520, p1521, p1522

Danger: For p1400.4 = 0 (torque limiting, upper/lower) the following applies:

Positive values. that are obtained as a result of the signal source and the scaling can cause the motor to accelerate in an uncontrollable fashion.

p1524[0...n] CO: Torque limit, upper/motoring, scaling / M_max up/mot scal

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5620, 5630, 6630
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min -2000.0 [%]	**Max** 2000.0 [%]	**Factory setting** 100.0 [%]

Description: Sets the scaling for the upper torque limit or the torque limit when motoring.

Dependency: p1400 bit 4 = 0: Upper / lower

p1400 bit 4 = 1: Motoring / generating

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

Note: This parameter can be freely interconnected.

The value has the above significance if it is interconnected from connector input p1528.

p1525[0...n] CO: Torque limit, lower/regenerating scaling / M_max low/gen scal

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5620, 5630, 6630
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min -2000.0 [%]	**Max** 2000.0 [%]	**Factory setting** 100.0 [%]

Description: Sets the scaling for the lower torque limit or the torque limit when regenerating.

Dependency: p1400 bit 4 = 0: Upper / lower

p1400 bit 4 = 1: Motoring / generating

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

Note: This parameter can be freely interconnected.

The value has the above significance if it is interconnected from connector input p1528.

r1526 Torque limit, upper/motoring without offset / M_max up. w/o offs

VECTOR (n/M)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5620, 5630, 6630, 6640
	P-Group: Closed-loop control	**Units group:** 7_1	**Unit selection:** p0505
	Min - [Nm]	**Max** - [Nm]	**Factory setting** - [Nm]

Description: Displays the upper torque limit of all torque limits without offset.

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Dependency: p1400 bit 4 = 0: Upper / lower
p1400 bit 4 = 1: Motoring / generating
Refer to: p1520, p1521, p1522, p1523, p1528, p1529

r1527 Torque limit, lower/regenerative without offset / M_max low w/o offs

VECTOR (n/M)

Can be changed: -		**Access level:** 3
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5620, 5630, 6630, 6640
P-Group: Closed-loop control	**Units group:** 7_1	**Unit selection:** p0505
Min - [Nm]	**Max** - [Nm]	**Factory setting** - [Nm]

Description: Displays the lower torque limit of all torque limits without offset.
Dependency: p1400 bit 4 = 0: Upper / lower
p1400 bit 4 = 1: Motoring / generating
Refer to: p1520, p1521, p1522, p1523, p1528, p1529

p1528[0...n] CI: Torque limit upper scaling / M_max upper scal

VECTOR (n/M)

Can be changed: T		**Access level:** 3
Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 6630
P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
Min -	**Max** -	**Factory setting** 1524[0]

Description: Sets the signal source for the scaling of the upper torque limit in p1522.
Danger: For p1400.4 = 0 (torque limiting, upper/lower) the following applies:

Negative values. that are obtained as a result of the signal source and the scaling can cause the motor to accelerate in an uncontrollable fashion.

p1529[0...n] CI: Torque limit lower scaling / M_max lower scal

VECTOR (n/M)

Can be changed: T		**Access level:** 3
Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 6630
P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
Min -	**Max** -	**Factory setting** 1525[0]

Description: Sets the signal source for the scaling of the lower torque limit in p1523.
Danger: For p1400.4 = 0 (torque limiting, upper/lower) the following applies:

Positive values. that are obtained as a result of the signal source and the scaling can cause the motor to accelerate in an uncontrollable fashion.

p1530[0...n] Power limit, motoring / P_max mot

VECTOR (n/M)

Can be changed: U, T		**Access level:** 2
Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5640, 6640
P-Group: Closed-loop control	**Units group:** 14_5	**Unit selection:** p0505
Min 0.00 [kW]	**Max** 100000.00 [kW]	**Factory setting** 0.00 [kW]

Description: Sets the power limit when motoring.
Dependency: The factory setting depends on p0500.
p0500 = 101 --> set to the maximum value
Otherwise --> set to the rated value
Refer to: p1531

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Note: For vector drives (refer to p0107):
The power limit is limited to 300% rated motor power.

p1531[0...n] Power limit, regenerating / P_max gen

VECTOR (n/M)

Can be changed: U, T		**Access level:** 2
Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5640, 6640
P-Group: Closed-loop control	**Units group:** 14_5	**Unit selection:** p0505
Min -100000.00 [kW]	**Max** -0.01 [kW]	**Factory setting** -0.01 [kW]

Description: Sets the regenerative power limit.
Dependency: The factory setting depends on p0500.
p0500 = 101 --> set to the maximum value
Otherwise --> set to the rated value
Refer to: p1530
Note: For vector drives (refer to p0107):
The power limit is limited to 300% rated motor power.

r1533 Current limit, torque-generating, total / Iq_max total

VECTOR (n/M)

Can be changed: -		**Access level:** 3
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 5640, 5722, 6640
P-Group: Displays, signals	**Units group:** 6_2	**Unit selection:** p0505
Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the maximum torque/force generating current as a result if all current limits.

r1536 Torque limit, torque-generating, maximum / Isq_max

VECTOR (n/M)

Can be changed: -		**Access level:** 4
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6640, 6710
P-Group: Closed-loop control	**Units group:** 6_2	**Unit selection:** p0505
Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the maximum limit for the torque-generating current component.

r1537 Torque limit, torque-generating, minimum / Isq_min

VECTOR (n/M)

Can be changed: -		**Access level:** 4
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6640, 6710
P-Group: Closed-loop control	**Units group:** 6_2	**Unit selection:** p0505
Min - [Aeff]	**Max** - [Aeff]	**Factory setting** - [Aeff]

Description: Displays the minimum limit for the torque-generating current component.

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r1538 CO: Upper effective torque limit / M_max upper eff

VECTOR (n/M)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 1590, 1610, 1750, 5610, 5650, 5714, 6040, 6060, 6640, 8012
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the actually effective upper torque limit.

Note: The effective upper torque limit is reduced with respect to the upper torque limit p1520, if the current limit p0640 is reduced or the rated magnetizing current of the induction motor p0320 is increased.

For vector drives (refer to p0107), this is possibly the case for rotating measurements (refer to p1960).

The torque limit p1520 can be re-calculated using p0340 = 1, 3 or 5.

r1539 CO: Lower effective torque limit / M_max lower eff

VECTOR (n/M)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 1590, 1610, 1750, 5610, 5650, 5714, 6040, 6060, 6640, 8012
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the actually effective lower torque limit.

Note: The effective lower torque limit is reduced with respect to the selected lower torque limit p1521 if the current limit p0640 is reduced or the rated magnetizing current of the induction motor p0320 is increased.

For vector drives (refer to p0107), this is possibly the case for rotating measurements (refer to p1960).

The torque limit p1520 can be re-calculated using p0340 = 1, 3 or 5.

p1540[0...n] CI: Torque limit, speed controller upper scaling / M_max n-ctr upScal

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the scaling of the upper torque limiting to limit the speed controller output.

p1541[0...n] CI: Torque limit. speed controller lower scaling / M_max nctr lowScal

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the scaling of the lower torque limiting to limit the speed controller output.

r1547[0...1] Torque limit for speed controller output / M_max outp n_ctrl

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the torque limit to limit the speed controller output.

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Index: [0] = Upper limit
[1] = Lower limit

r1548[0...1] Stall current limit, torque-generating, maximum / Isq_max stall

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the limit for the torque-generating current component using the stall calculation, the current limit of the Motor Module as well as the parameterization in p0640.

Index: [0] = Upper limit
[1] = Lower limit

p1551[0...n] BI: Torque limit, variable/fixed signal source / M_lim var/fixS_src

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 5620, 5630, 6060, 6630
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source to change over the torque limits between variable and fixed torque limit.
1 signal from BI: p1551:
The variable torque limit applies (fixed torque limit + scaling).
0 signal from BI: p1551:
The fixed torque limit applies.
Example:
In order that for a fast stop (OFF3) the fixed torque limit is effective, BI: p1551 must be interconnected to r0899.5.

p1552[0...n] CI: Torque limit, upper scaling without offset / M_max up offs scal

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the scaling of the upper torque limiting to limit the speed controller output without taking into account the current and power limits.

p1554[0...n] CI: Torque limit, lower scaling without offset / M_max low offsScal

VECTOR (n/M)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 6060
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the scaling of the lower torque limiting to limit the speed controller output without taking into account the current and power limits.

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p1555[0...n] CI: Power limit / P_max

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 6640
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for the motoring and negative regenerative power limit.

Dependency: Refer to: p1530, p1531

Note: The resulting power limit when motoring is the minimum from p1530 and the signal that is read-in, the resulting regenerative power limit is the maximum from p1531 and the negative signal that is read-in.

p1556[0...n] Power limit scaling / P_max_scale

VECTOR (n/M)	**Can be changed:** T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6640
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.00	**Max** 340.28235E36	**Factory setting** 0.00

Description: Sets the scaling of the signal source for the motoring and negative regenerative power limit.

0 signifies no power limiting.

p1569[0...n] CI: Supplementary torque 3 / M_suppl 3

VECTOR (n/M)	**Can be changed:** T		**Access level:** 2
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 7010
	P-Group: Functions	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 3841[0]

Description: Sets the signal source for supplementary torque 3.

Dependency: Refer to: p3842

Notice: The signal input is after the torque limit (refer to r1538, r1539). For vector drives, the signals that are entered are only limited by the current and power limits.

Note: The signal input is preferably used to enter the friction characteristic. The friction compensation is also effective if the speed controller output reaches its torque limits, but the current limits have still not been reached (this only applies to vector drives).

p1570[0...n] CO: Flux setpoint / Flux setpoint

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6722
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 50.0 [%]	**Max** 200.0 [%]	**Factory setting** 100.0 [%]

Description: Sets the flux setpoint referred to rated motor flux.

Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

Note: For p1570 > 100 %, the flux setpoint increases as a function of the load from 100 % (no-load operation) to the setting in p1570 (above rated motor torque).

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p1572[0...n] Supplementary flux setpoint / Suppl flux setp

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0 [%]	100.0 [%]	0.0 [%]

Description: Sets the supplementary flux setpoint for the flux controller. The value is referred to the rated motor flux.

Notice: The parameter should be set back to 0% again for normal closed-loop control operation.

Note: The parameter is used to optimize the flux controller. The current model is not influenced by the setting.

p1574[0...n] Voltage reserve dynamic / U_reserve dyn

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6723, 6724
P-Group: Closed-loop control
Units group: 5_1
Unit selection: p0505

Min	Max	Factory setting
0.0 [Veff]	150.0 [Veff]	10.0 [Veff]

Description: Sets a dynamic voltage reserve.

Note: In the field weakening range, it must be expected that the control dynamic performance is somewhat restricted due to the limited possibilities of controlling/adjusting the voltage. This can be improved by increasing the voltage margin (reserve). Increasing the reserve reduces the steady-state maximum output voltage (r0071).

p1576[0...n] Flux boost, adaptation speed, lower / Flux boost n lower

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	0.00 [1/min]

Description: Sets the lower adaptation speed of the flux boost. Below this speed, p1570 is set as reference (setpoint) flux.

p1577[0...n] Flux boost adaptation speed, upper / Flux boost n upper

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
100.0 [1/min]	10000.0 [1/min]	200.0 [1/min]

Description: Sets the upper adaptation speed of the flux boost. Above this speed, the rated motor flux (100%) is set as reference (setpoint) flux.

Dependency: The parameter value refers to the lower adaptation speed of the flux boost.
Refer to: p1576

p1580[0...n] Efficiency optimization / Efficiency opt.

VECTOR (n/M)

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6722
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [%]	100 [%]	0 [%]

Description: Sets the efficiency optimization. When optimizing the efficiency, the flux setpoint of the closed-loop control is adapted as a function of the load.
For p1580 = 100 %, under no-load operating conditions, the flux setpoint is reduced to 50 % of the rated motor flux.

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Note: It only makes sense to activate this function if the dynamic response requirements of the speed controller are low. In order to avoid oscillations, if required, the speed controller parameters should be adapted (increase Zn, reduce Kp).
Further, the smoothing time of the flux setpoint filter (p1582) should be increased.

p1582[0...n] Flux setpoint smoothing time / Flux setp T_smth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6722
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
4 [ms]	5000 [ms]	15 [ms]

Description: Sets the smoothing time for the flux setpoint.

r1583 Flux setpoint smoothed / Flux setp smooth

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6722, 6723
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the smoothed flux setpoint. The value is referred to the rated motor flux.

p1584[0...n] Field weakening operation, flux setpoint smoothing time / Field weak T_smth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6722
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [ms]	20000 [ms]	0 [ms]

Description: Sets the smoothing time for the flux setpoint in the field-weakening range
Recommendation: Smoothing should be especially used if there is no regenerative feedback into the line supply. This means that the DC link voltage can quickly increase in regenerative operation
Note: Only the flux setpoint rise is smoothed

p1585[0...n] Flux actual value, smoothing time / Flux actVal T_smth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [ms]	1000 [ms]	0 [ms]

Description: Sets the smoothing time for the flux actual value.

r1589 Field-weakening current, pre-control value / FieldWkCurrPrectrl

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6724
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the pre-control value for the field weakening current.

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p1590[0...n] Flux controller P gain / Flux controller Kp

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0	999999.0	10.0

Description: Sets the proportional gain of the flux controller.

Note: The value is automatically pre-assigned dependent on the motor when the drive system is first commissioned.
When calculating controller parameter (p0340 = 4), this value is re-calculated.

p1592[0...n] Flux controller integral.action time / Flux controller Tn

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [ms]	10000 [ms]	30 [ms]

Description: Sets the integral time of the flux controller.

Note: The value is automatically pre-assigned dependent on the motor when the drive system is first commissioned.
When calculating controller parameter (p0340 = 4), this value is re-calculated.

r1593[0...1] Field weakening/flux controller output / Field flx_ctr outp

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6724, 6726
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the output of the field weakening controller or the output of the flux controller for separately-excited synchronous motors (FEM).

Index: [0] = PI output
[1] = I output

p1594[0...n] Field-weakening controller, P gain / Field_ctrl Kp

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6724
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00	1000.00	0.00

Description: Sets the P gain of the field-weakening controller.

p1596[0...n] Field weakening controller integral-action time / Field_ctrl Tn

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6723, 6724
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
10 [ms]	10000 [ms]	50 [ms]

Description: Sets the integral-action time of the field-weakening controller.

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r1597 Field weakening controller output / Field_ctrl output

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6723
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the output of the field weakening controller. The value is referred to the rated motor flux.

r1598 CO: Total flux setpoint / Flux setpt total

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6714, 6723
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the effective flux setpoint. The value is referred to the rated motor flux.

p1599[0...n] Flux controller, excitation current difference / Flux ctr I_excDiff

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0 [%]	100.0 [%]	3.0 [%]

Description: Sets the permissible difference between the actual excitation current and the excitation current setpoint. The excitation current flux controller is active within this difference.

If the difference lies outside the specified limit value, then the I component of the excitation current flux controller is kept. Instead of this, for the flux controller of the field-generating current, an additional I controller is switched-in (integral time according to p1592).

If the difference again lies within the bandwidth, the I component of the excitation current flux controller is re-activated and the I component of the flux controller of the field-generating current is reduced as an exponential function with respect to time. The reduction of the I component over time depends on the rotor time constant (r0384).

p1600[0...n] P flux controller, P gain / P flux ctrl Kp

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0	999999.0	10.0

Description: Sets the proportional gain of the P flux controller for separately-excited synchronous motors.

Note: The value is automatically pre-assigned dependent on the motor when the drive system is first commissioned.

When calculating controller parameter (p0340 = 4), this value is re-calculated.

r1602 Flux controller P output / Flux ctrl P output

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the output of the P flux controller for separately-excited synchronous motors (FEM).

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p1609[0...n] Current setpoint for I/f operation / I_set I/f oper

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6727
	P-Group: Closed-loop control	**Units group:** 6_2	**Unit selection:** p0505
	Min 0.00 [Aeff]	**Max** 10000.00 [Aeff]	**Factory setting** 0.00 [Aeff]

Description: Sets the stator current setpoint for operation of separately-excited synchronous motors (FEM) in the operating mode I/f (p1300 = 18).

p1610[0...n] Torque setpoint static (SLVC) / M_set static

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 200.0 [%]	**Factory setting** 50.0 [%]

Description: Sets the static torque setpoint for sensorless vector control (SLVC). This parameter is entered as a percentage referred to the rated motor torque (r0333).

For sensorless closed-loop vector control, when the motor model is shut down, an absolute current is impressed. p1610 represents the maximum load that occurs at a constant setpoint speed.

Notice: p1610 should always be set to at least 10 % higher than the maximum steady-state load that can occur.

Note: For p1610 = 0%, a current setpoint is calculated that corresponds to the no-load case (rated magnetizing current).

For p1610 = 100 %, a current setpoint is calculated that corresponds to the rated motor torque.

p1611[0...n] Supplementary accelerating torque (SLVC) / M_suppl_accel

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6722
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 200.0 [%]	**Factory setting** 0.0 [%]

Description: Enters the dynamic torque setpoint for the low-speed range for sensorless vector control (SLVC). This parameter is entered as a percentage referred to the rated motor torque (r0333).

Note: When accelerating and braking p1611 is added to p1610 and the resulting total torque is converted into an appropriate current setpoint and controlled.

For pure accelerating torques, it is always favorable to use the torque precontrol of the speed controller (p1496).

p1616[0...n] Current setpoint smoothing time / I_set T_smooth

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6722
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 4 [ms]	**Max** 10000 [ms]	**Factory setting** 40 [ms]

Description: Sets the smoothing time for the current setpoint.

The current setpoint is generated from p1610 and p1611.

Note: This parameter is only effective in the range where current is impressed for sensorless vector control.

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r1618 Current model controller, pre-control / I_mod_ctr pre-ctr

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the pre-control value of the current model controller. It involves a magnetizing current in the de-direction.

p1619[0...n] Setpoint/actual value tracking threshold / SetAct track thrsh

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
0.00 [Aeff]	10000.00 [Aeff]	0.00 [Aeff]

Description: Threshold for setpoint - actual value tracking of the stator current in the q direction of the current model.

p1620[0...n] Stator current, minimum / I_stator min

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
-10000.00 [Aeff]	10000.00 [Aeff]	0.00 [Aeff]

Description: Sets the minimum stator current for separately-excited synchronous motors (FEM).

A negative value means that the field-generating stator current (d-axis) has a negative sign. The valid value is internally limited to 50% of the rated motor current (p0305).

p1621[0...n] Changeover speed, inner cos phi = 1 / n_chngov cos phi=1

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	0.00 [1/min]

Description: Sets the speed where a change is made from the inner to the outer cos phi = 1.

If the value that is entered exceeds the rated speed, then a change is made to the inner cos phi = 1 over the complete speed range.

p1622[0...n] Field-generating current setpoint smoothing time constant / Id_setp T_smth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.1 [ms]	200.0 [ms]	20.0 [ms]

Description: Sets the smoothing time constant for the setpoint of the field-generating current components.

The current filtered in this way is included in the calculation of the cos phi.

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r1623 Field-generating current setpoint (steady-state) / Id_set stationary

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6723
P-Group: Displays, signals
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the steady-state field generating current setpoint (Id_set).

r1624 Field-generating current setpoint, total / Id_setp total

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: 6640, 6723, 6724, 6727
P-Group: Displays, signals
Units group: 6_2
Unit selection: p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the limited field-generating current setpoint (Id_set).
This value comprises the steady-state field-generating current setpoint r1623 and a dynamic component that is only set when changes are made to the flux setpoint.

p1625[0...n] Excitation current setpoint calibration / I_exc_setp cal

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
10.0 [%]	200.0 [%]	100.0 [%]

Description: Gain factor to weight the excitation current setpoint.

r1626 CO: Excitation current setpoint / I_exc_set

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the calculated excitation current setpoint.
Dependency: Refer to: p0390

r1627 Current model load angle / I_mod load angle

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [°]	- [°]	- [°]

Description: Displays the load angle of the current model.

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p1628[0...n] Current model controller, dynamic factor / I_mod_ctr dyn_fact

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
1 [%]	400 [%]	50 [%]

Description: Dynamic factor of the model controller in the current model

p1629[0...n] Current model controller P gain / I_mod_ctrl Kp

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.000	100000.000	0.000

Description: Sets the proportional gain of the current model controller. This value is automatically preset using p3900 or p0340 when commissioning has been completed.

p1630[0...n] Current model controller integral time / I_ctrl Tn

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	10000.00 [ms]	0.00 [ms]

Description: Sets the proportional gain of the current model controller. This value is automatically preset using p3900 or p0340 when commissioning has been completed.

r1631 Current model controller, P gain effective / I_mod ctrl Kp eff

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the effective P gain of the current model controller.

r1632 Current model controller integral time effective / I_mod_ctrl Tn eff

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [ms]	- [ms]	- [ms]

Description: Displays the effective integral time of the current model controller.

r1633 Current model, flux setpoint / I_mod flux setp

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6727
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the effective flux setpoint of the current model. The value is referred to the rated motor flux.

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r1634 Current model, flux actual value / I_mod flux act val

VECTOR (n/M) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6727
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the effective flux actual value of the current model. The value is referred to the rated motor flux.

r1635 Current model controller, I component / I_mod_ctrl I_comp

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6727
P-Group: Closed-loop control **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the I component of the current model controller.

r1636 Current model controller output / I_mod_ctrl outp

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6727
P-Group: Closed-loop control **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the output of the current model controller.

r1637 Current model, magnetizing current, d axis / I_mod I_mag d-ax

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6727
P-Group: Closed-loop control **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the magnetizing current of the current model in the d-axis.

r1638 Current model, magnetizing current, q axis / I_mod I_mag q-ax

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6727
P-Group: Closed-loop control **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the magnetizing current of the current model in the q-axis.

r1639 Current model Isq after actual value tracking / I_mod Isq track

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6727
P-Group: Closed-loop control **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the stator current in the q axis after current actual value tracking.

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p1640[0...n] CI: Excitation current actual value / Excit curr act val

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 6727
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source for the excitation current actual value

r1641 Excitation current actual value / I_exc_act

VECTOR (n/M)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6727
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	- [%]	- [%]	- [%]

Description: Displays the excitation current actual value that is read-in.

Dependency: Refer to: p0390

p1642[0...n] Minimum excitation current / Min I_exc

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6727
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.1 [%]	50.0 [%]	5.0 [%]

Description: Sets the minimum excitation current. This means that negative excitation currents can be avoided.

p1643[0...n] Gain factor, minimum excitation current closed-loop control / Min I_exc Kp

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6727
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00	5.00	0.40

Description: Sets the gain factor for the minimum excitation current, closed-loop control. This is active if the excitation current is below 75% of p1642.

Dependency: Refer to: p1642

r1644 Excitation current monitoring output / I_exc monit output

VECTOR (n/M)	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6727
	P-Group: Closed-loop control	**Units group:** 6_2	**Unit selection:** p0505
	Min	**Max**	**Factory setting**
	- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the output of the excitation current monitoring for separately excited synchronous motors.

p1645[0...4] BI: Excitation feedback signals signal source / Exc FS S_src

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 6495
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for the individual feedback signals from the excitation.

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Index: [0] = Excitation ready to be powered-up
[1] = Excitation ready
[2] = Excitation operational
[3] = Excitation group signal fault
[4] = Excitation group signal alarm

Dependency: Refer to: r1649

p1646 Excitation monitoring time / Excit t_monit

VECTOR (n/M)

Can be changed: T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6495

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
2.0 [s]	1300.0 [s]	20.0 [s]

Description: Sets the monitoring time of the excitation.

After an ON command, the feedback signal must be received within this monitoring time.

Note: After the on command for the excitation (r1648.0 = 1), its feedback signal must be available at r1649.1 within this monitoring time (BI: p1645[1]).

The same monitoring time is effective after the excitation is enabled for operation (r1648.3 = 1) up to the feedback signal "excitation in operation" (r1649.2 = 1, BI: p1645[2]).

p1647 Excitation switch-out delay time / Exc t_off

VECTOR (n/M)

Can be changed: T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6495

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.5 [s]	5.0 [s]	0.8 [s]

Description: Sets the switch-off delay time to shut-down the excitation equipment.

Note: The delay time starts if, when powering-down, r0863.0 = 0.

r1648.0 and r1648.3 are reset at the end of the delay time.

r1648 CO/BO: Excitation, control word / Excitation STW

VECTOR (n/M)

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 6495

P-Group: Displays, signals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word for the excitation equipment.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Power-up excitation	Yes	No	-
01	Excitation no OFF2	Yes	No	-
02	Excitation no OFF3	Yes	No	-
03	Enable excitation operation	Yes	No	-
07	Excitation acknowledge fault	Yes	No	-
10	Control from excitation equipment	Yes	No	-

r1649 CO/BO: Excitation status word / Excitation ZSW

VECTOR (n/M)

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 6495

P-Group: Displays, signals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the excitation equipment.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Excitation ready to be powered-up, feedback signal	Yes	No	-
	01	Excitation ready feedback signal	Yes	No	-
	02	Excitation in operation feedback signal	Yes	No	-
	03	Excitation group signal fault	Yes	No	-
	07	Excitation, group signal alarm	Yes	No	-

Dependency: Refer to: p1645

r1650 Current setpoint torque-generating before filter / Iq_set before filt

VECTOR (n/M) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 5710
P-Group: Closed-loop control **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the torque generating current setpoint Iqset after the torque limits and the clock cycle interpolation is front of the current setpoint filters.

p1653[0...n] Current setpoint torque-generating minimum smoothing time / Isq_s T_smth_min

VECTOR (n/M) **Can be changed:** U, T **Access level:** 4
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.1 [ms]	20.0 [ms]	0.1 [ms]

Description: Sets the minimum smoothing time constant for the setpoint of the torque-generating current components.

p1654[0...n] Curr. setpoint torque-gen. smoothing time field weakening range / Isq_s T_smth FW

VECTOR (n/M) **Can be changed:** U, T **Access level:** 4
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 6710
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.1 [ms]	50.0 [ms]	4.8 [ms]

Description: Sets the smoothing time constant for the setpoint of the torque-generating current components.
Note: The smoothing time does not become effective until the field-weakening range is reached.

p1655[0...1] CI: Current setpoint filter natural frequency tuning / I_set_filt f_n

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 6710
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for tuning the natural frequency of the current setpoint filter.
Index: [0] = Filter 1
[1] = Filter 2

p1656[0...n] Activates current setpoint filter / I_set_filt active

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3
Data type: Unsigned16 **Dynamic index:** DDS, p0180 **Function diagram:** 6710
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0001 bin

Description: Activates current setpoint filters 1 to 2.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Filter 1	active	not active	-
	01	Filter 2	active	not active	-

Dependency: The current setpoint filters are parameterized with p1656 to p1666.

Note: If not all of the filters are required, then the filters should be used consecutively starting from filter 1.

p1657[0...n] Current setpoint filter 1 type / I_set_filt 1 Typ

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	2	1

Description: Sets the current setpoint filter 1 as low pass (PT2) or as extended general 2nd-order filter.

Values:
1: Low pass: PT2
2: General 2nd-order filter

Dependency: The current setpoint filters are parameterized with p1656 to p1676.

Note: For an extended general 2nd order filter, by inserting the same natural frequency in both the numerator and in the denominator, i.e. bandstop frequency, a bandstop filter is implemented. If the numerator damping of zero is selected, the bandstop frequency is completely suppressed. The denominator damping can be determined from the equation for the 3 dB bandwidth: f_3dB bandwidth = 2 * D_denominator * f_bandstop frequency

p1658[0...n] Current setpoint filter 1 denominator natural frequency / I_set_filt 1 fn_n

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

Description: Sets the denominator natural frequency for current setpoint filter 1 (PT2, general filter).

Dependency: The current setpoint filters are parameterized with p1656 to p1676.

p1659[0...n] Current setpoint filter 1 denominator damping / I_set_filt 1 D_n

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.001	10.000	0.700

Description: Sets the denominator damping for current setpoint filter 1.

Dependency: The current setpoint filters are parameterized with p1656 to p1676.

p1660[0...n] Current setpoint filter 1 numerator natural frequency / I_set_filt 1 fn_z

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710

P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

Description: Sets the numerator natural frequency for current setpoint filter 1 (general filter).

Dependency: The current setpoint filters are parameterized with p1656 to p1676.

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p1661[0...n] Current setpoint filter 1 numerator damping / I_set_filt 1 D_z

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000	10.000	0.700

Description: Sets the numerator damping for current setpoint filter 1.
Dependency: The current setpoint filters are parameterized with p1656 to p1676.

p1662[0...n] Current setpoint filter 2 type / I_set_filt 2 Typ

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Integer16 | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	2	1

Description: Sets the current setpoint filter 2 as low pass (PT2) or as extended general 2nd-order filter.
Values:
1: Low pass: PT2
2: General 2nd-order filter
Dependency: The current setpoint filters are parameterized with p1656 to p1676.
Note: For an extended general 2nd order filter, by inserting the same natural frequency in both the numerator and in the denominator, i.e. bandstop frequency, a bandstop filter is implemented. If the numerator damping of zero is selected, the bandstop frequency is completely suppressed. The denominator damping can be determined from the equation for the 3 dB bandwidth: f_3dB bandwidth = 2 * D_denominator * f_bandstop frequency

p1663[0...n] Current setpoint filter 2 denominator natural frequency / I_set_filt 2 fn_n

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

Description: Sets the denominator natural frequency for current setpoint filter 2 (PT2, general filter).
Dependency: The current setpoint filters are parameterized with p1656 to p1676.

p1664[0...n] Current setpoint filter 2 denominator damping / I_set_filt 2 D_n

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5710, 6710
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.001	10.000	0.700

Description: Sets the denominator damping for current setpoint filter 2.
Dependency: The current setpoint filters are parameterized with p1656 to p1676.

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p1665[0...n] Current setpoint filter 2 numerator natural frequency / I_set_filt 2 fn_z

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5710, 6710
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.5 [Hz]	**Max** 16000.0 [Hz]	**Factory setting** 1999.0 [Hz]

Description: Sets the numerator natural frequency for current setpoint filter 2 (general filter).

Dependency: The current setpoint filters are parameterized with p1656 to p1676.

p1666[0...n] Current setpoint filter 2 numerator damping / I_set_filt 2 D_z

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 5710, 6710
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.000	**Max** 10.000	**Factory setting** 0.700

Description: Sets the numerator damping for current setpoint filter 2.

Dependency: The current setpoint filters are parameterized with p1656 to p1676.

p1699 Filter data transfer / Filt data transfer

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 0

Description: Activates data transfer for parameter changes for the filter.
p1699 = 0:
The new filter data are immediately transferred.
p1699 = 1:
The new filter data are only transferred when this parameter is reset.

Dependency: Refer to: p1416, p1656, p1657, p1658, p1659, p1660, p1661, p1662, p1663, p1664, p1665, p1666

p1702[0...n] Isd current controller pre-control scaling / Isd_ctr_prectrScal

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6714
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 200.0 [%]	**Factory setting** 70.0 [%]

Description: Sets the scaling of the dynamic current controller pre-control for the flux-generating current component Isd.

p1703[0...n] Isq current controller pre-control scaling / Isq_ctr_prectrScal

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6714
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 0.0 [%]	**Max** 200.0 [%]	**Factory setting** 70.0 [%]

Description: Sets the scaling of the dynamic current controller pre-control for the torque/force-generating current component Isq.

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p1704[0...n] EMF scaling of the Isq current controller pre-control / EMF scal Isq_ctrl

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200.0 [%]	100.0 [%]

Description: Sets the scaling of the EMF pre-control for the Isq current controller.

p1705[0...n] Flux setpoint/actual value tracking threshold / Flux track thresh

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	100.0 [%]	100.0 [%]

Description: Threshold for the setpoint - actual value tracking of the EMF pre-control of the Isq current controller.

p1715[0...n] Current controller P gain / I_ctrl Kp

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5714, 6714
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000	100000.000	0.000

Description: Sets the proportional gain of the current controller for the lower adaptation current range. This value is automatically preset using p3900 or p0340 when commissioning has been completed.
Dependency: p0391, p0392 and p0393 are only available for SERVO.
Note: For p0393 = 100 %, the current controller adaptation is disabled and p1715 is effective over the entire range.

p1717[0...n] Current controller integral-action time / I_ctrl Tn

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 5714, 6714
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	1000.00 [ms]	2.00 [ms]

Description: Sets the integral-action time of the current controller.
Dependency: Refer to: p1715

r1718 CO: Isq controller output / Isq_ctrl outp

VECTOR (n/M) | **Can be changed:** - | | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 6714
P-Group: Closed-loop control | **Units group:** 5_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the actual output of the Isq current controller (torque/force generating current, PI controller). The value contains the proportional and integral components of the PI controller.

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r1719 Isq controller integral component / Isq_ctrl I_comp

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** 5_1 **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the integral component of the Isq current controller (torque/force-generating current, PI controller).

r1723 CO: Isd controller output / Isd_ctrl output

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** 6714
P-Group: Closed-loop control **Units group:** 5_1 **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the actual output of the Isd current controller (flux-generating current, PI controller). The value contains the proportional and integral components of the PI controller.

r1724 Isd controller integral component / Isd_ctrl I_comp

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** 5_1 **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the integral component of the Isd current controller (flux-generating current, PI controller).

r1725 Isd controller integral component limit / Isd_ctrl I_limit

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** 5_1 **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the limit value for the integral component of the Isd current controller.

p1726[0...n] Quadrature arm decoupling, scaling / Transv_decpl scal

VECTOR (n/M) **Can be changed:** U, T **Access level:** 4
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200.0 [%]	75.0 [%]

Description: Sets the scaling of the quadrature arm decoupling

Note: This parameter is ineffective for sensorless vector control. In this case, p1727 is always used. If p1726 is set to 0, then the quadrature de-coupling is de-activated. The integral component of the Isd current controller remains effective if the complete speed control range.

For the closed-loop control of synchronous motors p1726 is used to scale the current controller de-coupling.

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p1727[0...n] Quadrature arm decoupling at voltage limit, scaling / TrnsvDecplVmaxScal

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	200.0 [%]	50.0 [%]

Description: Sets the scaling of quadrature arm decoupling when the voltage limit is reached.

r1728 De-coupling voltage, in-line axis / U_dir-axis_decoupl

VECTOR (n/M) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** 5_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the actual output of the quadrature channel de-coupling for the d axis.

r1729 De-coupling voltage, quadrature axis / U_quad_decoupl

VECTOR (n/M) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** 5_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the actual output of the quadrature channel de-coupling for the q axis.

r1732 Direct-axis voltage setpoint / U_direct-axis_set

VECTOR (n/M) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 1630, 5714, 6714, 5718
P-Group: Closed-loop control | **Units group:** 5_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the direct-axis voltage setpoint Ud.

r1733 Quadrature-axis voltage setpoint / U_quad_set

VECTOR (n/M) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 1630, 5714, 5718, 6714, 6719
P-Group: Closed-loop control | **Units group:** 5_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the quadrature-axis component of voltage setpoint Uq.

p1740[0...n] Gain resonance damping for sensorless closed loop control / Gain res_damp

VECTOR (n/M) | **Can be changed:** U, T | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000	10.000	0.025

Description: Defines the gain of the controller for resonance damping for operation with sensorless vector control in the range that current is impressed.

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p1744[0...n] Motor model speed threshold stall detection / MotMod n_thr stall

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	100.00 [1/min]

Description: Sets the speed threshold value to detect a stalled motor.
If the adaptation controller output exceeds the parameterized speed difference, then bit 11 in status word p1408 is set.

Dependency: If a stalled drive is detected (p1408.11 set), fault 7902 is output after the delay time in p2178.
Refer to: p2178

Note: Speed monitoring is only effective in operation with a speed encoder (refer to p1300).

p1745[0...n] Motor model error threshold stall detection / MotMod ThreshStall

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	1000.0 [%]	5.0 [%]

Description: Sets the fault threshold in order to detect a motor that has stalled.
If the error signal (r1746) exceeds the parameterized error threshold, then bit 12 in status word p1408 is set.

Dependency: If a stalled drive is detected (p1408.12 set), fault 7902 is output after the delay time set in p2178.
Refer to: p2178

Note: Monitoring is only effective in the low-speed range (below p1755 * p1756).

r1746 Motor model error signal stall detection / MotMod sig stall

VECTOR (n/M)

Can be changed: - — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Signal to initiate stall detection

Note: The signal is not calculated while magnetizing and only in the low speed range (below p1755 * p1756).

p1750[0...n] Motor model configuration / MotMod config

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3
Data type: Unsigned8 — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the configuration of the motor model.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Controlled start	Yes	No	-
01	Controlled through 0 Hz	Yes	No	-
02	Set motor model	Yes	No	-

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r1751 Motor model status / MotMod status

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the motor model.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Controlled operation	active	not active	-
01	Set ramp-function generator	active	not active	-
02	Stop RsLh adaptation	Yes	No	-
03	Feedback	active	not active	-
04	Encoder operation	active	not active	-
05	Holding angle	Yes	No	-
06	Acceleration criteria	active	not active	-
07	Set angular integrator PEM	No	Yes	-
08	Stop Kt adaptation PEM	No	Yes	-
09	PolID active PEM SLVC	No	Yes	-
10	I injection PEM	No	Yes	-
12	Rs adapt waits	Yes	No	-
13	Motor operation	Yes	No	-
14	Stator frequency sign	Positive	Negative	-
15	Torque sign	Motor mode	Regenerative mode	-

p1752[0...n] Motor model changeover speed operation with encoder / MotMod n_chgov enc

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.0 [1/min]	210000.0 [1/min]	210000.0 [1/min]

Description: Sets the speed to change over the motor model for operation with encoder.

Dependency: Refer to: p1756

p1754[0...n] Flux angle difference smoothing time / Angle diff T_smth

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.1 [ms]	100.0 [ms]	5.0 [ms]

Description: Sets the smoothing time constant to filter the main flux angle difference from the voltage and current models. The filtered value is included in the calculation of the total flux angle.

p1755[0...n] Motor model changeover speed sensorless operation / MotMod n_chgSnsorl

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.0 [1/min]	210000.0 [1/min]	210000.0 [1/min]

Description: Sets the speed to change over the motor model to sensorless operation (without encoder).

Dependency: Refer to: p1756

Notice: The changeover speed represents the steady-state minimum speed up to which the motor model can be used in steady-state operation without encoder (sensorless operation).
If the stability is not adequate close to the changeover speed, it may make sense to increase the parameter value.

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Note: The changeover speed applies for the changeover between open-loop and closed-loop control mode.

p1756 Motor model changeover speed hysteresis / MotMod n_chgov.Hys

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [%]	90.0 [%]	5.0 [%]

Description: Sets the hysteresis for the changeover speed/velocity of the motor model.
Dependency: Refer to: p1752, p1755
Note: The value is entered relative to p1404, p1752 or p1755.

p1757[0...n] Motor model w/o enc. op./cl.-loop controlled stab. controller Kp / MotMod w/o enc Kp

VECTOR (n/M)

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.01	10.00	0.70

Description: Sets the gain of the transient response controller when the motor model changes over from open-loop controlled operation to closed-loop controlled operation.
Note: Only for ASM and PSM in sensorless operation:
The settling range starts at 0.5 * p1755 * p1756.
For ASM it ends at p1755 * p1756 or at p1755, if p1759 is at the maximum value.
For PSM it always ends at p1755 * p1756.

p1758[0...n] Motor model changeover delay time, closed/open-loop control / MotMod t cl_op

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
100 [ms]	2000 [ms]	1000 [ms]

Description: Sets the minimum time for falling below the changeover speed when changing from closed-loop controlled operation to open-loop controlled operation.
Dependency: Refer to: p1755, p1756

p1759[0...n] Motor model changeover delay time open/closed loop control / MotMod t op_cl

VECTOR (n/M)

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Closed-loop control — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0 [ms]	2000 [ms]	0 [ms]

Description: Sets the minimum time for exceeding the changeover speed when changing from open-loop controlled operation to closed-loop controlled operation.
Dependency: Refer to: p1755, p1756

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p1760[0...n] Motor model with encoder speed adaptation Kp / MotMod wE n_ada Kp

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.000	100000.000	1000.000

Description: Sets the proportional gain of the controller for speed adaptation with encoder

p1761[0...n] Motor model with encoder speed adaptation Tn / MotMod wE n_ada Tn

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0 [ms]	1000 [ms]	4 [ms]

Description: Sets the integral-action time of the controller for speed adaptation with encoder

r1762 Motor model deviation component 1 / MotMod dev comp 1

VECTOR (n/M)	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Induction motor (ASM):
Displays the referred imaginary system deviation for the adaptation circuit of the motor model.
Permanent magnet synchronous motor (PEM):
Displays the system deviation referred to PI for the speed adaptation.

r1763 Motor model deviation component 2 / MotMod dev comp 2

VECTOR (n/M)	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Induction motor (ASM):
Displays the referred real system deviation for the adaptation circuit of the motor model.
Permanent magnet synchronous motor (PEM):
Not used.

p1764[0...n] Motor model without encoder speed adaptation Kp / MotMod woE n_adaKp

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 6730
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.000	100000.000	1000.000

Description: Sets the proportional gain of the controller for speed adaptation without encoder.

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r1765 Motor model, speed adaptation Kp effective / MotM n_ada Kp act

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the effective proportional gain of the controller for the speed adaptation.

p1767[0...n] Motor model without encoder speed adaptation Tn / MotMod woE n_adaTn

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 6730
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
1 [ms]	200 [ms]	4 [ms]

Description: Sets the integral time of the controller for speed adaptation without encoder

r1768 Motor model, speed adaptation Vi effective / MotM n_ada Vi act

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the effective gain of the integral component of the controller for speed adaptation.

r1770 Motor model speed adaptation proportional component / MotMod n_adapt Kp

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6730
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the P component of the controller for speed adaptation.

r1771 Motor model speed adaptation I comp. / MotMod n_adapt Tn

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 6730
P-Group: Closed-loop control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the I component of the controller for speed adaptation.

p1774[0...n] Motor model, offset voltage compensation alpha / MotMod offs comp A

VECTOR (n/M)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
-5.000 [V]	5.000 [V]	0.000 [V]

Description: Sets the offset voltage in the alpha direction; this compensates the offset voltages of the drive converter/inverter at low speeds. The value is valid for the rated (nominal) pulse frequency of the Motor Module.

Note: The value is pre-set during the rotating measurement.

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p1775[0...n] Motor model, offset voltage compensation beta / MotMod offs comp B

VECTOR (n/M)

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-5.000 [V]	5.000 [V]	0.000 [V]

Description: Sets the offset voltage in the beta direction; this compensates the offset voltages of the drive converter/inverter at low speeds. The value is valid for the rated (nominal) pulse frequency of the Motor Module.

Note: The value is pre-set during the rotating measurement.

r1778 Motor model flux angle difference / MotMod ang. diff.

VECTOR (n/M)

Can be changed: - | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [°]	- [°]	- [°]

Description: Induction motor (ASM):
Displays the difference between the motor model flux angle and the transformation angle.
Permanent magnet synchronous motor (PEM):
Displays the difference between the motor model angle and the encoder angle.

r1779 Motor model absolute flux / MotMod abs flux

VECTOR (n/M)

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the absolute value of the flux of the motor model.

p1780[0...n] Motor model adaptation configuration / MotMod adapt conf

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0111 1100 bin

Description: Sets the configuration for the adaptation circuit of the motor model.
Induction motor (ASM): Rs, Rr (only for operation with encoder), Lh and offset compensation.
Permanent magnet synchronous motor (PEM): kT

Bit field:

Bit	Signal name	1 signal	0 signal	FP
01	Select motor model ASM Rs adaptation	Yes	No	-
02	Select motor model ASM Lh adaptation	Yes	No	-
03	Select motor model PEM KT adaptation	Yes	No	-
04	Select motor model, offset adaptation	Yes	No	-
05	Select ASM Rr adaptation (only with encoder)	Yes	No	-
06	Select pole wheel identification PEM sensorless	Yes	No	-
07	Select T(valve) with Rs adaptation	Yes	No	-

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Note: ASM: Induction motor

PEM: Permanent magnet synchronous motor

The following applies for the vector closed-loop control type:

When selecting the compensation of the valve interlocking via Rs (bit 7), the compensation in the gating unit is de-activated and is instead taken into account in the motor model.

p1781[0...n] Motor model ASM Rs adaptation integral time / MotMod Rs Tn

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
10 [ms]	10000 [ms]	100 [ms]

Description: Sets the integral time for the Rs adaptation of the motor model for an induction motor (ASM).

r1782 Motor model ASM Rs adaptation correction value / MotMod Rs corr

VECTOR (n/M) **Can be changed:** - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the correction value for the Rs adaptation of the motor model for an induction motor (ASM).

p1783[0...n] Motor model ASM Rs adaptation Kp / MotMod Rs Kp

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000	1.000	0.100

Description: Sets the proportional gain for the Rs adaptation of the motor model for an induction motor (ASM).

p1785[0...n] Motor model ASM Lh adaptation Kp / MotMod Lh Kp

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000	1.000	0.100

Description: Sets the proportional gain for the Lh adaptation of the motor model for an induction motor (ASM).

p1786[0...n] Motor model ASM Lh adaptation integral time / MotMod Lh Tn

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
10 [ms]	10000 [ms]	100 [ms]

Description: Sets the integral time for the Lh adaptation of the motor model for an induction motor (ASM).

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r1787 Motor model ASM Lh adaptation correction value / MotMod Lh corr

VECTOR (n/M) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the correction value for the Lh adaptation of the motor model for an induction motor (ASM).

r1789 Motor model ASM Rs adaptation switch-on frequency / MotMod Rs f_on

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the power-on stator frequency for the Rs adaptation for the induction motor (ASM).

r1790 Motor model ASM Rs adaptation switch-on slip / MotMod Rs fslip

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the power-on slip frequency for the Rs adaptation for the induction motor (ASM).

r1791 Motor model ASM Lh adaptation switch-on frequency / MotMod Lh f_on

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the power-on stator frequency/ primary section frequency for the Lh adaptation for the induction motor (ASM).

r1792 Motor model ASM Lh adaptation switch-on slip / MotMod Lh fslip

VECTOR (n/M) **Can be changed:** - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the power-on slip frequency for the Lh adaptation for the induction motor (ASM).

p1795[0...n] Motor model PEM kT adaptation integral time / MotMod kT Tn

VECTOR (n/M) **Can be changed:** U, T **Access level:** 3
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 6731
P-Group: Closed-loop control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
10 [ms]	10000 [ms]	100 [ms]

Description: Sets the integral time of the kT adaptation of the motor model for a permanent-magnet synchronous motor (PEM).

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r1797 Motor model PEM kT adaptation correction value / MotMod kT corr

VECTOR (n/M)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 6731
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min - [Nm/A]	**Max** - [Nm/A]	**Factory setting** - [Nm/A]

Description: Displays the correction value of the kT adaptation of the motor model for a permanent-magnet synchronous motor (PEM).

p1800[0...n] Pulse frequency / Pulse frequency

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Modulation	**Units group:** -	**Unit selection:** -
	Min 1.000 [kHz]	**Max** 16.000 [kHz]	**Factory setting** 4.000 [kHz]

Description: Sets the drive converter switching frequency.

This parameter is preset to the rated converter value when the drive is first commissioned.

Dependency: The pulse frequency can, depending on the current controller sampling time (p0115[0]) assume the following values.

p1800 = 1 / (p0115[0] * n) or

p1800 = n / p0115[0]

With n = 1, 2, 3, ...

The minimum and maximum pulse frequencies of the power unit must be taken into account (r0114).

Example:

p0115[0] = 125 µs --> p1800 = 2, 2.6, 4, 8, 16 kHz

Refer to: r0110, r0111, p0112, p0113, r0114, p0115, p0230, p1817

Note: The maximum possible pulse frequency is also determined by the power unit being used.

When the pulse frequency is increased, depending on the particular power unit, the maximum output current can be reduced (de-rating, refer to r0067).

If a sinusoidal filter is parameterized as output filter (p0230 = 3), then the pulse frequency cannot be changed below the minimum value required for the filter.

If p1800 is changed while commissioning (p0009, p0010 > 0), then it is possible that the old value will no longer be able to be set. The reason for this is that the dynamic limits of p1800 have been changed by a parameter that was set when the drive was commissioned (e.g. p1082).

r1801 Actual pulse frequency / Pulse freq actual

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min - [kHz]	**Max** - [kHz]	**Factory setting** - [kHz]

Description: Displays the actual converter switching frequency.

Note: The selected pulse frequency (p1800) may be reduced if the drive converter has overload condition (refer to p0290).

The following applies for vector drives (refer to p0107):

The pulse frequency can also be reduced when changing-over the modulator to an optimized pulse pattern. This is used to avoid overdriving.

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p1802[0...n] Modulator mode / Modulator mode

VECTOR

Can be changed: T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	9	0

Description: Sets the modulator mode.

Values:

0: Automatic changeover SVM/FLB
1: Flat top modulation (FLB)
2: Space vector modulation (SVM)
3: SVM without overmodulation
4: SVM/FLB without overcontrol
5: SVM with pulse frequency reduction
6: SVM/FLB with pulse frequency reduction
7: No edge modulation up to 100 Hz
8: No edge modulation up to 60 Hz
9: Edge modulation

Dependency: If a sinusoidal filter is parameterized as output filter (p0230 = 3, 4), or if the power unit firmware is not able to calculate edge modulation (r0192 bit0 = 0), then only space vector modulation without overcontrol can be set as modulation type (p1802 = 3).

Refer to: r0192, p0230, p7003

Note: When modulation modes are enabled that could lead to overmodulation (p1802 = 0, 1, 2, 5, 6), the modulation depth must be limited using p1803. The higher the overmodulation, the greater the current ripple and torque ripple.

When changing p1802[x], the values for all of the other existing indices are also changed.

p1802 = 7, 8 should be used if the drive is operated below 100 Hz or 60 Hz, and it is necessary to avoid changing over to edge modulation. Above these output frequencies, the modulation depth remains limited so that there the full output voltage of the edge modulation is not reached.

p1803[0...n] Maximum modulation depth / Modulat depth max

VECTOR

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 6723

P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
20.0 [%]	150.0 [%]	100.0 [%]

Description: Defines the maximum modulation depth.

Note: p1803 = 100 % is the overcontrol limit for space vector modulation (or an ideal drive converter without any switching delay).

If an optimized pulse pattern is enabled (edge modulation), then the modulation depth is limited to below the output frequency of 28 Hz as there is no optimized pulse pattern in this range.

p1804[0...n] Filter time constant smoothed modulation index / T_filt mod_idxSmth

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -

P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	10000.0 [ms]	10.0 [ms]

Description: Filter time constant for the smoothed modulation index to change over the modulator mode.

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p1806[0...n] Filter time constant Vdc correction / T_filt Vdc_corr

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	10000.0 [ms]	0.0 [ms]

Description: Sets the filter time constant of the DC link voltage used to calculate the modulation depth.

r1807 Actual DC-link voltage to calculate the modulation depth / VdcActValMod_depth

VECTOR

Can be changed: - | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 5_2 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: DC link voltage that is used to convert the setpoint voltage into an equivalent modulation depth.
Note: p1737 can be used for filtering.

r1808 DC link voltage actual value for V_max calculation / Vdc act val U_max

VECTOR

Can be changed: - | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 5_2 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: DC link voltage used to determine the maximum possible output voltage.

r1809 Modulator mode actual / Modulator mode act

VECTOR

Can be changed: - | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	8	1

Description: Displays the effective modulator mode.
Values:
1: Flat top modulation (FLB)
2: Space vector modulation (SVM)
3: Edge modulation from 28 Hz; 23:3
4: Edge modulation from 28 Hz; 19:1
5: Edge modulation from 60 Hz; 17:3
6: Edge modulation from 60 Hz; 17:1
7: Edge modulation from 100 Hz; 9:2
8: Edge modulation from 100 Hz; 9:1

p1817 Minimum ratio, pulse frequency to the output frequency / Min f_puls / f_max

VECTOR

Can be changed: C2(2) | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
8.3	15.0	12.0

Description: Sets the minimum ratio between the pulse frequency and the output frequency.
Notice: If the ratio between the pulse frequency and the output frequency is reduced, then oscillations can occur in the output current that can result in significant levels of current ripple with the appropriate negative effects.
Note: When the maximum speed is changed, the pulse frequency p1800 is automatically limited to this minimum ratio. It is not permissible to reduce the pulse frequency if this would result in this ratio being fallen below.

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p1820[0...n] Output phase direction of rotation / Phase revers. outp

VECTOR

Can be changed: C2(3) **Access level:** 3

Data type: Integer16 **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Direction of rotation reversal of the Motor Module output phases without changing the speed setpoint.

Values:
0: Off
1: On

Note: It is not possible to reverse the phases while the pulses are enabled. When a speed encoder is being used, it may be necessary to also invert the encoder actual value (refer to p0410).

p1821[0...n] Direction reversal / Direction reversal

VECTOR

Can be changed: C2(3) **Access level:** 3

Data type: Integer16 **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the direction of reversal of the motor.

Values:
0: No direction of reversal
1: Direction reversal

Dependency: Refer to: F07434

Notice: For a drive data set changeover with differently set direction reversal and pulse enable, an appropriate fault is output.

Note: If the parameter is changed, it reverses the direction of rotation of the motor without changing the setpoint.

For direction of rotation reversal, the rotating field direction of the current controller is reversed. The speed actual value (e.g. r0063) is also reversed so that the control sense is kept and internally causing the direction of rotation to be reversed with the same setpoint.

Further, the position actual values of the actual encoder are reversed (e.g. r0482[0...2]).

p1825 Converter valve threshold voltage / Threshold voltage

VECTOR

Can be changed: U, T **Access level:** 4

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Modulation **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.0 [Veff]	100.0 [Veff]	0.6 [Veff]

Description: Sets the threshold voltage drop of the valves (power semiconductor devices) to be compensated.

Note: The value is automatically calculated in the motor data identification routine.

p1828 Compensation valve lockout time phase U / Comp t_lock ph U

VECTOR

Can be changed: U, T **Access level:** 4

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Modulation **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	1000000.00 [µs]	0.00 [µs]

Description: Sets the valve lockout time to compensate for phase U.

Note: The value is automatically calculated in the motor data identification routine.

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p1829 Compensation valve lockout time phase V / Comp t_lock ph V

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	1000000.00 [µs]	0.00 [µs]

Description: Sets the valve lockout time to compensate for phase V.

p1830 Compensation valve lockout time phase W / Comp t_lock ph W

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	1000000.00 [µs]	0.00 [µs]

Description: Sets the valve lockout time to compensate for phase W.

p1832 Deadtime compensation current level / t_dead_comp I_lev

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [Aeff]	10000.0 [Aeff]	0.0 [Aeff]

Description: Above the current level, the deadtime - resulting from the converter switching delays - is compensated by a previously calculated, constant value . If the relevant phase current setpoint falls below the absolute value defined by p1832, the correction value for this phase is continuously reduced.

Dependency: The factor setting of p1832 is automatically set to 0.02 * rated drive converter current (r0207).
If the actual operating frequency exceeds the value of p1831, then p1832 is not applied!

r1837 Gating unit configuration / Gating unit config

VECTOR

Can be changed: - | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Display for the configuration of the gating unit driver.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Modulation depth for a flying restart	Limited	Not limited	-
01	Modulation depth for Vdc closed-loop control	Limited	Not limited	-
02	Vdc_min controller	active	Not active	-
03	Motor data identification routine	active	Not active	-
04	Current offset calculation	active	Not active	-
05	Simulation mode	active	Not active	-
06	Direction of rotation reversal, output phases	active	Not active	-
07	Direction of rotation reversal (including speed encoder)	active	Not active	-

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p1840[0...n] Actual value correction, configuration / ActVal_corr config

VECTOR

Can be changed: T | **Access level:** 4
Data type: Unsigned16 | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Configuration of the actual value correction

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Actual value correction de-activated	Yes	No	-
01	Compares the integrals from modulator and setpoint	Yes	No	-

Note: During operation (the pulses enabled) the configuration cannot be changed by changing-over drive data sets.

r1841 Actual value correction, status word / ActVal_corr status

VECTOR

Can be changed: - | **Access level:** 4
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1010 bin

Description: Status of the actual value correction

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Hardware for the actual value correction detected	Yes	No	-
01	Automatic shutdown (too many switching instants)	Yes	No	-
15	Actual value correction active	Yes	No	-

p1845[0...n] Actual value correction evaluation factor Lsig / ActV_corr FactLsig

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00	10.00	1.50

Description: Sets the weighting factor for the leakage inductance of the L-R element of the actual value correction.

p1846[0...n] Actual value correction damping factor / ActV_corr D_factor

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00	10.00	1.00

Description: Sets the damping factor for the actual value correction.
The factor multiplies the T0/Tsig ratio in the feedback branch of the LR element

r1848[0...5] Actual value correction, phase currents / ActVal_corr I_corr

VECTOR

Can be changed: - | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays phase correction currents as well as the drive converter phase currents

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Index: [0] = Harmonics, phase U
[1] = Harmonics, phase V
[2] = Harmonics, phase W
[3] = Meas. val. phase U
[4] = Meas. val. phase V
[5] = Meas. val. phase W

r1849[0...5] Actual value correction, phase voltages / ActVal_corr V_corr

VECTOR

Can be changed: - **Access level:** 4

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Modulation **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the phase correction voltages and and the drive converter phase voltages

Index: [0] = Harmonics, phase U
[1] = Harmonics, phase V
[2] = Harmonics, phase W
[3] = Meas. val. phase U
[4] = Meas. val. phase V
[5] = Meas. val. phase W

p1900 Motor data identification and rotating measurement / Mot ID rot meas

VECTOR

Can be changed: C2(1), T **Access level:** 1

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	2	2

Description: Sets the motor data identification and speed/velocity controller optimization.

p1900 = 0:

Function inhibited.

p1900 = 1:

Induction motors --> set p1910 = 1 and p1960 = 0, 1, 2 depending on p1300

Permanent-magnet or separately-excited synchronous motors --> set p1910 = 1 and p1990 = 1 and p1960 = 0, 1, 2 depending on p1300

When the drive enable signals are present, a motor data identification routine is carried-out at standstill with the next power-on command. Current flows through the motor which means that it can align itself by up to a quarter of a revolution.

For permanent-magnet or separately-excited synchronous motors, the encoder is adjusted with the next power-on command. The motor must be free to rotate and rotates through 1.5 revolutions of the motor encoder.

With the following power-on command, a rotating motor data identification routine is carried-out - and for vector, in addition, a speed/velocity controller optimization by making measurements at different motor speeds/velocities.

p1900 = 2:

Induction motors --> set p1910 = 1 and p1960 = 0

Permanent-magnet or separately-excited synchronous motors --> set p1910 = 1, p1990 = 1 and p1960 = 0

When the drive enable signals are present, a motor data identification routine is carried-out at standstill with the next power-on command. Current flows through the motor which means that it can align itself by up to a quarter of a revolution.

For permanent-magnet or separately-excited synchronous motors, the encoder is adjusted with the next power-on command. The motor must be free to rotate and rotates through 1.5 revolutions of the motor encoder.

Values:
0: Inhibited
1: Motor data identification for rotating motor
2: Motor data identification at standstill

Dependency: In the simulation mode, the parameter cannot be written into. When selecting the motor data identification routine, the drive data set changeover is suppressed.

Refer to: p1272, p1300, p1910, p1960, p1990

Refer to: A07980, A07981, F07982, F07983, F07984, F07985, F07986, A07987, F07988, F07990, A07991

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Notice: In order to permanently accept the determined settings they must be saved in a non-volatile fashion (p0971, p0977).

Note: An appropriate alarm is output when the parameter is set.

The power-on command must remain set during a measurement and after the measurement has been completed, the drive automatically resets it.

The duration of the measurements can lie between 0.3 s and several minutes. This time is, for example, influenced by the motor size and the mechanical conditions.

p1900 is automatically set to 0 after the motor data identification routine has been completed.

p1909[0...n] Motor data identification control word / MotID STW

VECTOR

Can be changed: T | **Access level:** 4

Data type: Unsigned16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the configuration of the motor data identification.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Estimates the stator inductance, no measurement	Yes	No	-
01	Cl.-loop current control w/ dead-beat controller	Yes	No	-
02	Estimates the rotor time constant, no measurement	Yes	No	-
03	Estimates the leakage inductance, no measurement	Yes	No	-
04	Activates the identification dynamic leakage inductance	Yes	No	-
05	Determine Tr. Lsig evaluation in the time range	Yes	No	-
06	Activates vibration damping	Yes	No	-
07	De-activates the vibration detection	Yes	No	-
11	De-activate pulse measurement Lq Ld	Yes	No	-
12	De-activate rotor resistance Rr measurement	Yes	No	-
15	Only measure stator resistance and valve voltage error	Yes	No	-

Note: Note for PEM:

Without de-selection in bit 11, in the closed-loop control mode, the direct inductance LD and the quadrature inductance Lq are measured at a low current.

When de-selecting with bit 11 or in the U/f mode, the stator inductance is measured at half the rated motor current.

If the stator is inductance is not measured but is to be estimated, then bit 0 should be set and bit 11 should be de-selected.

p1910 Motor data identification selection / MotID selection

VECTOR

Can be changed: T | **Access level:** 2

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	20	1

Description: Sets the motor data identification routine.

The motor data identification routine is carried-out after the next power-on command.

p1910 = 1:

All motor data and the drive converter characteristics are identified and then transferred to the following parameters:

p0350, p0354, p0356, p0357, p0358, p0360, p1825, p1828, p1829, p1830

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Values:
0: Inhibited
1: Complete identification (ID) and acceptance of motor data
2: Complete identification (ID) of motor data without acceptance
3: ID of the saturation characteristic and acceptance
4: ID of the saturation characteristic without acceptance
5: ID of dynamic leakage inductance Lsig (r1920) without acceptance
6: ID of lockout time (r1926) without acceptance
7: ID of stator resistance Rs (r1912) without acceptance
8: ID of stator inductance Ls (r1915) without acceptance
9: ID of rotor time constant Tr (r1913) without acceptance
10: ID of static leakage inductance Lsig (r1914) without acceptance
20: Voltage vector input

Dependency: "Quick commissioning" must be carried-out (p0010 = 1) before executing the motor data identification routine!

In the simulation mode, the parameter cannot be written into. When selecting the motor data identification routine, the drive data set changeover is suppressed.

Refer to: p1272, p1900

Cautiont: After the motor data identification (p1910 > 0) has been selected, alarm A07991 is output and a motor data identification routine is carried-out as follows at the next power-on command:

- current flows through the motor and a voltage is present at the drive converter output terminals.
- during the identification routine, the motor shaft can rotate through a maximum of half a revolution.
- however, no torque torque is generated.

Notice: In order to permanently accept the determined settings they must be saved in a non-volatile fashion (p0971, p0977).

Note: When setting p1910, the following should be observed:

1. "With transfer" means:

The parameters specified in the description are overwritten with the identified values and therefore have an influence on the controller setting.

2. "Without transfer" means:

The identified parameters are only displayed in the range r1912 ... r1926. The controller settings remain unchanged.

p1911 Number of phases to be identified / Phases to be ident

VECTOR

Can be changed: T | **Access level:** 4

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	3	1

Description: Selects the number of phases to be identified.

The accuracy of the identification routine is higher if several phases are identified - however, the time required to make the measurements also increases.

Values:
1: 1 phase U
2: 2 phases U, V
3: 3 phases U, V, W

r1912[0...2] Identified stator resistance / R_stator ident

VECTOR

Can be changed: - | **Access level:** 4

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [Ohm]	- [Ohm]	- [Ohm]

Description: Displays the identified stator resistance.

Index:
[0] = Phase U
[1] = Phase V
[2] = Phase W

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r1913[0...2] Identified rotor time constant / T_rotor ident

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [ms]	- [ms]	- [ms]

Description: Displays the identified rotor time constant.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1914[0...2] Identified total leakage inductance / L_total_leak ident

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the identified total leakage inductance.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1915[0...2] Identified nominal stator inductance / L_stator ident

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the nominal stator inductance identified.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1916[0...2] Identified stator inductance 1 / L_stator 1 ident

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the nominal stator inductance identified for the 1st point of the saturation characteristic.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1917[0...2] Identified stator inductance 2 / L_stator 2 ident

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the nominal stator inductance identified for the 2nd point of the saturation characteristic.

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Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1918[0...2] Identified stator inductance 3 / L_stator 3 ident

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the nominal stator inductance identified for the 3rd point of the saturation characteristic.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1919[0...2] Identified stator inductance 4 / L_stator 4 ident

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the nominal stator inductance identified for the 4th point of the saturation characteristic.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1920[0...2] Identified dynamic leakage inductance / L_leak dyn ident

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Description: Displays the identified dynamic total leakage inductance.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1921[0...2] Identified dynamic leakage inductance 1 / L_leak 1 dyn id

VECTOR

Can be changed: - **Access level:** 4
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [mH]	- [mH]	- [mH]

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

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r1922[0...2] Identified dynamic leakage inductance 2 / L_leak 2 dyn id

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [mH]	**Max** - [mH]	**Factory setting** - [mH]

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1923[0...2] Identified dynamic leakage inductance 3 / L_leak 3 dyn id

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [mH]	**Max** - [mH]	**Factory setting** - [mH]

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1924[0...2] Identified dynamic leakage inductance 4 / L_leak 4 dyn id

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [mH]	**Max** - [mH]	**Factory setting** - [mH]

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1925[0...2] Identified threshold voltage / U_threshold ident

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [Veff]	**Max** - [Veff]	**Factory setting** - [Veff]

Description: Displays the identified IGBT threshold voltage.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1926[0...2] Identified active valve lockout time / t_lock_valve id

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [µs]	**Max** - [µs]	**Factory setting** - [µs]

Description: Displays the identified effective valve lockout time.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

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r1927[0...2] Identified rotor resistance / R_rotor ident

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the identified rotor resistance

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

r1929[0...2] Identified cable resistance / R_cable ident

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the identified cable resistance.

Index: [0] = Phase U
[1] = Phase V
[2] = Phase W

p1959[0...n] Rotating measurement configuration / Rot meas config

VECTOR (n/M)	**Can be changed:** T		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0001 1111 bin

Description: Sets the configuration of the rotating measurement.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Enc test active	Yes	No	-
01	Saturation characteristic identification	Yes	No	-
02	Moment of inertia identification	Yes	No	-
03	Recalculates the speed controller parameters	Yes	No	-
04	Speed controller optimization, (vibration test)	Yes	No	-

Dependency: Refer to: F07988

Note: The encoder is only tested if the rotating measurement with encoder is selected (p1960 = 2).
The following parameters are influenced for the individual optimization steps:
Bit 00: None
Bit 01: p0320, p0360, p0362 ... p0369
Bit 02: p0341, p0342
Bit 03: p1400.0, p1458, p1459, p1460, p1462, p1462, p1463, p1470, p1472, p1496
Bit 04: Dependent on p1960
p1960 = 1, 3: p1400.0, p1458, p1459, p1470, p1472, p1496
p1960 = 2, 4: p1458, p1459, p1460, p1461, p1462, p1463, p1496

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p1960 Rotating measurement selection / Rot meas sel

VECTOR

Can be changed: T | **Access level:** 2

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	4	0

Description: Sets the rotating measurement.

The rotating measurement is carried-out after the next power-on command.

The setting possibilities of the parameter depend on the open-loop/closed-loop control mode (p1300):

p1300 < 20 (U/f control): It is not possible to select rotating measurement or speed controller optimization.

p1300 = 20, 22 (sensorless operation): Only rotating measurement or speed controller optimization can be selected in the sensorless mode.

p1300 = 21, 23 (operation with encoder): Both versions (sensorless and with encoder) of the rotating measurement or speed controller optimization can be selected.

Values:
0: Inhibited
1: Rotating measurement in sensorless operation
2: Rotating measurement with encoder
3: Speed controller optimization for sensorless operation
4: Speed controller optimization with encoder

Dependency: In the simulation mode, a value of 1 cannot be written into the parameter. When selecting the rotating measurement, the drive data set changeover is suppressed.

Refer to: p1272, p1300, p1900, p1959

Refer to: A07987

Notice: In order to permanently accept the determined settings they must be saved in a non-volatile fashion (p0971, p0977).

Note: When the rotating measurement is activated, it is not possible to save the parameters (p0971, p0977).

Parameter changes are automatically made for the rotating measurement (e.g. p1120); this is the reason that up to the end of the measurement, and if no faults are present, no manual changes should be made.

The ramp-up and ramp-down times (p1120, p1121) are limited, for the rotating measurement, to 900s.

p1961 Saturation characteristic speed to determine / Sat_char n determ

VECTOR (n/M)

Can be changed: U, T | **Access level:** 3

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
26 [%]	75 [%]	30 [%]

Description: Sets the speed to determine the saturation characteristic and the encoder test.

The percentage value is referred to p0310 (rated motor frequency).

Dependency: Refer to: p0310, p1959

Refer to: F07983

Note: The saturation characteristics should be determined at an operating point with the lowest possible load.

r1962[0...4] Saturation characteristic, magnetizing current / Sat_char I_mag

VECTOR (n/M)

Can be changed: - | **Access level:** 4

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the magnetizing currents of the identified saturation characteristic.

The values are referred to r0331.

After they have been determined, the values are transferred to p0366 ... p0369.

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Index: [0] = Value 1
[1] = Value 2
[2] = Value 3
[3] = Value 4
[4] = Value 5

Dependency: Refer to: r0331

r1963[0...4] Saturation characteristic, magnetizing inductance / Sat_char L_main

VECTOR (n/M)

Can be changed: - **Access level:** 4

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the magnetizing inductances of the identified saturation characteristic.
The values are referred to r0382.

Index: [0] = Value 1
[1] = Value 2
[2] = Value 3
[3] = Value 4
[4] = Value 5

Dependency: Refer to: r0382

r1964[0...4] Saturation characteristic, rotor flux / Sat_char rot flux

VECTOR (n/M)

Can be changed: - **Access level:** 4

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the rotor flux values of the identified saturation characteristic.
After they have been determined, the values are transferred to p0362 ... p0365.

Index: [0] = Value 1
[1] = Value 2
[2] = Value 3
[3] = Value 4
[4] = Value 5

p1965 Speed_ctrl_opt speed / n_opt speed

VECTOR (n/M)

Can be changed: U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
10 [%]	75 [%]	50 [%]

Description: Sets the speed for the identification of the moment of inertia and the vibration test.
Induction motor:
The percentage value is referred to p0310 (rated motor frequency).
Synchronous motor:
The percentage value is referred to the minimum from p0310 (rated motor frequency) and p1082 (maximum speed).

Dependency: Refer to: p0310, p1959
Refer to: F07984, F07985

Note: In order to calculate the inertia, sudden speed changes are carried-out - the specified value corresponds to the lower speed setpoint. This value is increased by 10 % for the upper speed value.

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p1967 Speed_ctrl_opt dynamic factor / n_opt dyn_factor

VECTOR (n/M)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
1 [%]	400 [%]	100 [%]

Description: Sets the dynamic response factor for speed controller optimization.

Dependency: Refer to: p1959
Refer to: F07985

Note: For a rotating measurement, this parameter can be used to optimize the speed controller.
p1967 = 100 % --> speed controller optimization according to a symmetric optimum.
p1967 > 100 % --> optimization with a higher dynamic response (Kp higher, Tn lower).

r1968 Speed_ctrl_opt dynamic factor actual / n_opt dyn_fact act

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the dynamic factor which is actually achieved for the vibration test

Dependency: Refer to: p1959, p1967
Refer to: F07985

Note: This dynamics factor only refers to the control mode of the speed controller set in p1960.

r1969 Speed_ctrl_opt moment of inertia determined / n_opt M_inert det

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: 25_1
Unit selection: p0100

Min	Max	Factory setting
- [kgm²]	- [kgm²]	- [kgm²]

Description: Displays the determined moment of inertia of the drive.
After it has been determined, the value is transferred to p0341, p0342.

Dependency: Refer to: p0341, p0342, p1959
Refer to: F07984

r1970[0...1] Speed_ctrl_opt vibration test vibration frequency determined / n_opt f_vibration

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the vibration frequencies determined by the vibration test.

Index: [0] = Frequency low
[1] = Frequency high

Dependency: Refer to: p1959
Refer to: F07985

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r1971[0...1] Speed_ctrl_opt vibration test standard deviation determined / n_opt std. deviat.

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the standard deviations of the vibration frequencies determined by the vibration test

Index: [0] = Standard deviation of low frequency
[1] = Standard deviation of high frequency

Dependency: Refer to: p1959
Refer to: F07985

r1972[0...1] Speed_ctrl_opt vibration test number of periods determined / n_opt period qty

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the number of periods determined by the vibration test.

Index: [0] = No. of periods of the low frequency
[1] = No. of periods of the high frequency

Dependency: Refer to: p1959
Refer to: F07985

r1973 Rotating measurement, encoder test pulse number determined / n_opt pulse No.

VECTOR (n/M)

Can be changed: -
Access level: 3
Data type: Integer32
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the number of pulses determined during the vibration test.

Note: A negative signal indicates an incorrect polarity of the encoder signal.

r1979 BO: Speed_ctrl_opt status / n_opt status

VECTOR (n/M)

Can be changed: -
Access level: 4
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Motor identification
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status to check and monitor the states of speed controller optimization.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Speed controller optimization activated	Yes	No	-
01	Speed controller optimization completed	Yes	No	-
02	Speed controller optimization interrupted	Yes	No	-
04	Enc test active	Yes	No	-
05	Saturation char. identification active	Yes	No	-
06	Moment of inertia identification active	Yes	No	-
07	Recalc. speed controller parameters active	Yes	No	-
08	Speed controller vibration test active	Yes	No	-
09	Magnetizing induction adapt. active	Yes	No	-
10	Operation with encoder after sensorless operation	Yes	No	-

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p1980[0...n] Pole position identification technique / PolID technique

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	10	4

Description: Sets the pole position identification technique.

Values:
1: Voltage pulsing, first harmonic
4: Voltage pulsing, 2-stage
10: DC current impression

Dependency: In the simulation mode, the parameter cannot be written into.

Refer to: p1272

Note: Voltage pulse technique (p1980 = 1 or 4) cannot be applied to separately-excited synchronous motors (p0300 = 5) and for for operation with sinusoidal output filters (refer to p230).

p1982[0...n] Pole position identification selection / PolID selection

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** MDS, p0130 | **Function diagram:** -
P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	0

Description: Activates the pole position identification routine to determine the commutation angle and to carry-out a plausibility check.

Values:
0: Pole position identification off
1: Pole position identification for commutation
2: Pole position identification for plausibility check

Recommendation: Re p1982 = 1:

This is used for synchronous motors with motor encoder without absolute data.

The information/data regarding the absolute commutation angle is supplied via a track C/D, Hall sensors, an absolute encoder or from the pole position identification routine.

Re p1982 = 2:

This is used for synchronous motor with motor encoder with absolute data to check this data.

For VECTOR, the following applies:

With p1982 = 2, each time the pulses are enabled it is checked as to whether the absolute position supplied from the encoder does not exceed a deviation of 45 degrees to the identified pole wheel position.

Dependency: Refer to: p0325, p0329, p1980, r1984, r1985, r1987, p1990

Note: For sensorless operation, the pole position identification routine is selected with P1780.6

r1984 Pole position identification, angular difference / PolID ang diff

VECTOR (n/M)

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Motor identification | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [°]	- [°]	- [°]

Description: Displays the angular difference between the actual electrical commutation angle and the angle determined by the pole position identification.

Dependency: Refer to: p0325, p0329, p1980, p1982, r1985, r1987, p1990

Note: When the pole position identification routine is executed several times using p1983, then using this value, then the spread of the measured values can be determined using this value. At the same position, the spread should be less than 2 degrees electrical.

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r1985 Pole position identification, saturation characteristic / PolID sat_char

VECTOR (n/M)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the saturation characteristic of the pole position identification routine.

The values for the characteristic of the last saturation-based pole position identification routine are output every 1 ms in order to record signals (e.g. trace).

Dependency: Refer to: p0325, p0329, p1980, p1982, r1984, r1987, p1990

r1987 Pole position identification trigger characteristic / PolID trig_char

VECTOR (n/M)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	- [%]	- [%]	- [%]

Description: Displays the trigger characteristic of the pole position identification routine.

The values for the characteristic of the last pole position identification routine are output every 1 ms in order to record signals (e.g. trace).

The values for the trigger characteristic and the saturation characteristic are always output in synchronism from a time perspective.

Dependency: Refer to: p0325, p0329, p1980, p1982, r1984, r1985

Note: The following information and data can be taken from the trigger characteristic.

- the value -100% marks the angle at the start of the measurement.
- the value +100 % marks the commutation angle determined from the pole position identification routine.

p1990 Encoder adjustment selection / Encod adjust sel

VECTOR	**Can be changed:** T		**Access level:** 2
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Motor identification	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	2	0

Description: Setting to active the automatic encoder adjustment.

With p1990 = 1, the angular commutation offset is saved in p0431.

With p1990 = 2, the adjustment is checked, for deviations of greater than 6 degrees electrical, fault F07413 is issued.

Values:
0: Encoder adjustment de-activated
1: Enc adjust. active
2: Check encoder adjustment

Dependency: In the simulation mode, the parameter cannot be written into. When selecting the encoder adjustment, the drive data set changeover is suppressed.

Refer to: p0431, p1272, p1900

Caution: When the encoder is being adjusted, the motor must be operated without a load - and if a motor holding brake is being used, this must be opened.

Note: p1990 is automatically set to 0 after the encoder has been adjusted.

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p1991[0...n] Motor changeover, angular commutation correction / Ang_com corr

VECTOR	**Can be changed:** T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min -180 [°]	**Max** 180 [°]	**Factory setting** 0 [°]

Description: Sets the angle that is added to the commutating angle.

Caution: If the angular correction is not correctly set, when changing over and with closed-loop torque control, the motor can accelerate to high speeds in spite of the fact that a setpoint of zero has been entered.

Notice: For vector drives (refer to r0107), the following applies:

A fast star/delta changeover while the motor is rotating is not possible, because after an intermediate pulse inhibit, the system must first wait for the de-magnetization time (p0347) and after the "flying restart" (refer to p1200) of the motor, the excitation time (p0346) must first expire before the closed-loop control is completely operational again.

Note: When changing-over between star and delta operation, 0° (motor data set for star operation) or 30/-30 ° (motor data set for delta operation) is set.

p1999[0...n] Ang. commutation offset calibr. and pole position ID - scaling / ComOffsCalib scal

VECTOR (n/M)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** MDS, p0130	**Function diagram:** -
	P-Group: Closed-loop control	**Units group:** -	**Unit selection:** -
	Min 10 [%]	**Max** 5000 [%]	**Factory setting** 100 [%]

Description: Sets the scaling for the runtime of the automatic encoder calibration and

the current-impressing technique for the pole position identification routine.

Dependency: Refer to: p0341, p0342

Note: For high moments of inertia, it is practical to scale the runtime of the calibration higher.

p2000 Reference speed reference frequency / Ref_n Ref_f

VECTOR	**Can be changed:** T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 6.00 [1/min]	**Max** 210000.00 [1/min]	**Factory setting** 3000.00 [1/min]

Description: Sets the reference quantity for speed and frequency.

All speeds or frequencies specified as relative value are referred to this reference quantity.

The reference quantity in this parameter corresponds to 100% or 4000 hex or 4000 0000 hex.

The following applies: Reference frequency (in Hz) = reference speed (in (RPM) / 60)

Dependency: Refer to: p2001, p2002, p2003, r2004

Note: If a BICO interconnection is established between different physical quantities, then the particular reference quantities are used as internal conversion factor.

Example 1:

The signal of an analog input (e.g. r4055[0]) is connected to a speed setpoint (e.g. p1070[0]). The actual percentage input value is cyclically converted into the absolute speed setpoint using the reference speed (p2000).

Example 2:

The setpoint from PROFIBUS (r2050[1]) is connected to a speed setpoint (e.g. p1070[0]). The current input value is cyclically converted into a percentage value via the pre-specified normalization 4000H. This percentage value is converted to the absolute speed setpoint via reference speed (p2000).

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p2001 Reference voltage / Reference voltage

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
10 [Veff]	100000 [Veff]	1000 [Veff]

Description: Sets the reference quantity for voltages.

All voltages specified as relative value are referred to this reference quantity.

The reference quantity in this parameter corresponds to 100% or 4000 hex or 4000 0000 hex.

Note: If a BICO interconnection is established between different physical quantities, then the particular reference quantities are used as internal conversion factor.

For infeed units, the parameterized device supply voltage (p0210) is pre-assigned as the reference quantity.

Example:

The actual value of the DC link voltage (r0070) is connected to a test socket (e.g. p0771[0]). The actual voltage value is cyclically converted into a percentage of the reference voltage (p2001) and output according to the parameterized scaling.

p2002 Reference current / Reference current

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.10 [Aeff]	100000.00 [Aeff]	100.00 [Aeff]

Description: Sets the reference quantity for currents.

All currents specified as relative value are referred to this reference quantity.

The reference quantity in this parameter corresponds to 100% or 4000 hex or 4000 0000 hex.

Note: If a BICO interconnection is established between different physical quantities, then the particular reference quantities are used as internal conversion factor.

For infeed units, the rated line current, that is obtained from the rated power and parameterized rated line supply voltage (p2002 = r0206 / p0210 / 1.73) is pre-assigned as the reference quantity.

Example:

The actual value of a phase current (r0069[0]) is connected to a test socket (e.g. p0771[0]). The actual current value is cyclically converted into a percentage of the reference current (p2002) and output according to the parameterized scaling.

p2003 Reference torque / Reference torque

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** 7_2 | **Unit selection:** p0505

Min	Max	Factory setting
0.01 [Nm]	1000000.00 [Nm]	1.00 [Nm]

Description: Sets the reference quantity for torques.

All torques specified as relative value are referred to this reference quantity.

The reference quantity in this parameter corresponds to 100% or 4000 hex or 4000 0000 hex.

Note: If a BICO interconnection is established between different physical quantities, then the particular reference quantities are used as internal conversion factor.

Example:

The actual value of the total torque (r0079]) is connected to a test socket (e.g. p0771[0]). The actual torque is cyclically converted into a percentage of the reference torque (p2003) and output according to the parameterized scaling.

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r2004 Reference power / Reference power

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** -

P-Group: Communications **Units group:** 14_10 **Unit selection:** p0505

Min	Max	Factory setting
- [kW]	- [kW]	- [kW]

Description: Displays the reference quantity for power ratings.

All power ratings specified as relative value are referred to this reference quantity.

The reference quantity in this parameter corresponds to 100% or 4000 hex or 4000 0000 hex.

Dependency: This value is calculated as voltage x current for the infeed and as torque x speed for closed-loop controls.

Refer to: p2000, p2001, p2002, p2003

Note: If a BICO interconnection is established between different physical quantities, then the particular reference quantities are used as internal conversion factor.

The reference power is calculated as follows:

- 2 * Pi * reference speed / 60 * reference torque (motor)
- reference voltage * reference current * root(3) (infeed)

r2032 Master control, control word effective / PcCtrl STW eff

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the effective control word 1 (STW1) of the drive for the master control.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	ON/OFF1	Yes	No	-
01	OC / OFF2	Yes	No	-
02	OC / OFF3	Yes	No	-
03	Enable operation	Yes	No	-
04	Enables the ramp-function generator	Yes	No	-
05	Start ramp-function generator	Yes	No	-
06	Enable speed setpoint	Yes	No	-
07	Acknowledge fault	Yes	No	-
08	Jog bit 0	Yes	No	3030
09	Jog bit 1	Yes	No	3030
10	Master ctrl by PLC	Yes	No	-

Notice: The master control only influences control word 1 and speed setpoint 1. Other control words/setpoints can be transferred from another automation device.

Note: The master control is used from the commissioning software (drive control panel) and from the Advanced Operator Panel (AOP, LOCAL mode).

p2037 PROFIBUS STW1.10 = 0 mode / PB STW1.10=0 mode

VECTOR

Can be changed: T **Access level:** 3

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	2	0

Description: Sets the processing mode for PROFIBUS STW1.10 "Control from PLC".

Generally, control world 1 is received with the first PROFIBUS receive word (PZD1) (this is in conformance to the PROFIdrive profile). The behavior of STW1.10 = 0 corresponds to that of the PROFIdrive profile. For other applications that deviate from this, the behavior can be adapted using this particular parameter.

Values:

0: Freeze setpoints and continue to process sign-of-life
1: Freeze setpoints and sign-of-life
2: Setpoints are not frozen

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Note: If the STW1 is not transferred according to the PROFIdrive with PZD1 (with bit 10 "control by the PLC"), then p2037 should be set to 2.

p2038 PROFIBUS STW/ZSW interface mode / PB STW/ZSW interf

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	0

Description: Sets the interface mode of the PROFIBUS control and status words.
When selecting a telegram via p0922, this parameter influences the device-specific assignment of the bits in the control and status words.

Values:
0: SINAMICS
1: SIMODRIVE 611 universal
2: VIK-NAMUR

Dependency: Refer to: p0922

Note: For p0922 = 100 ... 199, p2038 is automatically set to 1 and p2038 can no longer be changed. This means that for these telegrams, the "SIMODRIVE 611 universal" interface mode is set and cannot be changed.

p2038 PROFIBUS STW/ZSW interface mode / PB STW/ZSW interf

VECTOR (EPOS), VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	0	0

Description: Sets the interface mode of the PROFIBUS control and status words.
When selecting a telegram via p0922, this parameter influences the device-specific assignment of the bits in the control and status words.

Values:
0: SINAMICS

Dependency: Refer to: p0922

Note: For p0922 = 100 ... 199, p2038 is automatically set to 1 and p2038 can no longer be changed. This means that for these telegrams, the "SIMODRIVE 611 universal" interface mode is set and cannot be changed.

p2039 Select debug monitor interface / Sel. debug monitor

CU_G

Can be changed: U, T | **Access level:** 4
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: The serial interface for the debug monitor is COM1 (X140) or COM2 (internal).
Value = 0: COM2 (internal)
Value = 1: COM1 (X140), PPI is de-activated

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p2041[0...4] PROFIBUS detail settings / PROFIBUS detail

CU_G	**Can be changed:** U, T		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 0

p2042 PROFIBUS Ident Number / PB Ident No.

CU_G	**Can be changed:** C1(1)		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 0

Description: Sets the PROFIBUS Ident Number (PNO-ID).

SINAMICS can be operated with various identities on PROFIBUS. This allows the use of a PROFIBUS GSD that is independent of the device (e.g. PROFIdrive VIK-NAMUR with Ident Number 3AA0 hex).

Values:
0: SINAMICS S/G
1: VIK-NAMUR

Note: A new setting only becomes effective after POWER ON, reset or download.

r2043 BO: PROFIBUS PZD status / PB PZD state

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** 2410
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Displays the PROFIBUS PZD state.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Setpoint failure	Yes	No	-

Dependency: Refer to: p2044

Note: When using the "setpoint failure" signal, PROFIBUS can be monitored and an application-specific response triggered when the setpoint fails.

p2044 PROFIBUS fault delay / PB fault delay

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 2410
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 0 [s]	**Max** 100 [s]	**Factory setting** 0 [s]

Description: Sets the delay time to initiate fault F01910 after a PROFIBUS setpoint failure.

The time until the fault is initiated can be used by the application. This means that is is possible to respond to the failure while the drive is still operational (e.g. emergency retraction).

Dependency: Refer to: r2043
Refer to: F01910

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p2045 CI: PROFIBUS clock-cycle synchr. master sign-of-life, signal source / PB mast-SoL S_src

VECTOR (n/M)	**Can be changed:** T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2410
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Connector input for the sign-of-life of the clock synchronous PROFIBUS master.
The sign-of-life is expected at bits 12 to 15. Bits 0 to 11 are not evaluated.
The sign-of-life signal is normally received in PZD4 (control word 2) from the PROFIBUS master.

Dependency: Refer to: p0925, r2065

r2050[0...4] CO: PROFIBUS PZD receive word / PB PZD recv word

CU_G, TB30, TM31	**Can be changed:** -		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Connector output to interconnect PZD (setpoints) with word format received from the PROFIBUS master.

Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5

r2050[0...31] CO: PROFIBUS PZD receive word / PB PZD recv word

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** 2440, 2460
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Connector output to interconnect PZD (setpoints) with word format received from the PROFIBUS master.

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Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
[16] = PZD 17
[17] = PZD 18
[18] = PZD 19
[19] = PZD 20
[20] = PZD 21
[21] = PZD 22
[22] = PZD 23
[23] = PZD 24
[24] = PZD 25
[25] = PZD 26
[26] = PZD 27
[27] = PZD 28
[28] = PZD 29
[29] = PZD 30
[30] = PZD 31
[31] = PZD 32

Dependency: Refer to: r2060

p2051[0...14] CI: PROFIBUS PZD send word / PB PZD send word

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the PZD (actual values) with word format to be sent to the PROFIBUS master.

Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15

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p2051[0...31] CI: PROFIBUS PZD send word / PB PZD send word

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2470
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the PZD (actual values) with word format to be sent to the PROFIBUS master.

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
[16] = PZD 17
[17] = PZD 18
[18] = PZD 19
[19] = PZD 20
[20] = PZD 21
[21] = PZD 22
[22] = PZD 23
[23] = PZD 24
[24] = PZD 25
[25] = PZD 26
[26] = PZD 27
[27] = PZD 28
[28] = PZD 29
[29] = PZD 30
[30] = PZD 31
[31] = PZD 32

Dependency: Refer to: p2061

p2051[0...4] CI: PROFIBUS PZD send word / PB PZD send word

TB30, TM31	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the PZD (actual values) with word format to be sent to the PROFIBUS master.

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5

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r2053[0...14] PROFIBUS diagnostics send PZD word / PB diag send word

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the PZD (actual values) with word format sent to the PROFIBUS master.

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

r2053[0...31] PROFIBUS diagnostics send PZD word / PB diag send word

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2450, 2470
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the PZD (actual values) with word format sent to the PROFIBUS master.

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Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
[16] = PZD 17
[17] = PZD 18
[18] = PZD 19
[19] = PZD 20
[20] = PZD 21
[21] = PZD 22
[22] = PZD 23
[23] = PZD 24
[24] = PZD 25
[25] = PZD 26
[26] = PZD 27
[27] = PZD 28
[28] = PZD 29
[29] = PZD 30
[30] = PZD 31
[31] = PZD 32

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

Dependency: Refer to: p2051, p2061

r2053[0...4] PROFIBUS diagnostics send PZD word / PB diag send word

TB30, TM31

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the PZD (actual values) with word format sent to the PROFIBUS master.

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Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

r2054 PROFIBUS status / PB status

CU_G

Can be changed: - **Access level:** 3

Data type: Integer16 **Dynamic index:** - **Function diagram:** 2410

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	4	0

Description: Status display for the PROFIBUS interface.

Values:
0: Off
1: No connection (baud rate search)
2: Connection O. K. (baud rate found)
3: Cyclic connection with master (data exchange)
4: Cyclic data O. K.

Note: Re r2054 = 3:

In state 3 (the LED flashes green), a cyclic connection has been established to the PROFIBUS master; however, one of the following prerequisites is missing for cyclic operation:

- No setpoints are being received as the PROFIBUS master is in the STOP condition.

Only for clock-cycle synchronous operation, the following applies:

- The drive is not in synchronism as the global control (GC) has an error.

Re r2054 = 4:

In the status 4 (LED green), the cyclic connection to the PROFIBUS master has been established and setpoints are being received. The clock cycle synchronization is OK, the global control (GC) is error-free.

This state does not provide any statement regarding the quality of the clock cycle synchronous sign-of-life characters on the drive objects.

r2055[0...2] PROFIBUS diagnostics standard / PB diag standard

CU_G

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2410

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Diagnostics display for the PROFIBUS interface.

Index: [0] = Master bus address
[1] = Master input total length bytes
[2] = Master output total length bytes

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r2056[0...19] PROFIBUS diagnostics expert / PB diag experts

CU_G	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

r2057 PROFIBUS address switch, diagnostics / PB addr diagn

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 2410
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the setting of the PROFIBUS address switch "DP ADDRESS" on the Control Unit.
Dependency: Refer to: p0918

r2060[0...30] CO: PROFIBUS PZD receive double word / PB PZD recv DW

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Integer32	**Dynamic index:** -	**Function diagram:** 2440, 2460
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Connector output to interconnect PZD (setpoints) with double word format received from the PROFIBUS master.
Index:
[0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16
[15] = PZD 16 + 17
[16] = PZD 17 + 18
[17] = PZD 18 + 19
[18] = PZD 19 + 20
[19] = PZD 20 + 21
[20] = PZD 21 + 22
[21] = PZD 22 + 23
[22] = PZD 23 + 24
[23] = PZD 24 + 25
[24] = PZD 25 + 26
[25] = PZD 26 + 27
[26] = PZD 27 + 28
[27] = PZD 28 + 29
[28] = PZD 29 + 30
[29] = PZD 30 + 31
[30] = PZD 31 + 32
Dependency: Refer to: r2050

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p2061[0...30] CI: PROFIBUS PZD send double word / PB PZD send DW

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2470
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the PZD (actual values) with double word format to be sent to the PROFIBUS master.

Index:
[0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16
[15] = PZD 16 + 17
[16] = PZD 17 + 18
[17] = PZD 18 + 19
[18] = PZD 19 + 20
[19] = PZD 20 + 21
[20] = PZD 21 + 22
[21] = PZD 22 + 23
[22] = PZD 23 + 24
[23] = PZD 24 + 25
[24] = PZD 25 + 26
[25] = PZD 26 + 27
[26] = PZD 27 + 28
[27] = PZD 28 + 29
[28] = PZD 29 + 30
[29] = PZD 30 + 31
[30] = PZD 31 + 32

Dependency: Refer to: p2051

r2063[0...30] PROFIBUS diagnostics PZD send double word / PB diag send DW

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2450, 2470
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0000 bin

Description: Displays the PZD (actual values) with double word format sent to the PROFIBUS master.

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Index:

[0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16
[15] = PZD 16 + 17
[16] = PZD 17 + 18
[17] = PZD 18 + 19
[18] = PZD 19 + 20
[19] = PZD 20 + 21
[20] = PZD 21 + 22
[21] = PZD 22 + 23
[22] = PZD 23 + 24
[23] = PZD 24 + 25
[24] = PZD 25 + 26
[25] = PZD 26 + 27
[26] = PZD 27 + 28
[27] = PZD 28 + 29
[28] = PZD 29 + 30
[29] = PZD 30 + 31
[30] = PZD 31 + 32

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-
16	Bit 16	On	Off	-
17	Bit 17	On	Off	-
18	Bit 18	On	Off	-
19	Bit 19	On	Off	-
20	Bit 20	On	Off	-
21	Bit 21	On	Off	-

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22	Bit 22	On	Off	-
23	Bit 23	On	Off	-
24	Bit 24	On	Off	-
25	Bit 25	On	Off	-
26	Bit 26	On	Off	-
27	Bit 27	On	Off	-
28	Bit 28	On	Off	-
29	Bit 29	On	Off	-
30	Bit 30	On	Off	-
31	Bit 31	On	Off	-

r2064[0...7] PROFIBUS diagnostics clock synchronous mode / PB diag clock sync

CU_G

Can be changed: - **Access level:** 3

Data type: Integer32 **Dynamic index:** - **Function diagram:** 2410

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the last parameter received from the PROFIBUS master for clock synchronism.

The parameters for clock synchronism are created when configuring the bus and are transferred at the start of cyclic operation from the PROFIBUS master to the slave.

Index: [0] = Clock synchronous mode activated
[1] = Bus cycle time (Tdp) [µs]
[2] = Master cycle time (Tmapc) [µs]
[3] = Instant of actual value acquisition (Ti) [µs]
[4] = Instant of setpoint acquisition (To) [µs]
[5] = Data exchange interval (Tdx) [µs]
[6] = PLL window (Tpll-w) [1/12 µs]
[7] = PLL delay time (Tpll-d) [1/12 µs]

r2065 PROFIBUS master sign-of-life, diagnostics / PB master SoL diag

VECTOR (n/M)

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2410

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays how often the sign-of-life from the clock synchronous PROFIBUS master failed. An appropriate fault is output when the tolerance, specified in p0925, is exceeded.

Dependency: Refer to: F01912

r2074[0...4] PROFIBUS diagnostics bus address PZD receive / PB diag addr recv

CU_G, TB30, TM31

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: PROFIBUS address of sender from which the PZD is received.

Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5

Note: Value range:
0 - 125: Bus address of the sender
255: Not occupied

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r2074[0...31] PROFIBUS diagnostics bus address PZD receive / PB diag addr recv

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: PROFIBUS address of sender from which the PZD is received.

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
[16] = PZD 17
[17] = PZD 18
[18] = PZD 19
[19] = PZD 20
[20] = PZD 21
[21] = PZD 22
[22] = PZD 23
[23] = PZD 24
[24] = PZD 25
[25] = PZD 26
[26] = PZD 27
[27] = PZD 28
[28] = PZD 29
[29] = PZD 30
[30] = PZD 31
[31] = PZD 32

Note: Value range:
0 - 125: Bus address of the sender
255: Not occupied

r2075[0...4] PROFIBUS diagnostics telegram offset PZD receive / PB diag offs recv

CU_G, TB30, TM31

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: PZD byte offset in the PROFIBUS receive telegram (master output).

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5

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Note: Value range:
0 - 242: Byte offset
255: Not occupied

r2075[0...31] PROFIBUS diagnostics telegram offset PZD receive / PB diag offs recv

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: PZD byte offset in the PROFIBUS receive telegram (master output).

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
[16] = PZD 17
[17] = PZD 18
[18] = PZD 19
[19] = PZD 20
[20] = PZD 21
[21] = PZD 22
[22] = PZD 23
[23] = PZD 24
[24] = PZD 25
[25] = PZD 26
[26] = PZD 27
[27] = PZD 28
[28] = PZD 29
[29] = PZD 30
[30] = PZD 31
[31] = PZD 32

Note: Value range:
0 - 242: Byte offset
255: Not occupied

r2076[0...6] PROFIBUS PZD diagnostics telegram offset send / PB diag offs send

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: PZD byte offset in the PROFIBUS send telegram (master input).

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Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7

Note: Value range:
0 - 242: Byte offset
255: Not occupied

r2076[0...31] PROFIBUS PZD diagnostics telegram offset send / PB diag offs send

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: PZD byte offset in the PROFIBUS send telegram (master input).

Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
[16] = PZD 17
[17] = PZD 18
[18] = PZD 19
[19] = PZD 20
[20] = PZD 21
[21] = PZD 22
[22] = PZD 23
[23] = PZD 24
[24] = PZD 25
[25] = PZD 26
[26] = PZD 27
[27] = PZD 28
[28] = PZD 29
[29] = PZD 30
[30] = PZD 31
[31] = PZD 32

Note: Value range:
0 - 242: Byte offset
255: Not occupied

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r2076[0...4] PROFIBUS PZD diagnostics telegram offset send / PB diag offs send

TB30, TM31

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: PZD byte offset in the PROFIBUS send telegram (master input).

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5

Note: Value range:
0 - 242: Byte offset
255: Not occupied

r2077[0...15] PROFIBUS diagnostics peer-to-peer data transfer addresses / PB diag peer addr

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the addresses of the slaves (peers) where peer-to-peer data transfer has been configured via PROFIBUS.

p2079 PROFIBUS PZD telegram selection extended / PB PZD tlg exten.

CU_G

Can be changed: T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
390	999	999

Description: Sets the send and receive telegram for PROFIBUS. Contrary to p922, a telegram can be selected using p2079 and subsequently expanded.

If, with p922, a value not equal to 999 is set, then p2079 has the same value and is inhibited. All of the interconnections contained in the telegram are inhibited. Also expansions are inhibited.

If p922 is set to 999, then p2079 can be freely set. If p2079 is also set to 999, then all of the interconnections can be set.

If p922 = 999, and with p2079, a value is set that is not equal to 999, then the interconnections contained in the telegram are inhibited, but the telegram can be expanded.

Values:
390: SIEMENS telegram 390, PZD-1/1
391: SIEMENS telegram 391, PZD-3/7
392: SIEMENS telegram 392, PZD-3/15
999: Free telegram configuration with BICO

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p2079 PROFIBUS PZD telegram selection extended / PB PZD tlg exten.

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	999	999

Description: Sets the send and receive telegram for PROFIBUS. Contrary to p922, a telegram can be selected using p2079 and subsequently expanded.

For p0922 < 999 the following applies:

p2079 has the same value and is inhibited. All of the interconnections and extensions contained in the telegram are inhibited.

For p0922 = 999 the following applies:

p2079 can be freely set. If p2079 is also set to 999, then all of the interconnections can be set.

For p0922 = 999 and p2079 < 999 the following applies:

The interconnections contained in the telegram are inhibited. However, the telegram can be extended.

Values:
1: Standard telegram 1, PZD-2/2
2: Standard telegram 2, PZD-4/4
20: Standard telegram 20, PZD-2/6
352: SIEMENS telegram 352, PZD-6/6
999: Free telegram configuration with BICO

Dependency: Refer to: p0922

p2079 PROFIBUS PZD telegram selection extended / PB PZD tlg exten.

VECTOR (n/M)

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	999	999

Description: Sets the send and receive telegram for PROFIBUS. Contrary to p922, a telegram can be selected using p2079 and subsequently expanded.

For p0922 < 999 the following applies:

p2079 has the same value and is inhibited. All of the interconnections and extensions contained in the telegram are inhibited.

For p0922 = 999 the following applies:

p2079 can be freely set. If p2079 is also set to 999, then all of the interconnections can be set.

For p0922 = 999 and p2079 < 999 the following applies:

The interconnections contained in the telegram are inhibited. However, the telegram can be extended.

Values:
1: Standard telegram 1, PZD-2/2
2: Standard telegram 2, PZD-4/4
3: Standard telegram 3, PZD-5/9
4: Standard telegram 4, PZD-6/14
20: Standard telegram 20, PZD-2/6
352: SIEMENS telegram 352, PZD-6/6
999: Free telegram configuration with BICO

Dependency: Refer to: p0922

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p2079 PROFIBUS PZD telegram selection extended / PB PZD tlg exten.

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
2	999	999

Description: Sets the send and receive telegram for PROFIBUS. Contrary to p922, a telegram can be selected using p2079 and subsequently expanded.

For p0922 < 999 the following applies:

p2079 has the same value and is inhibited. All of the interconnections and extensions contained in the telegram are inhibited.

For p0922 = 999 the following applies:

p2079 can be freely set. If p2079 is also set to 999, then all of the interconnections can be set.

For p0922 = 999 and p2079 < 999 the following applies:

The interconnections contained in the telegram are inhibited. However, the telegram can be extended.

Values:
2: Standard telegram 2, PZD-4/4
999: Free telegram configuration with BICO

Dependency: Refer to: p0922

p2079 PROFIBUS PZD telegram selection extended / PB PZD tlg exten.

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
7	999	999

Description: Sets the send and receive telegram for PROFIBUS. Contrary to p922, a telegram can be selected using p2079 and subsequently expanded.

For p0922 < 999 the following applies:

p2079 has the same value and is inhibited. All of the interconnections and extensions contained in the telegram are inhibited.

For p0922 = 999 the following applies:

p2079 can be freely set. If p2079 is also set to 999, then all of the interconnections can be set.

For p0922 = 999 and p2079 < 999 the following applies:

The interconnections contained in the telegram are inhibited. However, the telegram can be extended.

Values:
7: Standard telegram 7, PZD-2/2
110: SIEMENS telegram 110, PZD-12/7
999: Free telegram configuration with BICO

Dependency: Refer to: p0922

p2080[0...15] BI: PROFIBUS send status word 1 / PB STW1 bit sel.

CU_G, TB30, TM31, VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2472
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Selects bits to be sent to the PROFIBUS master. The individual bits are combined to form status word 1.

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Index: [0] = Bit 0
[1] = Bit 1
[2] = Bit 2
[3] = Bit 3
[4] = Bit 4
[5] = Bit 5
[6] = Bit 6
[7] = Bit 7
[8] = Bit 8
[9] = Bit 9
[10] = Bit 10
[11] = Bit 11
[12] = Bit 12
[13] = Bit 13
[14] = Bit 14
[15] = Bit 15

Dependency: Refer to: p2088, r2089

p2081[0...15] BI: PROFIBUS send status word 2 / PB STW2 bit sel.

CU_G, TB30, TM31, VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2472
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Selects bits to be sent to the PROFIBUS master. The individual bits are combined to form status word 2.

Index: [0] = Bit 0
[1] = Bit 1
[2] = Bit 2
[3] = Bit 3
[4] = Bit 4
[5] = Bit 5
[6] = Bit 6
[7] = Bit 7
[8] = Bit 8
[9] = Bit 9
[10] = Bit 10
[11] = Bit 11
[12] = Bit 12
[13] = Bit 13
[14] = Bit 14
[15] = Bit 15

Dependency: Refer to: p2088, r2089

Note: When using the clock synchronous (isosynchronous) PROFIBUS with sign-of-life in status word 2, bit 12 to 15 are reserved to transfer the sign-of-life and may not be freely interconnected.

p2082[0...15] BI: PROFIBUS send free status word 3 / PB ZSW3 bit sel.

CU_G, TB30, TM31, VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2472
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Selects bits to be sent to the PROFIBUS master. The individual bits are combined to form free status word 3.

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Index: [0] = Bit 0
[1] = Bit 1
[2] = Bit 2
[3] = Bit 3
[4] = Bit 4
[5] = Bit 5
[6] = Bit 6
[7] = Bit 7
[8] = Bit 8
[9] = Bit 9
[10] = Bit 10
[11] = Bit 11
[12] = Bit 12
[13] = Bit 13
[14] = Bit 14
[15] = Bit 15

Dependency: Refer to: p2088, r2089

p2083[0...15] BI: PROFIBUS send free status word 4 / PB ZSW4 bit sel.

CU_G, TB30, TM31, VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 2472
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Selects bits to be sent to the PROFIBUS master. The individual bits are combined to form free status word 4.

Index: [0] = Bit 0
[1] = Bit 1
[2] = Bit 2
[3] = Bit 3
[4] = Bit 4
[5] = Bit 5
[6] = Bit 6
[7] = Bit 7
[8] = Bit 8
[9] = Bit 9
[10] = Bit 10
[11] = Bit 11
[12] = Bit 12
[13] = Bit 13
[14] = Bit 14
[15] = Bit 15

Dependency: Refer to: p2088, r2089

p2088[0...3] PROFIBUS invert status word / Invert PB ZSW

CU_G, TB30, TM31, VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 2472
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Setting to invert the individual binector inputs of the binector connector converter.

Index: [0] = Status word 1
[1] = Status word 2
[2] = Free status word 3
[3] = Free status word 4

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Bit 0	Inverted	Not inverted	-
	01	Bit 1	Inverted	Not inverted	-
	02	Bit 2	Inverted	Not inverted	-
	03	Bit 3	Inverted	Not inverted	-
	04	Bit 4	Inverted	Not inverted	-
	05	Bit 5	Inverted	Not inverted	-
	06	Bit 6	Inverted	Not inverted	-
	07	Bit 7	Inverted	Not inverted	-
	08	Bit 8	Inverted	Not inverted	-
	09	Bit 9	Inverted	Not inverted	-
	10	Bit 10	Inverted	Not inverted	-
	11	Bit 11	Inverted	Not inverted	-
	12	Bit 12	Inverted	Not inverted	-
	13	Bit 13	Inverted	Not inverted	-
	14	Bit 14	Inverted	Not inverted	-
	15	Bit 15	Inverted	Not inverted	-

Dependency: Refer to: p2080, p2081, p2082, p2083, r2089

r2089[0...3] CO: PROFIBUS send status word / Send PB ZSW

CU_G, TB30, TM31, VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2472
P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Connector output to interconnect the status words to a PROFIBUS PZD send word.

Index: [0] = Status word 1
[1] = Status word 2
[2] = Free status word 3
[3] = Free status word 4

Dependency: Refer to: p2051, p2080, p2081, p2082, p2083

Note: r2089 together with p2080 to p2083 forms four binector-connector converters.

r2090 BO: PROFIBUS PZD1 receive bit-serial / PB PZD1 recv bitw

CU_G, TB30, TM31, VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2460
P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of PZD1 (normally control word 1) received from the PROFIBUS master.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Bit 0	On	Off	-
	01	Bit 1	On	Off	-
	02	Bit 2	On	Off	-
	03	Bit 3	On	Off	-
	04	Bit 4	On	Off	-
	05	Bit 5	On	Off	-
	06	Bit 6	On	Off	-
	07	Bit 7	On	Off	-
	08	Bit 8	On	Off	-
	09	Bit 9	On	Off	-
	10	Bit 10	On	Off	-
	11	Bit 11	On	Off	-
	12	Bit 12	On	Off	-
	13	Bit 13	On	Off	-
	14	Bit 14	On	Off	-
	15	Bit 15	On	Off	-

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r2091 BO: PROFIBUS PZD2 received bit-serial / PB PZD2 recv bitw

CU_G, TB30, TM31, VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2460
P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of PZD2 received from the PROFIBUS master.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

r2092 BO: PROFIBUS PZD3 received bit-serial / PB PZD3 recv bitw

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2460
P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of PZD3 received from the PROFIBUS master.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

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r2093 BO: PROFIBUS PZD4 received bit-serial / PB PZD4 recv bitw

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2460
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of PZD4 (normally control word 2) received from the PROFIBUS master.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

r2094 BO: PROFIBUS PZD received bit-serial / PB PZD recv bitw

CU_G, TB30, TM31, VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2460
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial onward interconnection of a PZD word received from the PROFIBUS master . The PZD is selected via p2099[0].

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

Dependency: Refer to: p2099

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r2095 BO: PROFIBUS PZD received bit-serial / PB PZD recv bitw

CU_G, TB30, TM31, VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2460
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of a PZD word received from the PROFIBUS master. The PZD is selected via p2099[1].

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

Dependency: Refer to: p2099

p2098[0...1] Invert connector-binector converter bit-serial / CI_BO conv inv

CU_G, TB30, TM31, VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 2460
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Setting to invert the individual binector outputs of the connector-binector converter.
Using p2098[0], the signals of CI: p2099[0] are influenced.
Using p2098[1], the signals of CI: p2099[1] are influenced.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	Inverted	Not inverted	-
01	Bit 1	Inverted	Not inverted	-
02	Bit 2	Inverted	Not inverted	-
03	Bit 3	Inverted	Not inverted	-
04	Bit 4	Inverted	Not inverted	-
05	Bit 5	Inverted	Not inverted	-
06	Bit 6	Inverted	Not inverted	-
07	Bit 7	Inverted	Not inverted	-
08	Bit 8	Inverted	Not inverted	-
09	Bit 9	Inverted	Not inverted	-
10	Bit 10	Inverted	Not inverted	-
11	Bit 11	Inverted	Not inverted	-
12	Bit 12	Inverted	Not inverted	-
13	Bit 13	Inverted	Not inverted	-
14	Bit 14	Inverted	Not inverted	-
15	Bit 15	Inverted	Not inverted	-

Dependency: Refer to: r2094, r2095, p2099

Note: Bit x = 1: Inverts the appropriate binector output.
Bit x = 0: No inversion.

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p2099[0...1] CI: PROFIBUS PZD selection receive bit-serial / Select CO_BO conv

CU_G, TB30, TM31, VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2460
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Selects a PROFIBUS PZD receive word for bit-serial interconnection.
Dependency: Refer to: r2094, r2095
Note: p2099 together with r2094 and r2095 forms two connector-binector converters:
Connector input p2099[0] to binector outputs in r2094
Connector input p2099[1] to binector outputs in r2095

p2100[0...19] Setting the fault number for fault response / F_no F response

All objects	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1750, 8075
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** [0] 0 [1] 0 [2] 0 [3] 0 [4] 0 [5] 0 [6] 0 [7] 0 [8] 0 [9] 0 [10] 0 [11] 0 [12] 0 [13] 0 [14] 0 [15] 0 [16] 0 [17] 0 [18] 0 [19] 0

Description: Selects the faults for which the fault response should be changed
Dependency: The fault is selected and the required response is set under the same index.
Refer to: p2101
Notice: For the following cases, it is not possible to re-parameterize the fault response to a fault:
- if there is no existing fault number.
- the message type is not "fault" (F).
- when a fault is present.

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p2101[0...19] Setting the fault response / Fault response

CU_G, DMC20, TB30, TM31

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: 1750, 8075
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
0	0	[0] 0 [1] 0 [2] 0 [3] 0 [4] 0 [5] 0 [6] 0 [7] 0 [8] 0 [9] 0 [10] 0 [11] 0 [12] 0 [13] 0 [14] 0 [15] 0 [16] 0 [17] 0 [18] 0 [19] 0

Description: Sets the fault response for the selected fault.
Values: 0: NONE
Dependency: The fault is selected and the required response is set under the same index.

p2101[0...19] Setting the fault response / Fault response

VECTOR

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: 1750, 8075
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
0	7	[0] 0 [1] 0 [2] 0 [3] 0 [4] 0 [5] 0 [6] 0 [7] 0 [8] 0 [9] 0 [10] 0 [11] 0 [12] 0 [13] 0 [14] 0 [15] 0 [16] 0 [17] 0 [18] 0 [19] 0

Description: Sets the fault response for the selected fault.

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Values:
0: NONE
1: OFF1
2: OFF2
3: OFF3
4: STOP1 (being developed)
5: STOP2
6: DCBRAKE (being developed)
7: ENCODER (p0491)

Dependency: The fault is selected and the required response is set under the same index.
Refer to: p2100

Notice: It is not possible to re-parameterize the response to a specific fault for faults that are already present (queued).

Note: OFF1:
Braking along the ramp-function generator down ramp followed by a pulse inhibit.
OFF2:
Internal/external pulse inhibit.
OFF3:
Braking along the OFF3 down ramp followed by a pulse inhibit.
STOP2:
n_set = 0
The fault response can only be changed for faults with the appropriate identification.
Example:
F12345 and fault response = NONE (OFF1, OFF2) --> The NONE fault response can be changed to either OFF1 or OFF2.

p2102 BI: Acknowledge all faults / Ackn all faults

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 2546, 8060
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to acknowledge all faults at all drive objects of the drive system.

Note: A fault acknowledgment is triggered with a 0/1 signal.

p2103 BI: 1. Acknowledge faults / 1. Acknowledge

CU_G, DMC20, TB30, TM31

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the first signal source to acknowledge faults.

Note: A fault acknowledgment is triggered with a 0/1 signal.

p2103[0...n] BI: 1. Acknowledge faults / 1. Acknowledge

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 2441, 2442, 2443, 2448, 2475, 2546, 8060, 9220
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the first signal source to acknowledge faults.

Note: A fault acknowledgment is triggered with a 0/1 signal.

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p2104 BI: 2. Acknowledge faults / 2. Acknowledge

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the second signal source to acknowledge faults.
Note: A fault acknowledgment is triggered with a 0/1 signal.

p2104[0...n] BI: 2. Acknowledge faults / 2. Acknowledge

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2546, 8060
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the second signal source to acknowledge faults.
Note: A fault acknowledgment is triggered with a 0/1 signal.

p2105 BI: 3. Acknowledge faults / 3. Acknowledge

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the third signal source to acknowledge faults.
Note: A fault acknowledgment is triggered with a 0/1 signal.

p2105[0...n] BI: 3. Acknowledge faults / 3. Acknowledge

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2546, 8060
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the third signal source to acknowledge faults.
Note: A fault acknowledgment is triggered with a 0/1 signal.

p2106 BI: External fault 1 / External fault 1

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external fault 1.
Dependency: Refer to: F07860
Note: An external fault is triggered with a 1/0 signal.
If this fault is output at the Control Unit, then it is transferred to all existing drive objects.

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p2106[0...n] BI: External fault 1 / External fault 1

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2546
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for external fault 1.
Dependency: Refer to: F07860
Note: An external fault is triggered with a 1/0 signal.
If this fault is output at the Control Unit, then it is transferred to all existing drive objects.

p2107 BI: External fault 2 / External fault 2

CU_G, DMC20, TB30, TM31	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for external fault 2.
Dependency: Refer to: F07861
Note: An external fault is triggered with a 1/0 signal.
If this fault is output at the Control Unit, then it is transferred to all existing drive objects.

p2107[0...n] BI: External fault 2 / External fault 2

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2546
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for external fault 2.
Dependency: Refer to: F07861
Note: An external fault is triggered with a 1/0 signal.
If this fault is output at the Control Unit, then it is transferred to all existing drive objects.

p2108 BI: External fault 3 / External fault 3

CU_G, DMC20, TB30, TM31	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	1

Description: Sets the signal source for external fault 3.
External fault 3 is initiated by the following AND logic operation:
- BI: p2108 negated
- BI: p3111
- BI: p3112 negated

Dependency: Refer to: p3110, p3111, p3112
Refer to: F07862
Note: An external fault is triggered with a 1/0 signal.
If this fault is output at the Control Unit, then it is transferred to all existing drive objects.

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p2108[0...n] BI: External fault 3 / External fault 3

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 2546
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for external fault 3.
External fault 3 is initiated by the following AND logic operation:
- BI: p2108 negated
- BI: p3111
- BI: p3112 negated

Dependency: Refer to: p3110, p3111, p3112
Refer to: F07862

Note: An external fault is triggered with a 1/0 signal.
If this fault is output at the Control Unit, then it is transferred to all existing drive objects.

r2109[0...63] Fault time removed in milliseconds / t_flt resolved ms

All objects	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1750, 8060
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min - [ms]	**Max** - [ms]	**Factory setting** - [ms]

Description: Displays the system runtime in milliseconds when the fault was removed.

Dependency: Refer to: r0945, r0947, r0948, r0949, r2114, r2130, r2133, r2136

Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2110[0...63] Alarm number / Alarm number

All objects	**Can be changed:** -		**Access level:** 2
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 8065
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: This parameter is identical to r2122.

p2111 Alarm counter / Alarm counter

All objects	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 1750, 8065
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 0

Description: Number of alarms that have occurred after the last reset.

Dependency: When p2111 is set to 0, the following is initiated:
- all of the alarms of the alarm buffer that have gone [0...7] are transferred into the alarm history [8...63].
- the alarm buffer [0...7] is deleted.

Refer to: r2110, r2122, r2123, r2124, r2125

Note: The parameter is reset to 0 at POWER ON.

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p2112 BI: External alarm 1 / External alarm 1

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external alarm 1.
Dependency: Refer to: A07850
Note: An external alarm is triggered with a 1/0 signal.

p2112[0...n] BI: External alarm 1 / External alarm 1

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2546
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external alarm 1.
Dependency: Refer to: A07850
Note: An external alarm is triggered with a 1/0 signal.

r2114[0...1] System runtime total / t_System total

CU_G

Can be changed: - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the total system runtime for the drive unit.
Index 0 indicates the system runtime in milliseconds after reaching 86.400.000 ms (24 hours), the value is reset.
Index 1 indicates the system runtime in days.
Dependency: Refer to: r0948, r2109, r2123, r2125, r2130, r2136, r2145, r2146
Note: The time in r2114 is used to display the fault and alarm times.
At power-off the counter value is saved.
After the drive unit is powered-up, the counter continues to run with the value that was saved the last time that the drive unit was powered-down.

p2116 BI: External alarm 2 / External alarm 2

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external alarm 2.
Dependency: Refer to: A07851
Note: An external alarm is triggered with a 1/0 signal.

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p2116[0...n] BI: External alarm 2 / External alarm 2

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2546
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external alarm 2.
Dependency: Refer to: A07851
Note: An external alarm is triggered with a 1/0 signal.

p2117 BI: External alarm 3 / External alarm 3

CU_G, DMC20, TB30, TM31

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external alarm 3.
Dependency: Refer to: A07852
Note: An external alarm is triggered with a 1/0 signal.

p2117[0...n] BI: External alarm 3 / External alarm 3

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 2546
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for external alarm 3.
Dependency: Refer to: A07852
Note: An external alarm is triggered with a 1/0 signal.

p2118[0...19] Sets the message number for message type. / Msg_no Msg_type

All objects

Can be changed: U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1750, 8075
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Selects faults or alarms for which the message type should be changed.
Dependency: Selects the fault or alarm selection and sets the required type of message realized under the same index.
Refer to: p2119
Notice: It is not possible to re-parameterize the message type in the following cases:
- if there is no existing message number.
- if a message is present.

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p2119[0...19] Setting the message type / Message type

All objects

Can be changed: U, T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 1750, 8075

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	3	1

Description: Sets the message type for the selected fault or alarm.

Values:
1: Fault (F)
2: Alarm (A)
3: No message (N)

Dependency: Selects the fault or alarm selection and sets the required type of message realized under the same index.
Refer to: p2118

Notice: It is not possible to re-parameterize the message type for the existing faults or alarms.

Note: The message type can only be changed for messages with the appropriate identification.
Example:
F12345(A) --> Fault F12345 can be changed to alarm A12345.
In this case, the message number that may be possibly entered in p2100[0...19] and p2126[0...19] is automatically removed.

r2120 Sum of fault and alarm buffer changes / Sum buffer changed

All objects

Can be changed: - | **Access level:** 4

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 8065

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the sum of all of the fault and alarm buffer changes in the drive unit.

Dependency: Refer to: r0944, r2121

r2121 Counter, alarm buffer changes / Alrm buff changed

All objects

Can be changed: - | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 8065

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: This counter is incremented every time the alarm buffer changes.

Dependency: Refer to: r2110, r2122, r2123, r2124, r2125

r2122[0...63] Alarm code / Alarm code

All objects

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1750, 8065

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of alarms that have occurred.

Dependency: Refer to: r2110, r2123, r2124, r2125, r2134, r2145, r2146

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Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).
Alarm buffer structure (general principle):
r2122[0], r2124[0], r2123[0], r2125[0] --> alarm 1 (the oldest)
.
.
.
r2122[7], r2124[7], r2123[7], r2125[7] --> Alarm 8 (the latest)
When the alarm buffer is full, the alarms that have gone are entered into the alarm history:
r2122[8], r2124[8], r2123[8], r2125[8] --> Alarm 1 (the latest)
.
.
.
r2122[63], r2124[63], r2123[63], r2125[63] --> alarm 56 (the oldest)

r2123[0...63] Alarm time received in milliseconds / t_alarm recv ms

All objects

Can be changed: - **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 1750, 8065

P-Group: Messages **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the system runtime in milliseconds when the alarm occurred.
Dependency: Refer to: r2110, r2114, r2122, r2124, r2125, r2134, r2145, r2146
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2124[0...63] Alarm value / Alarm value

All objects

Can be changed: - **Access level:** 3

Data type: Integer32 **Dynamic index:** - **Function diagram:** 1750, 8065

P-Group: Messages **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays additional information about the active alarm (as integer number).
Dependency: Refer to: r2110, r2122, r2123, r2125, r2134, r2145, r2146
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2125[0...63] Alarm time removed in milliseconds / t_alarm res ms

All objects

Can be changed: - **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 1750, 8065

P-Group: Messages **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the system runtime in milliseconds when the alarm was cleared.
Dependency: Refer to: r2110, r2114, r2122, r2123, r2124, r2134, r2145, r2146
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

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p2126[0...19] Setting fault number for acknowledge mode / Fault_no ackn_mode

All objects

Can be changed: U, T | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1750, 8075

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Selects the faults for which the acknowledge mode is to be changed

Dependency: Selects the faults and sets the required acknowledge mode realized under the same index
Refer to: p2127

Notice: It is not possible to re-parameterize the acknowledge mode of a fault in the following cases:
- if there is no existing fault number.
- the message type is not "fault" (F).
- when a fault is present.

p2127[0...19] Sets acknowledgment mode / Acknowledge mode

All objects

Can be changed: U, T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 1750, 8075

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	3	1

Description: Sets the acknowledge mode for selected fault.

Values:
1: Acknowledgment only using POWER ON
2: IMMEDIATE acknowledged after the fault cause has been removed
3: Acknowledgement only for PULSE INHIBIT

Dependency: Selects the faults and sets the required acknowledge mode realized under the same index
Refer to: p2126

Notice: It is not possible to re-parameterize the acknowledge mode of a fault in the following cases:
- if there is no existing fault number.
- the message type is not "fault" (F).
- when a fault is present.

Note: The acknowledge mode can only be changed for faults with the appropriate identification.
Example:
F12345 and acknowledge mode = POWER ON (IMMEDIATELY) --> The acknowledge mode can be changed from POWER ON to IMMEDIATELY.

p2128[0...15] Selecting fault/alarm code for trigger / Message trigger

All objects

Can be changed: U, T | **Access level:** 3

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1750, 8070

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Selects faults or alarms which can be used as trigger.

Dependency: Refer to: r2129

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r2129 CO/BO: Trigger word for faults and alarms / Trigger word

All objects

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 1530, 8070
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Trigger signal for the selected faults and alarms

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Trigger signal p2128[0]	On	Off	-
01	Trigger signal p2128[1]	On	Off	-
02	Trigger signal p2128[2]	On	Off	-
03	Trigger signal p2128[3]	On	Off	-
04	Trigger signal p2128[4]	On	Off	-
05	Trigger signal p2128[5]	On	Off	-
06	Trigger signal p2128[6]	On	Off	-
07	Trigger signal p2128[7]	On	Off	-
08	Trigger signal p2128[8]	On	Off	-
09	Trigger signal p2128[9]	On	Off	-
10	Trigger signal p2128[10]	On	Off	-
11	Trigger signal p2128[11]	On	Off	-
12	Trigger signal p2128[12]	On	Off	-
13	Trigger signal p2128[13]	On	Off	-
14	Trigger signal p2128[14]	On	Off	-
15	Trigger signal p2128[15]	On	Off	-

Dependency: If one of the faults or alarms selected in p2128[n] occurs, then the particular bit of this binector output is set.
Refer to: p2128

Note: CO: r2129 = 0 --> None of the selected messages has occurred.
CO: r2129 > 0 --> At least one of the selected messages has occurred.

r2130[0...63] Fault time received in days / t_fault recv days

All objects

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 8060
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the system runtime in days when the fault occurred.

Dependency: Refer to: r0945, r0947, r0948, r0949, r2109, r2114, r2133, r2136

Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2131 CO: Actual fault code / Actual fault code

All objects

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 8060
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the code of the oldest active fault.

Note: 0: No fault present.

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r2132 CO: Actual alarm code / Actual alarm code

All objects

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 8065
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the code of the last alarm that occurred.
Note: 0: No alarm present.

r2133[0...63] Fault value for float values / Fault val float

All objects

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 8060
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays additional information about the fault that occurred for float values.
Dependency: Refer to: r0945, r0947, r0948, r0949, r2109, r2130, r2136
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2134[0...63] Alarm value for float values / Alarm value float

All objects

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 8065
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays additional information about the active alarm for float values.
Dependency: Refer to: r2110, r2122, r2123, r2124, r2125, r2145, r2146
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2135 CO/BO: Status word faults/alarms 2 / ZSW fault/alarm 2

CU_G, DMC20, TB30, TM31

Can be changed: -
Access level: 2
Data type: Unsigned16
Dynamic index: -
Function diagram: 1530, 2548
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the second status word of faults and alarms.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Fault, encoder 1	Yes	No	-
01	Fault, encoder 2	Yes	No	-
02	Fault, encoder 3	Yes	No	-
10	Fault transformer overtemperature	Yes	No	-
11	Alarm, transformer overtemperature	Yes	No	-
12	Fault motor overtemperature	Yes	No	-
13	Fault thermal overload power unit	Yes	No	-
14	Alarm, motor overtemperature	Yes	No	-
15	Alarm, power unit thermal overload	Yes	No	-

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r2135 CO/BO: Status word faults/alarms 2 / ZSW fault/alarm 2

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 1530, 2548

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the second status word of faults and alarms.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Fault, encoder 1	Yes	No	-
01	Fault, encoder 2	Yes	No	-
02	Fault, encoder 3	Yes	No	-
12	Fault motor overtemperature	Yes	No	-
13	Fault thermal overload power unit	Yes	No	-
14	Alarm, motor overtemperature	Yes	No	-
15	Alarm, power unit thermal overload	Yes	No	-

r2136[0...63] Fault time removed in days / t_flt resolv. days

All objects

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 8060

P-Group: Messages **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the system runtime in days when the fault was removed.

Dependency: Refer to: r0945, r0947, r0948, r0949, r2109, r2114, r2130, r2133

Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

r2138 CO/BO: Control word faults/alarms / STW fault/alarm

All objects

Can be changed: - **Access level:** 2

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 1530, 2546

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word of the faults and alarms.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
07	Acknowledge fault	Yes (0/1 edge)	No	-
10	External alarm 1 (A07850)	No	Yes (1/0 edge)	-
11	External alarm 2 (A07851)	No	Yes (1/0 edge)	-
12	External alarm 3 (A07852)	No	Yes (1/0 edge)	-
13	External fault 1 (F07860)	No	Yes (1/0 edge)	-
14	External fault 2 (F07861)	No	Yes (1/0 edge)	-
15	External fault 3 (F07862)	No	Yes (1/0 edge)	-

Dependency: Refer to: p2103, p2104, p2105, p2106, p2107, p2108, p2112, p2116, p2117, p3110, p3111, p3112

r2139 CO/BO: Status word faults/alarms 1 / ZSW fault/alarm 1

All objects

Can be changed: - **Access level:** 2

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 1530, 2548

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the first status word of faults and alarms.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Ackn. running	Yes	No	-
	03	Fault present	Yes	No	-
	06	Internal message 1 present	Yes	No	-
	07	Alarm present	Yes	No	-
	08	Internal message 2 present	Yes	No	-

Note: Re bit 03, 07:

These bits are set if at least one fault/alarm occurs. Data is entered into the fault/alarm buffer with delay. This is the reason that the fault/alarm buffer should only be read if, after "fault present"/"alarm present" has occurred, a change in the buffer was also detected (r0944, r2121).

p2140[0...n] Hysteresis speed 2 / n_hysteresis 2

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 8010

P-Group: Messages — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	300.00 [1/min]	90.00 [1/min]

Description: Sets the hysteresis speed (bandwidth) for the following signals:

"|n_act| < = speed threshold value 2" (BO: r2197.1)

"|n_act| > speed threshold value 2" (BO: r2197.2)

Dependency: Refer to: p2155, r2197

p2141[0...n] Speed threshold 1 / n_thresh val 1

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 8010

P-Group: Messages — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	5.00 [1/min]

Description: Sets the speed threshold value for the signal "f or n comparison value reached or exceeded" (BO: r2199.1).

Dependency: Refer to: p2142, r2199

p2142[0...n] Hysteresis speed 1 / n_hysteresis 1

VECTOR

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** 8010

P-Group: Messages — **Units group:** 3_1 — **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	300.00 [1/min]	2.00 [1/min]

Description: Sets the hysteresis speed (bandwidth) for the signal "f or n / v comparison value reached or exceeded" (BO: r2199.1).

Dependency: Refer to: p2141, r2199

r2145[0...63] Alarm time received in days / t_alarm recv days

All objects

Can be changed: - — **Access level:** 3

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** 8065

P-Group: Messages — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the system runtime in days when the alarm occurred.

Dependency: Refer to: r2110, r2114, r2122, r2123, r2124, r2125, r2134, r2146

Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

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r2146[0...63] Alarm time removed in days / t_alarm res days

All objects

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 8065
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the system runtime in days when the alarm was cleared.
Dependency: Refer to: r2110, r2114, r2122, r2123, r2124, r2125, r2134, r2145
Note: The buffer parameters are cyclically updated in the background (refer to status signal in r2139).

p2147 Delete fault buffer of all drive objects / Del fault buffer

CU_G

Can be changed: U, T
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: 8060
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Is used to delete (clear) the fault buffer of all of the existing drive objects.
Values:
0: not active
1: Start to delete the fault buffer of all drive objects
Dependency: Refer to: r0945, r0947, r0948, r0949, r2109, r2130, r2133, r2136
Note: p2147 is automatically set to 0 after execution.

p2148[0...n] BI: Ramp-function generator active / HLG active

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 8010
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the signal "ramp-function generator active" for the following signals/messages:
"Speed setpoint - actual value deviation within tolerance t_on" (BO: r2199.4)
"Ramp-up/ramp-down completed" (BO: r2199.5)
Note: The binector input is automatically pre-assigned to r1199.2.
The following applies for SERVO:
The pre-assignment is only made when the function module "setpoint channel" is activated (r0108.8 = 1).

p2149[0...n] Monitoring, configuration / Monit config

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned16
Dynamic index: DDS, p0180
Function diagram: 8010
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0001 bin

Description: Configuration word for messages and monitoring functions.
Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Enable alarm A07903	Yes	No	8010
01	Load monitoring only in the 1st quadrants	Yes	No	8010

Dependency: Refer to: r2197
Refer to: A07903

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Note: Re bit 00:
Alarm A07903 is output when the bit is set with p2197.7 = 0 (n_set <> n_act).
Re bit 01:
When the bit is set, the load monitoring is only carried-out in the 1st quadrant as a result of the positive characteristic parameters (p2182 ... p2190).

p2150[0...n] Hysteresis speed 3 / n_hysteresis 3

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	300.00 [1/min]	2.00 [1/min]

Description: Sets the hysteresis speed (bandwidth) for the following signals:
"|n_act| < speed threshold value 3" (BO: r2199.0)
"n_set >= 0" (BO: r2198.5)
"n_act >= 0" (BO: r2197.3)

Dependency: Refer to: p2161, r2197, r2199

p2151[0...n] CI: Speed setpoint for messages/signals / n_set for msg

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 8010
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1170[0]

Description: Sets the signal source for the speed setpoint for the following messages:
"Speed setpoint - actual value deviation within tolerance t_off" (BO: r2197.7)
"Ramp-up/ramp-down completed" (BO: r2199.5)
"|n_set| < p2161" (BO: r2198.4)
"n_set > 0" (BO: r2198.5)

Dependency: Refer to: r2197, r2198, r2199

p2153[0...n] Speed actual value filter time constant / n_act_filt T

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000000 [ms]	0 [ms]

Description: Sets the time constant of the PT1 element to smooth the speed / velocity actual value.
The smoothed actual speed/velocity is compared with the threshold values and is only used for messages and signals.

Dependency: Refer to: r2169

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p2154[0...n] CI: Speed setpoint 2 / n_set 2

VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 8010
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for speed setpoint 2.
The sum of CI: p2151 and CI: p2154 is used for the following messages/signals:
"Speed setpoint - actual value deviation within tolerance t_off" (BO: r2197.7)
"Speed setpoint - actual value deviation within tolerance t_on" (BO: r2199.4)
"Ramp-up/ramp-down completed" (BO: r2199.5)

Dependency: Refer to: p2151, r2197, r2199

p2155[0...n] Speed threshold 2 / n_thresh val 2

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	900.00 [1/min]

Description: Sets the speed threshold value for the following messages:
"|n_act| < = speed threshold value 2" (BO: r2197.1)
"|n_act| > speed threshold value 2" (BO: r2197.2)

Dependency: Refer to: p2140, r2197

p2156[0...n] On delay, comparison value reached / t_on cmpr val rchd

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	10000.0 [ms]	0.0 [ms]

Description: Sets the switch-in delay time for the signal "comparison value reached" (BO: r2199.1).

Dependency: Refer to: p2141, p2142, r2199

p2161[0...n] Speed threshold 3 / n_thresh val 3

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	5.00 [1/min]

Description: Sets the speed threshold value for the signal "|n_act| < speed threshold value 3" (BO: r2199.0).

Dependency: Refer to: p2150, r2199

p2162[0...n] Hysteresis speed n_act > n_max / Hyst n_act>n_max

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	60000.00 [1/min]	0.00 [1/min]

Description: Sets the hysteresis speed (bandwidth) for the signal "n_act > n_max" (BO: r2197.6).

Dependency: Refer to: r1084, r1087, r2197

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Notice: For p0322 = 0, the following applies: p2162 <= 0.1 * p0311
For p0322 > 0, the following applies: p1082 + p2162 <= 1.02 * p0322
If one of the conditions is violated, p2162 is appropriately and automatically reduced when exiting the commissioning mode.

Note: For a negative speed limit (r1087) the hysteresis is effective below the limit value and for a positive speed limit (r1084) above the limit value.

p2163[0...n] Speed threshold 4 / n_thresh val 4

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	90.00 [1/min]

Description: Sets the speed threshold value for the "speed setpoint - actual value deviation in tolerance t_off" signal/message (BO: r2197.7).

Dependency: Refer to: p2164, p2166, r2197

p2164[0...n] Hysteresis speed 4 / n_hysteresis 4

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	200.00 [1/min]	2.00 [1/min]

Description: Sets the hysteresis speed (bandwidth) for the "speed setpoint - actual value deviation in tolerance t_off" signal/message (BO: r2197.7).

Dependency: Refer to: p2163, p2166, r2197

p2166[0...n] Off delay n_act = n_set / t_del_off n_i=n_so

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	10000.0 [ms]	200.0 [ms]

Description: Sets the power-off delay time for the "speed setpoint - actual value deviation in tolerance t_off" signal/message (BO: r2197.7).

Dependency: Refer to: p2163, p2164, r2197

p2167[0...n] Switch-on delay n_act = n_set / t_on n_act=n_set

VECTOR

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8010
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	10000.0 [ms]	200.0 [ms]

Description: Sets the switch-in delay for the "speed setpoint - actual value deviation in tolerance t_on" signal/message (BO: r2199.4).

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r2169 CO: Speed actual value smoothed signals / n_act smth message

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 1750, 8010, 8012, 8013
	P-Group: Messages	**Units group:** 3_1	**Unit selection:** p0505
	Min - [1/min]	**Max** - [1/min]	**Factory setting** - [1/min]

Description: Displays the smoothed actual speed for messages/signals.

Dependency: Refer to: p2153

p2174[0...n] Torque threshold value 1 / M_thresh val 1

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 8012
	P-Group: Messages	**Units group:** 7_1	**Unit selection:** p0505
	Min 0.00 [Nm]	**Max** 99999.00 [Nm]	**Factory setting** 5.13 [Nm]

Description: Sets the torque threshold value for the signal "Torque setpoint < torque threshold value 1" (BO: r2198.10).

Dependency: Refer to: p2195, r2198

p2175[0...n] Motor locked speed threshold / Mot lock n_thresh

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 8012
	P-Group: Messages	**Units group:** 3_1	**Unit selection:** p0505
	Min 0.00 [1/min]	**Max** 210000.00 [1/min]	**Factory setting** 120.00 [1/min]

Description: Sets the speed threshold for the message "Motor locked" (BO: r2198.6).

Dependency: Refer to: p2177, r2198

p2177[0...n] Motor locked delay time / Mot lock t_del

VECTOR	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 8012
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 65.000 [s]	**Factory setting** 1.000 [s]

Description: Sets the delay time for the message "Motor locked" (BO: r2198.6).
If "Motor locked" is identified within this time, then ZSW2.6 is set and an appropriate fault is output.

Dependency: Refer to: p2175, r2198

p2178[0...n] Motor stalled delay time / Mot stall t_del

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 8012
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min 0.000 [s]	**Max** 10.000 [s]	**Factory setting** 0.010 [s]

Description: Sets the delay time for the message "Motor stalled" (BO: r2198.7).
If "Motor stalled" is identified within this time, then ZSW2.7 is set and an appropriate fault is output.

Dependency: Refer to: r2198

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p2181[0...n] Load monitoring, response / Load monit. resp.

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	6	0

Description: Sets the response when evaluating the load monitoring.

Values:
0: Load monitoring disabled
1: A07920 for torque/speed too low
2: A07921 for torque/speed too high
3: A07922 for torque/speed out of tolerance
4: F07923 for torque/speed too low
5: F07924 for torque/speed too high
6: F07925 for torque/speed out of tolerance

Dependency: Refer to: p2182, p2183, p2184, p2185, p2186, p2187, p2188, p2189, p2190, r2198
Refer to: A07920, A07921, A07922, F07923, F07924, F07925

Note: The response to the faults F07923 ... F07925 can be set.

p2182[0...n] Load monitoring, speed threshold value 1 / n_thresh 1

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	150.00 [1/min]

Description: Sets the speed/torque envelop curve for the load monitoring.
The envelope curve (upper and lower envelope curve) is defined as follows based on 3 speed thresholds:
p2182 (n_threshold 1) --> p2185 (M_threshold 1, upper), p2186 (M_threshold 1, lower)
p2183 (n_threshold 2) --> p2187 (M_threshold 2, upper), p2188 (M_threshold 2, lower)
p2184 (n_threshold 3) --> p2189 (M_threshold 3, upper), p2190 (M_threshold 3, lower)

Dependency: The following applies: p2182 < p2183 < p2184
Refer to: p2183, p2184, p2185, p2186
Refer to: A07926

p2183[0...n] Load monitoring, speed threshold value 2 / n_thresh 2

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	900.00 [1/min]

Description: Sets the speed/torque envelop curve for the load monitoring.
The envelope curve (upper and lower envelope curve) is defined as follows based on 3 speed thresholds:
p2182 (n_threshold 1) --> p2185 (M_threshold 1, upper), p2186 (M_threshold 1, lower)
p2183 (n_threshold 2) --> p2187 (M_threshold 2, upper), p2188 (M_threshold 2, lower)
p2184 (n_threshold 3) --> p2189 (M_threshold 3, upper), p2190 (M_threshold 3, lower)

Dependency: The following applies: p2182 < p2183 < p2184
Refer to: p2182, p2184, p2187, p2188
Refer to: A07926

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p2184[0...n] Load monitoring, speed threshold value 3 / n_thresh 3

VECTOR (Extended msg)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 8013
P-Group: Messages
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	1500.00 [1/min]

Description: Sets the speed/torque envelop curve for the load monitoring.
The envelope curve (upper and lower envelope curve) is defined as follows based on 3 speed thresholds:
p2182 (n_threshold 1) --> p2185 (M_threshold 1, upper), p2186 (M_threshold 1, lower)
p2183 (n_threshold 2) --> p2187 (M_threshold 2, upper), p2188 (M_threshold 2, lower)
p2184 (n_threshold 3) --> p2189 (M_threshold 3, upper), p2190 (M_threshold 3, lower)

Dependency: The following applies: p2182 < p2183 < p2184
Refer to: p2182, p2183, p2189, p2190
Refer to: A07926

p2185[0...n] Load monitoring torque threshold 1, upper / M_thresh 1 upper

VECTOR (Extended msg)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 8013
P-Group: Messages
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
0.00 [Nm]	99999.00 [Nm]	99999.00 [Nm]

Description: Sets the speed/torque / velocity/force envelope curve for the load monitoring.

Dependency: The following applies: p2185 > p2186
Refer to: p2182, p2186
Refer to: A07926

Note: The upper envelope curve is defined by p2185, p2187 and p2189.

p2186[0...n] Load monitoring torque threshold 1, lower / M_thresh 1 lower

VECTOR (Extended msg)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 8013
P-Group: Messages
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
0.00 [Nm]	99999.00 [Nm]	0.00 [Nm]

Description: Sets the speed/torque / velocity/force envelope curve for the load monitoring.

Dependency: The following applies: p2186 < p2185
Refer to: p2182, p2185
Refer to: A07926

Note: The lower envelope curve is defined by p2186, p2188 and p2190.

p2187[0...n] Load monitoring torque threshold 2, upper / M_thresh 2 upper

VECTOR (Extended msg)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 8013
P-Group: Messages
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
0.00 [Nm]	99999.00 [Nm]	99999.00 [Nm]

Description: Sets the speed/torque / velocity/force envelope curve for the load monitoring.

Dependency: The following applies: p2187 > p2188
Refer to: p2183, p2188
Refer to: A07926

Note: The upper envelope curve is defined by p2185, p2187 and p2189.

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p2188[0...n] Load monitoring torque threshold 2, lower / M_thresh 2 lower

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [Nm]	99999.00 [Nm]	0.00 [Nm]

Description: Sets the speed/torque / velocity/force envelope curve for the load monitoring.
Dependency: The following applies: p2188 < p2187
Refer to: p2183, p2187
Refer to: A07926
Note: The lower envelope curve is defined by p2186, p2188 and p2190.

p2189[0...n] Load monitoring torque threshold 3, upper / M_thresh 3 upper

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [Nm]	99999.00 [Nm]	99999.00 [Nm]

Description: Sets the speed/torque / velocity/force envelope curve for the load monitoring.
Dependency: The following applies: p2189 > p2190
Refer to: p2184, p2190
Refer to: A07926
Note: The upper envelope curve is defined by p2185, p2187 and p2189.

p2190[0...n] Load monitoring torque threshold 3, lower / M_thresh 3 lower

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [Nm]	99999.00 [Nm]	0.00 [Nm]

Description: Sets the speed/torque / velocity/force envelope curve for the load monitoring.
Dependency: The following applies: p2190 < p2189
Refer to: p2184, p2189
Refer to: A07926
Note: The lower envelope curve is defined by p2186, p2188 and p2190.

p2192[0...n] Load monitoring, delay time / Load monit t_del

VECTOR (Extended msg)

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8013
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [s]	65.00 [s]	10.00 [s]

Description: Sets the delay time to evaluate the load monitoring.

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p2194[0...n] Torque threshold value 2 / M_thresh val 2

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8012

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	100.00 [%]	90.00 [%]

Description: Sets the torque/force threshold value for the signal "Torque utilization < torque threshold value 2" (BO: r2199.11).

The message "torque setpoint < p2174" (BO: r2198.10) and "torque utilization < p2194" (BO: r2199.11) are only evaluated after the run-up and the delay time has expired.

Dependency: Refer to: r0033, p2195, r2199

p2195[0...n] Torque utilization switch-off delay / M_util t_off

VECTOR

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 8012

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	1000.0 [ms]	800.0 [ms]

Description: Sets the power-down delay time for the negated signal "run-up completed".

The message "torque setpoint < p2174" (BO: r2198.10) and "torque utilization < p2194" (BO: r2199.11) are only evaluated after the run-up and the delay time has expired.

Dependency: Refer to: p2174, p2194

r2197 CO/BO: Status word monitoring 1 / ZSW monitor 1

VECTOR

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1530, 2534

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the first status word for monitoring functions.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
01	|n_act| <= speed threshold value 2	Yes	No	8010
02	|n_act| > speed threshold value 2	Yes	No	8010
03	n_act >= 0	Yes	No	8010
06	|n_act| > n_max	Yes	No	8010
07	Speed setp - act val deviation in tolerance t_off	Yes	No	8010

Note: Re bit 01, 02:

The speed threshold value 2 is set in p2155.

r2198 CO/BO: Status word monitoring 2 / ZSW monitor 2

VECTOR

Can be changed: - | **Access level:** 2

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 1530, 2536

P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the second status word for monitoring functions.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	04	|n_set| < p2161	Yes	No	8010
	05	n_set > 0	Yes	No	8010
	06	Motor locked	Yes	No	8012
	07	Motor stalled	Yes	No	8012
	10	Torque setpoint < torque threshold value 1	Yes	No	8012
	11	Load monitoring signals an alarm	Yes	No	8013
	12	Load monitoring signals a fault condition	Yes	No	8013

Note: Re bit 10:

The torque threshold value 1 is set in p2174.

Re bit 07:

For servo drives, bit 07 is not used and is always inactive.

r2199 CO/BO: Status word monitoring 3 / ZSW monitor 3

VECTOR

Can be changed: -

Access level: 2

Data type: Unsigned16

Dynamic index: -

Function diagram: 1530, 2536

P-Group: Messages

Units group: -

Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the third status word for monitoring functions.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	|n_act| < speed threshold value 3	Yes	No	8010
	01	f or n comparison value reached or exceeded	Yes	No	8010
	04	Speed setp - act val deviation in tolerance t_on	Yes	No	8010
	05	Ramp-up/ramp-down completed	Yes	No	8010
	06	Current below the zero current threshold	Yes	No	-
	11	Torque utilization < torque threshold value 2	Yes	No	8012

Note: Re bit 00:

The speed threshold value 3 is set in p2161.

Re bit 01:

The comparison value is set in p2141.

Re bit 11:

The torque threshold value 2 is set in p2194.

p2200[0...n] BI: Technology controller enable / Tec_ctr enable

VECTOR (Tech_ctrl)

Can be changed: U, T

Access level: 2

Data type: Unsigned32

Dynamic index: CDS, p0170

Function diagram: 7958

P-Group: Technology

Units group: -

Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to switch-in/switch-out the technology controller.

The technology controller is switched-in with a 1 signal.

p2201[0...n] CO: Technology controller, fixed value 1 / Tec_ctr fix val 1

VECTOR (Tech_ctrl)

Can be changed: U, T

Access level: 2

Data type: Floating Point

Dynamic index: DDS, p0180

Function diagram: 7950

P-Group: Technology

Units group: 9_1

Unit selection: p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	10.00 [%]

Description: Sets the value for fixed value 1 of the technology controller.

Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229

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Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2202[0...n] CO: Technology controller, fixed value 2 / Tec_ctr fix val 2

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	20.00 [%]

Description: Sets the value for fixed value 2 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2203[0...n] CO: Technology controller, fixed value 3 / Tec_ctr fix val 3

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	30.00 [%]

Description: Sets the value for fixed value 3 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2204[0...n] CO: Technology controller, fixed value 4 / Tec_ctr fix val 4

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	40.00 [%]

Description: Sets the value for fixed value 4 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2205[0...n] CO: Technology controller, fixed value 5 / Tec_ctr fix val 5

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	50.00 [%]

Description: Sets the value for fixed value 5 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2206[0...n] CO: Technology controller, fixed value 6 / Tec_ctr fix val 6

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	60.00 [%]

Description: Sets the value for fixed value 6 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

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p2207[0...n] CO: Technology controller, fixed value 7 / Tec_ctr fix val 7

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	70.00 [%]

Description: Sets the value for fixed value 7 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2208[0...n] CO: Technology controller, fixed value 8 / Tec_ctr fix val 8

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	80.00 [%]

Description: Sets the value for fixed value 8 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2209[0...n] CO: Technology controller, fixed value 9 / Tec_ctr fix val 9

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	90.00 [%]

Description: Sets the value for fixed value 9 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2210[0...n] CO: Technology controller, fixed value 10 / Tec_ctr fix val 10

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	100.00 [%]

Description: Sets the value for fixed value 10 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2211[0...n] CO: Technology controller, fixed value 11 / Tec_ctr fix val 11

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	110.00 [%]

Description: Sets the value for fixed value 11 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

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p2212[0...n] CO: Technology controller, fixed value 12 / Tec_ctr fix val 12

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	120.00 [%]

Description: Sets the value for fixed value 12 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2213[0...n] CO: Technology controller, fixed value 13 / Tec_ctr fix val 13

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	130.00 [%]

Description: Sets the value for fixed value 13 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2214[0...n] CO: Technology controller, fixed value 14 / Tec_ctr fix val 14

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	140.00 [%]

Description: Sets the value for fixed value 14 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2215[0...n] CO: Technology controller, fixed value 15 / Tec_ctr fix val 15

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7950
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	150.00 [%]

Description: Sets the value for fixed value 15 of the technology controller.
Dependency: Refer to: p2220, p2221, p2222, p2223, r2224, r2229
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.

p2220[0...n] BI: Technology controller fixed value selection bit 0 / Tec_ctr sel bit 0

VECTOR (Tech_ctrl) **Can be changed:** T **Access level:** 3
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7950
P-Group: Commands **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed value of the technology controller.
Dependency: Refer to: p2221, p2222, p2223

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p2221[0...n] BI: Technology controller fixed value selection bit 1 / Tec_ctr sel bit 1

VECTOR (Tech_ctrl)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 7950
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed value of the technology controller.
Dependency: Refer to: p2220, p2222, p2223

p2222[0...n] BI: Technology controller fixed value selection bit 2 / Tec_ctr sel bit 2

VECTOR (Tech_ctrl)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 7950
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed value of the technology controller.
Dependency: Refer to: p2220, p2221, p2223

p2223[0...n] BI: Technology controller fixed value selection bit 3 / Tec_ctr sel bit 3

VECTOR (Tech_ctrl)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 7950
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the fixed value of the technology controller.
Dependency: Refer to: p2220, p2221, p2222

r2224 CO: Technology controller, fixed value effective / Tec_ctr FixVal eff

VECTOR (Tech_ctrl)

Can be changed: - | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 7950
P-Group: Technology | **Units group:** 9_1 | **Unit selection:** p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the selected and effective fixed value of the technology controller.
Dependency: Refer to: r2229

r2229 Technology controller current number / Tec_ctrl No. act

VECTOR (Tech_ctrl)

Can be changed: - | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 7950
P-Group: Technology | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of the selected fixed setpoint of the technology controller.
Dependency: Refer to: r2224

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p2230[0...n] Technology controller motorized potentiometer configuration / Tec_ctr mop config

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: DDS, p0180
Function diagram: 7954
P-Group: Technology
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0110 bin

Description: Sets the configuration for the motorized potentiometer of the technology controller.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Data save active	Yes	No	-
02	Initial rounding-off active	Yes	No	-
03	Non-volatile data save active for p2230.0 = 1	Yes	No	-

Dependency: Refer to: r2231, p2240

Note: Re bit 00:

0: The setpoint for the motorized potentiometer is not saved and after ON is entered using p2240.

1: The setpoint for the motorized potentiometer is saved and after ON is entered using r2231. In order to save in a non-volatile fashion, bit 03 should be set to 1.

Re bit 02:

0: Without initial rounding-off

1: With initial rounding-off. The selected ramp-up/down time is correspondingly exceeded.

Re bit 03:

0: Non-volatile data save de-activated.

1: The setpoint for the motorized potentiometer is saved in a non-volatile fashion (for p2230.0 = 1).

The following prerequisites must be fulfilled in order to be able to save the setpoint in a non-volatile fashion:

- Firmware with V2.3 or higher.
- Control Unit 320 (CU320) with hardware version C or higher (module with NVRAM).

r2231 Technology controller motorized potentiometer setpoint memory / Tec_ctrl mop mem

VECTOR (Tech_ctrl)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 7954
P-Group: Technology
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the setpoint memory for the motorized potentiometer of the technology controller.

For p2230.0 = 1, the last setpoint that was saved is entered after ON.

Dependency: Refer to: p2230

p2235[0...n] BI: Technology controller motorized potentiometer, raise setpoint / Tec_ctr mop raise

VECTOR (Tech_ctrl)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 7954
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to increase the setpoint for the motorized potentiometer of the technology controller.

Dependency: Refer to: p2236

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p2236[0...n] BI: Technology controller motorized potentiometer, lower setpoint / Tec_ctr mop lower

VECTOR (Tech_ctrl) **Can be changed:** T **Access level:** 3
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7954
P-Group: Commands **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to reduce the setpoint for the motorized potentiometer of the technology controller.
Dependency: Refer to: p2235

p2237[0...n] Technology controller motorized potentiometer maximum value / Tec_ctr mop max

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7954
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	100.00 [%]

Description: Sets the maximum value for the motorized potentiometer of the technology controller.
Dependency: Refer to: p2238

p2238[0...n] Technology controller motorized potentiometer minimum value / Tec_ctr mop min

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7954
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	-100.00 [%]

Description: Sets the minimum value for the motorized potentiometer of the technology controller.
Dependency: Refer to: p2237

p2240[0...n] Technology controller motorized potentiometer starting value / Tec_ctrl mop start

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7954
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	0.00 [%]

Description: Sets the starting value for the motorized potentiometer of the technology controller.
For p2230.0 = 0, this setpoint is entered after ON.
Dependency: Refer to: p2230

r2245 CO: Technology controller mot. potentiometer setpoint before RFG / Tec_ctr mop b. RFG

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7954
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Sets the effective setpoint in front of the internal motorized potentiometer ramp-function generator of the technology controller.
Dependency: Refer to: r2250

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p2247[0...n] Technology controller motorized potentiometer ramp-up time / Tec_ctr mop t_r-up

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7954
P-Group: Technology
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0 [s]	1000.0 [s]	10.0 [s]

Description: Sets the ramp-up time for the internal ramp-function generator for the motorized potentiometer of the technology controller.

Dependency: Refer to: p2248

Note: The time is referred to 100 %.
When the initial rounding-off is activated (p2230.2 = 1) the ramp-up is correspondingly extended.

p2248[0...n] Technology controller motorized potentiometer ramp-down time / Tec_ctrMop t_rdown

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7954
P-Group: Technology
Units group: -
Unit selection: -

Min	Max	Factory setting
0.0 [s]	1000.0 [s]	10.0 [s]

Description: Sets the ramp-down time for the internal ramp-function generator for the motorized potentiometer of the technology controller.

Dependency: Refer to: p2247

Note: The time is referred to 100 %.
When the initial rounding-off is activated (p2230.2 = 1) the ramp-down is correspondingly extended.

r2250 CO: Technology controller motorized potentiometer setpoint after RFG / Tec_ctr mop a. RFG

VECTOR (Tech_ctrl)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 7954
P-Group: Technology
Units group: 9_1
Unit selection: p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the effective setpoint after the internal ramp-function generator for the motorized potentiometer of the technology controller.

Dependency: Refer to: r2245

p2253[0...n] CI: Technology controller setpoint 1 / Tec_ctr setpoint 1

VECTOR (Tech_ctrl)

Can be changed: U, T
Access level: 2
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: 7958
P-Group: Technology
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the setpoint 1 of the technology controller.

Dependency: Refer to: p2254, p2255

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p2254[0...n] CI: Technology controller setpoint 2 / Tec_ctr setpoint 2

VECTOR (Tech_ctrl)	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** 7958
	P-Group: Technology	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the setpoint 2 of the technology controller.
Dependency: Refer to: p2253, p2256

p2255 Technology controller setpoint 1 scaling / Tec_ctr set1 scal.

VECTOR (Tech_ctrl)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 7958
	P-Group: Technology	**Units group:** -	**Unit selection:** -
	Min 0.00 [%]	**Max** 100.00 [%]	**Factory setting** 100.00 [%]

Description: Sets the scaling for the setpoint 1 of the technology controller.
Dependency: Refer to: p2253

p2256 Technology controller setpoint 2 scaling / Tec_ctr set2 scal.

VECTOR (Tech_ctrl)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 7958
	P-Group: Technology	**Units group:** -	**Unit selection:** -
	Min 0.00 [%]	**Max** 100.00 [%]	**Factory setting** 100.00 [%]

Description: Sets the scaling for the setpoint 2 of the technology controller.
Dependency: Refer to: p2254

p2257 Technology controller, ramp-up time / Tec_ctr t_ramp-up

VECTOR (Tech_ctrl)	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 7958
	P-Group: Technology	**Units group:** -	**Unit selection:** -
	Min 0.00 [s]	**Max** 650.00 [s]	**Factory setting** 1.00 [s]

Description: Sets the ramp-up time of the technology controller.
Dependency: Refer to: p2258
Note: The ramp-up time is referred to 100 %.

p2258 Technology controller ramp-down time / Tec_ctr t_ramp-dn

VECTOR (Tech_ctrl)	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 7958
	P-Group: Technology	**Units group:** -	**Unit selection:** -
	Min 0.00 [s]	**Max** 650.00 [s]	**Factory setting** 1.00 [s]

Description: Sets the ramp-down time of the technology controller.
Dependency: Refer to: p2257
Note: The ramp-down time is referred to 100 %.

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r2260 CO: Technology controller setpoint after ramp-function generator / Tec_ctr set a. RFG

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Sets the setpoint after the ramp-function generator of the technology controller.

p2261 Technology controller setpoint filter time constant / Tec_ctr set T

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [s]	60.00 [s]	0.00 [s]

Description: Sets the time constant for the setpoint filter (PT1) of the technology controller.

r2262 CO: Technology controller setpoint after filter / Tec_ctr set a. flt

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the smoothed setpoint after the setpoint filter (PT1) of the technology controller.

p2263 Technology controller type / Tec_ctr type

VECTOR (Tech_ctrl) **Can be changed:** T **Access level:** 3
Data type: Integer16 **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the technology controller type.
Values:
0: D component in the actual value signal
1: D component in the fault signal

p2264[0...n] CI: Technology controller actual value / Tec_ctr act val

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the actual value of the technology controller.

p2265 Technology controller actual value filter time constant / Tec_ctr act T

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [s]	60.00 [s]	0.00 [s]

Description: Sets the time constant for the actual value filter (PT1) of the technology controller.

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r2266 CO: Technology controller actual value after filter / Tec_ctr act a. flt

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the smoothed actual value after the filter (PT1) of the technology controller

r2273 CO: Technology controller error / Tec_ctr error

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** 9_1 **Unit selection:** p0595

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the error (system deviation) between the setpoint and actual value of the technology controller.
Dependency: Refer to: p2263

p2274 Technology controller differentiation, time constant / Tec_ctr T diff

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	60.000 [s]	0.000 [s]

Description: Sets the time constant for the differentiation (D component) of the technology controller.
Note: p2274 = 0: Differentiation is disabled.

p2280 Technology controller proportional gain / Tec_ctr Kp

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000	1000.000	1.000

Description: Sets the proportional gain (P component) of the technology controller.
Note: p2280 = 0: The proportional gain is disabled.

p2285 Technology controller integral time / Tec_ctr Tn

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	60.000 [s]	0.000 [s]

Description: Sets the integral time (I component, integrating time constant) of the technology controller.
Note: p2285 = 0: The integral time is disabled.

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p2289[0...n] CI: Technology controller pre-control signal / Tec_ctr prectrl

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2

Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7958

P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the pre-control signal of the technology controller.

p2291 CO: Technology controller maximum limiting / Tec_ctr max_limit

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958

P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	100.00 [%]

Description: Sets the maximum limit of the technology controller.

Dependency: Refer to: p2292

Caution: The maximum limit must always be greater than the minimum limit (p2291 > p2292).

p2292 CO: Technology controller minimum limiting / Tec_ctr min_lim

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958

P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-200.00 [%]	200.00 [%]	0.00 [%]

Description: Sets the minimum limit of the technology controller.

Dependency: Refer to: p2291

Caution: The maximum limit must always be greater than the minimum limit (p2291 > p2292).

p2293 Technology controller ramp-up/ramp-down time / Tec_ctr ramp up/dn

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958

P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [s]	100.00 [s]	1.00 [s]

Description: Sets the ramp-up and ramp-down time for the maximum and minimum limiting (p2291 and p2292) of the technology controller.

Dependency: Refer to: p2291, p2292

Note: The ramp-up/ramp-down times are referred to 100 %.

r2294 CO: Technology controller output signal / Tec_ctr outp_sig

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 2

Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958

P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the output signal of the technology controller.

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Dependency: Refer to: p2295

p2295 CO: Technology controller output scaling / Tec_ctr outp scal

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-100.00 [%]	100.00 [%]	100.00 [%]

Description: Sets the scaling for the output signal of the technology controller.

p2296[0...n] CI: Technology controller output scaling / Tec_ctr outp scal

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	2295[0]

Description: Sets the signal source for the scaling value of the technology controller.
Dependency: Refer to: p2295

p2297[0...n] CI: Technology controller maximum limiting / Tec_ctr max_limit

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	2291[0]

Description: Sets the signal source for the maximum limiting of the technology controller.
Dependency: Refer to: p2291

p2298[0...n] CI: Technology controller minimum limiting / Tec_ctr min_lim

VECTOR (Tech_ctrl) **Can be changed:** U, T **Access level:** 2
Data type: Unsigned32 **Dynamic index:** CDS, p0170 **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	2292[0]

Description: Sets the signal source for the minimum limiting of the technology controller.
Dependency: Refer to: p2292

r2349 CO/BO: Technology controller status word / Tec_ctr stat word

VECTOR (Tech_ctrl) **Can be changed:** - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 7958
P-Group: Technology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the technology controller.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Technology controller de-activated	Yes	No	-
01	Technology controller limited	Yes	No	-
02	Technology controller, motorized potentiometer limited max.	Yes	No	-
03	Technology controller, motorized potentiometer limited min.	Yes	No	-

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p2369 BI: Staging control word / Staging STW

VECTOR (Tech_ctrl)

Can be changed: U, T		**Access level:** 3
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
P-Group: -	**Units group:** -	**Unit selection:** -
Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select the "staging" function.

p2502[0...n] LR encoder assignment / Encoder assignment

VECTOR (Pos ctrl)

Can be changed: C2(25)		**Access level:** 1
Data type: Integer16	**Dynamic index:** DDS, p0180	**Function diagram:** 4010
P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
Min 0	**Max** 3	**Factory setting** 1

Description: Sets the assigned encoder.
The actual value conditioning and the closed-loop position control are carried-out using the assigned encoder.

Values:
0: No encoder
1: Encoder 1
2: Encoder 2
3: Encoder 3

Dependency: Refer to: p0187, p0188, p0189

Notice: For the setting p2502 = 0 (no encoder), closed-loop position control is not possible. This setting is only practical as supportive measure to implement sensorless closed-loop speed control (e.g. if the motor encoder is defective).

Note: The assigned encoder (p2502 = 1, 2, 3) must be allocated an encoder data set (p0187, p0188, p0189).

p2503[0...n] LR length unit LU per 10 mm / LU per 10 mm

VECTOR (Pos ctrl)

Can be changed: C2(25)		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** DDS, p0180	**Function diagram:** 4010
P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
Min 1 [LU]	**Max** 2147483647 [LU]	**Factory setting** 10000 [LU]

Description: Sets the neutral length units LU per 10 mm.
Therefore, for a linear scale, a reference is established between the physical arrangement and the neutral length units LU used in the drive.
Example:
Linear scale, 10 mm should be broken down to units of µm (i.e. 1 LU = 1 µm).
--> p2503 = 10000

Note: The assignment to the grid spacing can be achieved using this for a rotary axis with linear encoder.

p2504[0...n] LR motor/load motor revolutions / Mot/load motor rev

VECTOR (Pos ctrl)

Can be changed: C2(25)		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** DDS, p0180	**Function diagram:** 4010
P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
Min 1	**Max** 1048576	**Factory setting** 1

Description: Sets the motor revolutions for the gearbox factor between the motor shaft and load shaft.
Gearbox factor = motor revolutions (p2504) / load revolutions (p2505)

Dependency: Refer to: p0432, p0433, p2505

Note: The gearbox factor between the encoder shaft and the motor shaft is set using p0432 and p0433.

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p2505[0...n] LR motor/load motor revolutions / Mot/load motor rev

VECTOR (Pos ctrl)

Can be changed: C2(25) **Access level:** 1

Data type: Integer32 **Dynamic index:** DDS, p0180 **Function diagram:** 4010

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-1048576	1048576	1

Description: Sets the load revolutions for the gearbox factor between the motor shaft and load shaft.

Gearbox factor = motor revolutions (p2504) / load revolutions (p2505)

Dependency: Refer to: p0432, p0433, p2504

Note: The gearbox factor between the encoder shaft and the motor shaft is set using p0432 and p0433.

p2506[0...n] LR length unit LU per load revolution / LU per load rev

VECTOR (Pos ctrl)

Can be changed: C2(25) **Access level:** 1

Data type: Unsigned32 **Dynamic index:** DDS, p0180 **Function diagram:** 4010

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1 [LU]	2147483647 [LU]	10000 [LU]

Description: Sets the neutral length units LU per load revolution.

Therefore, for a rotary encoder, a reference is established between the physical arrangement and the neutral length units LU used in the drive.

Example:

Rotary encoder, ballscrew with 10 mm/revolution, 10 mm should be broken down to units of µm (i.e. 1 LU = 1 µm).

--> One load revolution corresponds to 10000 LU

--> p2506 = 10000

p2507[0...n] LR absolute encoder adjustment status / Abs_enc_adj stat

VECTOR (Pos ctrl)

Can be changed: T **Access level:** 1

Data type: Integer16 **Dynamic index:** EDS, p0140 **Function diagram:** 4010

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	3	1

Description: Activating the adjustment and display of the status of the adjustment for absolute encoders.

Values:
0: Error occurred while adjusting
1: Absolute encoder not adjusted
2: Absolute encoder not adjusted and encoder adjustment initiated
3: Absolute encoder adjusted

Dependency: Refer to: p2525, p2598, p2599

Caution:

After the encoder has been adjusted, it must be ensure that over the complete traversing range the absolute encoder does not overflow. For an overflow condition, there is no clear reference between the encoder actual value and the mechanical system.

In order to permanently accept the values, the offset of the encoder adjustment (p2525) must be saved in a non-volatile fashion (p0971, p0977).

Note: The encoder adjustment is initiated with p2507 = 2. The status is displayed using the other values.

This adjustment can only be initiated for absolute encoders.

p2508 BI: LR activate reference mark search / Ref_mark act

VECTOR (Pos ctrl)

Can be changed: T **Access level:** 1

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 4010

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the function "activate reference mark search".

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Dependency: Refer to: p0495, p2509, r2684
Refer to: A07495

Notice: When activating the function "set position actual value" while the function "reference mark search" is activated, then the function "reference mark search" is automatically de-activated.

Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2508 = r2684.0
The function can only be activated using a 0/1 signal transition if no reference function is active (refer to r2526.2).
If "reference mark search" and "measuring probe evaluation" are simultaneously activated, then no function is activated and the actual function is interrupted.

p2509 BI: LR activating measuring probe evaluation / MP_eval act

VECTOR (Pos ctrl) | **Can be changed:** T | | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the function "activating the measuring probe evaluation".
0/1 signal: The function "activate measuring probe evaluation" is started.

Dependency: Refer to: p0488, p0489, p2508, p2510, p2511
Refer to: A07495

Notice: When the "set position actual value" is activated while the function "measuring probe evaluation" is activated, then the function "measuring probe evaluation" is automatically de-activated.

Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2509 = r2684.1
The function can only be activated using a 0/1 signal transition if no reference function is active (refer to r2526.2).
If "reference mark search" and "measuring probe evaluation" are simultaneously activated, then no function is activated and the actual function is interrupted.

p2510 BI: LR selecting measuring probe evaluation / MP_eval select

VECTOR (Pos ctrl) | **Can be changed:** T | | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to select the measuring probe.
1 signal = measuring probe 2 is activated for BI: p2509 = 0/1 edge.
0 signal = measuring probe 1 is activated for BI: p2509 = 0/1 edge.

Dependency: Refer to: p2509, p2511

Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2509 = r2684.1
The measuring probe is selected at the 0/1 signal transition at r2684.1 (flying referencing active).

p2511 BI: LR measuring probe evaluation edge / MP_eval edge

VECTOR (Pos ctrl) | **Can be changed:** T | | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the edge evaluation of the measuring probe.
1 signal = falling edge of the measuring probe (p2510) is activated for BI: p2509 = 0/1 edge.
0 signal = rising edge of the measuring probe (p2510) is activated for BI: p2509 = 0/1 edge.

Dependency: Refer to: p2509, p2510

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p2512 BI: LR pos. actual value conditioning activate corr. value (edge) / ActVal_condCorrAct

VECTOR (Pos ctrl)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 4010, 4015
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the function "activate position actual value conditioning, correction value (edge)".

0/1 signal: The correction value available through CI: p2513 is activated.

Dependency: Refer to: p2513, r2684

Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2512 = r2684.7

p2513 CI: LR Position actual value conditioning, correction value / Act val_cond corr

VECTOR (Pos ctrl)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 4010, 4015
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the correction value for position actual value conditioning.

Dependency: Refer to: p2512, r2521, r2685

Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: CI: p2513 = r2685

For BI: p2512 = 0/1 signal, the position actual value (CO: r2521) is corrected corresponding to the value via CI: p2513. In so doing, the sign of the correction value present is taken into account.

p2514 BI: LR activate position actual value setting / s_act setting act

VECTOR (Pos ctrl)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 4010
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to activate the function "set position actual value".

Dependency: Refer to: p2515

Refer to: A07495

Warning:

As long as the position actual value is set, encoder increments that are received are not evaluated. In this state, any position difference cannot be corrected!

Notice: When the function "set position actual value" is activated while the function "reference mark search" or "measuring probe evaluation" is activated, then the corresponding function is de-activated.

Note: 1 signal:

The position actual value is set to the setting value in CI: p2515. Alarm F7497 "position setting value activated" is output. Increments that are received in the meantime, are not taken into account.

1/0 signal:

The position actual value conditioning is activated and is based on the setting value.

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p2515 CI: LR position actual setting, setting value / s_act set setVal

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the setting value of the function "setting position actual value".
Dependency: Refer to: p2514

p2516 CI: LR position offset / Position offset

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the position offset.
Dependency: Refer to: r2667
Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: CI: p2516 = r2667

r2520[0...2] CO: LR Position actual value conditioning, encoder control word / ActVal_cond STW

VECTOR (Pos ctrl)

Can be changed: - | **Access level:** 1
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the encoder control word generated by the position actual value conditioning.
Index: [0] = Encoder 1
[1] = Encoder 2
[2] = Encoder 3

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Request function 1	Yes	No	-
01	Request function 2	Yes	No	-
02	Request function 3	Yes	No	-
03	Request function 4	Yes	No	-
04	Request command bit 0	Yes	No	-
05	Request command bit 1	Yes	No	-
06	Request command bit 2	Yes	No	-
07	Mode flying measurement / search for reference	Flying measurement	Reference marks	-
13	Request absolute value cyclic	Yes	No	-
14	Request parking encoder	Yes	No	-
15	Request acknowledge encoder fault	Yes	No	-

Dependency: Refer to: p0480

r2521 CO: LR position actual value / s_act

VECTOR (Pos ctrl)

Can be changed: - | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 4010
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the actual position actual value determined by the position actual value conditioning.
Dependency: Refer to: r2526

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Note: r2526.0 = 1 --> The position actual value in r2521 is valid.

r2522 CO: LR velocity actual value / v_act

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1

Data type: Integer32 **Dynamic index:** - **Function diagram:** -

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [1000 LU/min]	- [1000 LU/min]	- [1000 LU/min]

Description: Displays the velocity actual value determined by the position actual value conditioning.

Dependency: Refer to: r2526

Note: r2526.0 = 1 --> The velocity actual value in r2522 is valid.

r2523 CO: LR measured value / Measured value

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1

Data type: Integer32 **Dynamic index:** - **Function diagram:** -

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the value determined by the function "reference mark search" and "measuring probe evaluation".

Dependency: Refer to: r2526

Note: r2526.2 = 1 --> The measured value in r2523 is valid.

r2524 CO: LR LU/revolution / LU/revolution

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1

Data type: Floating Point **Dynamic index:** - **Function diagram:** 4010

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the internal length units LU/motor revolution.

Dependency: Refer to: p0404

p2525[0...n] CO: LR encoder adjustment, offset / Enc_adj offset

VECTOR (Pos ctrl) **Can be changed:** T **Access level:** 4

Data type: Unsigned32 **Dynamic index:** EDS, p0140 **Function diagram:** 4010

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0 [LU]	4294967295 [LU]	0 [LU]

Description: For the absolute encoder adjustment, a drive determines the position offset.

Dependency: Refer to: p0404

Note: The position offset is only relevant for absolute encoders. The drive determines it when making the adjustment and the user should not change it.

r2526 CO/BO: LR status word / ZSW

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word of the position controller.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Pos act val valid	Yes	No	4010
	01	Referencing active	Yes	No	4010
	02	Meas val valid	Yes	No	4010
	03	Closed-loop position control active	Yes	No	4015
	06	Position controller output limited	Yes	No	4015
	07	Request tracking operation	Yes	No	-

Dependency: Refer to: r2521, r2522, r2523

p2530 CI: LR position setpoint / s_set

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the position setpoint of the position controller.
Dependency: Refer to: r2665
Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2530 = r2665

p2531 CI: LR velocity setpoint / v_set

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the velocity setpoint of the position controller.
Dependency: Refer to: r2666
Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2531 = r2666

p2532 CI: LR position actual value / s_act

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2521[0]

Description: Sets the signal source for the position actual value of the position controller.
Dependency: Refer to: r2521

p2533[0...n] LR position setpoint filter, time constant / s_set_filt T

VECTOR (Pos ctrl)

Can be changed: U, T | **Access level:** 1
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	1000.00 [ms]	0.00 [ms]

Description: Sets the time constant for the position setpoint filter (PT1).
Note: The effective Kv factor (position loop gain) is reduced with the filter. This allows a softer control behavior with improved tolerance with respect to noise/disturbances.

Applications:

- reduces the pre-control dynamic response.
- jerk limiting.

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p2534[0...n] LR speed precontrol factor / n_prectrl fact

VECTOR (Pos ctrl)	**Can be changed:** U, T		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 4015
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min 0.00 [%]	**Max** 200.00 [%]	**Factory setting** 0.00 [%]

Description: Setting to activate and weight the speed precontrol value.
Value = 0 % --> The precontrol is de-activated.

Dependency: Refer to: p2535, p2536

Note: When the axis control loop is optimally set as well as a precisely determined equivalent time constant of the speed control loop, the precontrol factor is 100%.

p2535[0...n] LR speed precontrol symmetrizing filter deadtime / n_ffCtr flt t_dead

VECTOR (Pos ctrl)	**Can be changed:** U, T		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 4015
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min 0.00	**Max** 2.00	**Factory setting** 0.00

Description: Sets the "fractional" deadtime to emulate the timing behavior of the speed control loop.
The selected multiplier refers to the position controller clock cycle (deadtime= p2535 * p0115[4]).

Dependency: Refer to: p0115, p2536

Notice: When speed pre-control is active (p2534 > 0 %), the following applies:
In addition to the set deadtime (p2535), internally two position controller clock cycles are effective.
When speed pre-control is inactive (p2534 = 0 %), the following applies:
No deadtime is effective (p2535 and internal).

Note: Together with p2536, the timing behavior of the closed-loop control loop can be emulated.

p2536[0...n] LR speed precontrol, symmetrizing filter PT1 / n_prectrl filt PT1

VECTOR (Pos ctrl)	**Can be changed:** U, T		**Access level:** 1
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** 4015
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min 0.00 [ms]	**Max** 100.00 [ms]	**Factory setting** 0.00 [ms]

Description: Sets a PT1 filter to emulate the timing behavior of the closed-speed control loop.

Dependency: Refer to: p2535

Notice: When speed pre-control is inactive (p2534 = 0 %), the following applies:
If a PT1 filter has been set, it is not effective.

Note: Together with p2535, the timing behavior of the closed-loop control loop can be emulated.

p2537 CI: LR position controller adaptation / Adaptation

VECTOR (Pos ctrl)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 4015
	P-Group: Closed loop position control	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for the adaptation of the proportional gain of the position controller.

Dependency: Refer to: p2538

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p2538[0...n] LR proportional gain / Kp

VECTOR (Pos ctrl)

Can be changed: U, T
Access level: 1
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 4015
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.000 [1000/min]	300.000 [1000/min]	1.000 [1000/min]

Description: Sets the proportional gain (P gain, position loop gain, Kv factor) of the position controller.

Dependency: Refer to: p2537, p2539, r2557, r2558

Note: The proportional gain is used define at which traversing velocity which following error is obtained (without precontrol)

Low proportional gain:

Slow response to a setpoint - actual value difference, the following error becomes large.

High proportional gain:

Fast response to the setpoint - actual value difference, the following error becomes small.

p2539[0...n] LR integral time / Tn

VECTOR (Pos ctrl)

Can be changed: U, T
Access level: 1
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 4015
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	100000.00 [ms]	0.00 [ms]

Description: Setting to activate the integral time of the position controller.

Value = 0 ms --> The I component of the position controller is de-activated.

Dependency: Refer to: p2538, r2559

p2540 CO: LR position controller output, speed limit / LR_output limit

VECTOR (Pos ctrl)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: 4015
P-Group: Closed loop position control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
0.000 [1/min]	210000.000 [1/min]	210000.000 [1/min]

Description: Sets the speed limit of the position controller output.

Dependency: Refer to: p2541

p2541 CI: LR position controller output, speed limit signal source / LR_outp lim S_src

VECTOR (Pos ctrl)

Can be changed: T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 4015
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	2540[0]

Description: Sets the signal source for the position controller output limit.

Dependency: Refer to: p2540

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p2542 LR standstill window / Standstill window

VECTOR (Pos ctrl)

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 4020
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	200 [LU]

Description: Sets the standstill window for the standstill monitoring function.
After the standstill monitoring time expires, it is cyclically checked as to whether the difference between the setpoint and actual position is located within the standstill window and if required an appropriate fault is output.
Value = 0 --> The standstill monitoring is de-activated.

Dependency: Refer to: p2543, p2544
Refer to: F07450

Note: The following applies for the setting of the standstill and positioning window:
Standstill window (p2542) >= positioning window (p2544)

p2543 LR standstill monitoring time / t_standstill monit

VECTOR (Pos ctrl)

Can be changed: U, T
Access level: 1
Data type: Floating Point
Dynamic index: -
Function diagram: 4020
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	100000.00 [ms]	200.00 [ms]

Description: Sets the standstill monitoring time for the standstill monitoring function.
After the standstill monitoring time expires, it is cyclically checked as to whether the difference between the setpoint and actual position is located within the standstill window and if required, an appropriate fault is output.

Dependency: Refer to: p2542, p2545
Refer to: F07450

Note: The following applies for the setting of the standstill and positioning monitoring time:
Standstill monitoring time (p2543) <= positioning monitoring time (p2545)

p2544 LR positioning window / Pos_window

VECTOR (Pos ctrl)

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 4020
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	40 [LU]

Description: Sets the positioning window for the positioning monitoring function.
After the positioning monitoring time expires, it is checked once as to whether the difference between the setpoint and actual position lies within the positioning window and if required an appropriate fault is output.
Value = 0 --> The positioning monitoring function is de-activated.

Dependency: Refer to: p2542, p2545, r2684
Refer to: F07451

Note: The following applies for the setting of the standstill and positioning window:
Standstill window (p2542) >= positioning window (p2544)

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p2545 LR positioning monitoring time / t_pos_monit

VECTOR (Pos ctrl)

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 4020

P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	100000.00 [ms]	1000.00 [ms]

Description: Sets the positioning monitoring time for the positioning monitoring.

After the positioning monitoring time expires, it is checked once as to whether the difference between the setpoint and actual position lies within the positioning window and if required an appropriate fault is output.

Dependency: Refer to: p2543, p2544, r2684

Refer to: F07451

Note: The following applies for the setting of the standstill and positioning monitoring time:

Standstill monitoring time (p2543) <= positioning monitoring time (p2545)

p2546[0...n] LR dynamic following error monitoring tolerance / s_delta_monit tol

VECTOR (Pos ctrl)

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** DDS, p0180 | **Function diagram:** 4025

P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	1000 [LU]

Description: Sets the tolerance for the dynamic following error monitoring.

If this maximum permissible deviation between the measured and the calculated position actual value is exceeded, an appropriate fault is output.

Value = 0 --> The dynamic following error monitoring is de-activated.

Dependency: Refer to: r2563, r2684

Refer to: F07452

Note: The tolerance bandwidth is intended to prevent the dynamic following error monitoring incorrectly responding due to operational control sequences (e.g. during load surges).

p2547 LR cam switching position 1 / Cam position 1

VECTOR (Pos ctrl)

Can be changed: U, T | **Access level:** 1

Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 4025

P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	0 [LU]

Description: Sets the cam switching position 1.

Dependency: Refer to: p2548, r2683

Caution: Only after the axis has been referenced can it be guaranteed that the cam switching signals when output have a "true" position reference.

Note: Position actual value <= cam switching position 1 --> r2683.8 = 1 signal

Position actual value > cam switching position 1 --> r2683.8 = 0 signal

p2548 LR cam switching position 2 / Cam position 2

VECTOR (Pos ctrl)

Can be changed: U, T | **Access level:** 1

Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 4025

P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	0 [LU]

Description: Sets the cam switching position 2.

Dependency: Refer to: p2547, r2683

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Caution: Only after the axis has been referenced can it be guaranteed that the cam switching signals when output have a "true" position reference.

Note: Position actual value <= cam switching position 2 --> r2683.9 = 1 signal
Position actual value > cam switching position 2 --> r2683.9 = 0 signal

p2549 BI: LR enable 1 / Enable 1

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	899.2

Description: Sets the signal source for enable 1 of the position controller.
Dependency: Refer to: r0899, p2550
Note: The position controller is enabled by ANDing BI: p2549 and BI: p2550.

p2550 BI: LR enable 2 / Enable 2

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the position controller enable 2.
Dependency: Refer to: p2549
Note: The position controller is enabled by ANDing BI: p2549 and BI: p2550.
When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2550 = 1

p2551 BI: LR setpoint signal present / Sig s_set pres

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4020
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the "setpoint present" signal.
BI: p2551 = 1 signal:
The end of the positioning operation on the setpoint side is signaled and the positioning and standstill monitoring activated.
BI: p2551 = 0 signal:
The start of a positioning operation or tracking operation on the setpoint side is signaled and the positioning and standstill monitoring de-activated.
Dependency: Refer to: p2554, r2683
Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2551 = r2683.2

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p2554 BI: LR signal, travel command active / Sig trav_cmnd act

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4020
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the signal "travel command active".
BI: p2554 = 1 signal:
It is signaled that positioning is active and therefore the positioning monitoring is not activated with the signal "setpoint present" (p2551).

Dependency: Refer to: p2551, r2684

Note: When the function module "basic positioner" (r0108.4 = 1) is activated, the following BICO interconnection is established: BI: p2554 = r2684.15

p2555 CI: LR LU/revolution LU/mm / LU/rev LU/mm

VECTOR (Pos ctrl)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2524[0]

Description: Sets the signal source for the reference of the internal length units LU to motor revolution for rotary encoders and to mm for linear encoders.

Dependency: Refer to: p0404, r2524

r2556 CO: LR position setpoint after setpoint smoothing / s_set after interp

VECTOR (Pos ctrl)

Can be changed: - | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the position setpoint after the setpoint smoothing.

r2557 CO: LR position controller input, system deviation / LR_input sys dev

VECTOR (Pos ctrl)

Can be changed: - | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the difference between the position setpoint and the position actual value at the position controller input.

r2558 CO: LR position controller output, P component / LR_output P comp

VECTOR (Pos ctrl)

Can be changed: - | **Access level:** 1
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 4015
P-Group: Closed loop position control | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the P component at the output of the position controller for the speed setpoint.

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r2559 CO: LR position controller output, I component / LR_output I comp

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 4015
P-Group: Closed loop position control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the I component at the output of the position controller for the speed setpoint.

r2560 CO: LR speed setpoint / n_set

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 4015
P-Group: Closed loop position control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed setpoint after limiting (CI: p2541).

r2561 CO: LR speed precontrol value / n_prectrl val

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 4015
P-Group: Closed loop position control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed setpoint due to the precontrol.

r2562 CO: LR total speed setpoint / n_set total

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 4015
P-Group: Closed loop position control **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the total speed setpoint
This value is obtained from the sum of the speed precontrol and position controller output.
Dependency: Refer to: r2560, r2561

r2563 CO: LR following error, dynamic model / Follow error dyn

VECTOR (Pos ctrl) **Can be changed:** - **Access level:** 1
Data type: Integer32 **Dynamic index:** - **Function diagram:** 4025
P-Group: Closed loop position control **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the following error of the dynamic model.
This value is the deviation, corrected by the velocity-dependent component, between the position setpoint and the position actual value.

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r2564 CO: LR torque pre-control value / M_pre-ctrl value

VECTOR (Pos ctrl)

Can be changed: -
Access level: 1
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed loop position control
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the torque pre-control value.

Dependency: Refer to: p1511, p1512

Note: The torque pre-control value is the derivation over time of the speed precontrol value and is referred to a moment of inertia of 1 kgm^2/2 PI. When using the pre-control, then this should be evaluated corresponding to the actual moment of inertia.

r2565 CO: LR actual following error / Following err act

VECTOR (Pos ctrl)

Can be changed: -
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 4015
P-Group: Closed loop position control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the actual following error.
This value is the deviation between the position setpoint - after fine interpolation - and the position actual value.

Notice: When speed pre-control is active (p2534 > 0 %), the following applies:
To calculate this value, the position setpoint is delayed by two position controller clock cycles.
When speed pre-control is inactive (p2534 = 0 %), the following applies:
To calculate this value, the position setpoint is delayed by two position controller clock cycles.

r2566 LR speed input pre-control / n_pre-ctrl input

VECTOR (Pos ctrl)

Can be changed: -
Access level: 1
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Closed loop position control
Units group: 3_1
Unit selection: p0505

Min	Max	Factory setting
- [1/min]	- [1/min]	- [1/min]

Description: Displays the speed at the input of the speed pre-control channel.
Used for diagnostics even when the pre-control is inactive (p2534 = 0%).

p2568 BI: EPOS STOP cam activation / STOP cam activ.

VECTOR (EPOS)

Can be changed: T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to activate the function "STOP cam".
BI: p2568 = 1 signal
--> The evaluation of the STOP cam minus (BI: p2569) and STOP cam plus (BI: p2570) is active.

Dependency: Refer to: p2569, p2570

Note: The traversing range can also be limited using software limit switches.

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p2569 BI: EPOS STOP cam minus / STOP cam minus

VECTOR (EPOS)

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the STOP cam in the negative direction of travel.

Recommendation: Set the OFF3 ramp-down time (p1135), so that the axis, after reaching the STOP cam at the maximum velocity, does not move through a higher braking travel than is actually available.

A07491 as alarm:

Set the maximum deceleration (p2573), so that the axis, after reaching the STOP cam at the maximum velocity, does not move through a higher braking travel than is actually available.

Dependency: Refer to: p1135, p2568, p2570, p2573, r2684

Refer to: F07491

Caution: The STOP cams are low active.

A0791 as fault:

For a 0 signal, the axis is stopped with the OFF3 ramp-down time (p1135), status signal r2684.13 is set to 1, saved and the appropriate fault is output. After the alarm has been acknowledged, only motion moving away from the STOP cam is permitted.

For a 0/1 signal and valid travel direction, when the stop cam is exited, this is detected and the status signal r2684.13 is reset.

A07491 as alarm:

For a 0 signal, the axis is stopped with the maximum deceleration (p2573), status signal r2684.13 is set to 1, saved and an appropriate alarm is output. Only motion away from the STOP cam is permitted.

For a 0/1 signal and valid travel direction, when the stop cam is exited, this is detected and the status signal r2684.13 and the alarm are reset.

p2570 BI: EPOS STOP cam plus / STOP cam plus

VECTOR (EPOS)

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the STOP cam in the positive direction of travel.

Recommendation: Set the OFF3 ramp-down time (p1135), so that the axis, after reaching the STOP cam at the maximum velocity, does not move through a higher braking travel than is actually available.

A07492 as alarm:

Set the maximum deceleration (p2573), so that the axis, after reaching the STOP cam at the maximum velocity, does not move through a higher braking travel than is actually available.

Dependency: Refer to: p1135, p2568, p2569, p2573, r2684

Refer to: F07492

Caution: The STOP cams are low active.

A07492 as fault:

For a 0 signal, the axis is stopped with the OFF3 ramp-down time (p1135), status signal r2684.14 is set to 1, saved and the appropriate alarm is output. After the alarm has been acknowledged, only motion moving away from the STOP cam is permitted.

For a 0/1 signal and valid travel direction, when the stop cam is exited, this is detected and the status signal r2684.14 is reset.

A07492 as alarm:

For a 0 signal, the axis is stopped with the maximum deceleration (p2573), status signal r2684.14 is set to 1, saved and an appropriate alarm is output. Only motion away from the STOP cam is permitted.

For a 0/1 signal and valid travel direction, when the stop cam is exited, this is detected and the status signal r2684.14 and the alarm are reset.

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p2571 EPOS maximum velocity / v_max

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3630
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/min]	40000000 [1000 LU/min]	30000 [1000 LU/min]

Description: Sets the maximum velocity for the function module "basic positioner" (r0108.4).

Dependency: Refer to: r1084, r1087, p2503, p2504, p2505, p2506

Note: The maximum velocity is active in all of the operating modes of the basic positioner.

The maximum velocity for the basic positioner should be aligned with the maximum speed/velocity of the speed/velocity controller:

Rotary encoders:

p2571[1000 LU/min] = min(r1084, r1087)[RPM] x p2505/p2504 x p2506/1000

Linear encoders:

p2571[1000 LU/min] = min(r1084, r1087)[m/min] x p2503/10[m]

p2572 EPOS maximum acceleration / a_max

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3630
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/s²]	2000000 [1000 LU/s²]	100 [1000 LU/s²]

Description: Sets the maximum acceleration for the function module "basic positioner" (r0108.4).

Dependency: Refer to: p2619, p2644

Note: The maximum acceleration appears to exhibit jumps (without jerk).

"Traversing blocks" operating mode:

The programmed acceleration override (p2619) acts on the maximum acceleration.

"Direct setpoint input/MDI" mode:

The acceleration override is effective (p2644, 4000 hex = 100 %).

"Jog" and "search for reference" modes

No acceleration override is active. The axis starts with the maximum acceleration.

p2573 EPOS maximum deceleration / -a_max

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3630
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/s²]	2000000 [1000 LU/s²]	100 [1000 LU/s²]

Description: Sets the maximum deceleration for the function module "basic positioner" (r0108.4).

Dependency: Refer to: p2620, p2645

Note: The maximum deceleration appears to exhibit jumps (without jerk).

"Traversing blocks" operating mode:

The programmed deceleration override (p2620) acts on the maximum deceleration.

"Direct setpoint input/MDI" mode:

The deceleration override is effective (p2645, 4000 hex = 100 %).

"Jog" and "search for reference" modes

No deceleration override is effective. The axis breaks with the maximum deceleration.

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p2576 EPOS modulo correction, modulo range / Modulo corr range

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3635
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1 [LU]	2147483647 [LU]	360000 [LU]

Description: Sets the modulo range for axes with modulo correction.
Dependency: Refer to: p2577

p2577 BI: EPOS modulo correction activation / Modulo corr act

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3635
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Sets the signal source to activate modulo correction.
Dependency: Refer to: p2576
Note: When the signal state changes at the binector input, this only becomes effective in the "ready to power-up" state.
Selecting modulo correction:
The actual position actual value in the modulo range is corrected.
De-selecting modulo correction:
It is based on the actual position actual value.

p2578 CI: EPOS software limit switch minus signal source / SW limSw Min S_src

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	2580[0]

Description: Sets the signal source for the software limit switch minus.
Dependency: Refer to: p2579, p2580, p2581, p2582
Refer to: A07469, A07477, A07479, F07481
Notice: A change to the software limit switch becomes immediately effective.
If the software limit switch is changed, then this results in the positions in the traversing blocks being checked.
Note: The following applies for the setting of the software limit switch:
Software limit switch minus < software limit switch plus

p2579 CI: EPOS software limit switch plus signal source / SW limSwPlus S_src

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3630
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	2581[0]

Description: Sets the signal source for the software limit switch plus.
Dependency: Refer to: p2578, p2580, p2581, p2582
Refer to: A07470, A07478, A07480, F07482
Notice: A change to the software limit switch becomes immediately effective.
If the software limit switch is changed, then this results in the positions in the traversing blocks being checked.
Note: The following applies for the setting of the software limit switch:
Software limit switch minus < software limit switch plus

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p2580 CO: EPOS software limit switch minus / SW limSwitch minus

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3630
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	-2147483648 [LU]

Description: Sets the software limit switch in the negative direction of travel.
Dependency: Refer to: p2578, p2579, p2581, p2582

p2581 CO: EPOS software limit switch plus / SW lim switch plus

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3630
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	2147483647 [LU]

Description: Sets the software limit switch in the positive direction of travel.
Dependency: Refer to: p2578, p2579, p2580, p2582

p2582 BI: EPOS software limit switch activation / SW lim sw act

VECTOR (EPOS)

Can be changed: T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3630
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to activate the "software limit switch".
Dependency: Refer to: p2578, p2579, p2580, p2581
Caution: Software limit switch effective:
- axis is referenced (r2684.11 = 1) and BI: p2582 = 1 signal.

Software limit switch ineffective:
- modulo correction active (BI: p2577 = 1 signal).
- search for reference is executed.

Notice: Target position for relative positioning outside software limit switch:
The traversing block is started and the axis comes to a standstill at the software limit switch. An appropriate alarm is output and the traversing block is interrupted. Traversing blocks with valid position can be activated.
Target position for absolute positioning outside software limit switch:
In the "traversing blocks" mode, the traversing block is not started and an appropriate fault is output.
Axis outside the valid traversing range:
If the axis is already outside the valid traversing range, then an appropriate fault is output. The fault can be acknowledged at standstill. Traversing blocks with valid position can be activated.
Note: The traversing range can also be limited using STOP cams.

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p2583 EPOS backlash compensation / Backlash comp

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3635
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-200000 [LU]	200000 [LU]	0 [LU]

Description: Sets the amount of play (backlash) for positive or negative play.
0: The backlash compensation is de-activated.
>0: Positive backlash (normal case)
When the direction is reversed, the encoder actual value leads the actual value.
<0: Negative backlash
When the direction is reversed, the actual value leads the encoder actual value.

Dependency: If a stationary axis is referenced by setting the reference point, or an adjusted with absolute encoder is powered-up, then the setting of p2604 is relevant for entering the compensation value.
p2604 = 1:
Traveling in the positive direction -> A compensation value is immediately entered.
Traveling in the negative direction -> A compensation value is not entered
p2604 = 0:
Traveling in the positive direction -> A compensation value is not entered
Traveling in the negative direction -> A compensation value is immediately entered.
When again setting the reference point (a referenced axis) or for "flying referencing", p2604 is not relevant but instead the history of the axis.
Refer to: p2604, r2667

p2585 EPOS jogging 1 setpoint velocity / Jog 1 v_set

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-40000000 [1000 LU/min]	40000000 [1000 LU/min]	-300 [1000 LU/min]

Description: Sets the setpoint velocity for jogging 1.
Dependency: Refer to: p2587, p2589, p2591

p2586 EPOS jogging 2 setpoint velocity / Jog 2 v_set

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-40000000 [1000 LU/min]	40000000 [1000 LU/min]	300 [1000 LU/min]

Description: Sets the setpoint velocity for jogging 2.
Dependency: Refer to: p2588, p2590, p2591

p2587 EPOS jogging 1 traversing distance / Jog 1 distance

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [LU]	4294967295 [LU]	1000 [LU]

Description: Sets the traversing distance for incremental jogging 1.
Dependency: Refer to: p2585, p2589, p2591
Note: Incremental jogging 1 is started with BI: p2591 = 1 signal and BI: p2589 = 0/1 signal.

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p2588 EPOS jogging 2 traversing distance / Jog 2 distance

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
0 [LU]	4294967295 [LU]	1000 [LU]

Description: Sets the traversing distance for incremental jogging 2.
Dependency: Refer to: p2586, p2590, p2591
Note: Incremental jogging 2 is started with BI: p2591 = 1 signal and BI: p2590 = 0/1 signal.

p2589 BI: EPOS jogging 1 signal source / Jog 1 S_src

VECTOR (EPOS)

Can be changed: T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for jog 1.
Dependency: When jogging, the axis is accelerated or braked with the maximum acceleration/deceleration (p2572/p2573).
BI: p2591 = 0 signal
The axis endlessly moves with the setpoint velocity, jog 1 (p2585).
BI: p2591 = 1 signal
The axis traverses through a parameterized distance (p2585) with the setpoint velocity, jog 1 (p2587).
Refer to: p2572, p2573, p2585, p2587, p2591

p2590 BI: EPOS jogging 2 signal source / Jog 2 S_src

VECTOR (EPOS)

Can be changed: T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for jog 2.
Dependency: When jogging, the axis is accelerated or braked with the maximum acceleration/deceleration (p2572/p2573).
BI: p2591 = 0 signal
The axis endlessly moves with the setpoint velocity, jog 2 (p2586).
BI: p2591 = 1 signal
The axis traverses through a parameterized distance (p2586) with the setpoint velocity, jog 2 (p2588).
Refer to: p2572, p2573, p2586, p2588, p2591

p2591 BI: EPOS jogging incremental / Jog incr

VECTOR (EPOS)

Can be changed: T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3610
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for jogging incremental.
Dependency: Refer to: p2585, p2586, p2587, p2588, p2589, p2590

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p2595 BI: EPOS referencing start / Ref start

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3612
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to start the "search for reference" or "flying referencing".
BI: p2595 = 0/1 signal
Referencing is started.
BI: p2595 = 1/0 signal
Referencing is interrupted.

Dependency: Refer to: p2597, p2598, p2599, r2684

Note: Search for reference (BI: p2597 = 0 signal):
With the start, where relevant, the state signal "reference point set" (r2684.11) is reset.
Flying referencing (BI: p2597 = 1 signal):
With the start, the state signal "reference point set" (r2684.11) is not reset.

p2596 BI: EPOS set reference point / Set ref_pt

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3612, 3625
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the "set reference point".

Dependency: Refer to: p2598, p2599, r2684

Note: Set reference point is only effective in the initial state.
The position control must be enabled as the necessary prerequisite for the standard wiring.

p2597 BI: EPOS referencing type selection / Ref_typ select

VECTOR (EPOS)	**Can be changed:** T		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3612
	P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source to select referencing type.
1 signal: Flying referencing
0 signal: Search for reference

Dependency: Refer to: p2595

Note: Referencing is activated as follows:
- Select the referencing type (BI: p2597)
- Start referencing (BI: p2595 = 0/1 signal)

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p2598 CI: EPOS reference point coordinate, signal source / Ref_pt coord S_src

VECTOR (EPOS, Pos ctrl)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2599[0]

Description: Sets the signal source for the reference point coordinate.
This value is used as reference for the following referencing operations:
- search for reference
- set reference point
- flying referencing
- absolute value adjustment

Dependency: Refer to: p2507, p2595, p2596, p2597, p2599

Note: Incremental measuring system:
After the reference point is reached, the drive accepts the actual axis position from the position received via the connector input.
Absolute encoder:
When adjusting the encoder, the position received via the connector input is set as the actual axis position. The position offset to the actual encoder value is displayed in r2525.

p2599 CO: EPOS reference point coordinate value / Ref_pt coord val

VECTOR (Pos ctrl)

Can be changed: U, T | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	0 [LU]

Description: Sets the position value for the reference point coordinate.
This value is set as the actual axis position after referencing or adjustment.

Dependency: Refer to: p2507, p2525, p2595, p2596, p2597, p2598

p2600 EPOS search for reference, reference point offset / Ref_pt offset

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	0 [LU]

Description: Sets the reference point offset for search for reference.

Dependency: Refer to: p2598

p2601 EPOS flying referencing, inner window / Inner window

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3614
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	0 [LU]

Description: Sets the inner window for flying referencing.
Value = 0:
The evaluation of the inner window is de-activated.

Dependency: Refer to: p2597, p2602, r2684

Notice: The inner window must be set so that it is smaller than the outer window.

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Note: If the difference between the reference point coordinate and detected actual position is less than the inner window, then no offset is executed for a referenced axis.

If the difference between the reference point coordinate and detected actual position is greater than the inner window and less than the outer window (p2602), then an offset is executed for a referenced axis.

p2602 EPOS flying referencing, outer window / Outer window

VECTOR (EPOS) **Can be changed:** U, T **Access level:** 1

Data type: Integer32 **Dynamic index:** - **Function diagram:** 3614

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	0 [LU]

Description: Sets the outer window for flying referencing.

Value = 0:

The evaluation of the outer window is de-activated.

Dependency: Refer to: p2597, r2684

Refer to: A07489

Notice: The inner window must be set so that it is smaller than the outer window.

Note: If the difference between the reference point coordinate and detected actual position is greater than the outer window, then no offset is executed for the referenced axis. Further, an appropriate message is output and r2684.3 is set to 1.

p2603 EPOS flying referencing, positioning mode, relative / Pos_mode relative

VECTOR (EPOS) **Can be changed:** U, T **Access level:** 1

Data type: Integer32 **Dynamic index:** - **Function diagram:** 3635

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: Sets the relative positioning mode for flying referencing.

Value = 1:

The corrected setpoint is not calculated into the traversing distance.

Value = 0:

The corrected setpoint is calculated into the traversing distance.

Dependency: Refer to: p2597, p2623, p2648

Cautiont: For p2603 = 0 the direction can change.

p2604 BI: EPOS search for reference, start direction / Srch for ref dir

VECTOR (EPOS) **Can be changed:** T **Access level:** 1

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 3612

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal sources for the start direction of the search for reference.

1 signal: Start in the negative direction.

0 signal: Start in the positive direction.

Dependency: Refer to: p2583, p2595, p2597

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p2605 EPOS search for reference, approach velocity, reference cam / v_appr ref_cam

VECTOR (EPOS)

Can be changed: U, T — **Access level:** 1

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 3612

P-Group: Basic positioner — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/min]	40000000 [1000 LU/min]	5000 [1000 LU/min]

Description: Sets the approach velocity to the reference cam for the search for reference.

Dependency: The search for reference only starts with the approach velocity to the reference cam when there is a reference cam (p2607 = 1).

Refer to: p2595, p2597, p2604, p2606, p2607

Note: When traversing to the reference cam, the velocity override is effective.

If, at the start of the search for reference, the axis is already at the reference cam, then the axis immediately starts to traverse to the zero mark.

p2606 EPOS search for reference, reference cam, maximum distance / Ref_cam max s

VECTOR (EPOS)

Can be changed: U, T — **Access level:** 1

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 3612

P-Group: Basic positioner — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	2147483647 [LU]

Description: Sets the maximum distance after the start of the search for reference when traversing to the reference cam.

Dependency: Refer to: p2595, p2597, p2604, p2605, p2607

Refer to: F07458

Note: When using a reversing cam, the maximum distance must be set appropriately long.

p2607 EPOS search for reference, reference cam present / Ref_cam pres

VECTOR (EPOS)

Can be changed: U, T — **Access level:** 1

Data type: Unsigned8 — **Dynamic index:** - — **Function diagram:** 3612

P-Group: Basic positioner — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: Sets whether or not a reference cam is present for the search for reference.

Value = 1: Reference cam present.

Value = 0: No reference cam present.

Dependency: Refer to: p2595, p2597, p2604, p2605, p2606

p2608 EPOS search for reference, approach velocity, zero mark / v_appr ref_ZM

VECTOR (EPOS)

Can be changed: U, T — **Access level:** 1

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 3612

P-Group: Basic positioner — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/min]	40000000 [1000 LU/min]	300 [1000 LU/min]

Description: Sets the approach velocity after detecting the reference cam to search for the zero mark for the the search for reference.

Dependency: If there is no reference cam (p2607 = 0), the search for reference immediately starts with the axis traversing to the zero mark.

Refer to: p2595, p2597, p2604, p2607, p2609, p2610

Caution: If the reference cam is not adjusted so that at each search for reference the same zero mark for synchronization is detected, then an "incorrect" axis reference point is obtained.

After the reference cam has been left, the search for the zero mark is activated with a time delay due to internal factors. This is the reason that the reference cam should be adjusted in this center between two zero marks and the approach velocity should be adapted to the distance between two zero marks.

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Note: The velocity override is not effective when traversing to the zero mark.

p2609 EPOS search for reference, max. distance ref. cam and zero mark / Max s ref_cam ZM

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	10000 [LU]

Description: Sets the maximum distance after leaving the reference cam when traversing to the zero mark.
Dependency: Refer to: p2595, p2597, p2604, p2607, p2608, p2610
Refer to: F07459

p2610 EPOS search for ref., tol. bandwidth for distance to zero mark / Tol_band too ZM

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [LU]	2147483647 [LU]	2147483647 [LU]

Description: Sets the tolerance bandwidth for the distance to the zero mark
The zero mark is evaluated within the maximum distance between the reference cam and zero mark (p2609) minus the tolerance bandwidth for the distance to the zero mark (p2610).
Dependency: Refer to: p2609

p2611 EPOS search for reference, approach velocity, reference point / v_appr ref_pt

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/min]	40000000 [1000 LU/min]	300 [1000 LU/min]

Description: Sets the approach velocity after detecting the zero mark to approach the reference point.
Dependency: Refer to: p2595, p2597, p2604, p2607, p2609, p2610
Note: When traversing to the reference point, the velocity override is not effective.

p2612 BI: EPOS search for reference, reference cam / Ref_cam

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the reference cam.
Dependency: Refer to: p2607

p2613 BI: EPOS search for reference, reversing cam minus / Revers cam minus

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the reversing cam in the negative direction of travel.
1 signal: Reversing cam not reached.
0 signal: Reversing cam reached.

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Dependency: Refer to: p2614
Note: If, during the search for reference from the reversing cam minus and plus, a 0 signal is detected, then the axis remains stationary (at standstill).

p2614 BI: EPOS search for reference, reversing cam plus / Reversing cam plus

VECTOR (EPOS)

Can be changed: T		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3612
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min -	**Max** -	**Factory setting** 1

Description: Sets the signal source for the reversing cam in the negative direction of travel.
1 signal: Reversing cam not reached.
0 signal: Reversing cam reached.
Dependency: Refer to: p2613
Note: If, during the search for reference from the reversing cam minus and plus, a 0 signal is detected, then the axis remains stationary (at standstill).

p2615 EPOS maximum number of traversing blocks / Trav_block qty max

VECTOR (EPOS)

Can be changed: C2(17)		**Access level:** 1
Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min 1	**Max** 64	**Factory setting** 64

Description: Sets the maximum number of traversing blocks that are available.
Dependency: Refer to: p2616, p2617, p2618, p2619, p2620, p2621, p2622, p2623, p2624

p2616[0...n] EPOS traversing block, block number / Trav_blk, blkNo.

VECTOR (EPOS)

Can be changed: U, T		**Access level:** 1
Data type: Integer16	**Dynamic index:** p2615	**Function diagram:** 3616
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min -1	**Max** 63	**Factory setting** -1

Description: Sets a block number.
-1: Invalid block number. These blocks are not taken into account.
0 ... 63: Valid block number.
Dependency: The number of indices depends on p2615.
Refer to: p2615, p2617, p2618, p2619, p2620, p2621, p2622, p2623, p2624

p2617[0...n] EPOS traversing block position / Trav_block pos

VECTOR (EPOS)

Can be changed: U, T		**Access level:** 1
Data type: Integer32	**Dynamic index:** p2615	**Function diagram:** 3616
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min -2147483648 [LU]	**Max** 2147483647 [LU]	**Factory setting** 0 [LU]

Description: Sets the target position for the traversing block.
Dependency: The number of indices depends on p2615.
Refer to: p2615, p2616, p2618, p2619, p2620, p2621, p2622, p2623, p2624
Note: The target position is approached in either relative or absolute terms depending on p2623.

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p2618[0...n] EPOS traversing block velocity / Trav_block v

VECTOR (EPOS) **Can be changed:** U, T **Access level:** 1

Data type: Integer32 **Dynamic index:** p2615 **Function diagram:** 3616

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/min]	40000000 [1000 LU/min]	600 [1000 LU/min]

Description: Sets the velocity for the traversing block.

Dependency: The number of indices depends on p2615.

Refer to: p2615, p2616, p2617, p2619, p2620, p2621, p2622, p2623, p2624, p2646

Note: The velocity can be influenced using the velocity override (p2646).

p2619[0...n] EPOS traversing block acceleration override / Trav_block a_over

VECTOR (EPOS) **Can be changed:** U, T **Access level:** 1

Data type: Floating Point **Dynamic index:** p2615 **Function diagram:** 3616

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1.0 [%]	100.0 [%]	100.0 [%]

Description: Sets the acceleration override for the traversing block.

The override refers to the maximum acceleration (p2572).

Dependency: The number of indices depends on p2615.

Refer to: p2572, p2615, p2616, p2617, p2618, p2620, p2621, p2622, p2623, p2624

p2620[0...n] EPOS traversing deceleration override / Trav_block -a_over

VECTOR (EPOS) **Can be changed:** U, T **Access level:** 1

Data type: Floating Point **Dynamic index:** p2615 **Function diagram:** 3616

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1.0 [%]	100.0 [%]	100.0 [%]

Description: Sets the deceleration override for the traversing block.

The override refers to the maximum deceleration (p2573).

Dependency: The number of indices depends on p2615.

Refer to: p2573, p2615, p2616, p2617, p2618, p2619, p2621, p2622, p2623, p2624

p2621[0...n] EPOS traversing block task / Trav_block task

VECTOR (EPOS) **Can be changed:** U, T **Access level:** 1

Data type: Integer16 **Dynamic index:** p2615 **Function diagram:** 3616

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1	8	1

Description: Sets the required task for the traversing block.

Values:
1: POSITIONING
3: ENDLESS_POS
4: ENDLESS_NEG
5: WAITING
6: GOTO
7: SET_O
8: RESET_O

Dependency: The number of indices depends on p2615.

Refer to: p2615, p2616, p2617, p2618, p2619, p2620, p2622, p2623, p2624

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p2622[0...n] EPOS traversing block task parameter / Trav_blck task_par

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Integer32
Dynamic index: p2615
Function diagram: 3616
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-2147483648	2147483647	0

Description: Sets additional information/data of the appropriate task for the traversing block.

Dependency: The number of indices depends on p2615.
Refer to: p2615, p2616, p2617, p2618, p2619, p2620, p2621, p2623, p2624

Note: The following should be set depending on the task:
WAIT: Waiting time in ms
GOTO: Block number
SET_O: 1, 2 or 3 - set direct output 1, 2 or 3 (both)
RESET_O: 1, 2 or 3 - set direct output 1, 2 or 3 (both)

p2623[0...n] EPOS traversing block, task mode / Trav_block mode

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Unsigned16
Dynamic index: p2615
Function diagram: 3616
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
0	65535	0

Description: Sets the influence of the task for the traversing block.
Value = 0000 cccc bbbb aaaa
cccc: Positioning mode
cccc = 0000 --> ABSOLUTE
cccc = 0001 --> RELATIVE
cccc = 0010 --> ABS_POS (only for a rotary axis with modulo correction)
cccc = 0011 --> ABS_NEG (only for a rotary axis with modulo correction)
bbbb: Progression condition
bbbb = 0000 --> END
bbbb = 0001 --> CONTINUE WITH STOP
bbbb = 0010 --> CONTINUE FLYING
aaaa: IDs
aaaa = 0001 --> Skip block

Dependency: The number of indices depends on p2615.
Refer to: p2615, p2616, p2617, p2618, p2619, p2620, p2621, p2622, p2624

p2624 EPOS traversing block, sorting / Trav_block sort

VECTOR (EPOS)

Can be changed: U, T
Access level: 1
Data type: Unsigned16
Dynamic index: -
Function diagram: 3616
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Sets the traversing blocks for sorting corresponding to their block number.
p2624 = 0 --> 1:
The sorting is started and the parameters are automatically reset to 0 after the sorting operation has been completed.

Dependency: Refer to: p2615, p2616, p2617, p2618, p2619, p2620, p2621, p2622, p2623

Note: After sorting, the traversing blocks are written at the beginning of the memory in increasing sequence without any gaps.

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p2625 BI: EPOS block selection, bit 0 / Block sel bit 0

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for block selection, bit 0.

Dependency: Binector inputs p2625, p2626, p2627, p2628, p2629 and p2630 are used to select one of the maximum of 64 traversing blocks.
Refer to: p2626, p2627, p2628, p2629, p2630

p2626 BI: EPOS block selection, bit 1 / Block sel bit 1:

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for block selection, bit 1.

Dependency: Binector inputs p2625, p2626, p2627, p2628, p2629 and p2630 are used to select one of the maximum of 64 traversing blocks.
Refer to: p2625, p2627, p2628, p2629, p2630

p2627 BI: EPOS block selection, bit 2 / Block sel bit 2

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for block selection, bit 2.

Dependency: Binector inputs p2625, p2626, p2627, p2628, p2629 and p2630 are used to select one of the maximum of 64 traversing blocks.
Refer to: p2625, p2626, p2628, p2629, p2630

p2628 BI: EPOS block selection, bit 3 / Block sel bit 3

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for block selection, bit 3.

Dependency: Binector inputs p2625, p2626, p2627, p2628, p2629 and p2630 are used to select one of the maximum of 64 traversing blocks.
Refer to: p2625, p2626, p2627, p2629, p2630

p2629 BI: EPOS block selection, bit 4 / Block sel bit 4

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for block selection, bit 4.

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Dependency: Binector inputs p2625, p2626, p2627, p2628, p2629 and p2630 are used to select one of the maximum of 64 traversing blocks.
Refer to: p2625, p2626, p2627, p2628, p2630

p2630 BI: EPOS block selection, bit 5 / Block sel bit 5

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for block selection, bit 5.
Dependency: Binector inputs p2625, p2626, p2627, p2628, p2629 and p2630 are used to select one of the maximum of 64 traversing blocks.
Refer to: p2625, p2626, p2627, p2628, p2629

p2631 BI: EPOS activate traversing task (0 -> 1) / Trav_task act

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for "activating traversing task".
BI: p2631 = 0/1 signal
The traversing task, selected using BI: p2625 ... p2630, is started.
Dependency: Refer to: p2625, p2626, p2627, p2628, p2629, p2630, p2640, p2641
Note: To start a traversing block, the axis must be referenced (r2684.11 = 1).
The status signal r2684.12 = 0/1 signal is used for acknowledgement.
A traversing task can be influenced using the following signals:
- intermediate stop via BI: p2640.
- reject traversing task via BI: p2641.

p2640 BI: EPOS intermediate stop (0 signal) / Intermediate stop

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3616
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the "no intermediate stop/intermediate stop".
BI: p2640 = 1 signal
No intermediate stop.
BI: p2640 = 0 signal
Intermediate stop.
Dependency: Refer to: p2631, p2641, p2647
Note: This signal is only effective in the modes "traversing blocks" and "direct setpoint input/MDI".
When activating the intermediate stop, the axis brakes with the parameterized deceleration (p2620 or p2645).
BI:p2649 = 1 signal : Motion starts without it being explicitly controlled.

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p2641 BI: EPOS reject traversing task (0 signal) / Trav_task reject

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3616
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for "do not reject traversing task/reject traversing task".
BI: p2641 = 1 signal
Do not reject traversing task.
BI: p2641 = 0 signal
Reject traversing task.

Dependency: Refer to: p2631, p2640, p2647

Note: This signal is only effective in the modes "traversing blocks" and "direct setpoint input/MDI".
When activating reject traversing tasks, then the axis brakes with the maximum deceleration (p2573).
BI:p2649 = 1 signal : Motion starts without it being explicitly controlled.

p2642 CI: EPOS direct setpoint input/MDI position setpoint / MDI s_set

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3618
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2690[0]

Description: Sets the signal source for the position setpoint in the mode "direct setpoint input/MDI".

Dependency: Refer to: p2648, p2649, p2650, p2690

Note: Depending on p2649, the position setpoint is either transferred continuously or edge-triggered.
The position setpoint input is interpreted as length unit [LU].

p2643 CI: EPOS direct setpoint input/MDI velocity setpoint / MDI v_set

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3618
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2691[0]

Description: Sets the signal source for the velocity setpoint in the "direct setpoint input/MDI mode".

Dependency: Refer to: p2649, p2650, p2691

Note: Depending on p2649, the velocity setpoint is either transferred continuously or edge-triggered.
The velocity setpoint input is interpreted as [1000 LU/min].

p2644 CI: EPOS direct setpoint input/MDI acceleration override / MDI a_over

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3618
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2692[0]

Description: Sets the signal source for the acceleration override in the operating mode "direct setpoint input/MDI".

Dependency: Refer to: p2649, p2650, p2692

Note: Depending on p2649, the acceleration override is either transferred continuously or edge-triggered.
The signal value 4000 hex (16384 dec) corresponds to 100 %.

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p2645 CI: EPOS direct setpoint input/MDI deceleration override / MDI -a_over

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3618
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2693[0]

Description: Sets the signal source for the deceleration override in the operating mode "direct setpoint input/MDI".
Dependency: Refer to: p2649, p2650, p2693
Note: Depending on p2649, the deceleration override is either transferred continuously or edge-triggered.
The signal value 4000 hex (16384 dec) corresponds to 100 %.

p2646 CI: EPOS velocity override / v_over

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3630
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the velocity override.
This velocity override is effective in the following operating modes "direct setpoint input/MDI", "traversing blocks", "jogging" and "search for reference" (when approaching the reference cam).
Dependency: Refer to: p2571, p2585, p2586, p2605, p2618, p2643, r2681
Note: The effective override (r2681) can differ from the specified override due to limits (e.g. maximum velocity).

p2647 BI: EPOS direct setpoint input/MDI selection / MDI selection

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3640
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for selecting the operating mode "direct setpoint input/MDI".
Dependency: Refer to: p2640, p2641, p2642, p2643, p2644, p2645, p2646, p2648, p2649, p2650, p2651, p2652, p2653
Note: In this mode, using BI: p2653 it is possible to make a flying changeover between setting-up and positioning.
In this mode, even if the axis is not referenced (r2684.11 = 0) relative positioning is possible.

p2648 BI: EPOS direct setpoint input/MDI positioning type / MDI pos_type

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the positioning type in the mode "direct setpoint input/MDI".
BI: p2648 = 1 signal
Absolute positioning is selected.
BI: p2648 = 0 signal
Relative positioning is selected.
Dependency: Refer to: p2649, p2650, p2654
Refer to: A07461, F07488
Notice: Absolute positioning:
To traverse, the reference point must be set (r2684.11 = 1).
Relative positioning:
To traverse, it is not necessary that the reference point is set.

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Note: Depending on p2649, the positioning type is either transferred continuously or edge-triggered.

p2649 BI: EPOS direct setpoint input/MDI transfer type selection / MDI trans_type sel

VECTOR (EPOS)

Can be changed: T		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3620
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	0

Description: Sets the signal source to define how values are transferred in the operating mode "direct setpoint input/MDI".
BI: p2649 = 1 signal
Values are continually transferred (refer to parameter under dependency).
Motion starts without it being explicitly controlled.
BI: p2649 = 0 signal
The values are transferred for BI: p2650 = 0/1 signal.

Dependency: Refer to: p2642, p2643, p2644, p2645, p2648, p2650, p2651, p2652

p2650 BI: EPOS direct setpoint input/MDI setpoint transfer edge / MDI setpt_transfer

VECTOR (EPOS)

Can be changed: T		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3620
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	0

Description: Sets the signal source to transfer the values for edge-triggered selection (BI: p2649 = 0 signal) in the operating mode "direct setpoint input/MDI".
BI: p2650 = 0/1 signal and BI: p2649 = 0 signal
Values are transferred, edge-triggered (refer to parameter under dependency).

Dependency: Refer to: p2640, p2641, p2642, p2643, p2644, p2645, p2648, p2649, p2651, p2652, r2684

Note: The status signal r2684.12 = 0/1 signal is used for acknowledgement.
The operating mode "direct setpoint input/MDI" can be influenced via the following signals:
- intermediate stop via BI: p2640.
- reject traversing task via BI: p2641.

p2651 BI: EPOS direct setpoint input/MDI direction selection, positive / MDI dir_sel pos

VECTOR (EPOS)

Can be changed: T		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 3620
P-Group: Basic positioner	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	0

Description: Sets the signal source for the positive direction selection in the operating mode "direct setpoint input/MDI".

Dependency: Refer to: p2576, p2648, p2649, p2650, p2652, p2653, p2654

Note: The following applies for "setting-up":
- the traversing direction can be entered using this binector input.
- if both directions (p2651, p2652) are selected one after the other, then the last selection remains active.
- if both directions (p2561, p2652) are selected simultaneously, then the axis remains stationary (zero speed).
The following applies for "positioning":
Using binector inputs p2651 and p2652, when the modulo correction (BI: p2576 = 1 signal) is activated and for absolute positioning (BI: p2648 = 1 signal), the traversing direction is specified as follows:
BI: p2651 / BI: p2652
0 signal / 0 signal: Absolute positioning through the shortest distance.
1 signal / 0 signal: Absolute positioning in the positive direction.
0 signal / 1 signal: Absolute positioning in the negative direction.
1 signal / 1 signal: Absolute positioning through the shortest distance.

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p2652 BI: EPOS direct setpoint input/MDI direction selection, negative / MDI dir_sel neg

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3620
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the negative direction selection in the operating mode "direct setpoint input/MDI".

Dependency: Refer to: p2576, p2648, p2649, p2650, p2651, p2653, p2654

Note: The following applies for "setting-up":
- the traversing direction can be entered using this binector input.
- if both directions (p2651, p2652) are selected one after the other, then the last selection remains active.
- if both directions (p2561, p2652) are selected simultaneously, then the axis remains stationary (zero speed).

The following applies for "positioning":
Using binector inputs p2651 and p2652, when the modulo correction (BI: p2576 = 1 signal) is activated and for absolute positioning (BI: p2648 = 1 signal), the traversing direction is specified as follows:
BI: p2651 / BI: p2652
0 signal / 0 signal: Absolute positioning through the shortest distance.
1 signal / 0 signal: Absolute positioning in the positive direction.
0 signal / 1 signal: Absolute positioning in the negative direction.
1 signal / 1 signal: Absolute positioning through the shortest distance.

p2653 BI: EPOS direct setpoint input/MDI setting-up selection / MDI setting-up sel

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3620
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for setting-up in the operating mode "direct setpoint input/MDI".
BI: p2653 = 1 signal
Setting-up selected.
BI: p2653 = 0 signal
Positioning selected.

Note: In the operating mode "direct setpoint input/MDI", it is possible to make a flying changeover between setting-up and positioning.

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p2654 CI: EPOS direct setpoint input/MDI mode adaptation / MDI mode adapt

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to interconnect the MDI mode to the operating mode "direct setpoint input MDI" via PROFIBUS telegram 110.
CI: p2654 = 0
The binector inputs listed below are evaluated.
CI: p2654 > 0
The following binector inputs are not evaluated:
- BI: p2648 (positioning type)
- BI: p2651 (direction selection, positive)
- BI: p2652 (direction selection, negative)
In this case, the following definitions apply:
Signal via CI: p2654 = xx0x hex -> absolute
Signal via CI: p2654 = xx1x hex -> relative
Signal via CI: p2654 = xx2x hex -> abs_pos (only for modulo correction)
Signal via CI: p2654 = xx3x hex -> abs_neg (only for modulo correction)

Dependency: Refer to: p2648, p2651, p2652

p2655[0...1] BI: EPOS select tracking mode / Sel tracking mode

VECTOR (EPOS)

Can be changed: T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	[0] 1 [1] 2526.7

Description: Sets the signal source to select tracking mode.
BI: p2655[0] or BI: p2655[1] = 1 signal
Tracking operation after withdrawing the enable signal from EPOS (BI: p2656 = 0 signal).
BI: p2655 and BI: p2655[1] = 0 signal
No tracking operation after withdrawing the enable signal from EPOS (BI: p2656 = 0 signal).

Dependency: Refer to: p2656

Note: For the following events, independent of the signal that is present, tracking operation is selected:
- after booting.
- after a 0/1 signal at BI: p2658 (EPOS position actual value, valid feedback signal).
- while a fault is present.

p2656 BI: EPOS enable basic positioner / EPOS enable

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2526.3

Description: Sets the signal source to enable the basic positioner.
BI: p2656 = 1 signal
The basic positioner is enabled.
BI: p2656 = 0 signal
The basic positioner is not enabled.

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Dependency: Refer to: r2526, p2655

p2657 CI: EPOS position actual value/position setting value / Pos act/set value

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3610, 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2521[0]

Description: Sets the signal source for the position actual value/position setting value.
Dependency: Refer to: r2521, p2658
Note: In the tracking mode, the position setpoint is taken from this connector input.

p2658 BI: EPOS pos. actual value valid, feedback signal / Pos valid feedback

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2526.0

Description: Sets the signal source for the feedback signal "position actual value is valid".
BI: p2658 = 1 signal
The position actual value received via CI: p2657 is valid.
BI: p2658 = 0 signal
The position actual value received via CI: p2657 is invalid.
Dependency: Refer to: r2526, p2657
Note: While a 0 signal is present, the position setpoint (p2665) is held at the value of 0.

p2659 BI: EPOS referencing active feedback signal / Ref act fdbk

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2526.1

Description: Sets the signal source for the feedback signal "referencing active".
BI: p2659 = 1 signal
Referencing is active.
BI: p2659 = 0 signal
Referencing is not active.
Dependency: Refer to: r2526

p2660 CI: EPOS measured value referencing / Meas val ref

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2523[0]

Description: Sets the signal source for the measured value for the function "referencing".
Dependency: Refer to: r2523

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p2661 BI: EPOS measured value valid, feedback signal / MeasVal valid fdbk

VECTOR (EPOS)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 3612
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	2526.2

Description: Sets the signal source for the feedback signal "measured value valid".
BI: p2661 = 1 signal
The measured value received via CI: p2660 is valid.
BI: p2661 = 0 signal
The measured value received via CI: p2660 is invalid.

Dependency: Refer to: r2526

r2665 CO: EPOS position setpoint / s_set

VECTOR (EPOS)

Can be changed: - | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the actual absolute position setpoint.

Dependency: Refer to: p2530

Note: As standard, the following BICO interconnection is established: CI: p2530 = r2665

r2666 CO: EPOS velocity setpoint / v_set

VECTOR (EPOS)

Can be changed: - | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [1000 LU/min]	- [1000 LU/min]	- [1000 LU/min]

Description: Displays the actual velocity setpoint.

Dependency: Refer to: p2531

Note: As standard, the following BICO interconnection is established: CI: p2531 = r2666

r2667 CO: EPOS backlash compensation value / Backlash value

VECTOR (EPOS)

Can be changed: - | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the currently effective value for backlash compensation.

Dependency: Refer to: p2516

Note: As standard, the following BICO interconnection is established: CI: p2516 = r2667

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r2669 CO: EPOS actual operating mode / Op mode act

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3630
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual, active operating mode.
Value = 00 hex -> no operating mode active
Value = 01 hex -> jogging active
Value = 02 hex -> search for reference active
Value = 04 hex -> traversing blocks active
Value = 08 hex -> Positioning for direct setpoint input/MDI active
Value = 10 hex -> Setting-up for direct setpoint input/MDI active
Value = 20 hex -> flying referencing active

Dependency: Refer to: p2589, p2590, p2595, p2631, p2647, p2653

r2670 CO/BO: EPOS status word, active traversing block / ZSW act trav_block

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 3650
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the active traversing block.
r2670.0: Active traversing block, bit 0
...
r2670.5: Active traversing block, bit 5
r2670.15: MDI active

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Active traversing block, bit 0	active	Not active	-
01	Active traversing block, bit 1	active	Not active	-
02	Active traversing block, bit 2	active	Not active	-
03	Active traversing block, bit 3	active	Not active	-
04	Active traversing block, bit 4	active	Not active	-
05	Active traversing block, bit 5	active	Not active	-
15	MDI active	active	Not active	-

Dependency: Refer to: p2631, p2647
Note: Re bit 00 ... 05:
Displays the active traversing block in the traversing blocks operating mode.
Re bit 15:
For a 1 signal, the operating mode - direct setpoint input/MDI - is active

r2671 CO: EPOS actual position setpoint / s_set act

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3610, 3616, 3620
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the position setpoint presently being processed.
Note: A position of zero is displayed for non position-related tasks (e.g. ENDLESS_POS, ENDLESS_NEG).

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r2672 CO: EPOS actual velocity setpoint / v_set act

VECTOR (EPOS) | **Can be changed:** - | | **Access level:** 1

Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3610, 3612, 3616, 3620

P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [1000 LU/min]	- [1000 LU/min]	- [1000 LU/min]

Description: Displays the velocity setpoint presently being processed.

r2673 CO: EPOS actual acceleration override / a_over act

VECTOR (EPOS) | **Can be changed:** - | | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3610, 3612, 3616, 3620

P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the acceleration override presently being processed.

Note: An override of 100% is effective in the "jogging" and "search for reference" operating modes.

r2674 CO: EPOS actual deceleration override / -a_over act

VECTOR (EPOS) | **Can be changed:** - | | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3610, 3612, 3616, 3620

P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the deceleration override presently being processed.

Note: An override of 100% is effective in the "jogging" and "search for reference" operating modes.

r2675 CO: EPOS actual task / Task act

VECTOR (EPOS) | **Can be changed:** - | | **Access level:** 1

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 3616

P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	8	0

Description: Displays the task presently being processed in the "traversing blocks" operating mode.

Values:
0: inactive
1: POSITIONING
3: ENDLESS_POS
4: ENDLESS_NEG
5: WAITING
6: GOTO
7: SET_O
8: RESET_O

Dependency: Refer to: p2621

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r2676 CO: EPOS actual task parameter / Task para act

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3616
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the task parameter presently being processed in the "traversing blocks" operating mode.
Dependency: Refer to: p2622
Note: The following is displayed depending on the task:
WAIT: Waiting time in ms
GOTO: Block number
SET_O: 1, 2 or 3 - direct output 1, 2 or 3 (both) is set
RESET_O: 1, 2 or 3 - direct output 1, 2 or 3 (both) is set

r2677 CO: EPOS actual task mode / Task mode act

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Unsigned16
Dynamic index: -
Function diagram: 3616
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the task mode presently being processed.
Dependency: Refer to: p2623

r2678 CO: EPOS external block change / Ext BlckChg s_act

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3616, 3620
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the actual position for an external block change.
"Jog" operating mode:
Displays the actual position that is present at the external block change (BI: p2589 = 0/1 signal or BI: p2590 = 0/1 signal).
"Referencing" operating mode:
Displays the actual position that is present at the external block change (BI: p2595 = 0/1 signal).
"Traversing blocks" operating mode:
Displays the actual position that is present at the external block change (BI: p2631 = 0/1 signal).
"Direct setpoint input/MDI" mode:
Displays the actual position that is present at the external block change (BI: p2650 = 0/1 signal).
Dependency: Refer to: p2589, p2590, p2595, p2631, p2650

r2680 CO: EPOS clearance, reference cam and zero mark / Clearance cam/ZM

VECTOR (EPOS)

Can be changed: -
Access level: 1
Data type: Integer32
Dynamic index: -
Function diagram: 3612
P-Group: Basic positioner
Units group: -
Unit selection: -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the clearance determined between the reference cam and zero mark in the search for reference.

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r2681 CO: EPOS velocity override effective / v_over effective

VECTOR (EPOS) | **Can be changed:** - | | **Access level:** 1
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3630
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the currently effective velocity override.
Dependency: Refer to: p2571, p2646
Note: The effective override can differ from the specified override due to limits (e.g. p2571, maximum velocity).

r2682 CO: EPOS residual distance to go / Residual distance

VECTOR (EPOS) | **Can be changed:** - | | **Access level:** 1
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** 3635
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the actual residual distance.
The remaining distance is the distance to still to be moved through up to the end of the current positioning task.
Dependency: Refer to: r2665, r2671, r2678

r2683 CO/BO: EPOS status word 1 / PosZSW1

VECTOR (Pos ctrl) | **Can be changed:** - | | **Access level:** 1
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 3645
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays status word 1 for the basic positioner (EPOS).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Tracking operation active	Yes	No	3635
01	Velocity limiting active	Yes	No	3630
02	Setpoint available	Yes	No	3635
04	Axis moves forwards	Yes	No	3635
05	Axis moves backwards	Yes	No	3635
06	Software limit switch minus reached	Yes	No	3635
07	Software limit switch plus reached	Yes	No	3635
08	Position actual value <= cam switching position 1	Yes	No	4025
09	Position actual value <= cam switching position 2	Yes	No	4025
10	Direct output 1 via traversing block	Yes	No	3616
11	Direct output 2 via traversing block	Yes	No	3616

Dependency: Refer to: r2684
Note: Re bit 08, 09:
These signals are generated in the "closed-loop position control" function module.

r2684 CO/BO: EPOS status word 2 / PosZSW2

VECTOR (Pos ctrl) | **Can be changed:** - | | **Access level:** 1
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 3646
P-Group: Closed loop position control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays status word 2 for the basic positioner (EPOS).

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Search for reference active	active	Not active	3612, 3614
	01	Flying referencing active	active	Not active	3614
	02	Referencing active	active	Not active	3614
	03	Printing mark outside outer window	Yes	No	3614
	04	Axis accelerating	Yes	No	3635
	05	Axis decelerating	Yes	No	3635
	07	Activate correction	Yes	No	3635
	08	Follow err in tol	Yes	No	-
	10	Target position reached	Yes	No	4020
	11	Reference point set	Yes	No	3612, 3614
	12	Acknowledgment, traversing block activated	Yes	No	3616
	13	STOP cam minus active	Yes	No	3630
	14	STOP cam plus active	Yes	No	3630
	15	Travel command active	Yes	No	3635

Note: Re bit 02:

The "referencing active" signal is an OR logic operation of "search for reference active" and "flying referencing active".

Re bit 00 ... 07 and 11 ... 14:

These signals are generated in the function module "basic positioner".

Re bit 08:

The signal is generated in the "closed-loop position control" function module.

r2685 CO: EPOS correction value / Correction value

VECTOR (EPOS)

Can be changed: - **Access level:** 1

Data type: Integer32 **Dynamic index:** - **Function diagram:** 3635

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [LU]	- [LU]	- [LU]

Description: Displays the correction value for the position actual value.

Dependency: Refer to: r2684

Note: As standard, the following BICO interconnection is established: CI: p2513 = r2685

Using this value, e.g. modulo corrections are carried-out.

p2690 CO: EPOS position fixed setpoint / Pos fixed value

VECTOR (EPOS)

Can be changed: U, T **Access level:** 1

Data type: Integer32 **Dynamic index:** - **Function diagram:** 3618

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-2147483648 [LU]	2147483647 [LU]	0 [LU]

Description: Sets a fixed setpoint for the position.

Dependency: Refer to: p2642

Note: As standard, the following BICO interconnection is established: CI: p2642 = r2690

p2691 CO: EPOS velocity fixed setpoint / v fixed value

VECTOR (EPOS)

Can be changed: U, T **Access level:** 1

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 3618

P-Group: Basic positioner **Units group:** - **Unit selection:** -

Min	Max	Factory setting
1 [1000 LU/min]	40000000 [1000 LU/min]	600 [1000 LU/min]

Description: Sets a fixed setpoint for the velocity.

Dependency: Refer to: p2643

Note: As standard, the following BICO interconnection is established: CI: p2643 = r2691

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p2692 CO: EPOS acceleration override, fixed setpoint / a_over fixed val

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3618
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [%]	100 [%]	100 [%]

Description: Sets a fixed setpoint for the acceleration override.
Dependency: Refer to: p2572, p2644
Note: As standard, the following BICO interconnection is established: CI: p2644 = r2692
The percentage value refers to the maximum acceleration (p2572).

p2693 CO: EPOS deceleration override, fixed setpoint / -a_over fixed val

VECTOR (EPOS)

Can be changed: U, T | **Access level:** 1
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 3618
P-Group: Basic positioner | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [%]	100 [%]	100 [%]

Description: Sets a fixed setpoint for the deceleration override.
Dependency: Refer to: p2573, p2645
Note: As standard, the following BICO interconnection is established: CI: p2645 = r2693
The percentage value refers to the maximum deceleration (p2573).

p2900[0...n] CO: Fixed value 1 [%] / Fixed value 1 [%]

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 1021
P-Group: Free function blocks | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-10000.00 [%]	10000.00 [%]	0.00 [%]

Description: Sets a fixed percentage.
Dependency: Refer to: p2901, p2930
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.
Note: The value can be used to interconnect a scaling function (e.g. scaling of the main setpoint)

p2901[0...n] CO: Fixed value 2 [%] / Fixed value 2 [%]

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 1021
P-Group: Free function blocks | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-10000.00 [%]	10000.00 [%]	0.00 [%]

Description: Sets a fixed percentage.
Dependency: Refer to: p2900, p2930
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.
Note: The value can be used to interconnect a scaling function (e.g. scaling of the supplementary setpoint)

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p2930[0...n] CO: Fixed value M [Nm] / Fixed value M [Nm]

VECTOR

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 1021
P-Group: Free function blocks
Units group: 7_1
Unit selection: p0505

Min	Max	Factory setting
-100000.00 [Nm]	100000.00 [Nm]	0.00 [Nm]

Description: Sets a fixed value for torque.
Dependency: Refer to: p2900, p2901
Notice: A BICO interconnection to a parameter that belongs to a drive objects always acts on the effective data set.
Note: The value can, for example, be used to interconnect a supplementary torque.

p3100 RTC time stamp mode / RTC t_stamp mode

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Sets the mode for the time stamp
p3100 = 0: Time stamp, operating hours
p3100 = 1: Time stamp, UTC format
Note: RTC: Real Time Clock
UTC: Universal Time Coordinates
The UTC time started, according to the definition on 01.01.1970 at 00:00:00 and is output in days and milliseconds.

p3101[0...1] RTC set UTC time / RTC set UTC

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	4294967295	0

Description: Setting the UTC time.
This means that the drive system is synchronized to the time specified by the time master. To start p3101[1] must be written to followed by p3101[0]. After writing to p3101[0], the UTC time is accepted.
p3101[0]: Milliseconds
p3101[1]: Days

r3102[0...1] RTC read UTC time / RTC read UTC

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual UTC time in the drive system.
p3102[0]: Milliseconds
p3102[1]: Days

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p3103 RTC synchronization source / RTC sync_source

CU_G | **Can be changed:** U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Sets the synchronization source/technique.

Values:
0: PROFIBUS
1: PROFINET
2: PPI
3: PROFINET PTP

p3104 BI: RTC real time synchronization PING / RTC PING

CU_G | **Can be changed:** U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the PING event to set the UTC time.

r3108[0...1] RTC last synchronization deviation / RTC sync_dev

CU_G | **Can be changed:** - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the last synchronization deviation that was determined.
r3108[0]: Milliseconds
r3108[1]: Days

p3109 RTC real time synchronization, tolerance window / RTC sync tol

CU_G | **Can be changed:** U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000 [ms]	100 [ms]

Description: Sets the tolerance window for time synchronization.
When this tolerance window is exceeded, an appropriate alarm is output.

Dependency: Refer to: A01099

p3110 External fault 3, power-up delay / Ext fault 3 t_on

All objects | **Can be changed:** U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 2546
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000 [ms]	0 [ms]

Description: Sets the delay time for external fault 3.

Dependency: Refer to: p2108, p3111, p3112
Refer to: F07862

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p3111 BI: External fault 3, enable / Ext fault 3 enab

CU_G, DMC20, TB30, TM31

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 2546
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the enable signal of external fault 3.
External fault 3 is initiated by the following AND logic operation:
- BI: p2108 negated
- BI: p3111
- BI: p3112 negated

Dependency: Refer to: p2108, p3110, p3112
Refer to: F07862

p3111[0...n] BI: External fault 3, enable / Ext fault 3 enab

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: -
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the enable signal of external fault 3.
External fault 3 is initiated by the following AND logic operation:
- BI: p2108 negated
- BI: p3111
- BI: p3112 negated

Dependency: Refer to: p2108, p3110, p3112
Refer to: F07862

p3112 BI: External fault 3 enable negated / Ext flt 3 enab neg

CU_G, DMC20, TB30, TM31

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 2546
P-Group: Messages
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the negated enable signal of external fault 3.
External fault 3 is initiated by the following AND logic operation:
- BI: p2108 negated
- BI: p3111
- BI: p3112 negated

Dependency: Refer to: p2108, p3110, p3111
Refer to: F07862

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p3112[0...n] BI: External fault 3 enable negated / Ext flt 3 enab neg

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** CDS, p0170	**Function diagram:** -
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the negated enable signal of external fault 3.

External fault 3 is initiated by the following AND logic operation:

- BI: p2108 negated
- BI: p3111
- BI: p3112 negated

Dependency: Refer to: p2108, p3110, p3111

Refer to: F07862

r3113 CO/BO: NAMUR message bit bar / NAMUR bit bar

All objects	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** 0000 bin

Description: Displays the status of NAMUR signal bit bar.

The faults or alarms are assigned to the appropriate signaling/message classes and influence a specific message bit.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Fault, drive converter data electronics / software error	Yes	No	-
01	Line supply fault	Yes	No	-
02	DC link overvoltage	Yes	No	-
03	Fault, drive converter power electronics	Yes	No	-
04	Drive converter overtemperature	Yes	No	-
05	Ground fault	Yes	No	-
06	Motor overload	Yes	No	-
07	Bus error	Yes	No	-
08	External safety-relevant shutdown	Yes	No	-
09	Mot encoder fault	Yes	No	-
10	Error, internal communications	Yes	No	-
11	Infeed fault	Yes	No	-
15	Other faults	Yes	No	-

p3201[0...n] Excitation current outside the tolerance threshold value / I_exc n.Tol thresh

VECTOR	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** DDS, p0180	**Function diagram:** -
	P-Group: Messages	**Units group:** -	**Unit selection:** -
	Min 0.1 [%]	**Max** 100.0 [%]	**Factory setting** 10.0 [%]

Description: Sets the threshold value for the "excitation current outside tolerance" message for the excitation current monitoring.

If the absolute value of the difference between the excitation current setpoint and actual value (r1641 - r1626) exceeds the threshold value and the hysteresis is longer than the selected delay time, then fault F07913 is output.

This fault is withdrawn when the threshold voltage is fallen below.

Dependency: Refer to: r1626, r1641, p3202, p3203

Refer to: F07913

Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).

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p3202[0...n] Excitation current outside the tolerance hysteresis / I_exc n.Tol hyst

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Messages — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.1 [%]	100.0 [%]	10.0 [%]

Description: Sets the hysteresis for the "excitation current outside tolerance" message for the excitation current monitoring.
Dependency: Refer to: p3201, p3203
Refer to: F07913
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).

p3203[0...n] Excitation current outside the tolerance delay time / I_exc n.Tol t_del

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Messages — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	10.0 [s]	1.0 [s]

Description: Sets the delay time for the "excitation current outside tolerance" message for the excitation current monitoring.
Dependency: Refer to: p3201, p3202
Refer to: F07913
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).

p3204[0...n] Flux outside the tolerance threshold value / Flux n. tol thresh

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Messages — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.1 [%]	100.0 [%]	10.0 [%]

Description: Sets the threshold value for the "flux outside the tolerance" message for the flux monitoring.
If the absolute value of the difference between the flux setpoint and actual value (r0083 - r0084) falls below the threshold value with hysteresis longer than the selected delay time, then fault F07914 is output.
This fault is withdrawn when the threshold voltage is fallen below.
Dependency: Refer to: r0083, r0084, p3205, p3206
Refer to: F07914
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).
The flux monitoring is only active after magnetization (r0056.4 = 1).

p3205[0...n] Flux outside the tolerance hysteresis / Flux n. tol hyst

VECTOR

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** DDS, p0180 — **Function diagram:** -
P-Group: Messages — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.1 [%]	50.0 [%]	10.0 [%]

Description: Sets the hysteresis for the "flux outside tolerance" message for the flux monitoring.
Dependency: Refer to: p3204, p3206
Refer to: F07914
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).
The flux monitoring is only active after magnetization (r0056.4 = 1).

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p3206[0...n] Flux outside tolerance delay time / Flux n. tol t_del

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [s]	10.0 [s]	5.0 [s]

Description: Sets the delay time for the "flux outside tolerance" message for the flux monitoring.
Dependency: Refer to: p3204, p3205
Refer to: F07914
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).
The flux monitoring is only active after magnetization (r0056.4 = 1).

p3207[0...n] Zero current signal, threshold value / I_0_sig thresh

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Messages | **Units group:** 6_2 | **Unit selection:** p0505

Min	Max	Factory setting
0.01 [Aeff]	10000.00 [Aeff]	1.00 [Aeff]

Description: Sets the threshold value for the zero current signal for the zero current monitoring.
If the absolute current falls below the threshold value then r2199.6 is set to 1 after the delay time has expired. The bit is reset if the threshold value and the hysteresis are exceeded again.
Dependency: Refer to: r2199, p3208, p3209
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).
The monitoring is only carried-out for speeds less than the speed threshold value in p2161 (r2199.0 = 1).

p3208[0...n] Zero current signal, hysteresis / I_0_sig hyst

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Messages | **Units group:** 6_2 | **Unit selection:** p0505

Min	Max	Factory setting
0.01 [Aeff]	10000.00 [Aeff]	1.00 [Aeff]

Description: Sets the hysteresis for the zero current signal for the zero current monitoring.
Dependency: Refer to: p3207, p3209
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).
The monitoring is only carried-out for speeds less than the speed threshold value in p2161 (r2199.0 = 1).

p3209[0...n] Zero current signal, delay time / I_0_sig t_del

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** -
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [s]	10.00 [s]	0.02 [s]

Description: Sets the delay time for the zero current signal for the zero current monitoring.
Dependency: Refer to: p3207, p3208
Note: The monitoring function is only carried-out for separately-excited synchronized motors (p0300 = 5).
The monitoring is only carried-out for speeds less than the speed threshold in p2161 (r2199.0 = 1).

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p3660[0...n] VSM input line supply voltage, voltage scaler / VSM input U_scaler

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	100000.00 [%]	0.00 [%]

Description: Sets the voltage scaler for the Voltage Sensing Module (VSM).

Note: When the 690 V input is used (X522) without voltage scaler,, 0 % should be entered.

When the 100 V input (X521) is used with voltage scaler to measure medium voltages, the dividing (scaling) factor multiplied by 100% should be entered.

Example:

1000 V line supply voltage, voltage scaling, 10:1

--> voltage at the VSM input is 100 V

--> p3660 = 10 * 100 % = 1000 %

r3661[0...n] CO: VSM input line supply voltage u1 - u2 / VSM input u1-u2

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** 5_3 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the voltage between L1 and L2.

Dependency: Refer to: p3660

Note: X521.1 or X522.1: Connection of L1

X521.2 or X522.2: Connection of L2

r3662[0...n] CO: VSM input line supply voltage u2 - u3 / VSM input u2-u3

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** 5_3 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the voltage between L2 and L3.

Dependency: Refer to: p3660

Note: X521.2 or X522.2: Connection of L2

X521.3 or X522.3: Connection of L3

r3664[0...n] CO: VSM temperature evaluation, status / VSM temp status

VECTOR

Can be changed: - | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the temperature evaluation of the Voltage Sensing Module (VSM).

This displays as to whether the temperature actual value has exceeded the fault/alarm threshold.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Temperature alarm threshold exceeded	Yes	No	-
01	Temperature fault threshold exceeded	Yes	No	-

Dependency: Refer to: p3665, r3666, p3667, p3668

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p3665[0...n] VSM temperature evaluation, sensor type / VSM TempSensorType

VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	0

Description: Setting of the temperature sensor for the Voltage Sensing Module (VSM).
The temperature sensor is connected to terminals X520.5 and X520.6 of the VSM.

Values:
0: No sensor
1: PTC
2: KTY84

r3666[0...n] CO: VSM temperature KTY / VSM temp KTY

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** 21_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the temperature actual value of a KTY84 temperature sensor connected to the Voltage Sensing Module (VSM).
Prerequisite:
A KTY84 sensor is connected and p3665 is set to 2.

Dependency: Refer to: p3665

Note: For sensor type PTC (p3665 = 1), the following applies:
- below the nominal response temperature, r3666 = -50°C.
- above the nominal response temperature, r3666 = 199.9 °C.

p3667[0...n] VSM line filter overtemperature alarm threshold / VSMfilt_T A_thresh

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: - | **Units group:** 21_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [°C]	301.00 [°C]	150.00 [°C]

Description: Sets the alarm threshold for the KTY temperature sensor of the Voltage Sensing Module (VSM) to monitor the line filter temperature.
Prerequisite:
A KTY84 sensor is connected and p3665 is set to 2.

Dependency: Refer to: p3665
Refer to: F34207

p3668[0...n] VSM line filter overtemperature shutdown threshold / VSM filt_T F_thres

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: - | **Units group:** 21_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [°C]	301.00 [°C]	180.00 [°C]

Description: Sets the shutdown threshold for the KTY temperature sensor of the VSM to monitor the line filter temperature.

Dependency: Refer to: p3667
Refer to: A34211

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p3669[0...n] VSM line filter overtemperature hysteresis / VSM filt_T hyst

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: - | **Units group:** 21_2 | **Unit selection:** p0505

Min	Max	Factory setting
1.00 [K]	50.00 [K]	3.00 [K]

Description: Sets the hysteresis for the alarm threshold of the VSM to monitor the line filter temperature.
Dependency: Refer to: p3667

p3670[0...n] VSM 10 V input CT gain / VSM CT_gain

VECTOR

Can be changed: T | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [A]	1000.000 [A]	1.000 [A]

Description: Sets CT gain of the CT connected at the 10 V input of the Voltage Sensing Module (VSM).
The parameter specifies the current magnitude in [A] referred to the input voltage at the VSM in [V].
Example:
CT with 1 V per 200 A.
--> p3670 = 200
Dependency: Refer to: r3671, r3672
Note: The CT for phase 1 is connected at terminals X520.1 and X520.2 of the VSM.
The CT for phase 2 is connected at terminals X520.3 and X520.4 of the VSM.

r3671[0...n] CO: VSM 10 V input CT 1 actual value / VSM CT 1 I_act

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the current actual value from current transducer (CT) 1 at the 10 V input of the Voltage Sensing Module (VSM).
Dependency: Refer to: p3670
Note: The CT for phase 1 is connected at terminals X520.1 and X520.2 of the VSM.

r3672[0...n] CO: VSM 10 V input CT 2 actual value / VSM CT 2 I_act

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** p0150 | **Function diagram:** -
P-Group: Closed-loop control | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the current actual value from current transducer (CT) 2 at the 10 V input of the Voltage Sensing Module (VSM).
Dependency: Refer to: p3670
Note: The CT for phase 2 is connected at terminals X520.3 and X520.4 of the VSM.

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r3673[0...n] CO: VSM 10 V input 1 actual value / VSM input 1 U_act

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: p0150
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual value of the voltage measured at the 10 V input 1 of the Voltage Sensing Modules (VSM).
Dependency: Refer to: p3670
Note: 10 V input 1: Terminals X520.1 and X520.2

r3674[0...n] CO: VSM 10 V input 2 actual value / VSM input 2 U_act

VECTOR

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: p0150
Function diagram: -
P-Group: Closed-loop control
Units group: -
Unit selection: -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual value of the voltage measured at the 10 V input 2 of the Voltage Sensing Modules (VSM).
Dependency: Refer to: p3670
Note: 10 V input 2: Terminals X520.3 and X520.4

p3784[0...n] BI: Sync line-drive external increase voltage / Sync ext U incr

VECTOR

Can be changed: T
Access level: 2
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to increase the voltage for external line-drive synchronization.
The voltage is increased for a 1 signal.
Note: Only SINAMICS GL150/GM150.

p3785[0...n] BI: Sync line-drive external decrease voltage / Sync ext U decr

VECTOR

Can be changed: T
Access level: 2
Data type: Unsigned32
Dynamic index: CDS, p0170
Function diagram: -
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to decrease the voltage for external line-drive synchronization.
The voltage is decreased for a 1 signal.
Note: Only SINAMICS GL150/GM150.

p3800[0...n] Sync line-drive activation / Sync activ.

VECTOR

Can be changed: T
Access level: 2
Data type: Integer16
Dynamic index: DDS, p0180
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Sets the activation for the line-drive synchronization.
Values:
0: Sync line-drive de-activated
1: Sync line-drive activated VSM-INT
Dependency: Refer to: p3801, p3802

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Note: VSM: Voltage Sensing Module.
When the ground fault monitoring initiates a fault for overlapping synchronizing the threshold value p0287[1] for the motor module and the associated infeed must be appropriately increased, e.g. p0287[1] = 100 %.
For p3800 = 1, the INTERNAL voltage actual values are used for synchronization. The effects that a (sinusoidal) filter - that is connected between the Motor Module and motor - has on the voltage actual values are taken into account (theoretically) by appropriately selecting p0230.

p3801[0...n] Sync line-drive, drive object number / Sync DO_No.

VECTOR

Can be changed: T | **Access level:** 2
Data type: Unsigned16 | **Dynamic index:** DDS, p0180 | **Function diagram:** 7020
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	62	1

Description: Sets the drive object number of the Voltage Sensing Module (VSM) used for the line-drive synchronization.
Dependency: Refer to: p3800, p3802
Note: VSM: Voltage Sensing Module

p3802[0...n] BI: Sync line-drive enable / Sync enable

VECTOR

Can be changed: T | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** CDS, p0170 | **Function diagram:** 7020
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to switch-in/switch-out for the line-drive synchronization.
Line-drive synchronization is switched-in with a 1 signal.
Dependency: Refer to: p3800, p3801

r3803 CO/BO: Sync line-drive control word / Sync STW

VECTOR

Can be changed: - | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the control word for the line-drive synchronization.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Sync line-drive selected	Yes	No	-

Note: Re bit 00:
For a 1 signal, p3800 > 0 is set.

r3804 CO: Sync line-drive target frequency / Sync f_target

VECTOR

Can be changed: - | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 7020
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the target frequency for the line-drive synchronization.
Dependency: Refer to: A07941

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r3805 CO: Sync line-drive frequency difference / Sync f_diff

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the frequency difference between the measured target frequency and output frequency of the gating unit of the closed-loop control for line-drive synchronization.

p3806[0...n] Sync line-drive frequency difference threshold value / Sync f_diff thresh

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [Hz]	1.00 [Hz]	0.10 [Hz]

Description: Sets the threshold value of the frequency difference to activate the closed-loop phase control for line-drive synchronization. The closed-loop phase control is activated (r3819.6 = 1), if the frequency difference is less that the threshold value.

r3808 CO: Sync line-drive phase difference / Sync phase diff

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
- [°]	- [°]	- [°]

Description: Displays the phase difference between the measured target phase and phase of the gating unit of the closed-loop control for line-drive synchronization.

p3809[0...n] Sync line-drive phase setpoint / Sync phase setp

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
-180.00 [°]	179.90 [°]	0.00 [°]

Description: Sets the phase setpoint for the line-drive synchronization.

p3811[0...n] Sync line-drive frequency limiting / Sync f_lim

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [Hz]	1.00 [Hz]	0.50 [Hz]

Description: Sets the frequency limiting of the phase controller output for the line-drive synchronization.

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r3812 CO: Sync line-drive correction frequency / Sync f_corr

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Hz]	- [Hz]	- [Hz]

Description: Displays the correction frequency for the line-drive synchronization.

p3813[0...n] Sync line-drive phase synchronism threshold value / Sync Ph_sync thrsh

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
1.00 [°]	20.00 [°]	2.00 [°]

Description: Sets the threshold value of the phase synchronism for the line-drive synchronization. A prerequisite for synchronism is achieved if the phase difference is lower than the threshold value.

Note: Synchronism is reached (r3819.2 = 1), if the AND logic operation of the results from the phase measurement (p3813) and voltage measurement (p3815) is fulfilled.

r3814 CO: Sync line-drive voltage difference / Sync U_diff

VECTOR

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Veff]	- [Veff]	- [Veff]

Description: Displays the voltage difference between the measured target voltage and output voltage of the gating unit of the closed-loop control for line-drive synchronization.

p3815[0...n] Sync line-drive voltage difference threshold value / Sync U_diff thresh

VECTOR

Can be changed: U, T
Access level: 2
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [%]	10.00 [%]	10.00 [%]

Description: Sets the threshold value of the voltage difference for the line-drive synchronization. A prerequisite for synchronism is reached if the voltage difference is less than the threshold value.

Note: Synchronism is reached (r3819.2 = 1), if the AND logic operation of the results from the phase measurement (p3813) and voltage measurement (p3815) is fulfilled.

For voltage manipulated quantity margin (reserve) of the drive converter, the amplitude difference (r3814) between the setpoint and actual value is controlled (corrected) to zero.

r3819 CO/BO: Sync line-drive status word / Sync ZSW

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned32
Dynamic index: -
Function diagram: 7020
P-Group: Functions
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status word for the line-drive synchronization.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Sync line-drive enabled	Yes	No	-
	02	Sync line-drive synchronism reached	Yes	No	-
	03	Sync line-drive synchronizing error	Yes	No	-
	05	Sync line-drive frequency measurement active	Yes	No	-
	06	Sync line-drive phase control active	Yes	No	-
	07	Sync line-drive without drive	Yes	No	-

p3820[0...n] Friction characteristic, value n0 / Friction n0

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	15.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 1st value pair of the friction characteristic.

Dependency: Refer to: p3830, p3845

p3821[0...n] Friction characteristic, value n1 / Friction n1

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	30.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 2nd value pair of the friction characteristic.

Dependency: Refer to: p3831, p3845

p3822[0...n] Friction characteristic, value n2 / Friction n2

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	60.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 3rd value pair of the friction characteristic.

Dependency: Refer to: p3832, p3845

p3823[0...n] Friction characteristic, value n3 / Friction n3

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	120.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 4th value pair of the friction characteristic.

Dependency: Refer to: p3833, p3845

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p3824[0...n] Friction characteristic, value n4 / Friction n4

VECTOR (n/M) **Can be changed:** T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7010
P-Group: Functions **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	150.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 5th value pair of the friction characteristic.
Dependency: Refer to: p3834, p3845

p3825[0...n] Friction characteristic, value n5 / Friction n5

VECTOR (n/M) **Can be changed:** T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7010
P-Group: Functions **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	300.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 6th value pair of the friction characteristic.
Dependency: Refer to: p3835, p3845

p3826[0...n] Friction characteristic, value n6 / Friction n6

VECTOR (n/M) **Can be changed:** T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7010
P-Group: Functions **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	600.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 7th value pair of the friction characteristic.
Dependency: Refer to: p3836, p3845

p3827[0...n] Friction characteristic, value n7 / Friction n7

VECTOR (n/M) **Can be changed:** T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7010
P-Group: Functions **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	1200.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 8th value pair of the friction characteristic.
Dependency: Refer to: p3837, p3845

p3828[0...n] Friction characteristic, value n8 / Friction n8

VECTOR (n/M) **Can be changed:** T **Access level:** 2
Data type: Floating Point **Dynamic index:** DDS, p0180 **Function diagram:** 7010
P-Group: Functions **Units group:** 3_1 **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	1500.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 9th value pair of the friction characteristic.
Dependency: Refer to: p3838, p3845

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p3829[0...n] Friction characteristic, value n9 / Friction n9

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 3_1 | **Unit selection:** p0505

Min	Max	Factory setting
0.00 [1/min]	210000.00 [1/min]	3000.00 [1/min]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the n coordinate of the 10th value pair of the friction characteristic.

Dependency: Refer to: p3839, p3845

p3830[0...n] Friction characteristic, value M0 / Friction M0

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 1st value pair of the friction characteristic.

Dependency: Refer to: p3820, p3845

p3831[0...n] Friction characteristic, value M1 / Friction M1

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 2nd value pair of the friction characteristic.

Dependency: Refer to: p3821, p3845

p3832[0...n] Friction characteristic, value M2 / Friction M2

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 3rd value pair of the friction characteristic.

Dependency: Refer to: p3822, p3845

p3833[0...n] Friction characteristic, value M3 / Friction M3

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 4th value pair of the friction characteristic.

Dependency: Refer to: p3823, p3845

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p3834[0...n] Friction characteristic, value M4 / Friction M4

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 5th value pair of the friction characteristic.

Dependency: Refer to: p3824, p3845

p3835[0...n] Friction characteristic, value M5 / Friction M5

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 6th value pair of the friction characteristic.

Dependency: Refer to: p3825, p3845

p3836[0...n] Friction characteristic, value M6 / Friction M6

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 7th value pair of the friction characteristic.

Dependency: Refer to: p3826, p3845

p3837[0...n] Friction characteristic, value M7 / Friction M7

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 8th value pair of the friction characteristic.

Dependency: Refer to: p3827, p3845

p3838[0...n] Friction characteristic, value M8 / Friction M8

VECTOR (n/M) | **Can be changed:** T | | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 9th value pair of the friction characteristic.

Dependency: Refer to: p3828, p3845

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p3839[0...n] Friction characteristic, value M9 / Friction M9

VECTOR (n/M)

Can be changed: T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
-1000000.00 [Nm]	1000000.00 [Nm]	0.00 [Nm]

Description: The friction characteristic is defined by 10 value pairs.
This parameter specifies the M coordinate of the 10th value pair of the friction characteristic.

Dependency: Refer to: p3829, p3845

r3840 CO/BO: Friction characteristic, status word / Friction ZSW

VECTOR (n/M)

Can be changed: - | **Access level:** 2
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 7010
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the state of the friction characteristic.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Friction characteristic OK	Yes	No	-
01	Friction characteristic plot activated	Yes	No	-
02	Friction characteristic plot completed	Yes	No	-
03	Friction characteristic plot aborted	Yes	No	-
08	Fiction characteristic direction of rotation, positive	Yes	No	-

r3841 CO: Friction characteristic output / Friction output

VECTOR (n/M)

Can be changed: - | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 7010
P-Group: Functions | **Units group:** 7_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [Nm]	- [Nm]	- [Nm]

Description: Displays the torque of the friction characteristic dependent on the speed.

Dependency: Refer to: p1569, p3842

p3842 Friction characteristic activation / Activate friction

VECTOR (n/M)

Can be changed: T | **Access level:** 2
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 7010
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Setting to activate and de-activate the friction characteristic.

Values:
0: Friction characteristic de-activated
1: Friction characteristic activated

Dependency: Refer to: p1569, r3841, p3845

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p3845 Friction characteristic plot activation / Friction plot act

VECTOR

Can be changed: T | **Access level:** 2
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 7010
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Setting for the friction characteristic plot.

After the next power-on command, the friction characteristic is automatically plotted.

Values:
0: Friction characteristic plot de-activated
1: Friction char. plot activated for all directions of rotation
2: Friction char. plot activated for a pos. direction of rotation
3: Friction char. plot activated for a neg. direction of rotation

Dependency: When selecting the friction characteristic measurement, the drive data set changeover is suppressed.

Notice: In order to permanently accept the determined settings they must be saved in a non-volatile fashion (p0971, p0977).

Note: When the friction characteristic plot is active, it is not possible to save the parameters (p0971, p0977).

When the friction characteristic plot is active (p3845 > 0), it is not possible to change p3820 ... p3829, p3830 ... p3839, p3842, p3846 and p3847.

When plotting the friction characteristic, in addition to the friction, the motor losses are also determined (e.g. iron losses, eddy current losses and re-magnetization losses). A differentiation is not made between these individual loss components. We recommend that a motor temperature sensor is used because torque deviations can also be emulated/mapped on the characteristic due to the thermal influence.

p3846[0...n] Friction characteristic plot ramp-up/ramp-down time / Fric plot t_RFG

VECTOR (n/M)

Can be changed: T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	999999.000 [s]	10.000 [s]

Description: Sets the ramp-up/ramp-down time of the ramp-up/ramp-down function generator to automatically plot the friction characteristic. The drive is accelerated from standstill (setpoint = 0) up to the maximum speed/velocity (p1082) in this time.

Dependency: Refer to: p3845

p3847[0...n] Friction characteristic plot warm-up time / Frict plot t_warm

VECTOR (n/M)

Can be changed: T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** DDS, p0180 | **Function diagram:** 7010
P-Group: Functions | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.000 [s]	3600.000 [s]	0.000 [s]

Description: Sets the warm-up time.

For an automatic trace (plot) to start, the highest selected speed (p3829) is approached and this time is held. After this, the measurement is started with the highest speed.

Dependency: Refer to: p3829, p3845

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p3900 Completion of quick commissioning / End quick_comm

VECTOR

Can be changed: C2(1) **Access level:** 1

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Exits the quick commissioning (p0010 = 1) with automatic calculation of all of the parameters that depend on the entries made during the quick commissioning.

p3900 = 1 initially includes a parameter reset (factory setting, the same as p0970 = 1) for all parameters of the drive object; however, without overwriting the entries made during the quick commissioning.

The interconnections of PROFIBUS PZD telegram selection (p0922) and the interconnections via p0700, p1000 and p1500 are re-established and all of the dependent motor, open-loop and control-loop control parameters are calculated (corresponding to p0340 = 1).

p3900 = 2 includes the restoration of the interconnections of PROFIBUS PZD telegram selection (p0922) and the interconnections via p0700, p1000 and p1500 and the calculations corresponding to p0340 = 1.

p3900 = 3 only includes the calculations associated with the motor, open-loop and closed-loop control parameters corresponding to p0340 = 1.

Values:

0: No quick parameterization
1: Quick parameterization after parameter reset
2: Quick parameterization (only) for BICO and motor parameters
3: Quick parameterization for motor parameters (only)

Note: When the calculations have been completed, p3900 and p0010 are automatically reset to a value of 0.

When calculating motor, open-loop and closed-loop control parameters (such as for p0340 = 1) parameters associated with a selected Siemens list motor are not overwritten.

p3902[0...n] Power unit EEPROM Vdc calibration / LT EEPROM Vdc_cal

VECTOR

Can be changed: C1, C2(1), T **Access level:** 3

Data type: Unsigned32 **Dynamic index:** PDS, p0120 **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	4294967295	0

Description: Calibration factor for the DC link voltage measurement.

Caution:

Incorrect use of the calibration can have a negative impact on the closed-loop control. The parameter influences the upper and lower voltage detection.

Note: Parameter entries are directly saved in the DRIVE-CLiQ component involved. Only values from 100 ... 10000 are accepted. All other entries are not saved and are therefore also not displayed.

The parameter only has an effect for chassis-type power units.

Calculation rule: p3902_new = p3902_old * r0026 / Vdc_measured value

r3925[0...n] Identification final display / Ident final_disp

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned32 **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Motor **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the commissioning steps that have been carried-out.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Automatic parameterization carried-out (p0340 = 1, p3900 > 0)	Yes	No	-
	02	Motor data identification carried-out at standstill (p1910 = 1)	Yes	No	-
	03	Rotating measurement carried-out (p1960 = 1 or 2)	Yes	No	-
	04	Motor encoder adjustment carried-out (p1990 = 1)	Yes	No	-
	15	Motor equivalent circuit diagram parameters changed	Changed	Not changed	-

Note: When motor rating plate parameters are changed, the final display is reset. When setting the individual bits, all of the most significant bits are reset.

Bit 00 = Automatic parameterization (p0340 = 1, p3900 > 0).

Bit 02 = Motor data identification (p1910 = 1) successfully completed.

Bit 03 = Rotating measurement (p1960 = 1, 2) successfully completed.

Bit 04 = Motor encoder adjustment (p1990 = 1) successfully completed.

Bit 15 = Equivalent circuit diagram parametes of the motor were subsequently manually changed.

r3927[0...n] Motor data identification control word / MotID STW

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Successfully completed component of the last motor data identification carried-out.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Estimates the stator inductance, no measurement	Yes	No	-
	01	Cl.-loop current control w/ dead-beat controller	Yes	No	-
	02	Estimates the rotor time constant, no measurement	Yes	No	-
	03	Estimates the leakage inductance, no measurement	Yes	No	-
	04	Activates the identification dynamic leakage inductance	Yes	No	-
	05	Determine Tr. Lsig evaluation in the time range	Yes	No	-
	06	Activates vibration damping	Yes	No	-
	07	De-activates the vibration detection	Yes	No	-
	11	De-activate pulse measurement Lq Ld	Yes	No	-
	12	De-activate rotor resistance Rr measurement	Yes	No	-
	15	Only measure stator resistance and valve voltage error	Yes	No	-

Dependency: Refer to: r3925

Note: The parameter is a copy of p1909.

r3928[0...n] Rotating measurement configuration / Rot meas config

VECTOR (n/M)

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** DDS, p0180 **Function diagram:** -

P-Group: Motor identification **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0001 1111 bin

Description: Successfully completed component of the last rotating measurement carried-out.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Enc test active	Yes	No	-
	01	Saturation characteristic identification	Yes	No	-
	02	Moment of inertia identification	Yes	No	-
	03	Recalculates the speed controller parameters	Yes	No	-
	04	Speed controller optimization, (vibration test)	Yes	No	-

Dependency: Refer to: r3925

Note: The parameter is a copy of p1959.

p3950 Service parameter / Service parameter

CU_G

Can be changed: C1, U, T | **Access level:** 4

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: For service personnel only.

r3977 BICO counter, topology / BICO counter topo

CU_G

Can be changed: - | **Access level:** 4

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the BICO interconnections that have been parameterized in the complete (overall) topology.
The counter is incremented by one for each modified BICO interconnection.

Dependency: Refer to: r3978, r3979

r3978 BICO CounterDevice / BICO CounterDevice

CU_G

Can be changed: - | **Access level:** 4

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: For each modified BICO interconnection of this device, the counter is incremented by one. Displays this counter.

r3979 BICO counter, drive object / BICO counter DO

DMC20, TB30, TM31, VECTOR

Can be changed: - | **Access level:** 4

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: For each modified BICO interconnection of this drive object, the counter is incremented by one. Displays this counter.

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p3981 Faults, acknowledge drive object / Faults ackn DO

All objects

Can be changed: U, T | **Access level:** 2
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** 2501
P-Group: Messages | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Acknowledges all active faults of a drive object.
Note: Parameter should be set from 0 to 1 to acknowledge.
After acknowledgement, the parameter is automatically reset to 0.

p3985 Master control mode selection / PcCtrl mode select

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Setpoints | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the mode to change over the master control / LOCAL mode.
Values:
0: Change master control for STW1.0 = 0
1: Change master control in operation
Danger:

When changing the master control in operation, the drive can manifest undesirable behavior - e.g. it can accelerate up to another setpoint.

r3986 Parameter count / Parameter count

All objects

Can be changed: - | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of parameters for this drive unit.
The number comprises the device-specific and the drive-specific parameters.
Dependency: Refer to: r0980, r0981, r0989

r3988 Ramp-up state / Ramp-up state

CU_G

Can be changed: - | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	800	0

Description: Displays the ramp-up state.

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Values:

0: Not active
1: Fatal fault
10: Fault
20: Reset all parameters
30: Drive object modified
40: Download using commissioning software
90: Reset Control Unit and delete drive objects
100: Start initialization
110: Instantiate Control Unit basis
150: Wait until actual topology determined
160: Evaluate topology
170: Instantiate Control Unit rest
180: Initialization YDB configuration information
200: First commissioning
210: Create drive packages
250: Wait for topology acknowledge
325: Wait for input of drive type
350: Determine drive type
360: Write into topology-dependent parameters
370: Wait until p0009 = 0 is set
380: Check topology
550: Call conversion functions for parameter
625: Wait non-cyclic starting DRIVE CLiQ
650: Start cyclic operation
660: Evaluate drive commissioning status
680: Wait for CU link slaves
700: Save parameters
725: Wait until DRIVE-CLiQ cyclic
740: Check the ability to operate
750: Interrupt enable
800: Initialization finished

r3996 Parameter write inhibit status / Par_write inhib st

All objects

Can be changed: - **Access level:** 1
Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description:

Displays whether writing to parameters is inhibited.

r3996 = 0: Write to parameter is not inhibited.

0 < r3996 < 100: Write to parameter is inhibited. The value shows how the calculations are progressing.

r4021 TB30 digital inputs terminal actual value / TB30 DI act value

TB30

Can be changed: - **Access level:** 2
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 9100
P-Group: Commands **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description:

Displays the actual value at the digital inputs.

This means that the actual input signal can be checked at terminal DI x prior to switching from the simulation mode (p4095.x = 1) to the terminal mode (p4095.x = 0). The input signal of terminal DI x is displayed in bit x of r4021.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X481.1)	High	Low	-
01	DI 1 (X481.2)	High	Low	-
02	DI 2 (X481.3)	High	Low	-
03	DI 3 (X481.4)	High	Low	-

Note:

DI: Digital input

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r4021 TM31 digital inputs terminal actual value / TM31 DI act value

TM31

Can be changed: -
Access level: 2
Data type: Unsigned32
Dynamic index: -
Function diagram: 1840, 9550, 9552, 9560, 9562
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the actual value at the digital inputs.

This means that the actual input signal can be checked at terminal DI x or DI/DO x prior to switching from the simulation mode (p4095.x = 1) to terminal mode (p4095.x = 0). The input signal at terminal DI x or DI/DO x is displayed in bit x of r4021.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X520.1)	High	Low	-
01	DI 1 (X520.2)	High	Low	-
02	DI 2 (X520.3)	High	Low	-
03	DI 3 (X520.4)	High	Low	-
04	DI 4 (X530.1)	High	Low	-
05	DI 5 (X530.2)	High	Low	-
06	DI 6 (X530.3)	High	Low	-
07	DI 7 (X530.4)	High	Low	-
08	DI/DO 8 (X541.2)	High	Low	-
09	DI/DO 9 (X541.3)	High	Low	-
10	DI/DO 10 (X541.4)	High	Low	-
11	DI/DO 11 (X541.5)	High	Low	-

Note: If a DI/DO is parameterized as output (p4028.x = 1), then r4021.x = 0 is displayed.

DI: Digital input

DI/DO: Bidirectional Digital Input/Output

r4022 CO/BO: TB30 digital inputs, status / TB30 DI status

TB30

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 1790, 9100
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the digital inputs of the Terminal Board 30 (TB30).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X481.1)	High	Low	-
01	DI 1 (X481.2)	High	Low	-
02	DI 2 (X481.3)	High	Low	-
03	DI 3 (X481.4)	High	Low	-

Dependency: Refer to: r4023

Note: DI: Digital input

r4022 CO/BO: TM31 digital inputs, status / TM31 DI status

TM31

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 1840, 9550, 9552, 9560, 9562
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the digital inputs of terminal module 31 (TM31).

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	DI 0 (X520.1)	High	Low	-
	01	DI 1 (X520.2)	High	Low	-
	02	DI 2 (X520.3)	High	Low	-
	03	DI 3 (X520.4)	High	Low	-
	04	DI 4 (X530.1)	High	Low	-
	05	DI 5 (X530.2)	High	Low	-
	06	DI 6 (X530.3)	High	Low	-
	07	DI 7 (X530.4)	High	Low	-
	08	DI/DO 8 (X541.2)	High	Low	-
	09	DI/DO 9 (X541.3)	High	Low	-
	10	DI/DO 10 (X541.4)	High	Low	-
	11	DI/DO 11 (X541.5)	High	Low	-

Dependency: Refer to: r4023

Note: DI: Digital input
DI/DO: Bidirectional Digital Input/Output

r4023 BO: TB30 digital inputs, status inverted / TB30 DI status inv

TB30

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 1790, 9100
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the inverted status of the digital inputs of the Terminal Board 30 (TB30).

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	DI 0 (X481.1)	High	Low	-
	01	DI 1 (X481.2)	High	Low	-
	02	DI 2 (X481.3)	High	Low	-
	03	DI 3 (X481.4)	High	Low	-

Dependency: Refer to: r4022

Note: DI: Digital input

r4023 CO/BO: TM31 digital inputs, status inverted / TM31 DI status inv

TM31

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 1840, 9550, 9552, 9560, 9562
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the inverted status of the digital inputs of terminal module 31 (TM31).

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	DI 0 (X520.1)	High	Low	-
	01	DI 1 (X520.2)	High	Low	-
	02	DI 2 (X520.3)	High	Low	-
	03	DI 3 (X520.4)	High	Low	-
	04	DI 4 (X530.1)	High	Low	-
	05	DI 5 (X530.2)	High	Low	-
	06	DI 6 (X530.3)	High	Low	-
	07	DI 7 (X530.4)	High	Low	-
	08	DI/DO 8 (X541.2)	High	Low	-
	09	DI/DO 9 (X541.3)	High	Low	-
	10	DI/DO 10 (X541.4)	High	Low	-
	11	DI/DO 11 (X541.5)	High	Low	-

Dependency: Refer to: r4022

Note: DI: Digital input
DI/DO: Bidirectional Digital Input/Output

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p4028 TM31 set input or output / TM31 DI or DO

TM31

Can be changed: T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1840, 9560, 9562

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the bidirectional digital inputs/outputs as input or output on the terminal module 31 (TM31).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
08	DI/DO 8 (X541.2)	Output	Input	-
09	DI/DO 9 (X541.3)	Output	Input	-
10	DI/DO 10 (X541.4)	Output	Input	-
11	DI/DO 11 (X541.5)	Output	Input	-

p4030 BI: TB30 signal source for terminal DO 0 / TB30 S_src DO 0

TB30

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1790, 9102

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for digital output DO 0 (X481.5) of the Terminal Board 30 (TB30).

Note: DO: Digital Output

p4030 BI: TM31 signal source for terminal DO 0 / TM31 S_src DO 0

TM31

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1840, 9556

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the digital output DO 0 (X542.1, X542.2, X542.3) of terminal module 31 (TM31).

Digital output 0 of TM31 is a relay output.

If the signal at the binector input p4030 is low, then terminal COM 0 (X542.2) is connected to NC 0 (X542.1). This connection also matches the mechanical quiescent setting of the relay.

If the signal at the binector input p4030 is high, then terminal COM 0 (X542.2) is connected to NO 0 (X542.3).

Note: DO: Digital Output

NC: Normally Closed contact

NO: Normally Open contact

p4031 BI: TB30 signal source for terminal DO 1 / TB30 S_src DO 1

TB30

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9102

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DO 1 (X481.6) of the Terminal Board 30 (TB30).

Note: DO: Digital Output

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p4031 BI: TM31 signal source for terminal DO 1 / TM31 S_src DO 1

TM31

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1840, 9556

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the digital output DO 1 (X542.4, X542.5, X542.6) of terminal module 31 (TM31).
Digital output 1 of TM31 is a relay output.
If the signal at the binector input p4031 is low, then terminal COM 1 (X542.5) is connected to NC 1 (X542.4). This connection also matches the mechanical quiescent setting of the relay.
If the signal at the binector input p4031 is high, then terminal COM 1 (X542.5) is connected to NO 1 (X542.6).

Note: DO: Digital Output
NC: Normally Closed contact
NO: Normally Open contact

p4032 BI: TB30 signal source for terminal DO 2 / TB30 S_src DO 2

TB30

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9102

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DO 2 (X481.7) of the Terminal Board 30 (TB30).

Note: DO: Digital Output

p4033 BI: TB30 signal source for terminal DO 3 / TB30 S_src DO 3

TB30

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1790, 9102

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DO 3 (X481.8) of the Terminal Board 30 (TB30).

Note: DO: Digital Output

p4038 BI: TM31 signal source for terminal DI/DO 8 / TM31 S_src DI/DO 8

TM31

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1840, 9560

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 8 (X541.2) of terminal module 31 (TM31).

Note: Prerequisite: The DI/DO must be set as an output (p4028.8 = 1).
DI/DO: Bidirectional Digital Input/Output

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p4039 BI: TM31 signal source for terminal DI/DO 9 / TM31 S_src DI/DO 9

TM31

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9560
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 9 (X541.3) of terminal module 31 (TM31).

Note: Prerequisite: The DI/DO must be set as an output (p4028.9 = 1).
DI/DO: Bidirectional Digital Input/Output

p4040 BI: TM31 signal source for terminal DI/DO 10 / TM31 S_src DI/DO10

TM31

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9562
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 10 (X541.4) of terminal module 31 (TM31).

Note: Prerequisite: The DI/DO must be set as an output (p4028.10 = 1).
DI/DO: Bidirectional Digital Input/Output

p4041 BI: TM31 signal source for terminal DI/DO 11 / TM31 S_src DI/DO11

TM31

Can be changed: U, T | **Access level:** 1
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1840, 9562
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for terminal DI/DO 11 (X541.5) of terminal module 31 (TM31).

Note: Prerequisite: The DI/DO must be set as an output (p4028.11 = 1).
DI/DO: Bidirectional Digital Input/Output

p4046 TM31 digital outputs, limit current / TM31 DO limit curr

TM31

Can be changed: T | **Access level:** 2
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 9560
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the limit for the total output voltage of terminals X541.1, X541.2, X541.3 and X541.4 (DI/DO 8 ... 11) of terminal module 31 (TM31).

Values:
0: 0.1 A total current limit DI/DO 8 ... 11
1: 1.0 A total current limit DI/DO 8 ... 11

Dependency: Refer to: p4028

Warning: Since the sum of the output currents at terminals X541.1, X541.2, X541.3 and X541.4 is limited, an overcurrent or short circuit at one output terminal can cause a dip in the signal at the other terminals.

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r4047 TB30 digital outputs status / TB30 DO status

TB30

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 9102
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the digital outputs of the Terminal Board 30 (TB30).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DO 0 (X481.5)	High	Low	-
01	DO 1 (X481.6)	High	Low	-
02	DO 2 (X481.7)	High	Low	-
03	DO 3 (X481.8)	High	Low	-

Note: Inversion using p4048 has been taken into account.
DO: Digital Output

r4047 TM31 digital outputs status / TM31 DO status

TM31

Can be changed: -
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 9556, 9560, 9562
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status of the digital outputs of terminal module 31 (TM31).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DO 0 (X542.1 - 3)	High	Low	-
01	DO 1 (X542.4 - 6)	High	Low	-
08	DI/DO 8 (X541.2)	High	Low	-
09	DI/DO 9 (X541.3)	High	Low	-
10	DI/DO 10 (X541.4)	High	Low	-
11	DI/DO 11 (X541.5)	High	Low	-

Note: Inversion using p4048 has been taken into account.
The setting of the DI/DO as either input or output is of no significance (p4028).
DO: Digital Output
DI/DO: Bidirectional Digital Input/Output

p4048 TB30 invert digital outputs / TB30 DO invert

TB30

Can be changed: U, T
Access level: 1
Data type: Unsigned32
Dynamic index: -
Function diagram: 9102
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Setting to invert the signals at the digital outputs of the Terminal Board 30 (TB30).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DO 0 (X481.5)	Inverted	Not inverted	-
01	DO 1 (X481.6)	Inverted	Not inverted	-
02	DO 2 (X481.7)	Inverted	Not inverted	-
03	DO 3 (X481.8)	Inverted	Not inverted	-

Note: DO: Digital Output

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p4048 TM31 invert digital outputs / TM31 DO invert

TM31

Can be changed: U, T | **Access level:** 1

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9556, 9560, 9562

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Setting to invert the signals at the digital outputs of terminal module 31 (TM31).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DO 0 (X542.1 - 3)	Inverted	Not inverted	-
01	DO 1 (X542.4 - 6)	Inverted	Not inverted	-
08	DI/DO 8 (X541.2)	Inverted	Not inverted	-
09	DI/DO 9 (X541.3)	Inverted	Not inverted	-
10	DI/DO 10 (X541.4)	Inverted	Not inverted	-
11	DI/DO 11 (X541.5)	Inverted	Not inverted	-

Note: DO: Digital Output
DI/DO: Bidirectional Digital Input/Output

r4052[0...1] TB30 analog inputs, actual input voltage / TB30 AI input_U

TB30

Can be changed: - | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9104

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual input voltage at the analog inputs of the Terminal Board 30 (TB30).

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Note: AI: Analog Input

r4052[0...1] TM31 analog inputs, actual input voltage/current / TM31 AI input_U/I

TM31

Can be changed: - | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9566, 9568

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the actual input voltage in V when set as voltage input.
Displays the actual input current in mA when set as current input and with the load resistor switched-in.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Dependency: The type of analog input AI x (voltage or current input) is set using p4056.
Refer to: r4056, p4056

Note: AI: Analog Input

p4053[0...1] TB30 analog inputs, smoothing time constant / TB30 AI T_smooth

TB30

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9104

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	1000.0 [ms]	0.0 [ms]

Description: Sets the smoothing time constant of the 1st-order low pass filter for the analog inputs of the Terminal Board 30 (TB30).

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Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)
Note: AI: Analog Input

p4053[0...1] TM31 analog inputs, smoothing time constant / TM31 AI T_smooth

TM31 **Can be changed:** U, T **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 9566, 9568
P-Group: Terminals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	1000.0 [ms]	0.0 [ms]

Description: Sets the smoothing time constant of the 1st-order low pass filter for the analog inputs of terminal module 31 (TM31).
Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)
Note: AI: Analog Input

r4055[0...1] CO: TB30 analog inputs, actual value in percent / TB30 AI value in %

TB30 **Can be changed:** - **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 1790, 9104
P-Group: Terminals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the currently referred input value of the analog inputs of Terminal Board 30 (TB30).
When interconnected, the signals are referred to the reference quantities p200x and p205x.
Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)
Note: AI: Analog Input

r4055[0...1] CO: TB31 analog inputs, actual value in percent / TM31 AI value in %

TM31 **Can be changed:** - **Access level:** 1
Data type: Floating Point **Dynamic index:** - **Function diagram:** 1840, 9566, 9568
P-Group: Terminals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the currently referred input value of the analog inputs of terminal module 31 (TM31).
When interconnected, the signals are referred to the reference quantities p200x and p205x.
Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)
Note: AI: Analog Input

r4056[0...1] TB30 analog inputs, type / TB30 AI type

TB30 **Can be changed:** - **Access level:** 1
Data type: Integer16 **Dynamic index:** - **Function diagram:** -
P-Group: Terminals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
4	4	4

Description: Displays the type of analog inputs.
Values: 4: Bipolar voltage input (-10 V ... +10 V)
Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

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p4056[0...1] TM31 analog inputs, type / TM31 AI type

TM31

Can be changed: U, T | **Access level:** 1

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 9566, 9568

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	5	4

Description: Sets the type of analog inputs of terminal module 31 (TM31).

p4056[x] = 0, 4 correspond to a voltage input (r4052, p4057, p4059 are displayed in V).

p4056[x] = 2, 3, 5 correspond to a current input (r4052, p4057, p4059 are displayed in mA).

In addition, the associated switch S5 must be switched.

For a voltage input, S5.1 or S5.2 must be switched to setting V.

For a current input, S5.1 and S5.2 must be switched into setting I (load resistor = 250 Ohm is switched-in).

Values:
0: Unipolar voltage input (0 V ... +10 V)
2: Unipolar current input (0 mA ... +20 mA)
3: Unipolar current input monitored (4 mA ... +20 mA)
4: Bipolar voltage input (-10 V ... +10 V)
5: Bipolar current input (-20 mA ... +20 mA)

Index:
[0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Warning:

The maximum voltage difference between the analog input terminals AI+, AI- and the ground of the TM31 (X520.6, X530.3) may not exceed 35 V.

For operation with the load resistor switched-in, the voltage between the differential inputs AI+ and AI- may not exceed 15 V or the impressed current of 60 mA; if this is not carefully observed, the input will be damaged.

Notice: For use as voltage input, switch S500 must be set to 0 for the input involved.

Switch S500 is located on the front panel of the TM31 above terminal block X521.

Note: When changing p4056, the parameters of the normalization characteristic (p4057, p4058, p4059, p4060) are overwritten with the following default values:

For p4056 = 0, 4, p4057 is set to 0.0 V, p4058 to 0.0 %, p4059 to 10.0 V and p4060 to 100.0 %.

For p4056 = 2, 5, p4057 is set to 0.0 mA, p4058 to 0.0 %, p4059 to 20.0 mA and p4060 to 100.0 %.

For p4056 = 3, p4057 is set to 4.0 mA, p4058 to 0.0 %, p4059 to 20.0 mA and p4060 to 100.0 %.

p4057[0...1] TB30 analog inputs, characteristic value x1 / TB30 AI char x1

TB30

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9104

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-11.000 [V]	11.000 [V]	0.000 [V]

Description: Sets the normalization characteristic for the analog inputs of Terminal Board 30 (TB30).

The normalization characteristic for the analog inputs is defined using two points.

This parameter specifies the x coordinate (input voltage in V) of the 1st value pair of the characteristic.

Index:
[0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Note: The parameters for the characteristic do not limit.

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p4057[0...1] TM31 analog inputs, characteristic value x1 / TM31 AI char x1

TM31

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-20.000	20.000	0.000

Description: Sets the normalization characteristic for the analog inputs of terminal module 31 (TM31).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the x coordinate (input voltage in V or input current in mA) of the 1st value pair of the characteristic.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Dependency: The units of this parameter (V or mA) depend on the analog input type.
Refer to: r4056, p4056

Notice: This parameter is automatically overwritten when the analog input type (p4056) is modified.

Note: The parameters for the characteristic do not limit.

p4058[0...1] TB30 analog inputs, characteristic value y1 / TB30 AI char y1

TB30

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	0.00 [%]

Description: Sets the normalization characteristic for the analog inputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the y coordinate (percentage) of the 1st value pair of the characteristic.

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Note: The parameters for the characteristic do not limit.

p4058[0...1] TM31 analog inputs, characteristic value y1 / TM31 AI char y1

TM31

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	0.00 [%]

Description: Sets the normalization characteristic for the analog inputs of terminal module 31 (TM31).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the y coordinate (percentage) of the 1st value pair of the characteristic.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Notice: This parameter is automatically overwritten when the analog input type (p4056) is modified.

Note: The parameters for the characteristic do not limit.

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p4059[0...1] TB30 analog inputs, characteristic value x2 / TB30 AI char x2

TB30

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9104

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-11.000 [V]	11.000 [V]	10.000 [V]

Description: Sets the normalization characteristic for the analog inputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the x coordinate (input voltage in V) of the 2nd value pair of the characteristic.

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Note: The parameters for the characteristic do not limit.

p4059[0...1] TM31 analog inputs, characteristic value x2 / TM31 AI char x2

TM31

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9566, 9568

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-20.000	20.000	10.000

Description: Sets the normalization characteristic for the analog inputs of terminal module 31 (TM31).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the x coordinate (input voltage in V or input current in mA) of the 2nd value pair of the characteristic.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Dependency: The units of this parameter (V or mA) depend on the analog input type.
Refer to: r4056, p4056

Notice: This parameter is automatically overwritten when the analog input type (p4056) is modified.

Note: The parameters for the characteristic do not limit.

p4060[0...1] TB30 analog inputs, characteristic value y2 / TB30 AI char y2

TB30

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9104

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	100.00 [%]

Description: Sets the normalization characteristic for the analog inputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the y coordinate (percentage) of the 2nd value pair of the characteristic.

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Note: The parameters for the characteristic do not limit.

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p4060[0...1] TM31 analog inputs, characteristic value y2 / TM31 AI char y2

TM31

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	100.00 [%]

Description: Sets the normalization characteristic for the analog inputs of terminal module 31 (TM31).
The normalization characteristic for the analog inputs is defined using two points.
This parameter specifies the y coordinate (percentage) of the 2nd value pair of the characteristic.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Notice: This parameter is automatically overwritten when the analog input type (p4056) is modified.

Note: The parameters for the characteristic do not limit.

p4061[0...1] TM31 analog inputs, wire breakage monitoring response threshold / TM31 WireBrk-Thresh

TM31

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mA]	20.00 [mA]	2.00 [mA]

Description: Sets the response threshold for wire-breakage monitoring of the analog inputs of terminal module 31 (TM31).

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Dependency: The wire breakage monitoring is active for the following type of analog input: p4056[x] = 3 (current input unipolar, monitored 4 mA ... 20 mA).
Refer to: r4056, p4056

p4062[0...1] TM31 analog inputs, wire breakage monitoring, delay time / TM31 wirebrk t_del

TM31

Can be changed: U, T — **Access level:** 2

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0 [ms]	1000 [ms]	100 [ms]

Description: Sets the delay time for wire-breakage monitoring of the analog inputs on terminal module 31 (TM31).

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

p4063[0...1] TB30 analog inputs offset / TB30 AI offset

TB30

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-20.000 [V]	20.000 [V]	0.000 [V]

Description: Sets the offset for the analog inputs of Terminal Board 30 (TB30).
The offset is added to the input signal before the normalization characteristic.

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

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p4063[0...1] TM31 analog inputs offset / TM31 AI offset

TM31

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-20.000	20.000	0.000

Description: Sets the offset for the analog inputs of terminal module 31 (TM31).
The offset is added to the input signal before the normalization characteristic.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

p4066[0...1] TB30 analog inputs, activate absolute value generation / TB30 AI absVal act

TB30

Can be changed: U, T — **Access level:** 3

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Activates the absolute value generation for the analog input signals of the Terminal Board 30 (TB30).

Values:
0: No absolute value generation
1: Absolute value generation switched-in

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

p4066[0...1] TM31 analog inputs, activate absolute value generation / TM31 AI absVal act

TM31

Can be changed: U, T — **Access level:** 3

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Activates the absolute value generation for the analog input signals of terminal module 31 (TM31).

Values:
0: No absolute value generation
1: Absolute value generation switched-in

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

p4067[0...1] BI: TB30 analog inputs, signal source for inversion / TB30 AI invert

TB30

Can be changed: U, T — **Access level:** 3

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to invert the analog input signals of the Terminal Board 30 (TB30).

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

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p4067[0...1] BI: TM31 analog inputs, signal source for inversion / TM31 AI invert

TM31

Can be changed: U, T — **Access level:** 3

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to invert the analog inputs signals of terminal module 31 (TM31).

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

p4068[0...1] TB30 analog inputs, window to suppress noise / TB30 AI window

TB30

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	20.00 [%]	0.00 [%]

Description: Sets the noise suppression window for the analog inputs of Terminal Board 30 (TB30).
Changes less than the window are suppressed.

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

p4068[0...1] TM31 analog inputs, window to suppress noise / TM31 AI window

TM31

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	20.00 [%]	0.00 [%]

Description: Sets the window for noise suppression for the analog inputs of terminal module 31 (TM31).
Changes less than the window are suppressed.

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

p4069[0...1] BI: TB30 analog inputs, signal source for enable / TB30 AI enable

TB30

Can be changed: U, T — **Access level:** 3

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for enabling the analog inputs of the Terminal Board 30 (TB30).

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

p4069[0...1] BI: TM31 analog inputs, signal source for enable / TM31 AI enable

TM31

Can be changed: U, T — **Access level:** 3

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source for the enable signal of the analog inputs of terminal module 31 (TM31).

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Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

p4071[0...1] CI: TB30 analog outputs, signal source / TB30 AO sig_source

TB30

Can be changed: U, T		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1790, 9106
P-Group: Terminals	**Units group:** -	**Unit selection:** -
Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the analog outputs of the Terminal Board 30 (TB30).

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

Note: AO: Analog Output

p4071[0...1] CI: TM31 analog outputs, signal source / TM31 AO sig_source

TM31

Can be changed: U, T		**Access level:** 1
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 1840, 9572
P-Group: Terminals	**Units group:** -	**Unit selection:** -
Min -	**Max** -	**Factory setting** 0

Description: Sets the signal source for the analog outputs of terminal module 31 (TM31).

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Note: AO: Analog Output

r4072[0...1] TB30 analog outputs, output value actually referred / TB30 AO output_val

TB30

Can be changed: -		**Access level:** 1
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 9106
P-Group: Terminals	**Units group:** -	**Unit selection:** -
Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the actual referred output value of the analog outputs of the Terminal Board 30 (TB30).

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

r4072[0...1] TM31 analog outputs, output value actually referred / TM31 AO output_val

TM31

Can be changed: -		**Access level:** 1
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 9572
P-Group: Terminals	**Units group:** -	**Unit selection:** -
Min - [%]	**Max** - [%]	**Factory setting** - [%]

Description: Displays the actual referred output value of the analog outputs of terminal module 31 (TM31).

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

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p4073[0...1] TB30 analog outputs, smoothing time constant / TB30 AO T_smooth

TB30

Can be changed: U, T — **Access level:** 1
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9106
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	1000.0 [ms]	0.0 [ms]

Description: Sets the smoothing time constant of the 1st order low pass filter for the analog outputs of the Terminal Board 30 (TB30).

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

p4073[0...1] TM31 analog outputs, smoothing time constant / TM31 AO T_smooth

TM31

Can be changed: U, T — **Access level:** 1
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9572
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0 [ms]	1000.0 [ms]	0.0 [ms]

Description: Sets the smoothing time constant of the 1st-order low pass filter for the analog outputs of terminal module 31 (TM31).

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

r4074[0...1] TB30 analog outputs, actual output voltage / TB30 AO U_smooth

TB30

Can be changed: - — **Access level:** 1
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9106
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual output voltage at the analog outputs of the Terminal Board 30 (TB30).

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

r4074[0...1] TM31 analog outputs, actual output voltage/current / TM31 AO U/I_output

TM31

Can be changed: - — **Access level:** 1
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9572
P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the actual output voltage in V when set as voltage output.
Displays the actual output voltage in mA when set as current output.

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: The type of the analog output AO x (voltage or current output) is set using p4076.
Refer to: r4076, p4076

Note: AO: Analog Output

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p4075[0...1] TB30 analog outputs, activate absolute value generation / TB30 AO absVal act

TB30

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 9106
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Activates the absolute value generation for the analog outputs of the Terminal Board 30 (TB30).

Values:
0: No absolute value generation
1: Absolute value generation switched-in

Index:
[0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

p4075[0...1] TM31 analog outputs, activate absolute value generation / TM31 AO absVal act

TM31

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 9572
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Activates the absolute value generation for the analog outputs of terminal module 31 (TM31).

Values:
0: No absolute value generation
1: Absolute value generation switched-in

Index:
[0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

r4076[0...1] TB30 analog outputs, type / TB30 AO type

TB30

Can be changed: - | **Access level:** 1
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
4	4	4

Description: Displays the type of analog outputs of the Terminal Board 30 (TB30).

Values:
4: Voltage output (-10 V ... +10 V)

Index:
[0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

p4076[0...1] TM31 analog outputs, type / TM31 AO type

TM31

Can be changed: U, T | **Access level:** 1
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** 9572
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	4	4

Description: Sets the type of analog outputs of terminal module 31 (TM31).
p4076[x] = 1, 4 correspond to a voltage output (p4074, p4078, p4080, p4083 are displayed in V).
p4076[x] = 0, 2, 3 correspond to a current output (p4074, p4078, p4080, p4083 are displayed in mA).

Values:
0: Current output (0 mA ... +20 mA)
1: Voltage output (0 V ... +10 V)
2: Current output (4 mA ... +20 mA)
3: Current output (-20 mA ... +20 mA)
4: Voltage output (-10 V ... +10 V)

Index:
[0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: Refer to: p4077, p4078, p4079, p4080

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Note: When changing p4076, the parameters of the normalization characteristic (p4077, p4078, p4079, p4080) are overwritten with the following default values:
For p4076 = 0, 3, p4077 is set to 0.0 %, p4078 to 0.0 mA, p4079 to 100.0 % and p4080 to 20.0 mA.
For p4076 = 1, 4, p4077 is set to 0.0 %, p4078 to 0.0 V, p4079 to 100.0 % and p4080 to 10.0 V.
For p4076 = 2, p4077 is set to 0.0 %, p4078 to 4.0 mA, p4079 to 100.0 % and p4080 to 20.0 mA.

p4077[0...1] TB30 analog outputs, characteristic value x1 / TB30 AO char x1

TB30

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9106
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	0.00 [%]

Description: Sets the normalization characteristic for the analog outputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the x coordinate (percentage) of the 1st value pair of the characteristic.

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

Note: The parameters for the characteristic do not limit.

p4077[0...1] TM31 analog outputs, characteristic value x1 / TM31 AO char x1

TM31

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9572
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	0.00 [%]

Description: Sets the normalization characteristic for the analog outputs of terminal module 31 (TM31).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the x coordinate (percentage) of the 1st value pair of the characteristic.

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: The units of this parameter (V or mA) depend on the analog input type.
Refer to: r4076, p4076

Notice: This parameter is automatically overwritten when the analog output type is changed (p4076).

Note: This parameter is automatically overwritten if p4076 (type of analog output) is changed.
The parameters for the characteristic do not limit.

p4078[0...1] TB30 analog outputs, characteristic value y1 / TB30 AO char y1

TB30

Can be changed: U, T | **Access level:** 2
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9106
P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-11.000 [V]	11.000 [V]	0.000 [V]

Description: Sets the normalization characteristic for the analog outputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the y coordinate (output voltage in V) of the 1st value pair of the characteristic.

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

Note: The parameters for the characteristic do not limit.

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p4078[0...1] TM31 analog outputs, characteristic value y1 / TM31 AO char y1

TM31

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9572

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-20.000 [V]	20.000 [V]	0.000 [V]

Description: Sets the normalization characteristic for the analog outputs of terminal module 31 (TM31).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the y coordinate (output voltage in V or output current in mA) of the 1st value pair of the characteristic.

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: The units of this parameter (V or mA) depend on the analog input type.
Refer to: r4076, p4076

Notice: This parameter is automatically overwritten when the analog output type is changed (p4076).

Note: This parameter is automatically overwritten if p4076 (type of analog output) is changed.
The parameters for the characteristic do not limit.

p4079[0...1] TB30 analog outputs, characteristic value x2 / TB30 AO char x2

TB30

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9106

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	100.00 [%]

Description: Sets the normalization characteristic for the analog outputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the x coordinate (percentage) of the 2nd value pair of the characteristic.

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

Note: The parameters for the characteristic do not limit.

p4079[0...1] TM31 analog outputs, characteristic value x2 / TM31 AO char x2

TM31

Can be changed: U, T | **Access level:** 2

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9572

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-1000.00 [%]	1000.00 [%]	100.00 [%]

Description: Sets the normalization characteristic for the analog outputs of terminal module 31 (TM31).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the x coordinate (percentage) of the 2nd value pair of the characteristic.

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: Refer to: r4076, p4076

Notice: This parameter is automatically overwritten when the analog output type is changed (p4076).

Note: This parameter is overwritten if p4076 (type of analog output) is changed.
The parameters for the characteristic do not limit.

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p4080[0...1] TB30 analog outputs, characteristic value y2 / TB30 AO char y2

TB30

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9106

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-11.000 [V]	11.000 [V]	10.000 [V]

Description: Sets the normalization characteristic for the analog outputs of Terminal Board 30 (TB30).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the y coordinate (output voltage in V) of the 2nd value pair of the characteristic.

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

Note: The parameters for the characteristic do not limit.

p4080[0...1] TM31 analog outputs, characteristic value y2 / TM31 AO char y2

TM31

Can be changed: U, T — **Access level:** 2

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** 9572

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-20.000 [V]	20.000 [V]	10.000 [V]

Description: Sets the normalization characteristic for the analog outputs of terminal module 31 (TM31).
The normalization characteristic for the analog outputs is defined using 2 points.
This parameter specifies the y coordinate (output voltage in V or output current in mA) of the 2nd value pair of the characteristic.

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: The units of this parameter (V or mA) depend on the analog input type.
Refer to: r4076, p4076

Notice: This parameter is automatically overwritten when the analog output type is changed (p4076).

Note: This parameter is overwritten if p4076 (type of analog output) is changed.
The parameters for the characteristic do not limit.

p4082[0...1] BI: TB30 analog outputs, signal source for inversion / TB30 AO invert

TB30

Can be changed: U, T — **Access level:** 3

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 9106

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for inverting the analog output signals of the Terminal Board 30 (TB30).

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

p4082[0...1] BI: TM31 analog outputs, signal source for inversion / TM31 AO invert

TM31

Can be changed: U, T — **Access level:** 3

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 9572

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to invert the analog output signals of terminal module 31 (TM31).

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

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p4083[0...1] TB30 analog outputs, offset / TB30 AO offset

TB30

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9106

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-10.000	10.000	0.000

Description: Sets the offset for the analog outputs of Terminal Board 30 (TB30).
The offset is added to the output signal after the normalization characteristic.

Index: [0] = AO 0 (X482.5/X482.6)
[1] = AO 1 (X482.7/X482.8)

p4083[0...1] TM31 analog outputs, offset / TM31 AO offset

TM31

Can be changed: U, T | **Access level:** 1

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** 9572

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-20.000	20.000	0.000

Description: Sets the offset for the analog outputs of terminal module 31 (TM31).
The offset is added to the output signal after the normalization characteristic.

Index: [0] = AO 0 (X522.1, X522.2, X522.3)
[1] = AO 1 (X522.4, X522.5, X522.6)

Dependency: The units of this parameter (V or mA) depend on the analog input type.
Refer to: r4076, p4076

Note: This means, for example, the offset of a downstream isolating amplifier can be compensated.

p4095 TB30 digital inputs, simulation mode / TB30 DI sim_mode

TB30

Can be changed: U, T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1790, 9100

P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the simulation mode for the digital inputs of the Terminal Board 30 (TB30).

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	DI 0 (X481.1)	Simulation	Terminal eval.	-
01	DI 1 (X481.2)	Simulation	Terminal eval.	-
02	DI 2 (X481.3)	Simulation	Terminal eval.	-
03	DI 3 (X481.4)	Simulation	Terminal eval.	-

Dependency: The setpoint for the input signals is specified using p4096.
Refer to: p4096

Note: This parameter is not saved when data is backed-up (p0971, p0977).
DI: Digital input

p4095 TM31 digital inputs, simulation mode / TM31 DI sim_mode

TM31

Can be changed: U, T | **Access level:** 2

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 1840, 9550, 9552, 9560, 9562

P-Group: Terminals | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the simulation mode for the digital inputs of terminal module 31 (TM31).

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	DI 0 (X520.1)	Simulation	Terminal eval.	-
	01	DI 1 (X520.2)	Simulation	Terminal eval.	-
	02	DI 2 (X520.3)	Simulation	Terminal eval.	-
	03	DI 3 (X520.4)	Simulation	Terminal eval.	-
	04	DI 4 (X530.1)	Simulation	Terminal eval.	-
	05	DI 5 (X530.2)	Simulation	Terminal eval.	-
	06	DI 6 (X530.3)	Simulation	Terminal eval.	-
	07	DI 7 (X530.4)	Simulation	Terminal eval.	-
	08	DI/DO 8 (X541.2)	Simulation	Terminal eval.	-
	09	DI/DO 9 (X541.3)	Simulation	Terminal eval.	-
	10	DI/DO 10 (X541.4)	Simulation	Terminal eval.	-
	11	DI/DO 11 (X541.5)	Simulation	Terminal eval.	-

Dependency: The setpoint for the input signals is specified using p4096.
Refer to: p4096

Note: This parameter is not saved when data is backed-up (p0971, p0977).
DI: Digital input
DI/DO: Bidirectional Digital Input/Output

p4096 TB30 digital inputs, simulation mode setpoint / TB30 DI sim setpt

TB30

Can be changed: U, T — **Access level:** 2

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 1790, 9100

P-Group: Commands — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the setpoint for the input signals in the simulation mode of the digital inputs of the Terminal Board 30 (TB30).

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	DI 0 (X481.1)	High	Low	-
	01	DI 1 (X481.2)	High	Low	-
	02	DI 2 (X481.3)	High	Low	-
	03	DI 3 (X481.4)	High	Low	-

Dependency: The simulation of a digital input is selected using p4095.
Refer to: p4095

Note: This parameter is not saved when data is backed-up (p0971, p0977).
DI: Digital input

p4096 TM31 digital inputs, simulation mode setpoint / TM31 DI sim setpt

TM31

Can be changed: U, T — **Access level:** 2

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 1840, 9550, 9552, 9560, 9562

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the setpoint for the input signals in the simulation mode of the digital inputs of terminal module 31 (TM31).

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	DI 0 (X520.1)	High	Low	-
	01	DI 1 (X520.2)	High	Low	-

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02	DI 2 (X520.3)	High	Low	-
03	DI 3 (X520.4)	High	Low	-
04	DI 4 (X530.1)	High	Low	-
05	DI 5 (X530.2)	High	Low	-
06	DI 6 (X530.3)	High	Low	-
07	DI 7 (X530.4)	High	Low	-
08	DI/DO 8 (X541.2)	High	Low	-
09	DI/DO 9 (X541.3)	High	Low	-
10	DI/DO 10 (X541.4)	High	Low	-
11	DI/DO 11 (X541.5)	High	Low	-

Dependency: The simulation of a digital input is selected using p4095.
Refer to: p4095

Note: This parameter is not saved when data is backed-up (p0971, p0977).
DI: Digital input
DI/DO: Bidirectional Digital Input/Output

p4097[0...1] TB30 analog inputs simulation mode / TB30 AI sim_mode

TB30

Can be changed: U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** 9104

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the simulation mode for the analog inputs of the Terminal Board 30 (TB30).

Values:
0: No simulation mode for analog input x
1: Simulation mode for analog input x

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Dependency: The setpoint for the input voltage is specified via p4098.
Refer to: p4098

Note: This parameter is not saved when data is backed-up (p0971, p0977).
AI: Analog Input

p4097[0...1] TM31 analog inputs simulation mode / TM31 AI sim_mode

TM31

Can be changed: U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** 9566, 9568

P-Group: Terminals — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the simulation mode for the analog inputs of terminal module 31 (TM31).

Values:
0: No simulation mode for analog input x
1: Simulation mode for analog input x

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Dependency: The setpoint for the input voltage is specified via p4098.
Refer to: p4098

Note: This parameter is not saved when data is backed-up (p0971, p0977).
AI: Analog Input

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p4098[0...1] TB30 analog inputs simulation mode setpoint / TB30 AI sim setpt

TB30	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 9104
	P-Group: Terminals	**Units group:** -	**Unit selection:** -
	Min -11.000 [V]	**Max** 11.000 [V]	**Factory setting** 0.000 [V]

Description: Sets the setpoint for the input voltage in the simulation mode of the analog inputs of Terminal Board 30 (TB30).

Index: [0] = AI 0 (X482.1/X482.2)
[1] = AI 1 (X482.3/X482.4)

Dependency: The simulation of an analog input is selected using p4097.
Refer to: p4097

Note: This parameter is not saved when data is backed-up (p0971, p0977).
AI: Analog Input

p4098[0...1] TM31 analog inputs simulation mode setpoint / TM31 AI sim setpt

TM31	**Can be changed:** U, T		**Access level:** 2
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 9566, 9568
	P-Group: Terminals	**Units group:** -	**Unit selection:** -
	Min -20.000	**Max** 20.000	**Factory setting** 0.000

Description: Sets the setpoint for the input value in simulation mode of the analog inputs of terminal module 31 (TM31).

Index: [0] = AI 0 (X521.1/X521.2, S5.0)
[1] = AI 1 (X521.3/X521.4, S5.1)

Dependency: The simulation of an analog input is selected using p4097.
If AI x is parameterized as voltage input (p4056), then the setpoint is a voltage in V.
If AI x is parameterized as current input (p4056), then the setpoint is current in mA.
Refer to: r4056, p4056, p4097

Note: This parameter is not saved when data is backed-up (p0971, p0977).
AI: Analog Input

p4099[0...2] TB30 inputs/outputs, sampling time / TB30 I/O t_sample

TB30	**Can be changed:** C1(3)		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 9100, 9102, 9104, 9106
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min 0.00 [µs]	**Max** 5000.00 [µs]	**Factory setting** [0] 4000.00 [µs] [1] 4000.00 [µs] [2] 4000.00 [µs]

Description: Sets the sampling time for the inputs and outputs of the Terminal Board 30 (TB30).

Index: [0] = Digital inputs/outputs (DI/DO)
[1] = Analog inputs (AI)
[2] = Analog outputs (AO)

Dependency: The parameter can only be modified for p0009 = 3, 29.
The sampling times can only be set as an integer multiple of the basic sampling time (p0110, p0111).
Refer to: p0009, r0110, r0111

Note: The modified sampling time is not effective until the drive unit is powered-up again.
For clock cycle synchronous PROFIBUS operation, the TB30 hardware (e.g. A/D converter) is operated with the PROFIBUS clock cycle (r2064[1]). This clock cycle is also kept after the PROFIBUS connection has been exited up to the next time that the Control Unit is powered-down. In this case, a faster sampling time than the PROFIBUS clock cycle is not practical in p4099[0...2].

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p4099[0...2] TM31 inputs/outputs, sampling time / TM31 I/O t_sample

TM31	**Can be changed:** C1(3)		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** 9550
	P-Group: Commands	**Units group:** -	**Unit selection:** -
	Min 0.00 [µs]	**Max** 5000.00 [µs]	**Factory setting** 4000.00 [µs]

Description: Sets the sampling time for the inputs and outputs of terminal module 31 (TM31).

Index: [0] = Digital inputs/outputs (DI/DO)
[1] = Analog inputs (AI)
[2] = Analog outputs (AO)

Dependency: The parameter can only be modified for p0009 = 3, 29.
The sampling times can only be set as an integer multiple of the basic sampling time (p0110, p0111).
Refer to: p0009, r0110, r0111

Notice: The sampling times entered in index 0 (digital inputs/outputs) and index 2 (analog outputs) must always be greater than or equal to the sampling time in index 1 (analog inputs).

Note: The modified sampling time is not effective until the drive unit is powered-up again.

p4100 TM31 temperature evaluation, sensor type / TM31 temp sens_typ

TM31	**Can be changed:** T		**Access level:** 1
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** 9576, 9577
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 2	**Factory setting** 0

Description: Sets the temperature evaluation of terminal module 31 (TM31).
This means that the temperature sensor type is selected and the evaluation is switched-in.

Values:
0: Evaluation disabled
1: PTC thermistor
2: KTY84

Note: The temperature sensor is connected at terminals X522.7(+) and X522.8(-).

r4101 TM31 temperature evaluation, sensor resistance / TM31 temp R_sensor

TM31	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 9576, 9577
	P-Group: Terminals	**Units group:** -	**Unit selection:** -
	Min - [Ohm]	**Max** - [Ohm]	**Factory setting** - [Ohm]

Description: Displays the actual resistance value of the temperature sensor connected at terminal module 31 (TM31).

Note: The temperature sensor is connected at terminals X522.7(+) and X522.8(-).
The maximum measurable resistance value is approx. 1700 Ohm.

p4102[0...1] TM31 temperature evaluation fault/alarm threshold / TM31 temp thresh

TM31	**Can be changed:** T		**Access level:** 1
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** 9576
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min -48 [°C]	**Max** 251 [°C]	**Factory setting** [0] 100 [°C] [1] 120 [°C]

Description: Sets the fault/alarm threshold for the temperature evaluation of terminal module 31 (TM31).
Temperature actual value > p4102[0] --> alarm A35211 is output.
Temperature actual value > p4102[1] --> fault F35207 is output.

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Index: [0] = Alarm threshold
[1] = Fault threshold

Dependency: Refer to: r4104

Warning: Fault F35207 only causes the drive to be shut down if there is at least one BICO interconnection between the drive and TM31.

Note: The temperature sensor is connected at terminals X522.7(+) and X522.8(-).
A value > 250 °C deactivates the alarm or fault.

r4104 BO: TM31 temperature evaluation, status / TM31 temp status

TM31

Can be changed: -
Access level: 1
Data type: Unsigned16
Dynamic index: -
Function diagram: 1840, 9576
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status for the temperature evaluation of terminal module 31 (TM31).
This displays as to whether the temperature actual value has exceeded the fault/alarm threshold.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Temperature alarm threshold exceeded	Yes	No	-
01	Temperature fault threshold exceeded	Yes	No	-

Dependency: Refer to: p4102

r4105 CO: TM31 temperature evaluation, actual value / TM31 temp actValue

TM31

Can be changed: -
Access level: 1
Data type: Floating Point
Dynamic index: -
Function diagram: 1840, 9576
P-Group: Terminals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the actual temperature value of the temperature evaluation of terminal module 31 (TM31).

Dependency: For sensor type PTC (p4100 = 1), the following applies:
- below the nominal response temperature, r4105 = -50°C.
- above the nominal response temperature, r4105 = 199.9 °C.
For sensor type KTY84-130 (p4100 = 2), the following applies:
- the displayed value corresponds to the temperature actual value.
Refer to: p4100

Note: The temperature sensor is connected at terminals X522.7(+) and X522.8(-).
For an invalid temperature actual value, (e.g. a short-circuit at the sensor input), r4105 = -300 °C is displayed.

p4600[0...n] SME motor temperature sensor 1 sensor type / MotTemp_sens typ 1

VECTOR

Can be changed: C2(3), U, T
Access level: 2
Data type: Integer16
Dynamic index: EDS, p0140
Function diagram: 8016
P-Group: Motor
Units group: -
Unit selection: -

Min	Max	Factory setting
0	32	0

Description: Sets the sensor type of the first temperature sensor for the motor temperature monitoring.
The parameter can only be changed for SME120 or SME125.

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Values:
0: No sensor available
10: PTC fault
11: PTC alarm
12: PTC alarm and timer stage
20: KTY84
30: Bimetallic NC contact fault
31: Bimetallic NC contact alarm
32: Bimetallic NC contact alarm and timer stage

Dependency: Refer to: r0458, p0600, p0601

Note: PTC thermistor: Tripping resistance = 1650 Ohm.

p4601[0...n] SME motor temperature sensor 2 sensor type / MotTemp_sens typ 2

VECTOR

Can be changed: C2(3), U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** EDS, p0140 — **Function diagram:** 8016

P-Group: Motor — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	32	0

Description: Sets the sensor type of the second temperature sensor for the motor temperature monitoring.
The parameter can only be changed for SME120 or SME125.

Values:
0: No sensor available
10: PTC fault
11: PTC alarm
12: PTC alarm and timer stage
20: KTY84
30: Bimetallic NC contact fault
31: Bimetallic NC contact alarm
32: Bimetallic NC contact alarm and timer stage

Dependency: Refer to: r0458, p0600, p0601

Note: PTC thermistor: Tripping resistance = 1650 Ohm.

p4602[0...n] SME motor temperature sensor 3 sensor type / MotTemp_sens typ 3

VECTOR

Can be changed: C2(3), U, T — **Access level:** 2

Data type: Integer16 — **Dynamic index:** EDS, p0140 — **Function diagram:** 8016

P-Group: Motor — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	32	0

Description: Sets the sensor type of the third temperature sensor for the motor temperature monitoring.
The parameter can only be changed for SME120 or SME125.

Values:
0: No sensor available
10: PTC fault
11: PTC alarm
12: PTC alarm and timer stage
20: KTY84
30: Bimetallic NC contact fault
31: Bimetallic NC contact alarm
32: Bimetallic NC contact alarm and timer stage

Dependency: Refer to: r0458, p0600, p0601

Note: PTC thermistor: Tripping resistance = 1650 Ohm.

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p4603[0...n] SME motor temperature sensor 4 sensor type / MotTemp_sens typ 4

VECTOR

Can be changed: C2(3), U, T | **Access level:** 2
Data type: Integer16 | **Dynamic index:** EDS, p0140 | **Function diagram:** 8016
P-Group: Motor | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	32	0

Description: Sets the sensor type of the fourth temperature sensor for the motor temperature monitoring.
The parameter can only be changed for SME120 or SME125.

Values:
0: No sensor available
10: PTC fault
11: PTC alarm
12: PTC alarm and timer stage
20: KTY84
30: Bimetallic NC contact fault
31: Bimetallic NC contact alarm
32: Bimetallic NC contact alarm and timer stage

Dependency: Refer to: r0458, p0600, p0601

Note: PTC thermistor: Tripping resistance = 1650 Ohm.

r4620[0...3] Motor temperatures SME / Mot Temp SME

VECTOR

Can be changed: - | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 21_1 | **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the actual temperatures in the motor, measured via an SME 120 or SME 125.

Index:
[0] = SME temperature channel 1
[1] = SME temperature channel 2
[2] = SME temperature channel 3
[3] = SME temperature channel 4

Note: An invalid temperature is displayed using the value -200°C.

p4700[0...1] Trace control / Trace control

CU_G

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Values:
0: Stop trace
1: Start trace

Index:
[0] = Trace 0
[1] = Trace 1

p4701 Measuring function, control / Meas fct ctrl

CU_G

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	0

Values:
0: Stop measuring function
1: Start measuring function
2: Measuring function, check parameterization

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r4705[0...1] Trace status / Trace status

CU_G

Can be changed: -
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	4	0

Description: Displays the current status of the trace.

Values:
0: Trace not active
1: Trace is recording presamples
2: Trace is waiting for trigger event
3: Trace is recording
4: Recording (trace) ended

Index: [0] = Trace 0
[1] = Trace 1

r4706 Measuring function, status / Meas fct status

CU_G

Can be changed: -
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	5	1

Values:
0: Measurement function inactive
1: Measuring function, parameterization checked
2: Measuring function waits for stabilizing time
3: Measuring function recording (tracing)
4: Measuring function, trace ended with error
5: Measuring function, trace successfully completed

r4708[0...1] Trace memory space required / Trace mem required

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the required memory in bytes for the actual parameterization.

Index: [0] = Trace 0
[1] = Trace 1

Dependency: Refer to: r4799

p4710[0...1] Trace trigger condition / Trace Trig_cond

CU_G

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
1	7	2

Description: Sets the trigger condition for the trace.

Values:
1: Immediate start
2: Positive edge
3: Negative edge
4: Entry to hysteresis band
5: Leaving hysteresis band
6: Trigger at bit mask
7: Start with function generator

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Index: [0] = Trace 0
[1] = Trace 1

p4711[0...1] Trace trigger signal / Trace trig_signal

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Selects the trigger signal for the trace.
OR: Defines the data type of signal to be traced when selected using the physical address (p4789).
Index: [0] = Trace 0
[1] = Trace 1
Dependency: Only effective when p4710 does not equal 1.

p4712[0...1] Trace trigger threshold / Trace trig_thresh

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-340.28235E36	340.28235E36	0.00

Description: Sets the trigger threshold for the trace.
Index: [0] = Trace 0
[1] = Trace 1
Dependency: Only effective when p4710 = 2, 3.

p4713[0...1] Trace tolerance band trigger threshold / Trace trig thresh

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-340.28235E36	340.28235E36	0.00

Description: Sets the first trigger threshold for trigger via tolerance band.
Index: [0] = Trace 0
[1] = Trace 1
Dependency: Only effective when p4710 = 4, 5.

p4714[0...1] Trace tolerance band trigger threshold / Trace trig thresh

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-340.28235E36	340.28235E36	0.00

Description: Sets the second trigger threshold for trigger via tolerance band
Index: [0] = Trace 0
[1] = Trace 1
Dependency: Only effective when p4710 = 4, 5.

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p4715[0...1] Trace bit mask trigger, bit mask / Trace trig mask

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	4294967295	0

Description: Sets the bit mask for the bit mask trigger.

Index: [0] = Trace 0
[1] = Trace 1

Dependency: Only effective when p4710 = 6.

p4716[0...1] Trace, bit mask trigger, trigger condition / Trace Trig_cond

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	4294967295	0

Description: Sets the trigger condition for bit mask trigger.

Index: [0] = Trace 0
[1] = Trace 1

Dependency: Only effective when p4710 = 6.

p4717 Measuring function, number of averaging operations / Meas fct avg qty

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	255	0

p4718 Measuring function, number of stabilizing periods / MeasFct StabPerQty

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	255	0

r4719[0...1] Trace trigger index / Trace Trig_index

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the trigger index in the trace buffer. The trigger event occurred at this point.

Index: [0] = Trace 0
[1] = Trace 1

Dependency: Only valid when p4705 = 4.

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p4720[0...1] Trace recording cycle / Trace record_cyc

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min 0.000 [ms]	**Max** 60000.000 [ms]	**Factory setting** 1.000 [ms]

Description: Sets the recording cycle for the trace.

Index: [0] = Trace 0
[1] = Trace 1

p4721[0...1] Trace recording time / Trace record_time

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min 0.000 [ms]	**Max** 3600000.000 [ms]	**Factory setting** 1000.000 [ms]

Description: Sets the recording time for the trace.

Index: [0] = Trace 0
[1] = Trace 1

p4722[0...1] Trace trigger delay / Trace trig_delay

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min -3600000.000 [ms]	**Max** 3600000.000 [ms]	**Factory setting** 0.000 [ms]

Description: Sets the trigger delay for the trace.
Trigger delay < 0:
Pretrigger: Tracing (recording) starts the selected time before the trigger event actually occurs.
Trigger delay > 0:
Post trigger: Tracing does not start until the set time after the trigger event.

Index: [0] = Trace 0
[1] = Trace 1

p4723[0...1] Time slice cycle for trace / Trace cycle

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min 0.03125 [ms]	**Max** 4.00000 [ms]	**Factory setting** 0.12500 [ms]

Description: Sets the time slice cycle in which the trace is called.

Index: [0] = Trace 0
[1] = Trace 1

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p4724[0...1] Trace average in the time range / Trace average

CU_G | **Can be changed:** U, T | **Access level:** 3
Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 bin	0001 bin	0001 bin

Index: [0] = Trace 0
[1] = Trace 1

r4725[0...1] Trace, data type 1 traced / Trace rec type 1

CU_G | **Can be changed:** - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Index: [0] = Trace 0
[1] = Trace 1

r4726[0...1] Trace, data type 2 traced / Trace rec type 2

CU_G | **Can be changed:** - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Index: [0] = Trace 0
[1] = Trace 1

r4727[0...1] Trace, data type 3 traced / Trace rec type 3

CU_G | **Can be changed:** - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Index: [0] = Trace 0
[1] = Trace 1

r4728[0...1] Trace, data type 4 traced / Trace rec type 4

CU_G | **Can be changed:** - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Index: [0] = Trace 0
[1] = Trace 1

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r4729[0...1] Trace number of recorded values / Trace rec values

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the number of traced values for each signal.

Index: [0] = Trace 0
[1] = Trace 1

Dependency: Only valid when p4705 = 4.

p4730[0...1] Trace record signal 0 / Trace record sig 0

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the first signal to be traced.
For trace with a physical address (p4780), the data type of the signal to be traced (recorded) is set here.

Index: [0] = Trace 0
[1] = Trace 1

p4731[0...1] Trace record signal 1 / Trace record sig 1

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the second signal to be traced.
For trace with a physical address (p4781), the data type of the signal to be traced (recorded) is set here.

Index: [0] = Trace 0
[1] = Trace 1

p4732[0...1] Trace record signal 2 / Trace record sig 2

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	0

Description: Selects the third signal to be traced.
For trace with a physical address (p4782), the data type of the signal to be traced (recorded) is set here.

Index: [0] = Trace 0
[1] = Trace 1

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p4733[0...1] Trace record signal 3 / Trace record sig 3

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Selects the fourth signal to be traced.
For trace with a physical address (p4783), the data type of the signal to be traced (recorded) is set here.

Index: [0] = Trace 0
[1] = Trace 1

r4740[0...16383] Trace 0 trace buffer signal 0 floating point / Trace 0 trace sig0

CU_G

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 0 and signal 0.
The trace (record) buffer is sub-divided into memory banks, each containing 500 values. Parameter p4795 can be used to toggle between the individual banks.
Example A:
The first 500 values of signal 0, trace 0 are to be read-out.
In this case, memory bank 0 is set with p4795 = 0. The first 500 values can only be read-out using r4740[0] to r4740[499].
Example B:
The values 750 to 800 from signal 0, trace 0 are to be read-out.
In this case, memory bank 1 is set with p4795 = 1. The values can now be read out in r4740[250] to r4740[299].

Dependency: Refer to: p4795

r4741[0...16383] Trace 0 trace buffer signal 1 floating point / Trace 0 trace sig1

CU_G

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 0 and signal 1.

Dependency: Refer to: r4740, p4795

r4742[0...16383] Trace 0 trace buffer signal 2 floating point / Trace 0 trace sig2

CU_G

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 0 and signal 2.

Dependency: Refer to: r4740, p4795

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r4743[0...16383] Trace 0 trace buffer signal 3 floating point / Trace 0 trace sig3

CU_G | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 0 and signal 3.
Dependency: Refer to: r4740, p4795

r4750[0...16383] Trace 1 trace buffer signal 0 floating point / Trace 1 trace sig0

CU_G | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 1 and signal 0.
Dependency: Refer to: r4740, p4795

r4751[0...16383] Trace 1 trace buffer signal 1 floating point / Trace 1 trace sig1

CU_G | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 1 and signal 1.
Dependency: Refer to: r4740, p4795

r4752[0...16383] Trace 1 trace buffer signal 2 floating point / Trace 1 trace sig2

CU_G | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 1 and signal 2.
Dependency: Refer to: r4740, p4795

r4753[0...16383] Trace 1 trace buffer signal 3 floating point / Trace 1 trace sig3

CU_G | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Trace and function generator | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the trace buffer (record buffer) for trace 1 and signal 3.
Dependency: Refer to: r4740, p4795

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r4760[0...16383] Trace 0 trace buffer signal 0 / Trace 0 trace sig0

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

r4761[0...16383] Trace 0 trace buffer signal 1 / Trace 0 trace sig1

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

r4762[0...16383] Trace 0 trace buffer signal 2 / Trace 0 trace sig2

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

r4763[0...16383] Trace 0 trace buffer signal 3 / Trace 0 trace sig3

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

p4780[0...1] Trace physical address signal 0 / Trace PhyAddr Sig0

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the physical address for the first signal to be traced.
The data type is defined using p4730.

Index: [0] = Trace 0
[1] = Trace 1

p4781[0...1] Trace physical address signal 1 / Trace PhyAddr Sig1

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the physical address for the second signal to be traced.
The data type is defined using p4731.

Index: [0] = Trace 0
[1] = Trace 1

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p4782[0...1] Trace physical address signal 2 / Trace PhyAddr Sig2

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the physical address for the third signal to be traced.
The data type is defined using p4732.

Index: [0] = Trace 0
[1] = Trace 1

p4783[0...1] Trace physical address signal 3 / Trace PhyAddr Sig3

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the physical address for the fourth signal to be traced.
The data type is defined using p4733.

Index: [0] = Trace 0
[1] = Trace 1

p4789[0...1] Trace physical address trigger signal / Trace PhyAddr Trig

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the physical address for the trigger signal.
The data type is defined by making the appropriate selection in p4711.

Index: [0] = Trace 0
[1] = Trace 1

p4795 Trace memory bank changeover / Trace mem changeov

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	500	0

Description: Changes over the memory bank to read-out the contents of the trace buffer.

Dependency: Refer to: r4740, r4741, r4742, r4743, r4750, r4751, r4752, r4753

r4799 Trace memory location free / Trace mem free

CU_G	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the free memory for the trace in bytes.

Dependency: Refer to: r4708

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p4800 Function generator control / FG control

CU_G

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	2	0

Description: The function generator is started with p4800 = 1.
The signal is only generated for a 1 signal of BI: p4819.

Values:
0: Stop function generator
1: Start function generator
2: Check function generator parameterization

Dependency: Refer to: p4819

r4805 Function generator status / FG status

CU_G

Can be changed: -
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	6	0

Description: Displays the actual status of the function generator.

Values:
0: not active
1: Generate accelerating ramp to offset
2: Generate parameterized signal shape
3: Generate braking ramp
4: Function generator stopped due to missing enable signals
5: Function generator waits for BI: p4819
6: Function generator parameterization has been checked

Dependency: Refer to: p4800, p4819

r4806 BO: Function generator status signal / FG status signal

CU_G

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the status of the function generator.
0 signal: Function generator inactive
1 signal: Function generator running

p4810 Function generator mode / FG operating mode

CU_G

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	99	0

Description: Sets the operating mode of the function generator.

Values:
0: Connection at connector output r4818
1: Connection at current setpoint after filter and r4818
2: Connection as disturbing torque and r4818
3: Connection at speed setpoint after filter and r4818
4: Connection at current setpoint before filter and r4818
5: Connection at speed setpoint before filter and r4818
99: Connection at physical address and r4818

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p4812 Function generator physical address / FG phys address

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	4294967295	0

Description: Sets the physical address where the function generator is to be connected.
Dependency: Only effective when p4810 = 99.

p4813 Function generator physical address reference value / FG phys addr ref

CU_G

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
1.00	1000000.00	1.00

Description: Sets the reference value for 100 % for referred inputs.
Dependency: Only effective when p4810 = 99.

p4815[0...2] Function generator drive number / FG drive number

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0	65535	0

Description: Selects the required drive where the function generator is to be connected.
Index: [0] = First drive for connection
[1] = Second drive for connection
[2] = Third drive for connection
Dependency: Only effective when p4810 = 1, 2, 3, 4 or 5.
Note: For the function generator, only type SERVO drives can be used.

r4818 CO: Function generator output signal / FG output signal

CU_G

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the output signal for the function generator.
Dependency: Refer to: p4810
Note: The value is displayed independently of the function generator mode.
The signal is available as connector output for an ongoing interconnection.

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p4819 BI: Function generator control / FG control

CU_G

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1

Description: Sets the signal source to control the function generator.
When the function generator is running, signal generation is stopped with a 0 signal from BI: p4819 and p4800 is set to 0.

Dependency: Refer to: p4800

p4820 Function generator signal shape / FG signal shape

CU_G

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
1	5	1

Description: Sets the signal to be generated for the function generator.

Values:
1: Square-wave
2: Staircase
3: Triangular
4: Binary noise - PRBS (Pseudo Random Binary Signal)
5: Sinusoidal

p4821 Function generator period / FG period duration

CU_G

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	60000.00 [ms]	1000.00 [ms]

Description: Sets the period of the signal to be generated for the function generator.

Dependency: Ineffective when p4820 = 4 (PRBS).

p4822 Function generator pulse width / FG pulse width

CU_G

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	60000.00 [ms]	500.00 [ms]

Description: Sets the pulse width for the signal to be generated for the function generator.

Dependency: Only effective when p4820 = 1 (square-wave).

p4823 Function generator bandwidth / FG bandwith

CU_G

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Trace and function generator
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [Hz]	16000.00 [Hz]	4000.00 [Hz]

Description: Sets the bandwidth for the signal to be generated for the function generator.

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Dependency: Only effective when p4820 = 4 (PRBS).
Refer to: p4830
Refer to: A02041

p4824 Function generator amplitude / FG amplitude

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-1600.00 [%]	1600.00 [%]	5.00 [%]

Description: Sets the amplitude for the signal to be generated for the function generator.
Dependency: Units are dependent on p4810.
If p4810 = 1, 2, 4: The amplitude is referred to p2002 (rated motor current).
If p4810 = 3, 5: The amplitude is referred to p2000 (rated motor speed).

p4825 Function generator 2nd amplitude / FG 2nd amplitude

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-1600.00 [%]	1600.00 [%]	7.00 [%]

Description: Sets the second amplitude for the signal to be generated for the function generator.
Dependency: Only effective for p4820 = 2 (staircase).
Units are dependent on p4810.
If p4810 = 1, 2, 4: The amplitude is referred to p2002 (rated motor current).
If p4810 = 3, 5: The amplitude is referred to p2000 (rated motor speed).

p4826 Function generator offset / FG offset

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-1600.00 [%]	1600.00 [%]	0.00 [%]

Description: Sets the offset (DC component) of the signal to be generated for the function generator.
Dependency: Units are dependent on p4810.
If p4810 = 1, 2, 4: The offset is referred to p2002 (rated motor current).
If p4810 = 3, 5: The offset is referred to p2000 (rated motor speed).
If p4810 = 2: In order to avoid effects of play (backlash), the offset does not act on the current setpoint, but instead on the speed setpoint.

p4827 Function generator ramp-up time to offset / FG ramp-up offset

CU_G

Can be changed: U, T — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	100000.00 [ms]	32.00 [ms]

Description: Sets the ramp-up time to the offset for the function generator.

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p4828 Function generator lower limit / FG lower limit

CU_G

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-10000.00 [%]	0.00 [%]	-100.00 [%]

Description: Sets the lower limit for the function generator.

Dependency: For p4810 = 2 the limit only applies to the current setpoint, but not the speed setpoint (offset).

p4829 Function generator upper limit / FG upper limit

CU_G

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [%]	10000.00 [%]	100.00 [%]

Description: Sets the upper limit for the function generator.

Dependency: For p4810 = 2 the limit only applies to the current setpoint, but not the speed setpoint (offset).

p4830 Function generator time slice cycle / FG time slice

CU_G

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.03125 [ms]	2.00000 [ms]	0.12500 [ms]

Description: Sets the time slice cycle in which the function generator is called.

p4831 Function generator amplitude scaling / FG amplitude scal

CU_G

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00000 [%]	200.00000 [%]	100.00000 [%]

Description: Sets the scaling for the amplitude of the signal waveforms for all output channels.
The value can be changed while the function generator is running.

p4832[0...2] Function generator amplitude scaling / FG amplitude scal

CU_G

Can be changed: U, T — **Access level:** 3

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Trace and function generator — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-340.28235E36 [%]	340.28235E36 [%]	100.00000 [%]

Description: Sets the scaling for the amplitude of the signal waveforms separately for each output channel.
The value cannot be changed while the function generator is running.

Index: [0] = First drive for connection
[1] = Second drive for connection
[2] = Third drive for connection

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p4833[0...2] Function generator offset scaling / FG offset scal

CU_G	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Trace and function generator	**Units group:** -	**Unit selection:** -
	Min -340.28235E36 [%]	**Max** 340.28235E36 [%]	**Factory setting** 100.00000 [%]

Description: Sets the scaling for the offset of the signal waveforms separately for each output channel.
The value cannot be changed while the function generator is running.

Index: [0] = First drive for connection
[1] = Second drive for connection
[2] = Third drive for connection

r4950 OA application count / OA appl qty

All objects	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: OEM range	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 10	**Factory setting** 0

Description: Displays the number of OA applications installed on the CompactFlash card.

Dependency: Refer to: r4951, r4952, r4955, p4956, r4957, r4958, r4959, r4960

Note: OA: Open Architecture

r4951 OA application identifier, total length / OA appl ID length

All objects	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: OEM range	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 90	**Factory setting** 0

Description: Displays the total length of the identifiers of all of the OA applications installed on the CompactFlash card.
The identifier of an OA application comprises a maximum of 8 characters plus separator.

Dependency: Refer to: r4950, r4952, r4955, p4956, r4957, r4958, r4959, r4960

r4952 OA application GUID, total length / OA applGUID length

All objects	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: OEM range	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 180	**Factory setting** 0

Description: Displays the total length of the GUIDs of all of the OA applications installed on the CompactFlash card.
The GUID of an OA application comprises 16 characters plus 1 character major information plus 1 character, minor information.

Dependency: Refer to: r4950, r4951, r4955, p4956, r4957, r4958, r4959, r4960

Note: GUID: Globally Unique IDentifier

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r4955[0...n] OA application identifier / OA appl identifier

All objects

Can be changed: -
Access level: 4
Data type: Unsigned8
Dynamic index: r4951
Function diagram: -
P-Group: OEM range
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the identifiers of all of the OA applications installed on the CompactFlash card.
r4955[0...8]: Identifier of OA application 1
r4955[9...17]: Identifier of OA application 2
etc.

Dependency: Refer to: r4950, r4951, r4952, p4956, r4957, r4958, r4959, r4960

p4956[0...n] OA application activation / OA appl act

All objects

Can be changed: C1, T
Access level: 4
Data type: Integer16
Dynamic index: r4950
Function diagram: -
P-Group: OEM range
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Setting to activate the OA applications installed on the CompactFlash card.
r4956[0]: Activates OA application 1
r4956[1]: Activates OA application 2
etc.

Values:
0: OA application inactive
1: OA application active

Dependency: Refer to: r4950, r4951, r4952, r4955, r4957, r4958, r4959, r4960

r4957[0...n] OA application version / OA appl version

All objects

Can be changed: -
Access level: 4
Data type: Unsigned32
Dynamic index: r4950
Function diagram: -
P-Group: OEM range
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the version of OA applications installed on the CompactFlash card.
r4957[0]: Version of OA application 1
r4957[1]: Version of OA application 2
etc.

Dependency: Refer to: r4950, r4951, r4952, r4955, p4956, r4958, r4959, r4960

Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

r4958[0...n] OA application interface version / OA appl intfc_vers

All objects

Can be changed: -
Access level: 4
Data type: Unsigned32
Dynamic index: r4950
Function diagram: -
P-Group: OEM range
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the interface version of the OA applications installed on the CompactFlash card.
r4958[0]: Interface version of OA application 1
r4958[1]: Interface version of OA application 2
etc.

Dependency: Refer to: r4950, r4951, r4952, r4955, p4956, r4957, r4959, r4960

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Note: Example:
The value 1010100 should be interpreted as V01.01.01.00.

r4959[0...n] OA application GUID / OA appl GUID

All objects

Can be changed: -
Access level: 4
Data type: Unsigned8
Dynamic index: r4952
Function diagram: -
P-Group: OEM range
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the GUIDs of OA applications installed on the CompactFlash card.
r4959[0...15]: GUID of OA application 1
r4960[16]: Major information of OA application 1
r4960[16]: Minor information of OA application 1
r4959[18...33]: GUID of OA application 2
r4960[34]: Major information of OA application 2
r4960[35]: Minor information of OA application 2
etc.

Dependency: Refer to: r4950, r4951, r4952, r4955, p4956, r4957, r4958, r4960

r4960[0...n] OA application GUID drive object / OA appl GUID DO

All objects

Can be changed: -
Access level: 4
Data type: Unsigned8
Dynamic index: r4952
Function diagram: -
P-Group: OEM range
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the GUIDs of this drive object of the OA applications installed on the CompactFlash card.
r4960[0...15]: GUID of this drive object of OA application 1
r4960[16]: Major information of this drive object of OA application 1
r4960[17]: Minor information of this drive object of OA application 1
r4960[18...33]: GUID of this drive object of OA application 2
r4960[34]: Major information of this drive object of OA application 2
r4960[35]: Minor information of this drive object of OA application 2
etc.

Dependency: Refer to: r4950, r4951, r4952, r4955, p4956, r4957, r4958, r4959

p6651 BI: Test mode, signal source ON/OFF / Test s_src ON/OFF

VECTOR

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source to switch-in/switch-out the test.
The test mode is set using p6650.

r7000 Par_circuit No. of active power units / Qty active LT

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the active power units for a parallel circuit configuration.

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Dependency: Refer to: p7001

p7001[0...n] Par_circuit enable power units / Enable LT

VECTOR (Parallel)

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: Enables the power units in the parallel circuit configuration.

Values:
0: Deactivated
1: Activated

Dependency: Refer to: r7000

r7002[0...n] Par_circuit status power units / Status LT

VECTOR (Parallel)

Can be changed: - | **Access level:** 3
Data type: Integer16 | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Modulation | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Displays the status of the power units in the parallel circuit configuration.

Values:
0: Pulses inhibited
1: Pulses enabled

Dependency: Refer to: r7000, p7001

p7003 Par_circuit winding system / Winding system

VECTOR (Parallel)

Can be changed: C2(2) | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Converter | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Specifies the winding system for a parallel circuit configuration.
The following limitations/restrictions are obtained depending on the setting:
One winding system (p7003 = 0):
- the motor data identification routine (p1910) determines the stator resistance and the cable resistance.
- the current symmetrizing is activated as standard after the motor data identification routine (p7035 = 1).
- individual Motor Modules can be activated and de-activated (p7001).
- the edge modulation is not possible (p1802).

Several separate winding systems or motors (p7003 = 1):
- the motor data identification routine (p1910) determines the total (overall) resistance.
- the current symmetrizing is de-activated as standard (p7035 = 0).
- all Motor Modules are activated. It is not possible to de-activate a motor model.
- the edge modulation can be activated (p1802).

Values:
0: One winding system
1: Several separate winding systems or motors

Dependency: Refer to: p1802

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p7010 Par_circuit current dissymmetry alarm threshold / i_dissym A thresh

VECTOR (Parallel)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
2 [%]	100 [%]	20 [%]

Description: Sets the alarm threshold to detect current dissymmetry in the parallel circuit configuration.
The deviation between the measured values and average value is evaluated. The specified value is referred to the rated power unit current (p7251[0]).

Dependency: Refer to: r7251
Refer to: A05052

p7011 Par_circuit DC link voltage dissymmetry, alarm threshold / Vdc_dissym A thrsh

VECTOR (Parallel)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
2 [%]	100 [%]	10 [%]

Description: Sets the alarm threshold to detect dissymmetry of the DC link voltages in the parallel circuit configuration.
The deviation between the measured values and average value is evaluated. The specified value is referred to the rated link voltage.

Dependency: Refer to: A05053

r7020[0...n] CO: Par_circuit deviation current in phase U / Phase U curr dev

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: 6_5
Unit selection: p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the deviation between the measured current actual value of phase U and the average value as peak value.
The maximum deviation from the average value is displayed in r7025.

Dependency: Refer to: r7021, r7022, r7025

r7021[0...n] CO: Par_circuit deviation current in phase V / Phase V curr dev

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: 6_5
Unit selection: p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the deviation between the measured current actual value of phase V and the average value as peak value.
The maximum deviation from the average value is displayed in r7026.

Dependency: Refer to: r7020, r7022, r7026

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r7022[0...n] CO: Par_circuit deviation current in phase W / Phase W curr dev

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: 6_5
Unit selection: p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the deviation between the measured current actual value of phase W and the average value as peak value.

The maximum deviation from the average value is displayed in r7027.

Dependency: Refer to: r7020, r7021, r7027

r7025 CO: Par_circuit max. deviation currents phase U / Phase U Max i_dev

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: 6_5
Unit selection: p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the maximum absolute deviation of the measured current actual values of phase U from the average value as peak value.

The deviation of the individual currents from the average value is displayed in r7020.

Dependency: Refer to: r7020, r7026, r7027

Refer to: A05052

r7026 CO: Par_circuit max. deviation currents phase V / Phase V Max i_dev

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: 6_5
Unit selection: p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the maximum absolute deviation of the measured current actual values of phase V from the average value as peak value.

The deviation of the individual currents from the average value is displayed in r7021.

Dependency: Refer to: r7021, r7025, r7027

Refer to: A05052

r7027 CO: Par_circuit max. deviation currents phase W / Phase W Max i_dev

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: 6_5
Unit selection: p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the maximum absolute deviation of the measured current actual values of phase W from the average value as peak value.

The deviation of the individual currents from the average value is displayed in r7022.

Dependency: Refer to: r7022, r7025, r7026

Refer to: A05052

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r7030[0...n] CO: Par_circuit DC link voltage deviation / Vdc deviation

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the deviation of the measured DC link voltage from the average value.
The maximum deviation from the average value is displayed in r7031.

Dependency: Refer to: r7031

r7031 CO: Par_circuit DC link voltage, maximum deviation / Vdc deviation max.

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the maximum absolute deviation of the measured DC link voltage from the average value.
The deviation of the individual voltages from the average value is displayed in r7030.

Dependency: Refer to: r7030
Refer to: A05053

p7035[0...n] Par_circuit circulating current control, operating mode / Circ_I mode

VECTOR (Parallel)

Can be changed: U, T
Access level: 3
Data type: Integer16
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	1

Description: Sets the operating mode of the circulating current control.
The circulating current control ensures symmetrical distribution of the total currents to the individual converters.

Values:
0: Circulating current control de-activated
1: Circulating control control activated

p7036[0...n] Par_circuit circulating current control, proportional gain / Circ_I Kp

VECTOR (Parallel)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00000 [Ohm]	20.00000 [Ohm]	0.00000 [Ohm]

Description: Sets the proportional gain for the circulating current controller.
The parameter is pre-set to the cable resistance.

p7037[0...n] Par_circuit circulating current control, integral time / Circ_I TN

VECTOR (Parallel)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
2.0	1000.0	4.0

Description: Sets the integral time of the circulating current controller.
The parameter is referred to the current controller sampling time p0115[0].

Dependency: Refer to: p0115

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p7038[0...n] Par_circuit circulating current control, limit / Circ_I limit

VECTOR (Parallel)

Can be changed: U, T
Access level: 3
Data type: Floating Point
Dynamic index: DDS, p0180
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
1 [%]	100 [%]	50 [%]

Description: Sets the limit of the circulating current controller output values.
The parameter is, depending on the phase, referred to the valve lockout times p1828, p1829 or p1830.

p7040[0...n] Par_circuit correction, valve lockout time phase U / Comp t_lockout U

VECTOR (Parallel)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [µs]	1000000.00 [µs]	0.00 [µs]

Description: For the particular Motor Module, the correction time must be added to the valve lockout time to be compensated for phase U (p1828).
The correction value is used to compensate variations/spread in the valve lockout times of Motor Modules for a parallel circuit configuration.

Dependency: Refer to: p1828

p7042[0...n] Par_circuit correction, valve lockout time phase V / Comp t_lockout V

VECTOR (Parallel)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [µs]	1000000.00 [µs]	0.00 [µs]

Description: For the particular Motor Module, the correction time must be added to the valve lockout time to be compensated for phase V (p1829).
The correction value is used to compensate variations/spread in the valve lockout times of Motor Modules for a parallel circuit configuration.

Dependency: Refer to: p1829

p7044[0...n] Par_circuit correction, valve lockout time phase W / Comp t_lockout W

VECTOR (Parallel)

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Modulation
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [µs]	1000000.00 [µs]	0.00 [µs]

Description: For the particular Motor Module, the correction time must be added to the valve lockout time to be compensated for phase W (p1830).
The correction value is used to compensate variations/spread in the valve lockout times of Motor Modules for a parallel circuit configuration.

Dependency: Refer to: p1830

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r7050[0...n] Par_circuit circulating current phase U / Circ_I_phase U

VECTOR (Parallel)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** PDS, p0120	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** 6_5	**Unit selection:** p0505
	Min - [A]	**Max** - [A]	**Factory setting** - [A]

Description: Displays the circulating current of phase U as peak value.

r7051[0...n] Par_circuit circulating current phase V / Circ_I_phase V

VECTOR (Parallel)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** PDS, p0120	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** 6_5	**Unit selection:** p0505
	Min - [A]	**Max** - [A]	**Factory setting** - [A]

Description: Displays the circulating current of phase V as peak value.

r7052[0...n] Par_circuit circulating current phase W / Circ_I_phase W

VECTOR (Parallel)	**Can be changed:** -		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** PDS, p0120	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** 6_5	**Unit selection:** p0505
	Min - [A]	**Max** - [A]	**Factory setting** - [A]

Description: Displays the circulating current of phase W as peak value.

r7100[0...99] Par_circuit ring buffer fault/alarm code / Fault/alarm code

VECTOR (Parallel)	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Ring buffer for faults and alarms that have occurred from power units connected in parallel (Motor Module, Active Line Infeed, Voltage Sensing Module).
Displays the fault/alarm code.

Dependency: Refer to: r7101, r7102, r7103

Note: The last fault case that occurred is documented in index 0.
The parameter is reset to 0 at POWER ON.

r7101[0...99] Par_circuit ring buffer data set number / Ring buffer Ds_No.

VECTOR (Parallel)	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Displays, signals	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Ring buffer for faults and alarms that have occurred from power units connected in parallel (Motor Module, Active Line Infeed, Voltage Sensing Module).
p7101 < 100:
Displays the Power unit Data Set number (PDS).
p7101 >= 100:
Displays the Voltage Sensing Module Data Set number (VSMDS)

Dependency: Refer to: r7100, r7102, r7103

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Note: The last fault case that occurred is documented in index 0.
The parameter is reset to 0 at POWER ON.

r7102[0...99] Par_circuit ring buffer fault/alarm received / F/A received

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Ring buffer for faults and alarms that have occurred from power units connected in parallel (Motor Module, Active Line Infeed, Voltage Sensing Module).
Displays the relative system runtime when the fault or alarm occurred.

Dependency: Refer to: r7100, r7101, r7103

Note: The last fault case that occurred is documented in index 0.
The parameter is reset to 0 at POWER ON.

r7103[0...99] Par_circuit ring buffer fault/alarm gone / F/A gone

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Ring buffer for faults and alarms that have occurred from power units connected in parallel (Motor Module, Active Line Infeed, Voltage Sensing Module).
Displays the relative system runtime when the fault or alarm was withdrawn.

Dependency: Refer to: r7100, r7101, r7102

Note: The last fault case that occurred is documented in index 0.
The parameter is reset to 0 at POWER ON.

r7200[0...n] Par_circuit power unit overload I2T / LT overload I2T

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: -
Unit selection: -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the overload of the particular power unit in a parallel circuit configuration calculated using the I2t function.
The maximum value of all power units is displayed in r0036.

r7201[0...n] Par_circuit power unit temperatures max. inverter / LT temp max inv

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: 21_1
Unit selection: p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the maximum inverter temperature in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[0].

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r7202[0...n] Par_circuit power unit temperatures max. depletion layer / LT TempMaxDepLayer

VECTOR (Parallel)

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the maximum depletion layer temperature in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[1].

r7203[0...n] Par_circuit power unit temperatures max. rectifier / LT temp max rect

VECTOR (Parallel)

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the maximum rectifier temperature in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[2].

r7204[0...n] Par_circuit power unit temperatures air intake / LT temp air intake

VECTOR (Parallel)

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the air intake temperature in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[3].

r7205[0...n] Par_circuit power unit temperatures electronics / LT temp electr

VECTOR (Parallel)

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the temperature of the electronics module in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[4].

r7206[0...n] Par_circuit power unit temperatures inverter 1 / LT temp inv 1

VECTOR (Parallel)

Can be changed: - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the inverter temperature 1 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[5].

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r7207[0...n] Par_circuit power unit temperatures inverter 2 / LT temp inv 2

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the inverter temperature 2 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[6].

r7208[0...n] Par_circuit power unit temperatures inverter 3 / LT temp inv 3

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the inverter temperature 3 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[7].

r7209[0...n] Par_circuit power unit temperatures inverter 4 / LT temp inv 4

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the inverter temperature 4 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[8].

r7210[0...n] Par_circuit power unit temperatures inverter 5 / LT temp inv 5

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the inverter temperature 5 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[9].

r7211[0...n] Par_circuit power unit temperatures inverter 6 / LT temp inv 6

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays the inverter temperature 6 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[10].

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r7212[0...n] Par_circuit power unit temperatures inverter 1 / LT temp rect 1

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays rectifier temperature 1 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[11].

r7213[0...n] Par_circuit power unit temperatures inverter 2 / LT temp rect 2

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays rectifier temperature 2 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[12].

r7214[0...n] Par_circuit power unit temperatures depletion layer 1 / LT temp DepLayer 1

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays depletion layer temperature 1 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[13].

r7215[0...n] Par_circuit power unit temperatures depletion layer 2 / LT temp DepLayer 2

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays depletion layer temperature 2 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[14].

r7216[0...n] Par_circuit power unit temperatures depletion layer 3 / LT temp DepLayer 3

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays depletion layer temperature 3 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[15].

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r7217[0...n] Par_circuit power unit temperatures depletion layer 4 / LT temp DepLayer 4

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays depletion layer temperature 4 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[16].

r7218[0...n] Par_circuit power unit temperatures depletion layer 5 / LT temp DepLayer 5

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays depletion layer temperature 5 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[17].

r7219[0...n] Par_circuit power unit temperatures depletion layer 6 / LT temp DepLayer 6

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 21_1 **Unit selection:** p0505

Min	Max	Factory setting
- [°C]	- [°C]	- [°C]

Description: Displays depletion layer temperature 6 in the power unit for a parallel circuit configuration.
The maximum value of all power units is displayed in r0037[18].

r7220[0...n] CO: Par_circuit drive output current, maximum / Drv I_output max

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the maximum output current of the power unit.
The minimum value of all power units multiplied by the number of Motor Modules is displayed in r0067.

r7222[0...n] CO: Par_circuit absolute current actual value / I_act abs.val.

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 6_2 **Unit selection:** p0505

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays actual absolute current.
The summed value of all power units is displayed in r0068.

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r7223[0...n] CO: Par_circuit phase current, actual value phase U / I_phase U act val

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 6_5 **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured actual value of phase U as peak value.
The summed value of all power units is displayed in r0069[0].

r7224[0...n] CO: Par_circuit phase current, actual value phase V / I_phase V act val

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 6_5 **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured actual value of phase V as peak value.
The summed value of all power units is displayed in r0069[1].

r7225[0...n] CO: Par_circuit phase current, actual value phase W / I_phase W act val

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 6_5 **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured actual value of phase W as peak value.
The summed value of all power units is displayed in r0069[2].

r7226[0...n] CO: Par_circuit phase current actual value, phase U offset / I_phase U offset

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 6_5 **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured offset of phase U as peak value.
The summed value of all power units is displayed in r0069[3].

r7227[0...n] CO: Par_circuit phase current, actual value, phase V offset / I_phase V offset

VECTOR (Parallel) **Can be changed:** - **Access level:** 3
Data type: Floating Point **Dynamic index:** PDS, p0120 **Function diagram:** -
P-Group: Displays, signals **Units group:** 6_5 **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured offset of phase V as peak value.
The summed value of all power units is displayed in r0069[4].

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r7228[0...n] CO: Par_circuit phase current, actual value, phase W offset / I_phase W offset

VECTOR (Parallel) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 6_5 | **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured offset of phase W as peak value.
The summed value of all power units is displayed in r0069[5].

r7229[0...n] CO: Par_circuit phase current actual value sum U, V, W / I_phase sum UVW

VECTOR (Parallel) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 6_5 | **Unit selection:** p0505

Min	Max	Factory setting
- [A]	- [A]	- [A]

Description: Displays the measured sum of the currents in phases U, V and W as peak value.
The summed value of all power units is displayed in r0069[6].

r7230[0...n] CO: Par_circuit DC link voltage actual value / Vdc_act

VECTOR (Parallel) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 5_2 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the measured actual value of the DC link voltage.
The average value of all power units is displayed in r0070.

r7231[0...n] CO: Par_circuit phase voltage, actual value phase U / U_phase U act val

VECTOR (Parallel) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 5_3 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual voltage, phase U.
The average value of all power units is displayed in r0089[0].

r7232[0...n] CO: Par_circuit phase voltage, actual value phase V / U_phase V act val

VECTOR (Parallel) | **Can be changed:** - | | **Access level:** 3
Data type: Floating Point | **Dynamic index:** PDS, p0120 | **Function diagram:** -
P-Group: Displays, signals | **Units group:** 5_3 | **Unit selection:** p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual voltage, phase V.
The average value of all power units is displayed in r0089[1].

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r7233[0...n] CO: Par_circuit phase voltage, actual value phase W / U_phase W act val

VECTOR (Parallel)

Can be changed: -
Access level: 3
Data type: Floating Point
Dynamic index: PDS, p0120
Function diagram: -
P-Group: Displays, signals
Units group: 5_3
Unit selection: p0505

Min	Max	Factory setting
- [V]	- [V]	- [V]

Description: Displays the actual voltage, phase W.
The average value of all power units is displayed in r0089[2].

r7250[0...4] Par_circuit power unit rated power / LT P_rated

VECTOR (Parallel)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Converter
Units group: 14_6
Unit selection: p0100

Min	Max	Factory setting
- [kW]	- [kW]	- [kW]

Description: Displays the rated power of the individual power units connected in parallel for various load duty cycles.
The sum of the rated powers of all power units connected in parallel is displayed in r0206.

Index: [0] = Rating plate
[1] = Load duty cycle with low overload
[2] = Load duty cycle with high overload
[3] = S1 load duty cycle
[4] = S6 load duty cycle

Dependency: The value is displayed in [kW] or [hp].
Refer to: p0100, p0205

r7251[0...4] Par_circuit power unit rated current / LT PI_rated

VECTOR (Parallel)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the rated current of the individual power units connected in parallel for various load duty cycles.
The sum of the rated currents of all power units connected in parallel is displayed in r0207.

Index: [0] = Rating plate
[1] = Load duty cycle with low overload
[2] = Load duty cycle with high overload
[3] = S1 load duty cycle
[4] = S6 load duty cycle

Dependency: Refer to: p0205

r7252[0...4] Par_circuit maximum power unit current / LT I_max

VECTOR (Parallel)

Can be changed: -
Access level: 2
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Converter
Units group: -
Unit selection: -

Min	Max	Factory setting
- [Aeff]	- [Aeff]	- [Aeff]

Description: Displays the maximum output current of the individual power units connected in parallel.
The sum of the maximum currents of all power units connected in parallel is displayed in r0209.

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Index: [0] = Rating plate
[1] = Load duty cycle with low overload
[2] = Load duty cycle with high overload
[3] = S1 load duty cycle
[4] = S6 load duty cycle

Dependency: Refer to: p0205

p7820 DRIVE-CLiQ component, component number / DLQ comp_no

CU_G

Can be changed: U, T — **Access level:** 4

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the component number of the DRIVE-CLiQ component whose parameters are to be accessed.

Dependency: Refer to: p7821, p7822, r7823

p7821 DRIVE-CLiQ component, parameter number / DLQ para_no

CU_G

Can be changed: U, T — **Access level:** 4

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the parameter number to access a parameter of a DRIVE-CLiQ component.

Dependency: Refer to: p7820, p7822, r7823

p7822 DRIVE-CLiQ component, parameter index / DLQ para_index

CU_G

Can be changed: U, T — **Access level:** 4

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the parameter index to access a parameter of a DRIVE-CLiQ component.

Dependency: Refer to: p7820, p7821, r7823

r7823 DRIVE-CLiQ component, read parameter value / Read DLQ value

CU_G

Can be changed: - — **Access level:** 4

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the parameter value read from the DRIVE-CLiQ component.

Dependency: Refer to: p7820, p7821, p7822

p7828 Firmware download component number / FW_download number

CU_G

Can be changed: U, T — **Access level:** 3

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	399	0

Description: Component number of the DRIVE-CLiQ component for which a firmware download is to be made.

Dependency: Refer to: p0121, p0141, p0151, p7829

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Note: For p7828 = 399, the firmware for all of the known components is downloaded.
The firmware download is started with p7829 = 1.

p7829 Activate firmware download / Act. FW_download

CU_G

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	999	0

Description: Activating the firmware download for the DRIVE-CLiQ components specified in p7828.
1: Activate download
0: Download successfully completed
1: Fault code
011: DRIVE-CLiQ component has detected a checksum error.
015: The selected DRIVE-CLiQ components did not accept the contents of the firmware file.
101: After several communication attempts, not response from the DRIVE-CLiQ component.
140: Firmware file for the DRIVE-CLiQ component not available on the CompactFlash card.
143: Component is not changed in the firmware download mode.
156: Component with the specified component number is not available.
Additional values:
Only for internal Siemens troubleshooting.

Dependency: Refer to: p7828

Note: p7829 is automatically set to 0 after the firmware has been successfully downloaded.
The new firmware only becomes active at the next system run-up.

p7830 Diagnostics telegram selection / Diag telegram

VECTOR

Can be changed: T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Selects a telegram whose contents should be shown in p7831 ... p7836.

Values:
0: Reserved
1: First cyclic receive telegram, sensor 1
2: First cyclic receive telegram, sensor 2
3: First cyclic receive telegram, sensor 3

Dependency: Refer to: r7831, r7832, r7833, r7834, r7835, r7836

r7831[0...15] Telegram diagnostics signals / Tel diag signals

VECTOR

Can be changed: - | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	10789	111

Description: Displays the signals contained in the selected telegram (p7830).

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Values:

0: UNUSED
1: UNKNOWN
102: SAPAR_ID_DSA_ALARM
110: SAPAR_ALARMBITS_FLOAT_0
111: SAPAR_ALARMBITS_FLOAT_1
112: SAPAR_ALARMBITS_FLOAT_2
113: SAPAR_ALARMBITS_FLOAT_3
114: SAPAR_ALARMBITS_FLOAT_4
115: SAPAR_ALARMBITS_FLOAT_5
10500: ENC_ID_TIME_PRETRIGGER
10501: ENC_ID_TIME_SEND_TELEG_1
10502: ENC_ID_TIME_CYCLE_FINISHED
10503: ENC_ID_TIME_DELTA_FUNMAN
10504: ENC_ID_SUBTRACE_CALCTIMES
10505: ENC_ID_SYNO_PERIOD
10516: ENC_ID_ADC_TRACK_A
10517: ENC_ID_ADC_TRACK_B
10518: ENC_ID_ADC_TRACK_C
10519: ENC_ID_ADC_TRACK_D
10520: ENC_ID_ADC_TRACK_A_SAFETY
10521: ENC_ID_ADC_TRACK_B_SAFETY
10523: ENC_ID_ADC_TEMP_1
10532: ENC_ID_TRACK_AB_X
10533: ENC_ID_TRACK_AB_Y
10534: ENC_ID_OFFSET_CORR_AB_X
10535: ENC_ID_OFFSET_CORR_AB_Y
10536: ENC_ID_AB_ABS_VALUE
10537: ENC_ID_TRACK_CD_X
10538: ENC_ID_TRACK_CD_Y
10539: ENC_ID_TRACK_CD_ABS
10542: ENC_ID_AB_RAND_X
10543: ENC_ID_AB_RAND_Y
10544: ENC_ID_AB_RAND_ABS_VALUE
10545: ENC_ID_SUBTRACE_ABS_ARRAY
10546: ENC_ID_PROC_OFFSET_0
10547: ENC_ID_PROC_OFFSET_4
10564: ENC_SELFTEMP_ACT
10565: ENC_ID_MOTOR_TEMP_TOP
10566: ENC_ID_MOTOR_TEMP_1
10580: ENC_ID_RESISTANCE_1
10596: ENC_ID_AB_ANGLE
10597: ENC_ID_CD_ANGLE
10598: ENC_ID_MECH_ANGLE_HI
10599: ENC_ID_RM_POS_PHI_COMMU
10600: ENC_ID_PHI_COMMU
10612: ENC_ID_DIFF_CD_INC
10613: ENC_ID_RM_POS_PHI_COMMU_RFG
10628: ENC_ID_MECH_ANGLE
10629: ENC_ID_MECH_RM_POS
10644: ENC_ID_INIT_VECTOR
10645: FEAT_INIT_VEKTOR
10660: ENC_ID_SENSOR_STATE
10661: ENC_ID_BASIC_SYSTEM
10662: ENC_ID_REFMARK_STATUS
10663: ENC_ID_DSA_STATUS1_SENSOR
10664: ENC_ID_DSA_RMSTAT_HANDSHAKE
10665: ENC_ID_DSA_CONTROL1_SENSOR
10676: ENC_ID_COUNTCORR_SAW_VALUE
10677: ENC_ID_COUNTCORR_ABS_VALUE
10678: ENC_ID_SAWTOOTH_CORR
10692: ENC_ID_RESISTANCE_CALIB_INSTANT
10693: ENC_ID_SERPROT_POS
10724: ENC_ID_ACT_FUNMAN_FUNCTION
10725: ENC_ID_SAFETY_COUNTER_CRC

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10740: ENC_ID_POS_ABSOLUTE
10741: ENC_ID_POS_REFMARK
10742: ENC_ID_SAWTOOTH
10743: ENC_ID_SAFETY_PULSE_COUNTER
10756: ENC_ID_DSA_ACTUAL_SPEED
10772: ENC_ID_DSA_POS_XIST1
10788: ENC_ID_AB_CROSS_CORR
10789: ENC_ID_AB_GAIN_Y_CORR

Index: [0] =
[1] =
[2] =
[3] =
[4] =
[5] =
[6] =
[7] =
[8] =
[9] =
[10] =
[11] =
[12] =
[13] =
[14] =
[15] =

r7832[0...15] Telegram diagnostics numerical format / tel diag format

VECTOR

Can be changed: -
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-1	14	11

Description: Indicates the original numerical format of the signals contained in the telegram.
The associated signal number is represented at the appropriate index in r7831.

Values:
-1: Unknown
0: Boolean
1: Signed 1 byte
2: Signed 2 byte
3: Signed 4 byte
4: Signed 8 byte
5: Unsigned 1 byte
6: Unsigned 2 byte
7: Unsigned 4 byte
8: Unsigned 8 byte
9: Float 4 byte
10: Double 8 byte
11: mm dd yy HH MM SS MS DOW
12: ASCII string
13: SIMUMERIK frame type
14: SIMUMERIK axis type

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Index: [0] =
[1] =
[2] =
[3] =
[4] =
[5] =
[6] =
[7] =
[8] =
[9] =
[10] =
[11] =
[12] =
[13] =
[14] =
[15] =

r7833[0...15] Telegram diagnostics unsigned / Tel diag unsigned

VECTOR

Can be changed: -
Access level: 4
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Parameter to display a DSA signal in the unsigned-integer format.
The associated signal number is represented at the appropriate index in r7831.

Index: [0] =
[1] =
[2] =
[3] =
[4] =
[5] =
[6] =
[7] =
[8] =
[9] =
[10] =
[11] =
[12] =
[13] =
[14] =
[15] =

r7834[0...15] Telegram diagnostics signed / Tel diag signed

VECTOR

Can be changed: -
Access level: 4
Data type: Integer32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Parameter to display a DSA signal in the signed-integer format.
The associated signal number is represented at the appropriate index in r7831.

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Index: [0] =
[1] =
[2] =
[3] =
[4] =
[5] =
[6] =
[7] =
[8] =
[9] =
[10] =
[11] =
[12] =
[13] =
[14] =
[15] =

r7835[0...15] Telegram diagnostics real / Tel diag real

VECTOR

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Parameter to display a DSA signal in the float format.
The associated signal number is represented at the appropriate index in r7831.

Index: [0] =
[1] =
[2] =
[3] =
[4] =
[5] =
[6] =
[7] =
[8] =
[9] =
[10] =
[11] =
[12] =
[13] =
[14] =
[15] =

r7836[0...15] Telegram diagnostics unit / Tel diag unit

VECTOR

Can be changed: -
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-1	147	131

Description: Parameter to display the units of a DSA signal.
The associated signal number is represented at the appropriate index in r7831.

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Values:

-1: Unknown
0: None
1: Millimeter or degrees
2: Millimeter
3: Degrees
4: mm/min or RPM
5: Millimeter / min
6: Revolutions / min
7: m/sec^2 or V/sec^2
8: m/sec^2
9: V/sec^2
10: m/sec^3 or V/sec^3
11: m/sec^3
12: V/sec^3
13: Sec
14: 16.667 / sec
15: mm / rev
16: ACX_UNIT_COMPENSATION_CORR
18: Newton
19: Kilogram
20: Kilogram meter ^2
21: Percent
22: Hertz
23: Volt peak-to-peak
24: Amps, peak-to-peak
25: Degrees Celsius
26: Degrees
28: Millimeter or degrees
29: Meters / minute
30: Meters / second
31: Ohm
32: Millihenry
33: Newton meter
34: Newton meter / Amps
35: Volt / Amp
36: Newton meter second / rad
38: 31.25 microseconds
39: Microseconds
40: Milliseconds
42: Kilowatt
43: Micro amps peak-to-peak
44: Volt seconds
45: Microvolt seconds
46: Micro Newton meter
47: Amps / Volt seconds
48: Per mille
49: Hertz / second
53: Micrometer or millidegrees
54: Micrometer
55: Millidegrees
59: Nanometer
61: Newton/Amps
62: Volt seconds / meter
63: Newton seconds / meter
64: Micronewton
65: Liters / minute
66: Bar
67: Cubic centimeters
68: Millimeters / Volt minute
69: Newton/Volt
80: Millivolts, peak-to-peak
81: Volt rms
82: Millivolts, rms
83: Amps rms

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84: Micro amps, rms
85: Micrometers / revolution
90: Tenths of a second
91: Hundredths of a second
92: 10 microseconds
93: Pulses
94: 256 pulses
95: Tenth of a pulse
96: Revolutions
97: 100 revolutions / minute
98: 10 revolutions / minute
99: 0.1 revolutions / minute
100: Thousandth revolution / minute
101: Pulses / second
102: 100 pulses / second
103: 10 revolutions / (minute * second)
104: 10000 pulses/second^2
105: 0.1 Hertz
106: 0.01 Hertz
107: 0.1 / seconds
108: Factor 0.1
109: Factor 0.01
110: Factor 0.001
111: Factor 0.0001
112: 0.1 Volt peak-to-peak
113: 0.1 Volt peak-to-peak
114: 0.1 amps, peak-to-peak
115: Watt
116: 100 Watt
117: 10 Watt
118: 0.01 percent
119: 1 / second ^3
120: 0.01 percent/millisecond
121: Pulses / revolution
122: Microfarads
123: Milliohm
124: 0.01 Newton meter
125: Kilogram millimeter ^2
126: Rad / (seconds newton meter)
127: Henry
128: Kelvin
129: Hours
130: Kilohertz
131: Milliamperes, peak-to-peak
132: Millifarads
133: Meter
135: Kilowatt hours
136: Percent
137: Amps / Volt
138: Volt
139: Millivolts
140: Microvolts
141: Amps
142: Milliamperes
143: Micro amps
144: Milliamperes, rms
145: Millimeter
146: Nanometer
147: Joules

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Index: [0] =
[1] =
[2] =
[3] =
[4] =
[5] =
[6] =
[7] =
[8] =
[9] =
[10] =
[11] =
[12] =
[13] =
[14] =
[15] =

r7843[0...20] CompactFlash card serial number / CF serial number

CU_G

Can be changed: -
Access level: 1
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the actual serial number of the CompactFlash card.
The individual characters of the serial number are displayed in the ASCII code in the indices.

Dependency: Refer to: p9920, p9921

Notice: An ASCII table can be found, for example, in the following reference:
SINAMICS S120 Commissioning Manual

Note: Example for displaying a CompactFlash card serial number:
r7843[0] = 49 dec --> ASCII characters = "1" --> serial number, character 1
r7843[1] = 49 dec --> ASCII characters = "1" --> serial number, character 2
r7843[2] = 49 dec --> ASCII characters = "1" --> serial number, character 3
r7843[3] = 57 dec --> ASCII characters = "9" --> serial number, character 4
r7843[4] = 50 dec --> ASCII characters = "2" --> serial number, character 5
r7843[5] = 51 dec --> ASCII characters = "3" --> serial number, character 6
r7843[6] = 69 dec --> ASCII characters = "E" --> serial number, character 7
r7843[7] = 0 dec --> ASCII characters = " " --> serial number, character 8
...
r7843[19] = 0 dec --> ASCII characters = " " --> serial number, character 20
CompactFlash card serial number = 111923E

r7850[0...15] Drive object operational/not operational / DO ready for oper

CU_G

Can be changed: -
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-32786	32767	-32768

Description: Displays whether, for an activated drive object, all activated topology components are available or not (or whether these can be addressed).
0: Drive object not ready for operation
1: Drive object ready for operation

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p7852 Number of indices for r7853 / Qty indices r7853

CU_G	**Can be changed:** U, T		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1	200	1

Description: Displays the number of indices for r7853[0...n].
This corresponds to the number of DRIVE-CLiQ components that are in the target topology.

Dependency: Refer to: r7853

r7853[0...n] Component available/not available / Comp present

CU_G	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** p7852	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF hex	0000 hex

Description: Displays the component and whether this component is currently present.
High byte: Component number
Low byte: 0/1 (not available/available)

Dependency: Refer to: p7852

r7870[0...5] Status/configuration changes, global / Config_chng global

CU_G	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays status and configuration changes of all of the drive objects in the complete unit.
Index 0:
When changing one of the following indices, then the value in this index is incremented.
Index 1:
Drive object configuration. When changing r7871[0] on a drive object, the value in this index is incremented.
Index 2:
Drive object, configuration unit. When changing either p0101 or r0102, the value in this index is incremented.
Index 3:
PROFIBUS configuration unit. When changing p0978, the value in this index is incremented.
Index 4:
DRIVE-CLiQ actual topology. When changing either r9900 or r9901, the value in this index is incremented.
Index 5:
DRIVE-CLiQ target topology. When changing either p9902 or p9903, the value in this index is incremented.

Dependency: Refer to: r7871

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r7871[0...8] Status/configuration changes, drive object / Config_chng DO

CU_G, DMC20, TB30, TM31

Can be changed: -		**Access level:** 4
Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
P-Group: -	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
-	-	-

Description: Displays the status and configuration changes on the drive object.

Index 0:

When changing one of the following indices, then the value in this index is incremented.

Index 1:

Drive object configuration. When changing p0107, the value in this index is incremented.

Index 2:

Drive object name. When changing p0199, the value in this index is incremented.

Index 3:

Drive object structure. When changing a parameter that is relevant for the structure (e.g. number of data sets), the value in this index is incremented.

Index 4:

Drive objects, BICO interconnections. When changing r3977, the value in this index is incremented.

Index 5:

Drive objects, faults/alarms. When changing r0944 or r2121, the value in this index is incremented.

Index 6:

Drive object, data save.

0: There are not parameter changes to save.

1: There are parameter changes to save.

Index 7:

Drive object Safety. When changing r9744, the value in this index is incremented.

Index 8:

Drive object, changeover of units. When changing reference or changeover parameters (e.g. p2000, p0304...), the value in this index is incremented.

Dependency: Refer to: r7870

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r7871[0...15] Status/configuration changes, drive object / Config_chng DO

VECTOR

Can be changed: -
Access level: 4
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the status and configuration changes on the drive object.
Index 0:
When changing one of the following indices, then the value in this index is incremented.
Index 1:
Drive object configuration. When changing p0107, the value in this index is incremented.
Index 2:
Drive object name. When changing p0199, the value in this index is incremented.
Index 3:
Drive object structure. When changing a parameter that is relevant for the structure (e.g. number of data sets), the value in this index is incremented.
Index 4:
Drive objects, BICO interconnections. When changing r3977, the value in this index is incremented.
Index 5:
Drive objects, faults/alarms. When changing r0944 or r2121, the value in this index is incremented.
Index 6:
Drive object, data save.
0: There are not parameter changes to save.
1: There are parameter changes to save.
Index 7:
Drive object Safety. When changing r9744, the value in this index is incremented.
Index 8:
Drive object, changeover of units. When changing reference or changeover parameters (e.g. p2000, p0304...), the value in this index is incremented.
Index 9...14:
Reserved.
Index 15:
SERVO/VECTOR configuration. When changing p0300, p0301 or p0400, the value in this index is incremented.

Dependency: Refer to: r7870

r7901[0...33] Time slice cycle times / Time slices t_cyc

CU_G

Can be changed: -
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
- [µs]	- [µs]	- [µs]

Description: Displays the actual cycle times for all existing time slices.
For r7901[x] = 0, the following applies: The time slice is not active.

p8550 AOP LOCAL/REMOTE / AOP LOCAL/REMOTE

CU_G

Can be changed: U, T
Access level: 4
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	1001 bin

Description: Is used to save the current configuration of the Advanced Operator Panels (AOP).

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	LOCAL save	Yes	No	-
	01	Start in LOCAL	Yes	No	-
	02	Change in oper.	Yes	No	-
	03	OFF acts like OFF1	Yes	No	-
	04	OFF acts like OFF2	Yes	No	-
	05	OFF acts like OFF3	Yes	No	-
	07	CW/CCW active	Yes	No	-
	08	Jog active	Yes	No	-
	09	Save speed setpoint	Yes	No	-
	14	Inhibit operation	Yes	No	-
	15	Inhibit parameters	Yes	No	-

r8570[0...9] Macro drive unit / Macro drv unit

CU_G

Can be changed: - **Access level:** 1
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the ACX file saved in the appropriate directory of the CompactFlash card.
Dependency: Refer to: p0015

r8570[0...9] Macro drive object / Macro DO

TM31, VECTOR

Can be changed: - **Access level:** 1
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the ACX file saved in the appropriate directory of the CompactFlash card.
Dependency: Refer to: p0015

r8571[0...9] Macro Binector Input (BI) / Macro BI

VECTOR

Can be changed: - **Access level:** 1
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the ACX file saved in the appropriate directory of the CompactFlash card.
Dependency: Refer to: p0700

r8572[0...9] Macro Connector Inputs (CI) for speed setpoints / Macro CI n_set

VECTOR

Can be changed: - **Access level:** 1
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the ACX file saved in the appropriate directory of the CompactFlash card.
Dependency: Refer to: p1000

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r8573[0...9] Macro Connector Inputs (CI) for torque setpoints / Macro CI M_set

VECTOR	**Can be changed:** -		**Access level:** 1
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the ACX file saved in the appropriate directory of the CompactFlash card.
Dependency: Refer to: p1500

r8585 Actual macro actual / Actual macro

CU_G, TM31, VECTOR	**Can be changed:** -		**Access level:** 1
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Indicates which macro is presently being run in the drive object.
Dependency: Refer to: p0015, p0700, p1000, p1500, r8570, r8571, r8572, r8573

r8600 CBC device type / Device type

CU_G (CAN)	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays all of the devices connected to the CAN bus after run-up.
r8600
= 00000000 hex: No drive recognized.
= FFFF0192 hex: Several drives - drive 1 is an Active Line Module, servo drive or vector drive
= FFFF0191 hex: Several drives - 1st drive us a Terminal Module
= 00010192 hex: 1 Vector drive
= 00020192 hex: 1 Servo drive
= 01000192 hex: 1 Active Line Module
= 00080191 hex: 1 Terminal Module
Note: Corresponds to the CANopen object 1000 hex.
For each detected drive, the device type is displayed in object 67FF hex + 800 hex * x (x: Drive number 0 ... 7).

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r8601 CBC error register / Error register

CU_G (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the error register for CANopen.
Bit 0: Generic error
0 signal: No error present
1 signal: Generic error present
Bit 1 ... 3: Not supported (always a 0 signal)
Bit 4: Communications error
0 signal: There is no message in the range 8700 ... 8799
1 signal: There is at least one message (fault or alarm) in the range 8700 ... 8799
Bit 5 ... 6: Not supported (always a 0 signal)
Bit 7:; Fault outside the range 8700 ... 8799
0 signal: There is no fault outside the range 8700 ... 8799
1 signal: There is at least one fault outside the range 8700 ... 8799

Note: Corresponds to the CANopen object 1001 hex.

p8602 CBC SYNC object / SYNC object

CU_G (CAN)

Can be changed: C1(1), T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0080 hex

Description: Sets the SYNC object parameter for the following CANopen objects:
- 1005 hex: COB-ID

Note: SINAMICS operates as SYNC load.
COB-ID: CAN object identification

p8603 CBC COB ID Emergency Message / COB ID EMCY Msg

CU_G (CAN)

Can be changed: C1(1), T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the COB ID of the emergency message (error telegram). It corresponds to the CANopen objects:
- 1014 hex: COB-ID

Note: If, when downloading, the pre-set value 0 is downloaded, then the CANopen pre-set value 80 hex + Node-ID is automatically set.
Online, the value 0 is rejected as, according to the CANopen Standard, COB ID 0 is not permitted here.
The changeover of the node ID using the hardware switch at the CU or per software has no effect on the COB-ID EMCY. The saved value remains effective.

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p8604[0...1] CBC node guarding / Node guarding

CU_G (CAN)

Can be changed: T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the node guarding parameter for the following CANopen objects:
- 100C hex: Guard Time
- 100D hex: Life Time Factor

The life time is derived by multiplying guard time by the life time factor.

Index: [0] = Time interval [ms] for new node guarding telegram
[1] = Factor for failure of the node guarding telegram

Dependency: Only adjustable if heartbeat time = 0 (heartbeat is disabled).
Refer to: p8606

Note: For p8604[0] = 0 and/or p8604[1] = 0, the node guarding protocol is not used.
Either node guarding or heartbeat can be used.

p8606 CBC producer heartbeat time / Prod Heartb Time

CU_G (CAN)

Can be changed: T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [ms]	65535 [ms]	0 [ms]

Description: Sets the time [ms] to cyclically send heartbeat telegrams.
The smallest cycle time is 100 ms.
When a 0 is written, then heartbeat telegrams are not sent.

Dependency: Only adjustable if guard time = 0 (node guarding disabled).
Refer to: p8604

Note: Corresponds to the CANopen object 1017 hex.
Either node guarding or heartbeat can be used.

r8607[0...3] CBC identity object / Identity object

CU_G (CAN)

Can be changed: - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: General device information display.

Index: [0] = Vendor ID
[1] = Product code
[2] = Revision number
[3] = Serial number

Note: Corresponds to the CANopen object 1018 hex.

p8608 CBC clear bus off error / Clear bus off err

CU_G (CAN)

Can be changed: U, T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: For a bus off error, the CAN bus is restarted with p8608 = 1 after the cause of the error has been removed.

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Values: 0: not active
1: Start CAN controller

Note: This parameter is automatically reset to 0 after start.

p8609[0...1] CBC error behavior / Error behavior

CU_G (CAN)

Can be changed: T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	1

Description: Sets the behavior of the CAN node referred to the communications error or equipment fault.

Values: 0: Pre-operational
1: No change
2: Stopped

Index: [0] = Behavior for communication errors
[1] = Behavior for device faults

Note: Corresponds to the CANopen object 1029 hex.

r8610[0...1] CBC first server SDO / First server SDO

CU_G (CAN)

Can be changed: - | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the identifier (client/server and server/client) of the SDO channel.

Index: [0] = Displays the COB ID from client to server
[1] = Displays the COB ID from server to client

Note: Corresponds to the CANopen object 1200 hex.
SDO: Service Data Object

p8611[0...82] CBC pre-defined error field / Pre_def err field

CU_G (CAN)

Can be changed: U, T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF 1000 hex	0000 hex

Description: Displays the Pre-defined Error Field of the CAN node.

It includes the number of all errors that have occurred, the number of errors that have occurred for each drive and the errors according to their history.

The first 16 bits represent the CANopen error code and the second 16 bits the SINAMICS error code.

Index 1 has the same structure - however, the CAN offset is in the second 16 bits instead of the SINAMICS error code.

CANopen error code:

0000 hex: No error present

8110 hex: Alarm A08751 present

8120 hex: Alarm A08752 present

8130 hex: Alarm A08700(F) with alarm value = 2 present

1000 hex: Generic error 1 present (there is at least one fault outside the range 8700 ... 8799)

1001 hex: Generic error 2 present (there is at least one alarm in the range 8700 ... 8799 with the exception of A08751, A08752, A08700)

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Index:

[0] = Number of all faults in the drive unit
[1] = Most recent drive number / fault number
[2] = Number of faults drive 1
[3] = Fault 1/ drive 1
[4] = Fault 2/ drive 1
[5] = Fault 3/ drive 1
[6] = Fault 4/ drive 1
[7] = Fault 5/ drive 1
[8] = Fault 6/ drive 1
[9] = Fault 7/ drive 1
[10] = Fault 8/ drive 1
[11] = Number of faults drive 2
[12] = Fault 1/ drive 2
[13] = Fault 2/ drive 2
[14] = Fault 3/ drive 2
[15] = Fault 4/ drive 2
[16] = Fault 5/ drive 2
[17] = Fault 6/ drive 2
[18] = Fault 7/ drive 2
[19] = Fault 8/ drive 2
[20] = Number of faults drive 3
[21] = Fault 1/ drive 3
[22] = Fault 2/ drive 3
[23] = Fault 3/ drive 3
[24] = Fault 4/ drive 3
[25] = Fault 5/ drive 3
[26] = Fault 6/ drive 3
[27] = Fault 7/ drive 3
[28] = Fault 8/ drive 3
[29] = Number of faults drive 4
[30] = Fault 1/ drive 4
[31] = Fault 2/ drive 4
[32] = Fault 3/ drive 4
[33] = Fault 4/ drive 4
[34] = Fault 5/ drive 4
[35] = Fault 6/ drive 4
[36] = Fault 7/ drive 4
[37] = Fault 8/ drive 4
[38] = Number of faults drive 5
[39] = Fault 1/ drive 5
[40] = Fault 2/ drive 5
[41] = Fault 3/ drive 5
[42] = Fault 4/ drive 5
[43] = Fault 5/ drive 5
[44] = Fault 6/ drive 5
[45] = Fault 7/ drive 5
[46] = Fault 8/ drive 5
[47] = Number of faults drive 6
[48] = Fault 1/ drive 6
[49] = Fault 2/ drive 6
[50] = Fault 3/ drive 6
[51] = Fault 4/ drive 6
[52] = Fault 5/ drive 6
[53] = Fault 6/ drive 6
[54] = Fault 7/ drive 6
[55] = Fault 8/ drive 6
[56] = Number of faults drive 7
[57] = Fault 1/ drive 7
[58] = Fault 2/ drive 7
[59] = Fault 3/ drive 7
[60] = Fault 4/ drive 7
[61] = Fault 5/ drive 7
[62] = Fault 6/ drive 7
[63] = Fault 7/ drive 7

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[64] = Fault 8/ drive 7
[65] = Number of faults drive 8
[66] = Fault 1/ drive 8
[67] = Fault 2/ drive 8
[68] = Fault 3/ drive 8
[69] = Fault 4/ drive 8
[70] = Fault 5/ drive 8
[71] = Fault 6/ drive 8
[72] = Fault 7/ drive 8
[73] = Fault 8/ drive 8
[74] = Number of faults Control Unit
[75] = Fault 1/Control Unit
[76] = Fault 2/Control Unit
[77] = Fault 3/Control Unit
[78] = Fault 4/Control Unit
[79] = Fault 5/Control Unit
[80] = Fault 6/Control Unit
[81] = Fault 7/Control Unit
[82] = Fault 8/Control Unit

p8620 CBC node ID / Node ID

CU_G (CAN)

Can be changed: T | **Access level:** 2

Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
1	126	126

Description: Display or setting of the CANopen Node ID.
The Node ID can be set as follows:
1) Using the DIP switch power-up the Control Unit.
--> p8620 can then only be read and displays the selected Node ID.
--> A change only becomes effective after a POWER ON.
--> CANopen Node ID and PROFIBUS address are identical.
2) Using p8620
--> only if all of the DIP switches - from S1 to S7 - are either set to ON or OFF.
--> the Node ID is set as standard to 126.
--> A change only becomes effective after save and POWER ON.

Note: Every node ID change only becomes effective after a POWER ON.
It is only possible to independently set CANopen node ID and the PROFIBUS address using p0918 and p8620 (pre-requisite: For DIP switches, all of the switches from S1 to S7 are either set to ON or OFF).

p8622 CBC baud rate / Baud rate

CU_G (CAN)

Can be changed: T | **Access level:** 3

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	7	6

Description: Setting the baud rate for the CAN bus.
The appropriate bit timings are selected that are defined in p8623 in the associated sub-index.

Values:
0: 1 Mbit/s
1: 800 kbit/s
2: 500 kbit/s
3: 250 kbit/s
4: 125 kbit/s
5: 50 kbit/s
6: 20 kbit/s
7: 10 kbit/s

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Recommendation: Use the factory setting when setting the baud rate.
Example:
Baud rate = 20 kbit/s --> p8622 = 6 --> associated bit timing is in p8623[6].

Dependency: Refer to: p8623

p8623[0...7] CBC bit timing selection / Bit timing select

CU_G (CAN)

Can be changed: T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	000F 7FFF hex	[0] 1405 hex [1] 1605 hex [2] 1C05 hex [3] 1C0B hex [4] 1C17 hex [5] 1C3B hex [6] 0002 1C15 hex [7] 0004 1C2B hex

Description: Sets the bit timing for the C_CAN controller to the associated and selected baud rate (p8622).
Bits are distributed to the following parameters of the C_CAN controller in p8623[0...7]:
Bit 0 ... 5: BRP (Baud Rate Prescaler)
Bit 6 ... 7: SJW (Synchronization Jump Width)
Bit 8 ... 11: TSEG1 (Time Segment 1, before the sampling point)
Bit 12 ... 14: TSEG2 (Time Segment 2, after the sampling point)
Bit 15: Reserved
Bit 16 ... 19: BRPE (Baud Rate Prescaler Extension)
Bit 20 ... 31: Reserved

Index: [0] = 1 Mbit/s
[1] = 800 kbit/s
[2] = 500 kbit/s
[3] = 250 kbit/s
[4] = 125 kbit/s
[5] = 50 kbit/s
[6] = 20 kbit/s
[7] = 10 kbit/s

Dependency: Refer to: p8622

Note: Recommendation:
You use the factory setting (refer to p8622) when setting the bit timing.
Example:
Baud rate = 20 kbit/s --> p8622 = 6 --> associated bit timing is in p8623[6] --> 0001 2FB6

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p8630[0...2] CBC virtual objects / Virtual objects

CU_G (CAN)

Can be changed: U, T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Sets the drive object selection (index 0), the sub-index area (index 1) and the parameter area (index 2) when using virtual objects.

This means that it is possible to access all SINAMICS parameters via CAN.

Index 0 (drive object selection):

0: Not possible to access virtual CANopen objects

1: Device

2 ... 65535: Drive 1 ... 8

Index 1 (sub-index area):

0: 0 ... 255

1: 256 ... 511

2: 512 ... 767

3: 768 ... 1023

Index 2 (parameter area):

0: 1 ... 9999

1: 10000 ... 19999

2: 20000 ... 29999

3: 30000 ... 39999

Index: [0] = Drive object selection
[1] = Sub-index range
[2] = Parameter range

p8641 CBC abort connection option code / Abort con opt code

VECTOR (CAN)

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	3	3

Description: Sets the drive behavior if a CAN communication error occurs.

Values:
0: No response
1: OFF1
2: OFF2
3: OFF3

Dependency: Refer to: F08700

r8680[0...36] CBC diagnostics hardware / Diagnostics HW

CU_G (CAN)

Can be changed: - | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the register of the CAN controller C_CAN:

Register, Message Interface Register and Message Handler Register - referred to the CAN protocol.

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Index:
[0] = Control register
[1] = Status register
[2] = Error counter
[3] = Bit timing register
[4] = Interrupt register
[5] = Test register
[6] = Baud rate prescaler extension register
[7] = Interface 1 command request register
[8] = Interface 1 command mask register
[9] = Interface 1 mask 1 register
[10] = Interface 1 mask 2 register
[11] = Interface 1 arbitration 1 register
[12] = Interface 1 arbitration 2 register
[13] = Interface 1 message control register
[14] = Interface 1 data A1 register
[15] = Interface 1 data A2 register
[16] = Interface 1 data B1 register
[17] = Interface 1 data B2 register
[18] = Interface 2 command request register
[19] = Interface 2 command mask register
[20] = Interface 2 mask 1 register
[21] = Interface 2 mask 2 register
[22] = Interface 2 arbitration 1 register
[23] = Interface 2 arbitration 2 register
[24] = Interface 2 message control register
[25] = Interface 2 data A1 register
[26] = Interface 2 data A2 register
[27] = Interface 2 data B1 register
[28] = Interface 2 data B2 register
[29] = Transmission request 1 register
[30] = Transmission request 2 register
[31] = New data 1 register
[32] = New data 2 register
[33] = Interrupt pending 1 register
[34] = Interrupt pending 2 register
[35] = Message valid 1 register
[36] = Message valid 2 register

Note: A description of the individual registers of the C_CAN controller can be taken from "C_CAN User's Manual".

p8685 CBC NMT states / NMT states

CU_G (CAN)

Can be changed: C1(1), U, T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0	129	127

Description: Sets and displays the CANopen NMT state.

Values:
0: Initializing
4: Stopped
5: Operational
127: Pre-operational
128: Reset node
129: Reset Communication

Note: The value 0 (initialization) is only displayed and cannot be set.

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p8700[0...1] CBC receive PDO 1 / Receive PDO 1

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 1 (RPDO 1).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1400 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

p8701[0...1] CBC receive PDO 2 / Receive PDO 2

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 2 (RPDO 2).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1401 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

p8702[0...1] CBC receive PDO 3 / Receive PDO 3

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 3 (RPDO 3).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1402 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

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p8703[0...1] CBC receive PDO 4 / Receive PDO 4

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 4 (RPDO 4).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1403 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

p8704[0...1] CBC receive PDO 5 / Receive PDO 5

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 5 (RPDO 5).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1404 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

p8705[0...1] CBC receive PDO 6 / Receive PDO 6

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 6 (RPDO 6).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1405 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

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p8706[0...1] CBC receive PDO 7 / Receive PDO 7

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 7 (RPDO 7).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1406 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

p8707[0...1] CBC receive PDO 8 / Receive PDO 8

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	8000 06DF hex	[0] 8000 06DF hex [1] 00FE hex

Description: Sets the communication parameters for CANopen receive process data object 8 (RPDO 8).

Index: [0] = PDO COB-ID
[1] = PDO transmission type

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Note: Corresponds to the CANopen object 1407 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1, FE and FF can be set.
PDO: Process Data Object

p8710[0...3] CBC receive mapping for RPDO 1 / Mapping RPDO 1

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 1 (RPDO 1).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1600 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

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p8711[0...3] CBC receive mapping for RPDO 2 / Mapping RPDO 2

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 2 (RPDO 2).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1601 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

p8712[0...3] CBC receive mapping for RPDO 3 / Mapping RPDO 3

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 3 (RPDO 3).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1602 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

p8713[0...3] CBC receive mapping for RPDO 4 / Mapping RPDO 4

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204, 9206

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 4 (RPDO 4).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1603 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

p8714[0...3] CBC receive mapping for RPDO 5 / Mapping RPDO 5

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 5 (RPDO 5).

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Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1604 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

p8715[0...3] CBC receive mapping for RPDO 6 / Mapping RPDO 6

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 6 (RPDO 6).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1605 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

p8716[0...3] CBC receive mapping for RPDO 7 / Mapping RPDO 7

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 7 (RPDO 7).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1606 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

p8717[0...3] CBC receive mapping for RPDO 8 / Mapping RPDO 8

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9204
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen receive process data object 8 (RPDO 8).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1607 hex + 40 hex * x (x: Drive number 0 ... 7).
Dummy mapping not supported.

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p8720[0...4] CBC transmit PDO 1 / Transmit PDO 1

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 1 (TPDO 1).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1800 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

p8721[0...4] CBC transmit PDO 2 / Transmit PDO 2

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 2 (TPDO 2).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1801 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

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p8722[0...4] CBC transmit PDO 3 / Transmit PDO 3

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 3 (TPDO 3).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1802 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

p8723[0...4] CBC transmit PDO 4 / Transmit PDO 4

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 4 (TPDO 4).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1803 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

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p8724[0...4] CBC transmit PDO 5 / Transmit PDO 5

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 5 (TPDO 5).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1804 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

p8725[0...4] CBC transmit PDO 6 / Transmit PDO 6

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 6 (TPDO 6).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1805 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

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p8726[0...4] CBC transmit PDO 7 / Transmit PDO 7

VECTOR (CAN)

Can be changed: C1(3), T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 9208
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 7 (TPDO 7).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1806 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

p8727[0...4] CBC transmit PDO 8 / Transmit PDO 8

VECTOR (CAN)

Can be changed: C1(3), T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 9208
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	C000 06DF hex	[0] C000 06DF hex [1] 00FE hex [2] 0000 hex [3] 0000 hex [4] 0000 hex

Description: Sets the communication parameters for CANopen transmit process data object 8 (TPDO 8).

Index: [0] = PDO COB-ID
[1] = PDO transmission type
[2] = Inhibit time (in 100 µs)
[3] = Reserved
[4] = Event timer (in ms)

Dependency: A valid COB-ID can only be set for the available (existing) channel.
Refer to: p8740, p8741

Notice: For inhibit time and even timer, the following apply:
A value that is not a multiple integer of CANopen (4 ms) is rounded-off.

Note: Corresponds to the CANopen object 1807 hex + 40 hex * x (x: Drive number 0 ... 7).
Transmission types 0, 1 ... F0, FE and FF can be set.
PDO: Process Data Object

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p8730[0...3] CBC send mapping for TPDO 1 / Mapping TPDO 1

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 1 (TPDO 1).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A00 hex + 40 hex * x (x: Drive number 0 ... 7).

p8731[0...3] CBC send mapping for TPDO 2 / Mapping TPDO 2

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 2 (TPDO 2).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A01 hex + 40 hex * x (x: Drive number 0 ... 7).

p8732[0...3] CBC send mapping for TPDO 3 / Mapping TPDO 3

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 3 (TPDO 3).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A02 hex + 40 hex * x (x: Drive number 0 ... 7).

p8733[0...3] CBC send mapping for TPDO 4 / Mapping TPDO 4

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208, 9210

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 4 (TPDO 4).

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Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A03 hex + 40 hex * x (x: Drive number 0 ... 7).

p8734[0...3] CBC send mapping for TPDO 5 / Mapping TPDO 5

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 5 (TPDO 5).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A04 hex + 40 hex * x (x: Drive number 0 ... 7).

p8735[0...3] CBC send mapping for TPDO 6 / Mapping TPDO 6

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 6 (TPDO 6).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A05 hex + 40 hex * x (x: Drive number 0 ... 7).

p8736[0...3] CBC send mapping for TPDO 7 / Mapping TPDO 7

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 7 (TPDO 7).

Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A06 hex + 40 hex * x (x: Drive number 0 ... 7).

p8737[0...3] CBC send mapping for TPDO 8 / Mapping TPDO 8

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the mapping parameters for CANopen transmit process data object 8 (TPDO 8).

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Index: [0] = Mapped object 1
[1] = Mapped object 2
[2] = Mapped object 3
[3] = Mapped object 4

Note: Corresponds to the CANopen object 1A07 hex + 40 hex * x (x: Drive number 0 ... 7).

p8740[0...23] CBC channel assignment / Chann assign.

CU_G (CAN)

Can be changed: T — **Access level:** 3

Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	8	0

Description: Sets the number of channels for receive PDOs and Transmit PDOs.
To define the number of channels of a drive, there are 3 indices (3 * n indices, n = 8).
Index 0: Number of channels for receive PDOs (1st drive)
Index 1: Number of channels for transmit PDOs (1st drive)
Index 2: Reserved
Correspondingly, indices 3 to 5 are valid for the 2nd drive, etc.

Index: [0] = Number of channels for receive PDOs (drive 1)
[1] = Number of channels for transmit PDOs (drive 1)
[2] = Reserved
[3] = Number of channels for receive PDOs (drive 2)
[4] = Number of channels for transmit PDOs (drive 2)
[5] = Reserved
[6] = Number of channels for receive PDOs (drive 3)
[7] = Number of channels for transmit PDOs (drive 3)
[8] = Reserved
[9] = Number of channels for receive PDOs (drive 4)
[10] = Number of channels for transmit PDOs (drive 4)
[11] = Reserved
[12] = Number of channels for receive PDOs (drive 5)
[13] = Number of channels for transmit PDOs (drive 5)
[14] = Reserved
[15] = Number of channels for receive PDOs (drive 6)
[16] = Number of channels for transmit PDOs (drive 6)
[17] = Reserved
[18] = Number of channels for receive PDOs (drive 7)
[19] = Number of channels for transmit PDOs (drive 7)
[20] = Reserved
[21] = Number of channels for receive PDOs (drive 8)
[22] = Number of channels for transmit PDOs (drive 8)
[23] = Reserved

Dependency: Refer to: p8741

Note: Channel assignment not yet in effect. To acknowledge set p8741 = 1.

p8741 CBC PDO configuration acknowledgement / PDO config ackn

CU_G (CAN)

Can be changed: T — **Access level:** 3

Data type: Integer16 — **Dynamic index:** - — **Function diagram:** -

P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Acknowledges the channel distribution selection made (p8740) and the setting of the predefined connection sets (p8744).

Values: 0: not active
1: Acknowledge configuration

Dependency: Refer to: p8740

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r8742 CBC number of free RPDO channels / Qty free RPDO

CU_G (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the RPDO channels that are still available.
Dependency: Refer to: p8741
Note: The display is updated after acknowledging the configuration (p8741 = 1).
RPDO: Receive Process Data Object

r8743[0...7] CBC assignment, drive ID / Drive ID

CU_G (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the drive ID associated with each drive.
Index: [0] = Drive ID for 1st drive
[1] = Drive ID for 2nd drive
[2] = Drive ID for 3rd drive
[3] = Drive ID for 4th drive
[4] = Drive ID for 5th drive
[5] = Drive ID for 6th drive
[6] = Drive ID for 7th drive
[7] = Drive ID for 8th drive

p8744 CBC PDO mapping configuration / PDO Mapping conf.

VECTOR (CAN)

Can be changed: C2, T
Access level: 2
Data type: Integer16
Dynamic index: -
Function diagram: 9204, 9206, 9208, 9210
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
1	2	2

Description: Selector switch for the PDO mapping.
Sets the mapping for download or in the online mode after acknowledging with p8741.
Values: 1: Predefined Connection Set
2: Free PDO Mapping

r8750[0...15] CBC mapped 16-bit receive objects / RPDO 16 mapped

VECTOR (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays 16-bit receive CANopen objects mapped to process data buffer.
Example:
The control word is mapped in p8720[0] and p8721[0]; this means that r8750[0] indicates that it is located at the first position (p8850[0]) in the process data buffer.

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Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16

r8751[0...15] CBC mapped 16-bit transmit objects / TPDO 16 mapped

VECTOR (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays mapped 16-bit transmit CANopen objects in the process data buffer.

Index: [0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16

Dependency: Refer to: r8750

r8760[0...14] CBC mapped 32-bit receive objects / RPDO 32 mapped

VECTOR (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays 32-bit receive CANopen objects mapped to process data buffer.

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Index:
[0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16

r8761[0...14] CBC mapped 32-bit transmit objects / TPDO 32 mapped

VECTOR (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays mapped 32-bit transmit CANopen objects in the process data buffer.

Index:
[0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16

r8784 CO: CBC status word / Status word

VECTOR (CAN)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: 8010
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the CANopen status word.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Ready to power up	Yes	No	-
01	Ready	Yes	No	-
02	Operation enabled	Yes	No	-
03	Fault present	Yes	No	-
04	No coasting active	Yes	No	-

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05	No fast stop active	Yes	No	-
06	Power-on inhibit active	Yes	No	-
07	Alarm present	Yes	No	-
08	Can be freely interconnected (BI: p8785)	High	Low	-
09	Control requested	Yes	No	-
10	Target reached	Yes	No	-
11	Torq limit reached	Yes	No	-
12	Velocity equal to zero	Yes	No	-
14	Can be freely interconnected (BI: p8786)	High	Low	-
15	Can be freely interconnected (BI: p8787)	High	Low	-

Note: Corresponds to the CANopen object 6041 hex + 800 hex * x (x: Drive number 0 ... 7).

Re bit 10:

When the ramp-function generator is activated, the interconnection from CI: p2151 = r1119 can be changed, so that to evaluate bit 10, the setpoint can be retrieved (taken) from in front of the ramp-function generator.

Re bit 10, 12:

When braking, the two bits must indicate the same state. This is the reason that the following parameters must be set the same:

p2161 (speed threshold value 3, for r2199.0) = p2163 (speed threshold value 4, for r2197.7)

p2150 (hysteresis speed 3, for r2199.0) = p2164 (hysteresis speed 4, for r2197.7)

p8785 BI: CBC status word bit 8 / Status word bit 8

VECTOR (CAN)

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Binector input for CANopen status word bit 8.

Dependency: Refer to: r8784

p8786 BI: CBC status word bit 14 / Status word bit 14

VECTOR (CAN)

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Binector input for CANopen status word bit 14.

Dependency: Refer to: r8784

p8787 BI: CBC status word bit 15 / Status word bit 15

VECTOR (CAN)

Can be changed: T | **Access level:** 3

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Binector input for CANopen status word bit 15.

Dependency: Refer to: r8784

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p8790 CBC control word - auto interconnection / STW_interconn.auto

VECTOR (CAN)

Can be changed: C1(3), T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the automatic BICO interconnection of the CANopen control word.

Values:
0: No interconn
1: Interconnection

Dependency: Refer to: r8750, r8795, r8850

Note: The following BICO interconnections are automatically established if the CANopen control word is mapped at one of the locations x = 0 ... 3 in the receive process data buffer.

BI: p0840.0 = r889x.0
BI: p0844.0 = r889x.1
BI: p0848.0 = r889x.2
BI: p0852.0 = r889x.3
BI: p2103.0 = r889x.7

The write access is rejected if a CANopen control word is not mapped at one of these locations.
This means that the STARTER project download is interrupted.

r8795 CBC control word / Control word

VECTOR (CAN)

Can be changed: - | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Access to the CANopen control word using SDO transfer.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	ON/OFF1	Yes	No	-
01	Do not activate coast down	Yes	No	-
02	Do not activate a fast stop	Yes	No	-
03	Enable operation	Yes	No	-
07	Acknowledge fault	Yes	No	-
11	Freely interconn	High	Low	-
12	Freely interconn	High	Low	-
13	Freely interconn	High	Low	-
14	Freely interconn	High	Low	-
15	Freely interconn	High	Low	-

Dependency: Refer to: p8790

Note: Corresponds to the CANopen object 6040 hex + 800 hex * x (x: Drive number 0 ... 7).

r8796 CBC target velocity / Target velocity

VECTOR (CAN)

Can be changed: - | **Access level:** 3
Data type: Integer32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Access to the CANopen object target velocity using the SDO transfer.
The value is displayed in increments/second as standard.

Note: Corresponds to the CANopen object 60FF hex + 800 hex * x (x: Drive number 0 ... 7).
The displayed value is calculated as follows:
r8796 = n_set [RPM] / 60 s * p0408 * 2^p0418 * p8798[1] / p8798[0]

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r8797 CBC target torque / Target torque

VECTOR (CAN)

Can be changed: -
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Access to the CANopen object target torque using SDO transfer.
The value is displayed as per mille (1/1000) as standard.

Note: Corresponds to the CANopen object 6071 hex + 800 hex * x (x: Drive number 0 ... 7).
The displayed value is calculated as follows:
r8797 [per mille] = M_set [Nm] / p0333 [Nm] * 1000

p8798[0...1] CBC speed conversion factor / n_conv_factor

VECTOR (CAN)

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
1	4294967295	1

Description: The factor converts the required velocity units into the internal velocity units (U/s).
With the factor setting, for CANopen, the velocity units are increments/second.
The parameter corresponds to the CANopen object 6094 hex.
The internal velocity is calculated as follows:
n_set_internal = object 6094.1 / object 6094.2 * 1/(p0408 * 2^p0418) * n_set_bus

Index: [0] = Counter
[1] = Denominator

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p8840 COMM BOARD monitoring time / CB t_monitoring

CU_G (CB, CBE)	**Can be changed:** U, T		**Access level:** 3
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 0 [ms]	**Max** 65535000 [ms]	**Factory setting** 20 [ms]

p8841[0...39] COMM BOARD send configuration data / CB S_config_data

CU_G (CB, CBE)	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 65535	**Factory setting** 0

p8842 COMM BOARD start configuration / CB config start

CU_G (CB, CBE)	**Can be changed:** U, T		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min 0	**Max** 1	**Factory setting** 0

r8849[0...139] COMM BOARD receive configuration data / CB E_config_data

CU_G (CB, CBE)	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

r8850[0...15] CO: COMM BOARD PZD receive word / CB PZD recv word

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** 9204, 9206
	P-Group: Communications	**Units group:** -	**Unit selection:** -
	Min -	**Max** -	**Factory setting** -

Description: Connector output for interconnecting the PZD (setpoints) received from the COMM BOARD in the word format.

Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16

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Dependency: Refer to: r8860, r8890, r8891, r8892, r8893
Note: PZD1 to PZD4 are displayed bit-serially in r8890 to r8893.

p8851[0...15] CI: COMM BOARD PZD send word / CB PZD send word

VECTOR

Can be changed: U, T | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** 9208
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Selects PZD (actual values) to be sent to COMM BOARD in the word format.
Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16
Dependency: Refer to: p8861

r8853[0...15] COMM BOARD PZD send diagnostics / CB diag PZD send

VECTOR

Can be changed: - | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** 9208, 9210
P-Group: Communications | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays PZD (actual values) sent to COMM BOARD.
Index:
[0] = PZD 1
[1] = PZD 2
[2] = PZD 3
[3] = PZD 4
[4] = PZD 5
[5] = PZD 6
[6] = PZD 7
[7] = PZD 8
[8] = PZD 9
[9] = PZD 10
[10] = PZD 11
[11] = PZD 12
[12] = PZD 13
[13] = PZD 14
[14] = PZD 15
[15] = PZD 16

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Bit 0	On	Off	-
	01	Bit 1	On	Off	-
	02	Bit 2	On	Off	-
	03	Bit 3	On	Off	-
	04	Bit 4	On	Off	-
	05	Bit 5	On	Off	-
	06	Bit 6	On	Off	-
	07	Bit 7	On	Off	-
	08	Bit 8	On	Off	-
	09	Bit 9	On	Off	-
	10	Bit 10	On	Off	-
	11	Bit 11	On	Off	-
	12	Bit 12	On	Off	-
	13	Bit 13	On	Off	-
	14	Bit 14	On	Off	-
	15	Bit 15	On	Off	-

Dependency: Refer to: p8851, p8861

r8854 COMM BOARD state / CB state

CU_G (CB, CBE)

Can be changed: -
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
0	255	0

Description: Status display for COMM BOARD.

Values:
0: No initialization
1: Fatal Error
2: Initialization
3: Send configuration
4: Receive configuration
5: Non-cyclic communication
6: Cyclic communications but no setpoints (stop/no clock cycle)
255: Cyclic communication

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r8858[0...39] COMM BOARD read diagnostics channel / CB diagn. read

CU_G (CB, CBE)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

r8859[0...7] COMM BOARD identification Data / CB Ident_data

CU_G (CB, CBE)

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

r8860[0...14] CO: COMM BOARD PZD receive double word / CB PZD recv DW

VECTOR

Can be changed: -
Access level: 3
Data type: Integer32
Dynamic index: -
Function diagram: 9204, 9206
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Connector output for interconnecting the PZD (setpoints) received from the COMM BOARD with double word format.

Index:
[0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16

Dependency: Refer to: r8850

p8861[0...14] CI: COMM BOARD PZD send doubleword / CB PZD send DW

VECTOR

Can be changed: U, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 9208, 9210
P-Group: Communications
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0

Description: Selects PZD (actual values) to be sent to COMM BOARD in the double word format.

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Index: [0] = PZD 1 + 2
[1] = PZD 2 + 3
[2] = PZD 3 + 4
[3] = PZD 4 + 5
[4] = PZD 5 + 6
[5] = PZD 6 + 7
[6] = PZD 7 + 8
[7] = PZD 8 + 9
[8] = PZD 9 +10
[9] = PZD 10 + 11
[10] = PZD 11 + 12
[11] = PZD 12 + 13
[12] = PZD 13 + 14
[13] = PZD 14 + 15
[14] = PZD 15 + 16

Dependency: Refer to: p8851

r8890 BO: COMM BOARD PZD1 receive bit-serial / CB PZD1 recv bitw

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 9204, 9206

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of a PZD1 (normally control word 1) word received from the COMM BOARD.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Bit 0	On	Off	-
01	Bit 1	On	Off	-
02	Bit 2	On	Off	-
03	Bit 3	On	Off	-
04	Bit 4	On	Off	-
05	Bit 5	On	Off	-
06	Bit 6	On	Off	-
07	Bit 7	On	Off	-
08	Bit 8	On	Off	-
09	Bit 9	On	Off	-
10	Bit 10	On	Off	-
11	Bit 11	On	Off	-
12	Bit 12	On	Off	-
13	Bit 13	On	Off	-
14	Bit 14	On	Off	-
15	Bit 15	On	Off	-

Dependency: Refer to: r8850

r8891 BO: COMM BOARD PZD2 receive bit-serial / CB PZD2 recv bitw

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 9204, 9206

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of a PZD2 word received from the COMM BOARD.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Bit 0	On	Off	-
	01	Bit 1	On	Off	-
	02	Bit 2	On	Off	-
	03	Bit 3	On	Off	-
	04	Bit 4	On	Off	-
	05	Bit 5	On	Off	-
	06	Bit 6	On	Off	-
	07	Bit 7	On	Off	-
	08	Bit 8	On	Off	-
	09	Bit 9	On	Off	-
	10	Bit 10	On	Off	-
	11	Bit 11	On	Off	-
	12	Bit 12	On	Off	-
	13	Bit 13	On	Off	-
	14	Bit 14	On	Off	-
	15	Bit 15	On	Off	-

Dependency: Refer to: r8850

r8892 BO: COMM BOARD PZD3 receive bit-serial / CB PZD3 recv bitw

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 9204, 9206

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of a PZD3 word received from the COMM BOARD..

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Bit 0	On	Off	-
	01	Bit 1	On	Off	-
	02	Bit 2	On	Off	-
	03	Bit 3	On	Off	-
	04	Bit 4	On	Off	-
	05	Bit 5	On	Off	-
	06	Bit 6	On	Off	-
	07	Bit 7	On	Off	-
	08	Bit 8	On	Off	-
	09	Bit 9	On	Off	-
	10	Bit 10	On	Off	-
	11	Bit 11	On	Off	-
	12	Bit 12	On	Off	-
	13	Bit 13	On	Off	-
	14	Bit 14	On	Off	-
	15	Bit 15	On	Off	-

Dependency: Refer to: r8850

r8893 BO: COMM BOARD PZD4 receive bit-serial / CB PZD4 recv bitw

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 9204, 9206

P-Group: Communications **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Binector output for bit-serial interconnection of a PZD4 (normally control word 2) word received from the COMM BOARD.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Bit 0	On	Off	-
	01	Bit 1	On	Off	-
	02	Bit 2	On	Off	-
	03	Bit 3	On	Off	-
	04	Bit 4	On	Off	-
	05	Bit 5	On	Off	-
	06	Bit 6	On	Off	-
	07	Bit 7	On	Off	-
	08	Bit 8	On	Off	-
	09	Bit 9	On	Off	-
	10	Bit 10	On	Off	-
	11	Bit 11	On	Off	-
	12	Bit 12	On	Off	-
	13	Bit 13	On	Off	-
	14	Bit 14	On	Off	-
	15	Bit 15	On	Off	-

Dependency: Refer to: r8850

p9300 SI motion monitoring clock cycle (Motor Module) / SI Mtn clock MM

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
500.00 [µs]	25000.00 [µs]	12000.00 [µs]

Description: Sets the monitoring clock cycle for safe motion monitoring.

Dependency: Refer to: p0115, p9500
Refer to: F01652

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: The monitoring clock cycle must be a multiple of the position controller clock cycle.

p9301 SI motion enable safety functions (Motor Module) / SI Mtn enable MM

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the enable signals for the safe motion monitoring.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00				-
	03	Enable actual value synchronization	Enable	Inhibit	-
	06				-

Dependency: Refer to: p9501
Refer to: F01682, F01683

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: A change only becomes effective after a POWER ON.
SOS: Safe operating stop
SLS: Safely-reduced speed

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p9302 SI motion axis type (Motor Module) / SI Mtn AxisType MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the axis type (linear axis or rotary axis/spindle).

Values:
0: Linear axis
1: Rot axis/spindle

Dependency: Refer to: p9502

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: A change only becomes effective after a POWER ON.

p9316 SI motion encoder configuration, safety functions (Motor Module) / SI Mtn enc cfg MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the configuration for the encoder and position actual value.
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Encoder, rotating/linear	Linear	Rotating:	-
01	Position actual value, sign change	Yes	No	-

Dependency: Refer to: p0404, p0410, p9516

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.

p9317 SI motion linear scale, grid division (Motor Module) / SI Mtn grid MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [nm]	250000000.00 [nm]	10000.00 [nm]

Description: Sets the grid division for a linear encoder.
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Dependency: Refer to: p0407, p9316

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.

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p9318 SI motion encoder pulses per revolution (Motor Module) / SI Mtn p/rev MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	100000	2048

Description: Sets the number of encoder pulses per revolution for rotary encoders.
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Dependency: Refer to: p0408, p9316

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.

p9319 SI motion fine resolution G1_XIST1 (Motor Module) / SI Mtn fine resolu

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
2	18	11

Description: Sets the fine resolution for G1_XIST1 in bits.
For safe functions that are not enabled (p9301 = 0), the following applies:
p9319 is automatically set the same as p0418 at run-up.
For safety functions that are enabled (p9301 > 0), the following applies:
p9319 is checked to see that it matches p0418.
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Dependency: Refer to: p0418
Refer to: F01670, F01671

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.
G1_XIST1: Position actual value of the encoder according to PROFIdrive

p9320 SI motion spindle pitch (Motor Module) / SI Mtn sp_pitch MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.10 [mm]	8388.00 [mm]	10.00 [mm]

Description: Sets the gear ratio between the encoder and load in mm/rev for a linear axis with rotary encoder.
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Dependency: Refer to: p9520

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.

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p9321[0...7] SI motion gearbox encoder/load denominator (Motor Module) / SI Mtn gearDenomMM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1	2147000000	1

Description: Sets the denominator for the gearbox between the encoder and load.
The actual gearbox stage is selected via safety-relevant inputs (SGE).
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Index: [0] = Gearbox 1
[1] = Gearbox 2
[2] = Gearbox 3
[3] = Gearbox 4
[4] = Gearbox 5
[5] = Gearbox 6
[6] = Gearbox 7
[7] = Gearbox 8

Dependency: Refer to: p9322

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.

p9322[0...7] SI motion gearbox encoder/load numerator / SI Mtn gear num MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1	2147000000	1

Description: Sets the numerator for the gearbox between the encoder and load.
The actual gearbox stage is selected via safety-relevant inputs (SGE).
The encoder that is used for the safe motion monitoring functions on the Motor Module must be parameterized in this parameter.

Index: [0] = Gearbox 1
[1] = Gearbox 2
[2] = Gearbox 3
[3] = Gearbox 4
[4] = Gearbox 5
[5] = Gearbox 6
[6] = Gearbox 7
[7] = Gearbox 8

Dependency: Refer to: p9321

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Note: A change only becomes effective after a POWER ON.

p9326 SI motion encoder assignment (Motor Module) / SI Mtn encoder MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1	3	1

Description: Sets the number of the encoder that the Motor Module uses for safe motion monitoring functions.

Dependency: For the safe motion monitoring functions, the redundant safety position actual value sensing must be activated in the appropriate encoder data set (p0430.19 = 1).
Refer to: p0187, p0188, p0189, p0430, p9526

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Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: If a 1 is parameterized (the Motor Module uses an encoder for closed-loop speed control), then a single-encoder system is being used.
A change only becomes effective after a POWER ON.

p9328[0...11] SI Motion Sensor Module Node Identifier (Motor Module) / SI Mtn SM NodId MM

VECTOR

Can be changed: U, T		**Access level:** 4
Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
0000 hex	00FF hex	0000 hex

Description: Node Identifier of the Sensor Module that is used by the Motor Module for the motion monitoring functions.
Dependency: Refer to: r9881
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

p9330 SI motion standstill tolerance (Motor Module) / SI Mtn SOS Tol MM

VECTOR

Can be changed: U, T		**Access level:** 4
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
0.00 [mm]	100.00 [mm]	1.00 [mm]

Description: Sets the tolerance in mm or degrees for the function "safe operating stop" (SBH/SOS).
Dependency: Refer to: p9530
Refer to: C01707
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

p9331[0...3] SI motion SG limit values / SI Mtn SG lim MM

VECTOR

Can be changed: U, T		**Access level:** 4
Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
Min	**Max**	**Factory setting**
0.00 [mm/min]	1000000.00 [mm/min]	2000.00 [mm/min]

Description: Sets the limit values for the function "safely reduced speed" (SLS).
Index: [0] = Limit value SG1
[1] = Limit value SG2
[2] = Limit value SG3
[3] = Limit value SG4
Dependency: Refer to: p9363, p9531
Refer to: C01714
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

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p9342 SI motion act val comparison tol (crosswise) (Motor Module) / SI Mtn act tol MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0010 [mm]	360.0000 [mm]	0.1000 [mm]

Description: Sets the tolerance for the crosswise data comparison of the actual position between the two monitoring channels.
Dependency: Refer to: p9542
Refer to: C01711
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

p9346 SI motion velocity limit n_x (Motor Module) / SI Mtn lim n_x MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	6000.00 [mm/min]	20.00 [mm/min]

Description: Sets the velocity limit n_x to detect standstill (zero speed).
When this limit value is fallen below, SGA "n < n_x" is set.
Dependency: Refer to: p9546
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.
SGA: Safety-related output

p9348 SI motion SBR actual velocity tolerance (Motor Module) / SI Mtn SBR Tol MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	120000.00 [mm/min]	300.00 [mm/min]

Description: Sets the velocity tolerance for the "Safe Braking Ramp" (SBR).
Dependency: Refer to: p9548
Refer to: C01706
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.
SBR: Safe braking ramp

p9349 SI motion slip velocity tolerance (Motor Module) / SI Mtn slip MM

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	6000.00 [mm/min]	6.00 [mm/min]

Description: Sets the velocity tolerance that is used for a two encoder system in crosswise comparison between the Control Unit and the Motor Module.
Dependency: Refer to: p9301, p9342, p9549
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

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Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: If the "actual value synchronization" is not enabled (p9301.3 = 0), then the value parameterized in p9342 is used as tolerance in the crosswise data comparison.

A change only becomes effective after a POWER ON.

p9351 SI motion SG changeover delay time (Motor Module) / SI Mtn SG t_del MM

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	60000000.00 [µs]	100000.00 [µs]

Description: Sets the delay time for the SG changeover for the function "safely reduced speed" (SLS).

When transitioning from a higher to a lower safely-reduced velocity/speed stage or to the safe operating stop (SOS), within this delay time, the "old" velocity stage remains active.

Even if SLS or SOS is activated from non safety-related operation, then this delay is still applied.

Dependency: Refer to: p9551

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: A change only becomes effective after a POWER ON.

p9352 SI motion transition time STOP C to SBH (Motor Module) / SI Mtn t C->SBH MM

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	10000000.00 [µs]	100000.00 [µs]

Description: Sets the transition time from STOP C to "safe operating stop" (SBH).

Dependency: Refer to: p9552

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: A change only becomes effective after a POWER ON.

p9353 SI motion transition time STOP D to SBH (Motor Module) / SI Mtn t D->SBH MM

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	60000000.00 [µs]	100000.00 [µs]

Description: Sets the transition time from STOP D to "safe operating stop" (SBH).

Dependency: Refer to: p9553

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: A change only becomes effective after a POWER ON.

p9356 SI motion pulse cancellation delay time (Motor Module) / SI Mtn IL t_del MM

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	10000000.00 [µs]	100000.00 [µs]

Description: Sets the delay time for the safe pulse cancellation after STOP B / SS1.

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Dependency: Refer to: p9360, p9556
Refer to: C01701
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

p9357 SI motion pulse cancellation test time (Motor Module) / SI Mtn IL tTest MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	10000000.00 [µs]	100000.00 [µs]

Description: Sets the time after which the pulses must have been cancelled when initiating the test stop.
Dependency: Refer to: p9557
Refer to: C01798
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

p9358 SI motion acceptance test mode time limit (Motor Module) / SI Mtn t accept MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
5000000.00 [µs]	100000000.00 [µs]	40000000.00 [µs]

Description: Sets the maximum time for the acceptance test mode.
If the acceptance test mode takes longer than the selected time limit, then the mode is automatically terminated.
Dependency: Refer to: p9558
Refer to: C01799
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

p9360 SI motion pulse cancellation shutdown speed (Motor Module) / SI Mtn IL n_shd MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	6000.00 [mm/min]	0.00 [mm/min]

Description: Sets the velocity, under which the axis is considered to be "stationary" and for a STOP B, the pulses are cancelled (by changing to STOP A).
Dependency: Refer to: p9356, p9560
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

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p9363[0...3] SI motion stop response SLS (Motor Module) / SI Mtn Stop SLS MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Integer16 — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	13	2

Description: Sets the stop response for the function "safely reduced speed" (SLS).
This setting applies to the individual SG limit values.

Values:
0: STOP A
1: STOP B
2: STOP C
3: STOP D
10: STOP A with delayed pulse cancellation when the bus fails
11: STOP B with delayed pulse cancellation when the bus fails
12: STOP C with delayed pulse cancellation when the bus fails
13: STOP D with delayed pulse cancellation when the bus fails

Index:
[0] = Limit value SG1
[1] = Limit value SG2
[2] = Limit value SG3
[3] = Limit value SG4

Dependency: Refer to: p9331, p9380, p9563

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

Notice: This parameter is overwritten by the copy function of the drive-based safety functions.

Note: A change only becomes effective after a POWER ON.

p9370 SI motion acceptance test mode (Motor Module) / SI Mtn acc mode MM

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Integer16 — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0000 hex	00AC hex	0000 hex

Description: Setting to select and de-select the acceptance test mode.

Values:
0: [00 hex] De-select the acceptance test mode
172: [AC hex] Select the acceptance test mode

Dependency: Refer to: p9358, r9371
Refer to: C01799

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

r9371 SI motion acceptance test status (Motor Module) / SI Mtn acc stat MM

VECTOR

Can be changed: - — **Access level:** 4
Data type: Integer16 — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0000 hex	00AC hex	0000 hex

Description: Displays the status of the acceptance test mode.

Values:
0: [00 hex] Acc_mode inactive
12: [0C hex] Acc_mode not possible due to POWER ON fault
13: [0D hex] Acc_mode not possible due to incorrect ID in p9370
15: [0F hex] Acc_mode not possible due to expired Acc_timer
172: [AC hex] Acc_mode active

Dependency: Refer to: p9358, p9370
Refer to: C01799

Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

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p9380 SI motion pulse cancellation delay bus failure (Motor Module) / SI Mtn t to IL MM

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [µs]	800000.00 [µs]	0.00 [µs]

Description: Sets the delay time after which the pulses are safely cancelled after a bus failure.
Dependency: Refer to: p9363
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.
Notice: This parameter is overwritten by the copy function of the drive-based safety functions.
Note: A change only becomes effective after a POWER ON.

r9398[0...1] SI motion actual checksum SI parameters (Motor Module) / SI Mtn act CRC MM

VECTOR	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the checksum for the checked Safety Integrated parameters of the motion monitoring function (actual checksum) on the Motor Module.
Index: [0] = Check sum over SI parameters for motion monitoring
[1] = Check sum over SI parameters for actual values
Dependency: Refer to: p9399
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

p9399[0...1] SI motion reference checksum SI parameters (Motor Module) / SI Mtn ref CRC MM

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the checksum for the checked Safety Integrated parameters of the motion monitoring function (actual checksum) on the Motor Module.
Index: [0] = Check sum over SI parameters for motion monitoring
[1] = Check sum over SI parameters for actual values
Dependency: Refer to: r9398
Cautiont: The parameter has not been released in firmware version 2.4 and may not be changed.

r9406[0...19] PS file parameter number, parameter not transferred / PS par n. transf

All objects	**Can be changed:** -		**Access level:** 4
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the parameters that were not able to be transferred when reading the parameter back-up files (PS files) from the CompactFlash card.
r9406[0] = 0
--> All of the parameter values were able to be transferred error-free.
r9406[0...x] > 0
--> Displays the parameter number whose value was not able to be completely transferred or for an indexed parameter, for at least 1 index, was not able to be transferred. The first index that is not transferred is displayed in r9407.

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Dependency: Refer to: r9407, r9408
Note: All indices from r9406 to r9408 designate the same parameter.
The parameter number is in r9406[x], the parameter index is in r9407[x], and the associated fault code is in r94088[x].

r9407[0...19] PS file parameter index, parameter not transferred / PS parIdx n.transf

All objects

Can be changed: - **Access level:** 1
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the first index of the parameter that was not able to be transferred when reading the parameter back-up files (PS files) from the CompactFlash card.
If, from an indexed parameter, at least one index was not able to be transferred, then the parameter number is displayed in r9406[n] and the first index that was not transferred is displayed in r9407[n].
r9406[0] = 0
--> All of the parameter values were able to be transferred error-free.
r9406[n] > 0
--> Displays r9407[n] the first index of the parameter number r9406[n] that was not transferred.
Dependency: Refer to: r9406, r9408
Note: All indices from r9406 to r9408 designate the same parameter.
The parameter number is in r9406[x], the parameter index is in r9407[x], and the associated fault code is in r94088[x].

r9408[0...19] PS file fault code parameter not transferred / PS fault code

All objects

Can be changed: - **Access level:** 1
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Only for internal Siemens service.
Note: All indices from r9406 to r9408 designate the same parameter.
The parameter number is in r9406[x], the parameter index is in r9407[x], and the associated fault code is in r94088[x].

r9409 Number of parameters to be saved / Qty par to save

All objects

Can be changed: - **Access level:** 4
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of modified parameters and those that have still not be saved for this drive object.
Dependency: Refer to: p0971, p0977
Note: The modified parameters that still need to be saved are internally listed in r9410 ... r9419.

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r9481 Number of BICO interconnections / BICO count

CU_G, TB30, TM31, VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the number of BICO interconnections (signal drains) to other drive objects.
The selected BICO interconnections should be entered into r9482[0...59] and r9483[0...59].

Dependency: Refer to: r9482, r9483

r9482[0...59] BICO interconnections, BI/CI parameters / BICO BI/CI par

CU_G, TB30, TM31, VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the signal drains (Binector/Connector Inputs, BI/CI parameters) to other drive objects.
The number of BICO interconnections to other drive objects is displayed in r9481.

Dependency: Refer to: r9481, r9483

Note: The list is sorted according to signal sources and is structured as follows:
r9842[0]: Interconnection 1 (signal drain, BICO coded), r9843[0]: Interconnection 1 (signal source, BICO coded)
r9842[1]: Interconnection 2 (signal drain, BICO coded), r9843[1]: Interconnection 2 (signal source, BICO coded)
...

r9483[0...59] BICO interconnections, BO/CO parameters / BICO BO/CO par

CU_G, TB30, TM31, VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the signal sources (Binector/Connector Outputs, BO/CO parameters) to other drive objects.
The number of BICO interconnections to other drive objects is displayed in r9481.

Dependency: Refer to: r9481, r9482

Note: The list is sorted according to signal sources and is structured as follows:
r9842[0]: Interconnection 1 (signal drain, BICO coded), r9843[0]: Interconnection 1 (signal source, BICO coded)
r9842[1]: Interconnection 2 (signal drain, BICO coded), r9843[1]: Interconnection 2 (signal source, BICO coded)
...

p9484 BICO interconnections, search signal source / BICO S_src srch

CU_G, TB30, TM31, VECTOR

Can be changed: T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	4294967295	0

Description: Sets the signal source (BO/CO parameter, BICO coded) to search in the signal drains.
The question is answered:
How often is a connection made to a signal source in the drive object and from which index are these interconnections saved (r9482[0...59], r9483[0...59])?

Dependency: Refer to: r9481, r9482, r9483, r9485, r9486

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r9485 BICO interconnections, signal source search count / BICO S_src srchQty

CU_G, TB30, TM31, VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of BICO interconnections to the signal drain being searched for.
The signal source to be searched is set in p9484 (BICO-coded).
The search result is contained in r9482[0...59] and r9483[0...59] and is specified by the count (r9485) and the first index (r9486).

Dependency: Refer to: r9481, r9482, r9483, p9484, r9486

r9486 BICO interconnections, signal source search first index / BICO S_src srchIdx

CU_G, TB30, TM31, VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the first index of the signal source being searched for.
The signal source to be searched is set in p9484 (BICO-coded).
The search result is contained in r9482[0...59] and r9483[0...59] and is specified by the count (r9485) and the first index (r9486).

Dependency: Refer to: r9481, r9482, r9483, p9484, r9485

r9490 Number of BICO interconnections to other drives / Qty BICO to drive

All objects

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: Commands **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of signal sources from this drive to other drives/drive objects (Binector Output/Connector Output, BO/CO).

Dependency: Refer to: r9491, r9492, p9493

r9491[0...9] BI/CI of BICO interconnections to other drives / BI/CI to drive

All objects

Can be changed: - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -
P-Group: Commands **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the signal receiver list (Binector Input/Connector Input, BI/CI) for the first interconnections between this drive and other drives/drive objects.

Dependency: Refer to: r9490, r9492, p9493

Notice: A drive cannot be deleted if this list is not empty! Otherwise, another drive would continue to attempt to read a signal from a drive that no longer existed.

Note: All indices of r9491 to p9493 designate the same interconnection.
r9491[x] contains the signal receiver and r9492[x] the matching signal source; p9493[x] can be set to modify the interconnection.

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r9492[0...9] BO/CO of BICO interconnections to other drives / BO/CO to drive

All objects

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Commands
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the signal source list (Binector Output/Connector Output, BO/CO) for the first interconnections between this drive and other drives/drive objects.

Dependency: Refer to: r9490, r9491, p9493

Notice: A drive cannot be deleted if this list is not empty! Otherwise, another drive would continue to attempt to read a signal from a drive that no longer existed.

Note: All indices of r9491 to p9493 designate the same interconnection.
r9491[x] contains the signal receiver and r9492[x] the matching signal source; p9493[x] can be set to modify the interconnection.

p9493[0...9] Reset BICO interconnections to other drives / Reset BICO to drv

All objects

Can be changed: T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	15	15

Description: Setting to reset the BICO interconnections to other drives. Each interconnection can be individually reset.

Values:
0: Set connection to 0
1: Set connection to 1 (100 %)
2: Set connection to factory setting
15: Finished

Dependency: Refer to: r9490, r9491, r9492

Note: All indices of r9491 to p9493 designate the same interconnection.
r9491[x] contains the signal receiver and r9492[x] the matching signal source; p9493[x] can be set to modify the interconnection.

p9495 BICO behavior to de-activated drive objects / Behav to deact obj

CU_G, TB30, TM31, VECTOR

Can be changed: T
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	2	0

Description: Setting for the behavior for BICO interconnections to other non-operational/de-activated drive objects.
If this drive object has BICO interconnections to other non-operational or de-activated drive objects as drain, then using these parameters, all of the associated BI/CI parameters of this drive object can be set to the re-set value and marked, or only marked.

Values:
0: Do not do anything
1: Mark connection
2: Set the connection to default and mark

Dependency: Refer to: p9496, p9497, r9498, r9499
Refer to: A01318, F01507

Note: The BI/CI parameters involved are listed in r9498[0...29] (drain).
The associated BO/CO parameters are listed in r9499[0...29] (source).
However, r9498 and r9499 are only then filled if p9495 is not equal to 0, otherwise they remain empty.

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p9496 Restore BICO to the drive objects that are now activated / Rest BICO act obj

CU_G, TB30, TM31, VECTOR

Can be changed: T | **Access level:** 3
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	2	0

Description: If this drive object has BICO interconnections to other drive objects that are either not operational or have been de-activated, then using this parameter, all of the BI/CI parameters involved with this drive object can be re-established.

Values:
0: Do not do anything
1: Restore the connections from the list
2: Delete the connection from the list

Dependency: Refer to: p9495, p9497, r9498, r9499
Refer to: A01318, F01507

Note: The BI/CI parameters involved are listed in r9498[0...29] (drain).
The associated BO/CO parameters are listed in r9499[0...29] (source).
After setting p9496 to 1 or 2, r9498 and r9499 are reset, r9497 is set to 0 and p9496 itself is set to 0.

p9497 BICO number of interconnections to de-activated drive objects / Qty to deact obj

CU_G, TB30, TM31, VECTOR

Can be changed: T | **Access level:** 3
Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	65535	0

Description: Displays the number of signal drains of this drive object to other drives/drive objects that are no longer operational/de-activated (Binector Input/Connector Input, BI/CI).

Dependency: Refer to: p9495, p9496, r9498, r9499
Refer to: A01318, F01507

Note: The parameter is only used for display purposes and cannot be written into.

r9498[0...29] BICO BI/CI parameters to de-activated drive objects / BI/CI to deact obj

CU_G, TB30, TM31, VECTOR

Can be changed: - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: List of the BI/CI parameters that represent a connection to non-operational/de-activated drive objects.

Dependency: Refer to: p9495, p9496, p9497, r9499
Refer to: A01318, F01507

Note: All indices from r9498 to r9499 designate the same BICO interconnection.
This signal drain is in r9498[x] and the associated signal source in r9499[x].

r9499[0...29] BICO BO/CO parameters to de-activated drive objects / BO/CO to deact obj

CU_G, TB30, TM31, VECTOR

Can be changed: - | **Access level:** 3
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Commands | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: List of the BO/CO parameters that represent a connection to non-operational/de-activated drive objects.

Dependency: Refer to: p9495, p9496, p9497, r9498
Refer to: A01318, F01507

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Note: All indices from r9498 to r9499 designate the same BICO interconnection.
This signal drain is in r9498[x] and the associated signal source in r9499[x].

p9500 SI motion monitoring clock cycle / SI Mtn clock

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.50 [ms]	25.00 [ms]	12.00 [ms]

Description: Sets the monitoring clock cycle for safe motion monitoring.
Dependency: Refer to: p0115
Refer to: F01652
Note: The monitoring clock cycle must be a multiple of the position controller clock cycle.

p9501 SI motion enable safety-relevant functions / SI Mtn enable

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the enable signals for the safe motion monitoring.
Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Enable SBH/SG	Enable	Inhibit	-
01	Enable SE	Enable	Inhibit	-
03	Enable actual value synchronization	Enable	Inhibit	-
04	Enable external ESR activation	Enable	Inhibit	-
05	Enable override SG	Enable	Inhibit	-
06	Enable external STOPs	Enable	Inhibit	-
07	Enable cam synchronization	Enable	Inhibit	-
08	Enable SN1+	Enable	Inhibit	-
09	Enable SN1 -	Enable	Inhibit	-
10	Enable SN2 +	Enable	Inhibit	-
11	Enable SN2 -	Enable	Inhibit	-
12	Enable SN3 +	Enable	Inhibit	-
13	Enable SN3 -	Enable	Inhibit	-
14	Enable SN4 +	Enable	Inhibit	-
15	Enable SN4 -	Enable	Inhibit	-

Dependency: Refer to: F01682, F01683
Note: A change only becomes effective after a POWER ON.
ESR: Extended Stopping and Retraction
SBH: Safe operating stop
SE: Safe software limit switch
SG: Safely-reduced speed
SN: Safe software cam

p9502 SI motion axis type / SI Mtn axis type

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the axis type (linear axis or rotary axis/spindle).
Values:
0: Linear axis
1: Rot axis/spindle

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Note: A change only becomes effective after a POWER ON.

p9505 SI motion SN modulo value / SI Mtn Sn modulo

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0 [°]	737280 [°]	0 [°]

Description: Sets the modulo range of the safe position actual value in degrees for the function "safe software cam" (SN) for rotary axes.

Dependency: Refer to: p9536, p9537

Note: A change only becomes effective after a POWER ON.

SN: Safe software cam

p9516 SI motion motor encoder configuration, safety-relevant functions / SI Mtn enc config

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Unsigned16 | **Dynamic index:** - | **Function diagram:** -

P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the configuration for the motor encoder and position actual value.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Motor encoder, rotating/linear	Linear	Rotating:	-
01	Position actual value, sign change	Yes	No	-

Note: A change only becomes effective after a POWER ON.

p9517 SI motion linear scale, grid division / SI Mtn grid

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [nm]	250000000.00 [nm]	10000.00 [nm]

Description: Sets the grid division for a linear motor encoder.

Dependency: Refer to: p9516

Note: A change only becomes effective after a POWER ON.

p9518 SI motion encoder pulses per revolution / SI Mtn pulses/rev

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	100000	2048

Description: Sets the number of encoder pulses per revolution for rotary motor encoders.

Dependency: Refer to: p9516

Note: A change only becomes effective after a POWER ON.

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p9519 SI motion fine resolution G1_XIST1 / SI Mtn fine resolu

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	2	18	11

Description: Sets the fine resolution for G1_XIST1 in bits.
For safe functions that are not enabled (p9501 = 0), the following applies:
p9519 is automatically set the same as p0418 at run-up.
For safety functions that are enabled (p9501 > 0), the following applies:
p9519 is checked to see that it matches p0418.

Dependency: Refer to: p0418
Refer to: F01670, F01671

Note: A change only becomes effective after a POWER ON.
G1_XIST1: Position actual value of the motor encoder according to PROFIdrive

p9520 SI motion spindle pitch / SI Mtn Sp_pitch

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.10 [mm]	8388.00 [mm]	10.00 [mm]

Description: Sets the gear ratio between the encoder and load in mm/rev for a linear axis with rotary encoder.

Note: A change only becomes effective after a POWER ON.

p9521[0...7] SI motion gearbox encoder/load denominator / SI Mtn gear denom

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1	2147000000	1

Description: Sets the denominator for the gearbox between the encoder and load.
The actual gearbox stage is selected via safety-relevant inputs (SGE).

Index: [0] = Gearbox 1
[1] = Gearbox 2
[2] = Gearbox 3
[3] = Gearbox 4
[4] = Gearbox 5
[5] = Gearbox 6
[6] = Gearbox 7
[7] = Gearbox 8

Dependency: Refer to: p9522

Note: A change only becomes effective after a POWER ON.

p9522[0...7] SI motion gearbox encoder/load numerator / SI Mtn gear numer

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	1	2147000000	1

Description: Sets the numerator for the gearbox between the encoder and load.
The actual gearbox stage is selected via safety-relevant inputs (SGE).

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Index: [0] = Gearbox 1
[1] = Gearbox 2
[2] = Gearbox 3
[3] = Gearbox 4
[4] = Gearbox 5
[5] = Gearbox 6
[6] = Gearbox 7
[7] = Gearbox 8

Dependency: Refer to: p9521

Note: A change only becomes effective after a POWER ON.

p9526 SI motion encoder assignment 2nd channel / SI Mtn enc 2ndChan

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
1	3	1

Description: Sets the number of the encoder that the 2nd channel (control, Motor Module) uses for safe motion monitoring functions.

Dependency: For the safe motion monitoring functions, the redundant safety position actual value sensing must be activated in the appropriate encoder data set (p0430.19 = 1).
Refer to: p0187, p0188, p0189, p0430

Note: If a 1 is parameterized (the 2nd channel of the motion monitoring functions uses encoders for closed-loop speed control), then a single-encoder system is being used.
A change only becomes effective after a POWER ON.

p9530 SI motion standstill tolerance / SI Mtn standst_tol

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mm]	100.00 [mm]	1.00 [mm]

Description: Sets the tolerance for the function "safe operating stop" (SBH).

Dependency: Refer to: C01707

Note: A change only becomes effective after a POWER ON.

p9531[0...3] SI motion SG limit values / SI Mtn SG lim val

VECTOR

Can be changed: U, T — **Access level:** 4

Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -

P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	1000000.00 [mm/min]	2000.00 [mm/min]

Description: Sets the limit values for the function "safely reduced speed" (SG).

Index: [0] = Limit value SG1
[1] = Limit value SG2
[2] = Limit value SG3
[3] = Limit value SG4

Dependency: Refer to: p9532, p9561, p9563
Refer to: C01714

Note: A change only becomes effective after a POWER ON.

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p9532[0...15] SI motion SG override factor / SI Mtn SG override

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.000 [%]	100.000 [%]	100.000 [%]

Description: Sets the override factor for the limit value for SG2 and SG4 for the function "safely reduced speed" (SG).

Index:
[0] = SG override factor 0
[1] = SG override factor 1
[2] = SG override factor 2
[3] = SG override factor 3
[4] = SG override factor 4
[5] = SG override factor 5
[6] = SG override factor 6
[7] = SG override factor 7
[8] = SG override factor 8
[9] = SG override factor 9
[10] = SG override factor 10
[11] = SG override factor 11
[12] = SG override factor 12
[13] = SG override factor 13
[14] = SG override factor 14
[15] = SG override factor 15

Dependency: Refer to: p9501, p9531

Note: The actual override factor for SG2 and SG4 is selected using the safety-relevant inputs (SGE).
A change only becomes effective after a POWER ON.

p9534[0...1] SI motion SE upper limit values / SI Mtn SE up_lim

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-2147000.00 [mm]	2147000.00 [mm]	100000.00 [mm]

Description: Sets the upper limit value for the function "safe software limit switch" (SE).

Index:
[0] = Limit value SE1
[1] = Limit value SE 2

Dependency: Refer to: p9501, p9535, p9562

Note: For the setting of the SE limit values, the following applies: p9534 > p9535
A change only becomes effective after a POWER ON.

p9535[0...1] SI motion SE lower limit values / SI Mtn SE low_lim

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-2147000.00 [mm]	2147000.00 [mm]	-100000.00 [mm]

Description: Sets the lower limit value for the function "safe software limit switch" (SE).

Index:
[0] = Limit value SE1
[1] = Limit value SE 2

Dependency: Refer to: p9501, p9534, p9562

Note: For the setting of the SE limit values, the following applies: p9534 > p9535
A change only becomes effective after a POWER ON.

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p9536[0...29] SI motion SN plus cam position / SI Mtn SN+

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-2147000.00 [mm]	2147000.00 [mm]	10.00 [mm]

Description: Sets the plus cam position for the function "safe software cam" (SN).

Index:
[0] = Cam position SN1
[1] = Cam position SN2
[2] = Cam position SN3
[3] = Cam position SN4
[4] = Cam position SN5
[5] = Cam position SN6
[6] = Cam position SN7
[7] = Cam position SN8
[8] = Cam position SN9
[9] = Cam position SN10
[10] = Cam position SN11
[11] = Cam position SN12
[12] = Cam position SN13
[13] = Cam position SN14
[14] = Cam position SN15
[15] = Cam position SN16
[16] = Cam position SN17
[17] = Cam position SN18
[18] = Cam position SN19
[19] = Cam position SN20
[20] = Cam position SN21
[21] = Cam position SN22
[22] = Cam position SN23
[23] = Cam position SN24
[24] = Cam position SN25
[25] = Cam position SN26
[26] = Cam position SN27
[27] = Cam position SN28
[28] = Cam position SN29
[29] = Cam position SN30

Dependency: Refer to: p9501, p9537

Note: A change only becomes effective after a POWER ON.

p9537[0...29] SI motion SN minus cam position / SI Mtn SN-

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-2147000.00 [mm]	2147000.00 [mm]	-10.00 [mm]

Description: Sets the minus cam position for the function "safe software cam" (SN).

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Index: [0] = Cam position SN1
[1] = Cam position SN2
[2] = Cam position SN3
[3] = Cam position SN4
[4] = Cam position SN5
[5] = Cam position SN6
[6] = Cam position SN7
[7] = Cam position SN8
[8] = Cam position SN9
[9] = Cam position SN10
[10] = Cam position SN11
[11] = Cam position SN12
[12] = Cam position SN13
[13] = Cam position SN14
[14] = Cam position SN15
[15] = Cam position SN16
[16] = Cam position SN17
[17] = Cam position SN18
[18] = Cam position SN19
[19] = Cam position SN20
[20] = Cam position SN21
[21] = Cam position SN22
[22] = Cam position SN23
[23] = Cam position SN24
[24] = Cam position SN25
[25] = Cam position SN26
[26] = Cam position SN27
[27] = Cam position SN28
[28] = Cam position SN29
[29] = Cam position SN30

Dependency: Refer to: p9501, p9536

Note: A change only becomes effective after a POWER ON.

p9540 SI motion SN tolerance / SI Mtn SN tol

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0010 [mm]	10.0000 [mm]	0.1000 [mm]

Description: Sets the tolerance for the function "safe software cam" (SN).
Within this tolerance, both monitoring channels may signal different signal states of the same safe software cam.

Note: A change only becomes effective after a POWER ON.

p9542 SI motion actual value comparison tolerance (crosswise) / SI Mtn act val tol

VECTOR

Can be changed: U, T | **Access level:** 4

Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -

P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.0010 [mm]	360.0000 [mm]	0.1000 [mm]

Description: Sets the tolerance for the crosswise data comparison of the actual position between the two monitoring channels.

Dependency: Refer to: C01711

Note: A change only becomes effective after a POWER ON.

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p9544 SI motion actual value comparison tolerance (referencing) / SI Mtn ref tol

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.0000 [mm]	36.0000 [mm]	0.0100 [mm]

Description: Sets the tolerance to check the actual values after referencing (incremental encoder) or when powering-up (absolute encoder).

Dependency: Refer to: C01711

Note: A change only becomes effective after a POWER ON.

p9546 SI motion velocity limit n_x / SI Mtn lim val n_x

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	6000.00 [mm/min]	20.00 [mm/min]

Description: Sets the velocity limit n_x to detect standstill (zero speed).
When this limit value is fallen below, SGA "n < n_x" is set.

Note: A change only becomes effective after a POWER ON.
SGA: Safety-related output

p9548 SI motion SBR actual speed tolerance / SI Mtn SBR tol

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	120000.00 [mm/min]	300.00 [mm/min]

Description: Sets the velocity tolerance for the "Safe Braking Ramp" (SBR).

Dependency: Refer to: C01706

Note: A change only becomes effective after a POWER ON.
SBR: Safe braking ramp

p9549 SI motion slip speed tolerance / SI Mtn slip tol

VECTOR

Can be changed: U, T — **Access level:** 4
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	6000.00 [mm/min]	6.00 [mm/min]

Description: Sets the velocity tolerance that is used for a two encoder system in crosswise comparison between the drive and the control.

Dependency: Refer to: p9501, p9542

Note: If the "actual value synchronization" is not enabled (p9501.3 = 0), then the value parameterized in p9542 is used as tolerance in the crosswise data comparison.
A change only becomes effective after a POWER ON.

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p9550 SI motion SGE changeover tolerance time / SI Mtn SGE tol

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [ms]	10000.00 [ms]	500.00 [ms]

Description: Sets the tolerance time for the changeover of the safety-related inputs (SGE).

Note: A change only becomes effective after a POWER ON.

p9551 SI motion SG changeover delay time / SI Mtn SG t_del

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [ms]	60000.00 [ms]	100.00 [ms]

Description: Sets the delay time for the SG changeover for the function "safely reduced speed" (SG).

When transitioning from a higher to a lower safely-reduced velocity/speed stage or to the safe operating stop, within this delay time, the "old" velocity stage remains active.

Note: A change only becomes effective after a POWER ON.

p9552 SI motion transition time STOP C to SBH / SI Mtn time C->SBH

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [ms]	10000.00 [ms]	100.00 [ms]

Description: Sets the transition time from STOP C to "safe operating stop" (SBH).

Note: A change only becomes effective after a POWER ON.

p9553 SI motion transition time STOP D to SBH / SI Mtn time D->SBH

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [ms]	60000.00 [ms]	100.00 [ms]

Description: Sets the transition time from STOP D to "safe operating stop" (SBH).

Note: A change only becomes effective after a POWER ON.

p9554 SI motion transition time STOP E to SBH / SI Mtn time E->SBH

VECTOR	**Can be changed:** U, T		**Access level:** 4
	Data type: Floating Point	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0.00 [ms]	60000.00 [ms]	100.00 [ms]

Description: Sets the transition time from STOP E to "safe operating stop" (SBH).

Note: A change only becomes effective after a POWER ON.

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p9555 SI motion transition time STOP F to STOP B / SI Mtn time F->B

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	60000.00 [ms]	0.00 [ms]

Description: Sets the transition time from STOP F to STOP B.
Dependency: Refer to: C01711
Note: A change only becomes effective after a POWER ON.

p9556 SI motion pulse cancellation delay time / SI Mtn IL t_del

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	10000.00 [ms]	100.00 [ms]

Description: Sets the delay time for the safe pulse cancellation after STOP B.
Dependency: Refer to: p9560
Refer to: C01701
Note: A change only becomes effective after a POWER ON.

p9557 SI motion pulse cancelation test time / SI Mtn IL t_test

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	10000.00 [ms]	100.00 [ms]

Description: Sets the time after which the pulses must have been cancelled when initiating the test stop.
Dependency: Refer to: C01798
Note: A change only becomes effective after a POWER ON.

p9558 SI motion acceptance test mode, time limit / SI Mtn t_accept

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
5000.00 [ms]	100000.00 [ms]	40000.00 [ms]

Description: Sets the maximum time for the acceptance test mode.
If the acceptance test mode takes longer than the selected time limit, then the mode is automatically terminated.
Dependency: Refer to: C01799
Note: A change only becomes effective after a POWER ON.

p9560 SI motion pulse cancellation shutdown speed / SI Mtn IL n_shutd

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Floating Point | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0.00 [mm/min]	6000.00 [mm/min]	0.00 [mm/min]

Description: Sets the velocity, under which the axis is considered to be "stationary" and for a STOP B, the pulses are cancelled (by changing to STOP A).

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Dependency: Refer to: p9556
Note: A change only becomes effective after a POWER ON.

p9561 SI motion SG stop response / SI Mtn SG stop res

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	14	5

Description: Sets the stop response for the function "safely reduced speed" (SG).
This setting applies for all SG limit values.
An input value of less than 5 signifies personnel protection, from 10 and upwards, machine protection.

Values:
0: STOP A
1: STOP B
2: STOP C
3: STOP D
4: STOP E
5: Sets the stop response via p9563 (SG-specific)
10: STOP A with delayed pulse cancellation when the bus fails
11: STOP B with delayed pulse cancellation when the bus fails
12: STOP C with delayed pulse cancellation when the bus fails
13: STOP D with delayed pulse cancellation when the bus fails
14: STOP E with delayed pulse cancellation when the bus fails

Dependency: Refer to: p9531, p9563, p9580
Note: A change only becomes effective after a POWER ON.

p9562 SI motion SE stop response / SI Mtn SE stop res

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
2	4	2

Description: Sets the stop response for the function "safe software limit switch" (SE).

Values:
2: STOP C
3: STOP D
4: STOP E

Dependency: Refer to: p9534, p9535
Note: A change only becomes effective after a POWER ON.

p9563[0...3] SI motion SG-specific stop response / SI Mtn SGspec stop

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: Safety Integrated | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	14	2

Description: Sets the stop response for the function "safely reduced speed" (SG, SG-specific).
This setting applies to the individual SG limit values.

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Values:
0: STOP A
1: STOP B
2: STOP C
3: STOP D
4: STOP E
10: STOP A with delayed pulse cancellation when the bus fails
11: STOP B with delayed pulse cancellation when the bus fails
12: STOP C with delayed pulse cancellation when the bus fails
13: STOP D with delayed pulse cancellation when the bus fails
14: STOP E with delayed pulse cancellation when the bus fails

Index:
[0] = Limit value SG1
[1] = Limit value SG2
[2] = Limit value SG3
[3] = Limit value SG4

Dependency: Refer to: p9531, p9561, p9580

Note: A change only becomes effective after a POWER ON.

p9570 SI motion acceptance test mode / SI Mtn Acc_mode

VECTOR

Can be changed: U, T
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	00AC hex	0000 hex

Description: Setting to select and de-select the acceptance test mode.

Values:
0: [00 hex] De-select the acceptance test mode
172: [AC hex] Select the acceptance test mode

Dependency: Refer to: p9558, r9571
Refer to: C01799

r9571 SI motion acceptance test status / SI Mtn acc_status

VECTOR

Can be changed: -
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	00AC hex	00AC hex

Description: Displays the status of the acceptance test mode.

Values:
0: [00 hex] Acc_mode inactive
12: [0C hex] Acc_mode not possible due to POWER ON fault
13: [0D hex] Acc_mode not possible due to incorrect ID in p9570
15: [0F hex] Acc_mode not possible due to expired Acc_timer
172: [AC hex] Acc_mode active

Dependency: Refer to: p9558, p9570
Refer to: C01799

p9580 SI motion pulse cancellation delay time after bus failure / SI Mtn t to IL

VECTOR

Can be changed: U, T
Access level: 4
Data type: Floating Point
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0.00 [ms]	800.00 [ms]	0.00 [ms]

Description: Sets the delay time after which the pulses are safely cancelled after a bus failure.

Dependency: Refer to: p9561, p9563

Note: A change only becomes effective after a POWER ON.

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r9590[0...2] SI motion version, safe motion monitoring functions / SI Mtn version

VECTOR

Can be changed: -
Access level: 4
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the Safety Integrated version for the safe monitoring functions.

Index: [0] = Safety Version (major release)
[1] = Safety Version (minor release)
[2] = Safety Version (baselevel or patch)

Dependency: Refer to: r9770, r9870, r9890

Note: Example:
r9590[0] = 2, r9590[1] = 3, r9590[2] = 1 --> SI motion version V02.03.01

p9601 SI enable, functions integrated in the drive (Control Unit) / SI enable fct CU

VECTOR

Can be changed: C2
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the enable signals for safety functions on the Control Unit that are integrated in the drive.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Enable SH via terminal (Control Unit)	Enable	Inhibit	2810
02	Motion monitoring functions integr. in the drive (Control Unit)	Enable	Inhibit	-
03	Enable PROFIsafe (Control Unit)	Enable	Inhibit	-

Dependency: Refer to: p9801

Note: CU: Control Unit
SH: Safe standstill
SI: Safety Integrated
SMM: Safe Motion Monitoring

p9602 SI enable Safe Brake Control (Control Unit) / SI enable SBC CU

VECTOR

Can be changed: C2
Access level: 3
Data type: Integer16
Dynamic index: -
Function diagram: 2814
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0	1	0

Description: Sets the enable signal for the function "Safe Brake Control" (SBC) on the Control Unit.

Values: 0: Inhibit SBC
1: Enable SBC

Dependency: Refer to: p9802

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Note: The "Safe Brake Control" function is not activated until at least one safety monitoring function has been enabled (i.e. p9501 not equal to 0 and/or p9601 not equal to 0).

The parameterization "no motor holding brake available" and "Safe Brake Control" enabled (p1215 = 0, p9602 = p9802 = 1) is not practical if there is no motor holding brake.

The parameterization "motor holding brake the same as sequence control, connection via BICO" and "Safe Brake Control" enabled (p1215 = 3, p9602 = 1, p9802 = 1) is not practical.

It is not permissible to parameterize "motor holding brake without feedback signals" and also enable "safe brake control" (p1278 = 1, p9602 = 1, p9802 = 1).

CU: Control Unit

SBC: Safe Brake Control

SI: Safety Integrated

p9610 SI PROFIsafe address (Control Unit) / SI PROFIsafe CU

VECTOR

Can be changed: C2 **Access level:** 4

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFE hex	0000 hex

Description: Sets the PROFIsafe address of the Control Unit.

Dependency: Refer to: p9810

p9620 BI: SI signal source for SH/SBC/SS1 (Control Unit) / SI sel SH/SS1 CU

VECTOR

Can be changed: C2 **Access level:** 3

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2810

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0

Description: Sets the signal source for the functions "Safe standstill" (SH), "Safe Brake Control" (SBC) and "Safe Stop 1" (SS1) on the Control Unit.

Dependency: Refer to: p9601

Note: The following signal sources are permitted:

- fixed zero (standard setting).
- digital inputs DI 0 to DI 7 on the Control Unit 320 (CU320).
- digital inputs DI 0 to DI 3 on the Controller Extensions (CX32, NX10, NX15).
- digital inputs DI 0 to DI 3 on the Control Unit 310 (CU310).

It is not permitted to establish an interconnection to a digital input in the simulation mode.

p9650 SI SGE changeover tolerance time (Control Unit) / SI SGE_chg tol CU

VECTOR

Can be changed: C2 **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 2810

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	2000.00 [ms]	500.00 [ms]

Description: Sets the tolerance time to change over the safety-related inputs (SGE) on the Control Unit.

An SGE changeover is not simultaneously effective due to the different runtimes in the two monitoring channels. After an SGE changeover, dynamic data is not subject to a crosswise data comparison during this tolerance time.

Dependency: Refer to: p9850

Note: For a crosswise data comparison between p9650 and p9850, a difference of one Safety monitoring clock cycle is tolerated.

The parameterized time is internally rounded-off to an integer multiple of the monitoring clock cycle.

SGE: Safety-related input (e.g. SH terminals)

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p9652 SI Safe Stop delay time (Control Unit) / SI Stop 1 t_del CU

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [s]	300.00 [s]	0.00 [s]

Description: Sets the delay time of the pulse cancellation for the function "Safe Stop 1" (SS1) on the Control Unit to brake along the OFF3 down ramp (p1135).

Dependency: Refer to: p1135, p9852

Note: For a crosswise data comparison between p9652 and p9852, a difference of one Safety monitoring clock cycle is tolerated.

The parameterized time is internally rounded-off to an integer multiple of the monitoring clock cycle.

SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

p9658 SI transition time STOP F to STOP A (Control Unit) / SI STOP F->A CU

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 2802
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	30000.00 [ms]	0.00 [ms]

Description: Sets the transition period from STOP F to STOP A on the Control Unit.

Dependency: Refer to: r9795, p9858

Refer to: F01611

Note: For a crosswise data comparison between p9658 and p9858, a difference of one Safety monitoring clock cycle is tolerated.

The parameterized time is internally rounded-off to an integer multiple of the monitoring clock cycle.

STOP F: Defect in a monitoring channel (error in the crosswise data comparison)

STOP A: Pulse cancellation via the safety shutdown path

p9659 SI forced checking procedure timer / SI FrcdCkProcTimer

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 2810
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [h]	9000.00 [h]	8.00 [h]

Description: Sets the time to carry-out the dynamic update and testing the safety shutdown paths (forced checking procedure).

Within the parameterized time, safe standstill must have been de-selected at least once. The monitoring time is reset each time that SH is de-selected.

Dependency: Refer to: A01699

p9700 SI Motion, start copy function / SI Mtn copy

VECTOR

Can be changed: U, T **Access level:** 4
Data type: Integer16 **Dynamic index:** - **Function diagram:** -
P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	0057 hex	0000 hex

Description: Starts the copy function of the drive-based motion monitoring function parameters from the Control Unit to the Motor Module with the value 57 (hex)

After the write access operations have been completed, the parameter is again reset to 0.

Values:
0: [00 hex] Copy function ended
87: [00 hex] Start copy function

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p9701 SI Motion data acknowledge / SI Mtn dat ackn

VECTOR

Can be changed: U, T | **Access level:** 4
Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	00AC hex	0000 hex

Description: Accepts the reference checksums of all drive-based monitoring parameters from the associated actual checksums when writing the value AC (hex).

After the write access operations have been completed, the parameter is again reset to 0.

Values:
0: [00 hex] Data unchanged
172: [AC hex] Data change, acknowledge

Dependency: Refer to: r9398, p9399, r9728, p9729, r9798, p9799, r9898, p9899

r9710[0...1] SI motion diagnostics result list 1 / SI Mtn res_list 1

VECTOR

Can be changed: - | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays result list 1, that for the crosswise data comparison with the control, led to the fault.

Index:
[0] = Result list, control
[1] = Result list, drive

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Actual value > upper limit, SBH	Yes	No	-
01	Actual value > lower limit, SBH	Yes	No	-
02	Actual value > upper limit, SE1	Yes	No	-
03	Actual value > lower limit, SE1	Yes	No	-
04	Actual value > upper limit, SE2	Yes	No	-
05	Actual value > lower limit, SE2	Yes	No	-
06	Actual value > upper limit, SG1	Yes	No	-
07	Actual value > lower limit, SG1	Yes	No	-
08	Actual value > upper limit, SG2	Yes	No	-
09	Actual value > lower limit, SG2	Yes	No	-
10	Actual value > upper limit, SG3	Yes	No	-
11	Actual value > lower limit, SG3	Yes	No	-
12	Actual value > upper limit, SG4	Yes	No	-
13	Actual value > lower limit, SG4	Yes	No	-
16	Actual value > upper limit, SBR	Yes	No	-
17	Actual value > lower limit, SBR	Yes	No	-

Dependency: Refer to: C01711

r9711[0...1] SI motion diagnostics result list 2 / SI Mtn res_list 2

VECTOR

Can be changed: - | **Access level:** 4
Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -
P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays result list 2, that for the crosswise data comparison with the control, led to the fault.

Index:
[0] = Result list, control
[1] = Result list, drive

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Actual value > upper limit, SN1+	Yes	No	-
	01	Actual value > lower limit, SN1+	Yes	No	-
	02	Actual value > upper limit, SN1-	Yes	No	-
	03	Actual value > lower limit, SN1-	Yes	No	-
	04	Actual value > upper limit, SN2+	Yes	No	-
	05	Actual value > lower limit, SN2+	Yes	No	-
	06	Actual value > upper limit, SN2-	Yes	No	-
	07	Actual value > lower limit, SN2-	Yes	No	-
	08	Actual value > upper limit, SN3+	Yes	No	-
	09	Actual value > lower limit, SN3+	Yes	No	-
	10	Actual value > upper limit, SN3-	Yes	No	-
	11	Actual value > lower limit, SN3-	Yes	No	-
	12	Actual value > upper limit, SN4+	Yes	No	-
	13	Actual value > lower limit, SN4+	Yes	No	-
	14	Actual value > upper limit, SN4-	Yes	No	-
	15	Actual value > lower limit, SN4-	Yes	No	-
	16	Actual value > upper limit, n_x+	Yes	No	-
	17	Actual value > lower limit, n_x+	Yes	No	-
	18	Actual value > upper limit, n_x-	Yes	No	-
	19	Actual value > lower limit, n_x-	Yes	No	-
	20	Actual value > upper limit, modulo	Yes	No	-
	21	Actual value > lower limit, modulo	Yes	No	-

Dependency: Refer to: C01711

r9718 CO/BO: SI motion control signals 1 / SI Mtn ctrl_sig 1

VECTOR

Can be changed: - **Access level:** 4

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Control signal 1 for safety-relevant motion monitoring functions.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	23	Set offset for TfS to the actual torque	Set	Reset	-

Note: TfS: Traverse to fixed stop

r9719 CO/BO: SI motion control signals 2 / SI Mtn ctrl_sig 2

VECTOR

Can be changed: - **Access level:** 4

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Control signal 2 for safety-relevant motion monitoring functions.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	Control signal de-select SBH/SG	Yes	No	-
	01	Control signal de-select SBH	Yes	No	-
	03	Control signal select SG bit 0	set	not set	-
	04	Control signal select SG bit 1	set	not set	-
	08	Control signal gearbox selection, bit 0	set	not set	-
	09	Control signal gearbox selection, bit 1	set	not set	-
	10	Control signal gearbox selection, bit 2	set	not set	-
	12	Control signal, select SE	2	1	-
	13	Control signal, close brake from control	Yes	No	-

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15	Control signal, select test stop	Yes	No	-
16	Control signal SGE valid	Yes	No	-
18	Control signal de-select ext. Stop A	Yes	No	-
19	Control signal de-select ext. Stop C	Yes	No	-
20	Control signal de-select ext. Stop D	Yes	No	-
21	Control signal de-select ext. Stop E	Yes	No	-
28	Control signal select SG override, bit 0	set	not set	-
29	Control signal select SG override, bit 1	set	not set	-
30	Control signal SG override, bit 2	set	not set	-
31	Control signal select SG override, bit 3	set	not set	-

r9721 SI motion status signals / SI Mtn stat_sig

VECTOR

Can be changed: - **Access level:** 4

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Status signal for safety-relevant motion monitoring functions.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Status signal SBH or SG active	Yes	No	-
01	Status signal SBH active	Yes	No	-
02	Status signal, pulses	cleared	enabled	-
03	Status signal active SG stage, bit 0	set	not set	-
04	Status signal active SG stage, bit 1	set	not set	-
05	Status signal velocity below limit value nx	Yes	No	-
06	Status signals valid	Yes	No	-
07	Status signal safely referenced	Yes	No	-
12	Status signal Stop A or B active	Yes	No	-
13	Status signal Stop C active	Yes	No	-
14	Status signal Stop D active	Yes	No	-
15	Status signal Stop E active	Yes	No	-

r9725 SI motion, diagnostics STOP F / SI Mtn Diag STOP F

VECTOR

Can be changed: - **Access level:** 4

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the message value that resulted in the STOP F on the drive.
Value = 0 means:
The controlled signaled a STOP F.
Value = 1 ... 999 means:
Number of the incorrect crosswise compared data between the drive and control.
Value >= 1000 means:
Additional diagnostic values of the drive.

Dependency: Refer to: C01711

Note: The significance of the individual values is described in message 27001 of the higher-level control.

p9726 SI motion, user agreement selection/de-selection / SI Mtn UserAgr sel

VECTOR

Can be changed: U, T **Access level:** 4

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	00AC hex	0000 hex

Description: Setting to select and de-select the user agreement.

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Values: 0: [00 hex] De-select user agreement
172: [AC hex] Select user agreement

Dependency: Refer to: r9727

r9727 SI motion user agreement, inside the drive / SI Mtn UserAgr int

VECTOR

Can be changed: -
Access level: 4
Data type: Integer16
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the internal state of the user agreement.
Value = 0: User agreement is not set.
Value = AC hex: User agreement is set.

Dependency: Refer to: p9726

r9728[0...1] SI motion actual checksum, SI parameters / SI Mtn act CRC

VECTOR

Can be changed: -
Access level: 4
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the checksum over the checked Safety Integrated parameters of the motion monitoring functions (actual checksum).

Index: [0] = Check sum over SI parameters for motion monitoring
[1] = Check sum over SI parameters for actual values

Dependency: Refer to: p9729
Refer to: F01680

p9729[0...1] SI motion reference checksum, SI parameters / SI Mtn ref CRC

VECTOR

Can be changed: U, T
Access level: 4
Data type: Unsigned32
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the checksum using the checksum-tested Safety Integrated parameters for motion monitoring functions (reference checksum).

Index: [0] = Check sum over SI parameters for motion monitoring
[1] = Check sum over SI parameters for actual values

Dependency: Refer to: r9728
Refer to: F01680

p9761 SI password input / SI password input

VECTOR

Can be changed: C1, T
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 2800
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Enters the Safety Integrated password.

Dependency: Refer to: F01659

Note: It is not permissible to change Safety Integrated parameter settings until the Safety Integrated password has been entered.

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p9762 SI password new / SI password new

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2800
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Enters a new Safety Integrated password.

Dependency: A change made to the Safety Integrated password must be acknowledged in the following parameter:
Refer to: p9763

p9763 SI password acknowledgment / SI ackn password

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2800
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Acknowledges the new Safety Integrated password.

Dependency: Refer to: p9762

Note: The new password entered into p9762 must be re-entered in order to acknowledge.
p9762 = p9763 = 0 is automatically set after the new Safety Integrated password has been successfully acknowledged.

r9770[0...2] SI vers. safety fcts that run indep. in the drive (Control Unit) / SI version Drv CU

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2802
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the Safety Integrated version for the safety functions that run independently in the drive on the Control Unit.

Index: [0] = Safety Version (major release)
[1] = Safety Version (minor release)
[2] = Safety Version (baselevel or patch)

Dependency: Refer to: r9870, r9890

Note: Example:
r9770[0] = 2, r9770[1] = 3, r9770[2] = 1 --> Safety-Version V02.03.01

r9771 SI common functions (Control Unit) / SI common fct CU

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2804
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the safety integrated monitoring functions supported on the Control Unit and Motor Module.
The Control Unit determines this display.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	SH supported via terminal	Yes	No	2804
	01	SBC supported	Yes	No	2804
	02	SI Motion supported	Yes	No	2804
	03	SS1 supported	Yes	No	2804
	04	PROFIsafe supported	Yes	No	-
	05	Drive-based motion monitoring functions supported	Yes	No	-

Dependency: Refer to: r9871

Note: CU: Control Unit
SBC: Safe Brake Control
SH: Safe standstill
SI: Safety Integrated
SS1: Safe Stop 1

r9772 CO/BO: SI status (Control Unit) / SI stat CU

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2804

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the Safety Integrated status on the Control Unit.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	SH selected on Control Unit	Yes	No	2810
	01	SH active on the Control Unit	Yes	No	2810
	02	SS1 active on Control Unit	Yes	No	-
	04	SBC requested	Yes	No	2814
	09	STOP A cannot be acknowledged, active	Yes	No	2802
	10	STOP A active	Yes	No	2802
	15	STOP F active	Yes	No	2802

Dependency: Refer to: r9872

r9773 CO/BO: SI status (Control Unit + Motor Module) / SI stat CU+MM

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2804

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the Safety Integrated status on the drive (Control Unit + Motor Module).

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	SH in the drive selected	Yes	No	2804
	01	SH in the drive active	Yes	No	2804
	02	SS1 in drive active	Yes	No	2804
	04	SBC requested	Yes	No	2804
	31	Shutdown paths must be tested	Yes	No	2810

Note: This status is formed from the AND operation of the relevant status of the two monitoring channels.

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r9774 CO/BO: SI status (safe standstill group) / SI stat group SH

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2804

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the status for Safety Integrated of the group to which this drive belongs.

These signals are an AND logic operation of the individual status signals of the drives included in this group.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	SH selected in group	Yes	No	2804
01	SH active in group	Yes	No	2804
02	SS1 in group active	Yes	No	-
04	SBC in group requested	Yes	No	2804
31	Shutdown paths of the group must be tested	Yes	No	2804

Dependency: Refer to: p9620, r9773

Note: A group is formed by appropriately grouping the terminals for "safe standstill".

The status of a group of n drives is, for drives 1 to n - 1 displayed with a delay of one monitoring clock cycle; this is a system-related effect.

r9780 SI monitoring clock cycle (Control Unit) / SI monitor_clck CU

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 2802

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [ms]	- [ms]	- [ms]

Description: Displays the clock cycle time for the safety functions on the Control Unit.

Dependency: Refer to: r9880

r9794[0...19] SI crosswise comparison list (Control Unit) / SI KDV_list CU

VECTOR

Can be changed: - **Access level:** 3

Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2802

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the number of the data that are being presently compared crosswise on the Control Unit.

Example:

r9794[0] = 1 (monitoring clock cycle)

r9794[1] = 2 (enable safety-related functions)

r9794[2] = 3 (SGE changeover, tolerance time)

r9794[3] = 4 (transition time, STOP F to STOP A)

...

The list of crosswise compared data is obtained dependent on the particular application.

Dependency: Refer to: r9894

Note: The complete list of numbers for crosswise data comparison is listed in Fault F01611.

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r9795 SI diagnostics STOP F (Control Unit) / SI diag STOP F CU

VECTOR

Can be changed: -
Access level: 2
Data type: Unsigned32
Dynamic index: -
Function diagram: 2802
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the number of the cross-checked data which has caused STOP F on the Control Unit.
Dependency: Refer to: r9895
Refer to: F01611
Note: The complete list of numbers for crosswise data comparison is listed in Fault F01611.

r9798 SI actual checksum SI parameters (Control Unit) / SI act_checksum CU

VECTOR

Can be changed: -
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 2800
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the checksum over the checked Safety Integrated parameters on the Control Unit (actual checksum).
Dependency: Refer to: p9799, r9898

p9799 SI reference checksum SI parameters (Control Unit) / SI set_checksum CU

VECTOR

Can be changed: C2
Access level: 3
Data type: Unsigned32
Dynamic index: -
Function diagram: 2800
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the checksum for the checked Safety Integrated parameters on the Control Unit (reference checksum).
Dependency: Refer to: r9798, p9899

p9801 SI enable, functions integrated in the drive (Motor Module) / SI enable fct MM

VECTOR

Can be changed: C2
Access level: 3
Data type: Unsigned16
Dynamic index: -
Function diagram: -
P-Group: Safety Integrated
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	0000 bin

Description: Sets the enable signals for safety functions on the Motor Module that are integrated in the drive.

Bit field:

Bit	Signal name	1 signal	0 signal	FP
00	Enable SH via terminal (Motor Module)	Enable	Inhibit	2810
02	Motion monitoring functions integr. in the drive (Motor Module)	Enable	Inhibit	-
03	Enable PROFIsafe (Motor Module)	Enable	Inhibit	-

Dependency: Refer to: p9601
Note: MM: Motor Module
SH: Safe standstill
SI: Safety Integrated

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p9802 SI enable Safe Brake Control (Motor Module) / SI enable SBC MM

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Integer32 **Dynamic index:** - **Function diagram:** 2814
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Sets the enable signal for the "Safe Brake Control" function (SBC) on the Motor Module.
0: Inhibit SBC
1: Enable SBC

Dependency: Refer to: p9602

Note: The "Safe Brake Control" function is not activated until at least one safety monitoring function has been enabled (i.e. p9501 not equal to 0 and/or p9801 not equal to 0).
The parameterization "no motor holding brake available" and "Safe Brake Control" enabled (p1215 = 0, p9602 = p9802 = 1) is not practical if there is no motor holding brake.
The parameterization "motor holding brake the same as sequence control, connection via BICO" and "Safe Brake Control" enabled (p1215 = 3, p9602 = 1, p9802 = 1) is not practical.
It is not permissible to parameterize "motor holding brake without feedback signals" and also enable "safe brake control" (p1278 = 1, p9602 = 1, p9802 = 1).
MM: Motor Module
SBC: Safe Brake Control
SI: Safety Integrated

p9810 SI PROFIsafe address (Motor Module) / SI PROFIsafe MM

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** -
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFE hex	0000 hex

Description: Sets the PROFIsafe address of the Motor Module.

p9850 SI SGE changeover tolerance time (Motor Module) / SI SGE_chg tol MM

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 2810
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	2000000.00 [µs]	500000.00 [µs]

Description: Sets the tolerance time to change over the safety-related inputs (SGE) on the Motor Module.
An SGE changeover is not simultaneously effective due to the different runtimes in the two monitoring channels. After an SGE changeover, dynamic data is not subject to a crosswise data comparison during this tolerance time.

Dependency: Refer to: p9650

Note: For a crosswise data comparison between p9650 and p9850, a difference of one Safety monitoring clock cycle is tolerated.
The parameterized time is internally rounded-off to an integer multiple of the monitoring clock cycle.
SGE: Safety-related input (e.g. SH terminals)

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p9852 SI Safe Stop 1 delay time (Motor Module) / SI Stop 1 t_del MM

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** -
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [ms]	300000.00 [ms]	0.00 [ms]

Description: Sets the delay time of the pulse cancellation for the function "Safe Stop 1" (SS1) on the Motor Module to brake along the OFF3 down ramp (p1135).

Dependency: Refer to: p1135, p9652

Note: For a crosswise data comparison between p9652 and p9852, a difference of one Safety monitoring clock cycle is tolerated.

The parameterized time is internally rounded-off to an integer multiple of the monitoring clock cycle.

SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

p9858 SI transition time STOP F to STOP A (Control Unit) / SI STOP F->A MM

VECTOR

Can be changed: C2 **Access level:** 3
Data type: Floating Point **Dynamic index:** - **Function diagram:** 2802
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0.00 [µs]	30000000.00 [µs]	0.00 [µs]

Description: Sets the transition period from STOP F to STOP A on the Motor Module.

Dependency: Refer to: p9658, r9895

Refer to: F30611

Note: For a crosswise data comparison between p9658 and p9858, a difference of one Safety monitoring clock cycle is tolerated.

The parameterized time is internally rounded-off to an integer multiple of the monitoring clock cycle.

STOP F: Defect in a monitoring channel (error in the crosswise data comparison)

STOP A: Pulse cancellation via the safety shutdown path

r9870[0...2] SI version (Motor Module) / SI version MM

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned16 **Dynamic index:** - **Function diagram:** 2802
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the Safety Integrated version on the Motor Module.

Index: [0] = Safety Version (major release)
[1] = Safety Version (minor release)
[2] = Safety Version (baselevel or patch)

Dependency: Refer to: r9770, r9890

Note: Example:

r9870[0] = 2, r9870[1] = 3, r9870[2] = 1 --> Safety-Version V02.03.01

r9871 SI common functions (Motor Module / SI general fct MM

VECTOR

Can be changed: - **Access level:** 3
Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2804
P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the safety integrated monitoring functions supported on the Control Unit and Motor Module.

The Motor Module determines this display.

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Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	SH supported via terminal	Yes	No	2804
	01	SBC supported	Yes	No	2804
	02	SI Motion supported	Yes	No	2804
	03	SS1 supported	Yes	No	2804
	04	PROFIsafe supported	Yes	No	-
	05	Drive-based motion monitoring functions supported	Yes	No	-

Dependency: Refer to: r9771

Note: MM: Motor Module
SBC: Safe Brake Control
SH: Safe standstill
SI: Safety Integrated
SS1: Safe Stop 1

r9872 CO/BO: SI status list (Motor Module) / SI status MM

VECTOR

Can be changed: - **Access level:** 2

Data type: Unsigned32 **Dynamic index:** - **Function diagram:** 2804

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	0000 bin

Description: Displays the Safety Integrated status on the Motor Module.

Bit field:	Bit	Signal name	1 signal	0 signal	FP
	00	SH on selected on Motor Module	Yes	No	2810
	01	SH on Motor Module active	Yes	No	2810
	02	SS1 on Motor Module active	Yes	No	2804
	04	SBC requested	Yes	No	2814
	09	STOP A cannot be acknowledged, active	Yes	No	2802
	10	STOP A active	Yes	No	2802
	15	STOP F active	Yes	No	2802

Dependency: Refer to: r9772

r9880 SI monitoring clock cycle (Motor Module) / SI monitor_clck MM

VECTOR

Can be changed: - **Access level:** 3

Data type: Floating Point **Dynamic index:** - **Function diagram:** 2802

P-Group: Safety Integrated **Units group:** - **Unit selection:** -

Min	Max	Factory setting
- [ms]	- [ms]	- [ms]

Description: Displays the cycle time for the safety functions on the Motor Module.

Dependency: Refer to: r9780

r9881[0...11] SI Motion Sensor Module Node Identifier 2nd Channel / SI Mtn SM node Id

VECTOR

Can be changed: - **Access level:** 4

Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -

P-Group: - **Units group:** - **Unit selection:** -

Min	Max	Factory setting
-	-	-

Description: Displays the Node Identifier of the Sensor Module that the 2nd channel uses for the motion monitoring functions.

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r9890[0...2] SI version (Sensor Module) / SI version SM

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the Safety Integrated version on the Sensor Module.

Index: [0] = Safety Version (major release)
[1] = Safety Version (minor release)
[2] = Safety Version (baselevel or patch)

Dependency: Refer to: r9770, r9870

Note: Example:
r9890[0] = 2, r9890[1] = 3, r9890[2] = 1 --> Safety-Version V02.03.01

r9894[0...19] SI crosswise comparison list (Motor Module) / SI KDV_list MM

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned16	**Dynamic index:** -	**Function diagram:** 2802
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the number of the data that are being presently compared crosswise on the Motor Module.
Example:
r9894[0] = 1 (monitoring clock cycle)
r9894[1] = 2 (enable safety-related functions)
r9894[2] = 3 (SGE changeover, tolerance time)
r9894[3] = 4 (transition time, STOP F to STOP A)
...
The list of crosswise compared data is obtained dependent on the particular application.

Dependency: Refer to: r9794

Note: The complete list of numbers for crosswise data comparison is listed in Fault F30611.

r9895 SI diagnostics STOP F (Motor Module) / SI diag STOP F MM

VECTOR	**Can be changed:** -		**Access level:** 2
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2802
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the number of the cross-checked data which has caused STOP F on the Motor Module.

Dependency: Refer to: r9795
Refer to: F30611

Note: The complete list of numbers for crosswise data comparison is listed in Fault F30611.

r9898 SI actual checksum SI parameters (Motor Module) / SI act_checksum MM

VECTOR	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned32	**Dynamic index:** -	**Function diagram:** 2800
	P-Group: Safety Integrated	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays the checksum for the checked Safety Integrated parameters on the Motor Module (actual checksum).

Dependency: Refer to: r9798, p9899

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p9899 SI reference checksum SI parameters (Motor Module) / SI set_checksum MM

VECTOR

Can be changed: C2 — **Access level:** 3
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** 2800
P-Group: Safety Integrated — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Sets the checksum for the checked Safety Integrated parameters on the Motor Module (reference checksum).

Dependency: Refer to: p9799, r9898

p9904 Topology comparison, acknowledge differences / Topo_compare ackn

CU_G

Can be changed: C1(1) — **Access level:** 3
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: Topology — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: If, when comparing the actual topology and target topology, only error has occurred, that can be acknowledged, then using this parameter, a new comparison can be started - acknowledging the error in the target topology.

Differences that can be acknowledged:

- topology comparison, component shifted
- topology comparison, serial number of a component has been detected to be different (byte 3 = 1)
- topology comparison shows one component that is connected differently

The following parameter values are available:

p9904 = 1 --> the procedure is started.

p9904 = 0 after starting --> the procedure has been successfully completed.

p9904 = 1 after starting --> the procedure has not been successfully completed.

The possible causes for an unsuccessful procedure are located in bytes 4, 3, 2.

Byte 2:

Number of structural differences.

Byte 3:

Number of differences that can be acknowledged (p9904).

Byte 4:

Number of differences. These differences can be resolved as follows:

- sets the topology comparison (p9906 or p9907/p9908).
- change over the actual topology.

The appropriate action should be selected corresponding to the message that is displayed/output.

Note: In order to permanently accept the acknowledgement of the fault that can be resolved, then it must be saved in a non-volatile fashion (p0977).

p9905 Device specialization / Device specializ.

CU_G

Can be changed: C1(1) — **Access level:** 3
Data type: Unsigned16 — **Dynamic index:** - — **Function diagram:** -
P-Group: Topology — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: With p9905 = 1, the serial numbers and the hardware versions of all of the components are transferred from the actual topology into the target topology and a new comparison is started..

For the device specialization, the components of the target topology may only differ from those of the actual topology by the serial numbers.

Note: p9905 is automatically set to 0 at the end of the operation.

In order to permanently accept the data, it is necessary to save in a non-volatile fashion (p0977).

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p9906 Topology comparison, comparison stage of all components / Topo_cmpr tot comp

CU_G	**Can be changed:** C1(1)		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Topology	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	99	0

Description: Sets the type of comparison between the actual topology and target topology.
The comparison is started by setting the required value.

Values:
0: High: Compares the complete electronic rating plate
1: Average: Compares the component type and the Order number
2: Low: Compares the component type
3: Minimum: Compares the component class
99: Topology has different comparison stages

Note: The electronic rating plate comprises the following data:
- component type (e.g. "SMC20")
- Order No. (e.g. "6SL3055-0AA0-5BA0")
- manufacturer (e.g. SIEMENS)
- hardware version (e.g. "A")
- Serial No. (e.g. "T-P30050495")

When comparing the topology, the following data is compared in the target and actual topologies:
p9906 = 0: Component type, Order No., Hardware version, Manufacturer, Serial No.
p9906 = 1: Component type, Order No.
p9906 = 2: Component type
p9906 = 3: Component class (e.g. Sensor Module or Motor Module)

p9907 Topology comparison, comparison stage of the component number / Topo_cmpr comp_no

CU_G	**Can be changed:** C1(1)		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: Topology	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	199	0

Description: Enters the number of the component where the setting of how the actual topology should be compared to the target topology should be changed.

Dependency: Refer to: p9908

p9908 Topology comparison, comparison stage of a component / Topo_cmpr 1 comp

CU_G	**Can be changed:** C1(1)		**Access level:** 3
	Data type: Integer16	**Dynamic index:** -	**Function diagram:** -
	P-Group: Topology	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	0	99	0

Description: Sets the type of comparison of a component in the target topology with the actual topology.
The comparison is started by setting the required value.

Values:
0: High: Compares the complete electronic rating plate
1: Average: Compares the component type and the Order number
2: Low: Compares the component type
3: Minimum: Compares the component class
99: Topology has different comparison stages

Dependency: Refer to: p9907

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Note: The electronic rating plate comprises the following data:
- component type (e.g. "SMC20")
- Order No. (e.g. "6SL3055-0AA0-5BA0")
- manufacturer (e.g. SIEMENS)
- hardware version (e.g. "A")
- Serial No. (e.g. "T-P30050495")

When comparing the topology, the following data is compared in the target and actual topologies:
p9908 = 0: Component type, Order No., Hardware version, Manufacturer, Serial No.
p9908 = 1: Component type, Order No.
p9908 = 2: Component type
p9908 = 3: Component class (e.g. Sensor Module or Motor Module)

p9909 Topology comparison, component replacement / Topo_cmpr replace

CU_G

Can be changed: C1(1) **Access level:** 3

Data type: Unsigned8 **Dynamic index:** - **Function diagram:** -

P-Group: Topology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	1	1

Description: For p9909 = 1, the serial number and the hardware version of the new replaced component is automatically transferred from the actual topology into the target topology and then saved in a non-volatile fashion.
For the components that have been replaced, the electronic type plate must match as far as the following data is concerned:
- component type (e.g. "SMC20")
- Order No. (e.g. "6SL3055-0AA0-5BA0")

For p9909 = 0, serial numbers and hardware versions are not automatically transferred. In this case, the transfer must be made using p9904.

Dependency: Refer to: p9904, p9905

Note: The modified target topology is automatically saved in a non-volatile fashion when the drive object runs-up (e.g. after a POWER ON).
Special case for Control Unit and option slot modules:
When replacing these components, independent of p9909, the serial number and hardware version are automatically transferred and saved in a non-volatile fashion.

p9910 Transfer additional components into the target topology / Transfer comp

CU_G

Can be changed: C1(1) **Access level:** 1

Data type: Integer16 **Dynamic index:** - **Function diagram:** -

P-Group: Topology **Units group:** - **Unit selection:** -

Min	Max	Factory setting
0	5	0

Description: Transfer additional inserted DRIVE-CLiQ components into the target topology and add the appropriate drive objects to the project.

Values:
0: No selection
1: Drive object type SERVO
2: Drive object type VECTOR
3: SINAMICS GM (DFEMV & VECTORMV)
4: SINAMICS SM (AFEMV & VECTORMV)
5: SINAMICS GL (VECTORGL)

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p9915 DRIVE-CLiQ data transfer error, shutdown threshold, master / DLQ fault master

CU_G | **Can be changed:** C1(1) | **Access level:** 4

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Topology | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	0007 07FF hex	0007 02FF hex

Description: Only for internal Siemens service.

p9916 DRIVE-CLiQ data transfer error, shutdown threshold, slave / DLQ fault slave

CU_G | **Can be changed:** C1(1) | **Access level:** 4

Data type: Unsigned32 | **Dynamic index:** - | **Function diagram:** -

P-Group: Topology | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0000 hex	0007 07FF hex	0007 02FF hex

Description: Only for internal Siemens service.

p9920[0...19] Licensing, enter license key / Enter license key

CU_G | **Can be changed:** U, T | **Access level:** 2

Data type: Unsigned8 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	255	0

Description: Enters the license key for this drive unit.
Example of the license key:
EACZ-QBCA = 69 65 67 90 45 81 66 67 65 dec (ASCII characters)
Index 0 = license key character 1 (e.g. 69 dec)
Index 1 = license key character 2 (e.g. 65 dec)
...
Index 19 = license key character 20 (e.g. 0 dec)

Dependency: Refer to: r7843, p9921
Refer to: A13000, A13001

Notice: An ASCII table can be found, for example, in the following reference:
SINAMICS S120 Commissioning Manual

Note: When changing p9920[x] to the value 0, all of the following indices are also set to 0.
After entering the license key, the license key must be activated (p9921).
If the licensing is not adequate, then the following alarm is displayed together with LED:
- A13000 --> licensing not sufficient
- LED READY --> flashes green/red with 0.5 Hz

p9921 Licensing, activate license key / Act. license key

CU_G | **Can be changed:** U, T | **Access level:** 2

Data type: Integer16 | **Dynamic index:** - | **Function diagram:** -

P-Group: - | **Units group:** - | **Unit selection:** -

Min	Max	Factory setting
0	1	0

Description: Activates the entered license key.
The following is executed when activating the license key.
- the checksum of the entered license key is checked.
- the entered license key is saved in the a non-volatile fashion on the CompactFlash card.
- re-enter the license key.

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Values: 0: not active
1: Activate start license key

Dependency: Refer to: p9920
Refer to: A13000, A13001

Note: Before activation, the license key entered using parameter p9920 is checked. If this check identifies an error, activation is rejected. In this case, writing a 1 to p9921 is rejected.
When the license key has been activated, p9921 is automatically set to 0.

r9925[0...99] CompactFlash card file error / CF file error

CU_G

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the directory and the name of the file that was identified as illegal with respect to the state when supplied from the factory when checking the CompactFlash card.

Dependency: Refer to: r9926
Refer to: A01016

Note: The directory and name of the file is displayed in the ASCII code.

r9926 CompactFlash card check status / CF check status

CU_G

Can be changed: -
Access level: 2
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
-	-	-

Description: Displays the status when checking the CompactFlash card after powering-up.
0: CompactFlash Card still not checked.
1: Check running.
2: Check successfully completed.
3: Check indicates an error.

Dependency: Refer to: r9925
Refer to: A01016

p9930[0...8] System logbook activation / SYSLOG activation

CU_G

Can be changed: U, T
Access level: 4
Data type: Unsigned8
Dynamic index: -
Function diagram: -
P-Group: -
Units group: -
Unit selection: -

Min	Max	Factory setting
0	255	0

Description: Only for service purposes.

Index: [0] = System logbook stage (0: Not active)
[1] = COM2/COM1 (0: COM2, 1: COM1)
[2] = Activate file write (0: Not active)
[3] = Display time stamp (0: Not displayed)
[4] = Display system logbook stage (0: Not displayed)
[5] = Display drive object number (0: Not displayed)
[6] = Display software module name (0: Not displayed)
[7] = Output buffer size (stages, each 1 kB)
[8] = System logbook file size (stages, each 10 kB)

Notice: Before powering-down the Control Unit, ensure that the system logbook is switched-out (p9930[0] = 0).

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p9931[0...99] System logbook module selection / SYSLOG mod select.

CU_G

Can be changed: U, T — **Access level:** 4
Data type: Unsigned32 — **Dynamic index:** - — **Function diagram:** -
P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0000 hex	FFFF FFFF hex	0000 hex

Description: Only for service purposes.

p9932 Save system logbook EEPROM / SYSLOG EEPROM save

CU_G

Can be changed: U, T — **Access level:** 4
Data type: Unsigned8 — **Dynamic index:** - — **Function diagram:** -
P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	255	0

Description: Only for service purposes.

p9950 Runtime measurement, control / Runtime_meas ctrl

CU_G

Can be changed: U, T — **Access level:** 4
Data type: Integer16 — **Dynamic index:** - — **Function diagram:** -
P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
0	3	0

Description: Setting to control the runtime measurement.

Values:
0: Stop runtime measurement
1: Start runtime meas (internal)
2: Clear trace buffer (internal)
3: Activate calculation of remaining computing time

Dependency: Refer to: r9976

r9976[0...7] System load / System load

CU_G

Can be changed: - — **Access level:** 3
Data type: Floating Point — **Dynamic index:** - — **Function diagram:** -
P-Group: - — **Units group:** - — **Unit selection:** -

Min	Max	Factory setting
- [%]	- [%]	- [%]

Description: Displays the system load.

The system load measurement is automatically started after run-up.

The individual values (computation load and cyclic load) are measured over short time slices and from the measurements, the maximum, the minimum and the average value are formed and displayed in the appropriate indices. Further, the degree of memory utilization of the data and program memory is displayed.

Index:
[0] = comp. time load (min)
[1] = Computation time load (averaged)
[2] = Computation time load (max)
[3] = Computation time load cyclic (min)
[4] = Computation time load cyclic (avg)
[5] = Computation time load cyclic (max)
[6] = Data memory locked
[7] = Program memory locked

Dependency: Refer to: p9950
Refer to: A01053

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r11000[0...239] PROFINET Name of Station / PN Name of Station

CU_G (CBE)	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays PROFINET Name of Station.

r11001[0...3] PROFINET IP of Station / PN IP of Station

CU_G (CBE)	**Can be changed:** -		**Access level:** 3
	Data type: Unsigned8	**Dynamic index:** -	**Function diagram:** -
	P-Group: -	**Units group:** -	**Unit selection:** -
	Min	**Max**	**Factory setting**
	-	-	-

Description: Displays PROFINET IP of Station.

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1.3 Parameters for data sets

1.3.1 Parameters for command data sets (CDS)

The following list contains the command-data-set-dependent parameters.

Product: SINAMICS G, Version: 2402300, Label: ., Language: eng

p0700[0...n] Macro Binector Input (BI) / Macro BI
p0820[0...n] BI: Drive data set selection DDS bit 0 / DDS select., bit 0
p0821[0...n] BI: Drive data set selection DDS bit 1 / DDS select., bit 1
p0822[0...n] BI: Drive data set selection DDS bit 2 / DDS select., bit 2
p0823[0...n] BI: Drive data set selection DDS bit 3 / DDS select., bit 3
p0824[0...n] BI: Drive data set selection DDS bit 4 / DDS select., bit 4
p0828[0...n] BI: Motor changeover, feedback signal / Mot_chng fdbk sig
p0840[0...n] BI: ON/OFF1 / ON/OFF1
p0844[0...n] BI: 1. OFF2 / 1. OFF2
p0845[0...n] BI: 2. OFF2 / 2. OFF2
p0848[0...n] BI: 1. OFF3 / 1. OFF3
p0849[0...n] BI: 2. OFF3 / 2. OFF3
p0852[0...n] BI: Enable operation / Enable operation
p0854[0...n] BI: Master ctrl by PLC / Master ctrl by PLC
p0855[0...n] BI: Unconditionally release holding brake / Uncond open brake
p0856[0...n] BI: Enable speed controller / Enable n_ctrl
p0858[0...n] BI: Unconditionally close holding brake / Uncond close brake
p1000[0...n] Macro Connector Inputs (CI) for speed setpoints / Macro CI n_set
p1020[0...n] BI: Fixed speed setpoint selection Bit 0 / n_set_fixed Bit 0
p1021[0...n] BI: Fixed speed setpoint selection Bit 1 / n_set_fixed Bit 1
p1022[0...n] BI: Fixed speed setpoint selection Bit 2 / n_set_fixed Bit 2
p1023[0...n] BI: Fixed speed setpoint selection Bit 3 / n_set_fixed Bit 3
p1035[0...n] BI: Motorized potentiometer, setpoint, raise / Mop raise
p1036[0...n] BI: Motorized potentiometer, lower setpoint / Mop lower
p1039[0...n] BI: Motorized potentiometer, inversion / Mop inversion
p1041[0...n] BI: Motorized potentiometer, manual/automatic / Mop manual/auto
p1042[0...n] CI: Motorized potentiometer, automatic setpoint / Mop auto setpoint
p1043[0...n] BI: Motorized potentiometer, accept setpoint / Mop accept set val
p1044[0...n] CI: Motorized potentiometer, setting value / Mop setting value
p1055[0...n] BI: Jog bit 0 / Jog bit 0
p1056[0...n] BI: Jog bit 1 / Jog bit 1
p1070[0...n] CI: Main setpoint / Main setpoint
p1071[0...n] CI: Main setpoint scaling / Main setpt scal
p1075[0...n] CI: Suppl setpoint / Suppl setpoint
p1076[0...n] CI: Supplementary setpoint scaling / Suppl setpt scal
p1085[0...n] CI: Speed limit in positive direction of rotation / n_limit pos
p1088[0...n] CI: Speed limit negative direction of rotation / n_limit neg
p1110[0...n] BI: Inhibit negative direction / Inhib neg dir rot
p1111[0...n] BI: Inhibit positive direction / Inhib pos dir rot
p1113[0...n] BI: Direction reversal / Direction reversal
p1122[0...n] BI: Bypass ramp-function generator / Bypass RFG
p1140[0...n] BI: Enables the ramp-function generator / Enable RFG
p1141[0...n] BI: Start ramp-function generator / Start RFG
p1142[0...n] BI: Enable speed setpoint / Enable n_set

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p1143[0...n] BI: Ramp-function generator, accept setting value / Accept RFG set val
p1144[0...n] CI: Ramp-function generator setting value / RFG setting value
p1155[0...n] CI: Speed controller speed setpoint 1 / n_ctrl n_set 1
p1160[0...n] CI: Speed controller speed setpoint 2 / n_ctrl n_set 2
p1230[0...n] BI: Activating armature short-circuit / ASC act
p1235[0...n] BI: External armature short-circuit, contactor feedback signal / ASC ext feedback
p1330[0...n] CI: V/Hz control independent voltage setpoint / Uf U_set independ.
p1356[0...n] CI: U/f control, angular setpoint / Uf ang setpoint
p1437[0...n] CI: Speed controller, reference model I component input / n_ctrRefMod I_comp
p1455[0...n] CI: Speed controller P gain adaptation signal / n_ctrl Adpt_sig Kp
p1466[0...n] CI: Speed controller P-gain scaling / n_ctrl Kp Scal
p1476[0...n] BI: Speed controller hold integrator / n_ctrl integ stop
p1477[0...n] BI: Speed controller set integrator value / n_ctrl integ set
p1478[0...n] CI: Speed controller integrator setting value / n_ctr integ_setVal
p1479[0...n] CI: Speed controller integrator setting value scaling / n_ctrl I_val scal
p1492[0...n] BI: Droop feedback enable / Enables droop
p1495[0...n] CI: Acceleration pre-control, speed change each 1 s / a_prectrl dn/1s
p1500[0...n] Macro Connector Inputs (CI) for torque setpoints / Macro CI M_set
p1501[0...n] BI: Change over between closed-loop speed/torque control / Changeov n/M_ctrl
p1503[0...n] CI: Torque setpoint / M_set
p1511[0...n] CI: Supplementary torque 1 / M_suppl 1
p1512[0...n] CI: Supplementary torque 1 scaling / M_suppl 1 scal
p1513[0...n] CI: Supplementary torque 2 / M_suppl 2
p1522[0...n] CI: Torque limit, upper/motoring / M_max upper/mot
p1523[0...n] CI: Torque limit, lower/regenerative / M_max lower/regen
p1528[0...n] CI: Torque limit upper scaling / M_max upper scal
p1529[0...n] CI: Torque limit lower scaling / M_max lower scal
p1540[0...n] CI: Torque limit, speed controller upper scaling / M_max n-ctr upScal
p1541[0...n] CI: Torque limit. speed controller lower scaling / M_max nctr lowScal
p1551[0...n] BI: Torque limit, variable/fixed signal source / M_lim var/fixS_src
p1552[0...n] CI: Torque limit, upper scaling without offset / M_max up offs scal
p1554[0...n] CI: Torque limit, lower scaling without offset / M_max low offsScal
p1555[0...n] CI: Power limit / P_max
p1569[0...n] CI: Supplementary torque 3 / M_suppl 3
p1640[0...n] CI: Excitation current actual value / Excit curr act val
p2103[0...n] BI: 1. Acknowledge faults / 1. Acknowledge
p2104[0...n] BI: 2. Acknowledge faults / 2. Acknowledge
p2105[0...n] BI: 3. Acknowledge faults / 3. Acknowledge
p2106[0...n] BI: External fault 1 / External fault 1
p2107[0...n] BI: External fault 2 / External fault 2
p2108[0...n] BI: External fault 3 / External fault 3
p2112[0...n] BI: External alarm 1 / External alarm 1
p2116[0...n] BI: External alarm 2 / External alarm 2
p2117[0...n] BI: External alarm 3 / External alarm 3
p2148[0...n] BI: Ramp-function generator active / HLG active
p2151[0...n] CI: Speed setpoint for messages/signals / n_set for msg
p2154[0...n] CI: Speed setpoint 2 / n_set 2
p2200[0...n] BI: Technology controller enable / Tec_ctr enable
p2220[0...n] BI: Technology controller fixed value selection bit 0 / Tec_ctr sel bit 0
p2221[0...n] BI: Technology controller fixed value selection bit 1 / Tec_ctr sel bit 1
p2222[0...n] BI: Technology controller fixed value selection bit 2 / Tec_ctr sel bit 2
p2223[0...n] BI: Technology controller fixed value selection bit 3 / Tec_ctr sel bit 3
p2235[0...n] BI: Technology controller motorized potentiometer, raise setpoint / Tec_ctr mop raise

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p2236[0...n]	BI: Technology controller motorized potentiometer, lower setpoint / Tec_ctr mop lower
p2253[0...n]	CI: Technology controller setpoint 1 / Tec_ctr setpoint 1
p2254[0...n]	CI: Technology controller setpoint 2 / Tec_ctr setpoint 2
p2264[0...n]	CI: Technology controller actual value / Tec_ctr act val
p2289[0...n]	CI: Technology controller pre-control signal / Tec_ctr prectrl
p2296[0...n]	CI: Technology controller output scaling / Tec_ctr outp scal
p2297[0...n]	CI: Technology controller maximum limiting / Tec_ctr max_limit
p2298[0...n]	CI: Technology controller minimum limiting / Tec_ctr min_lim
p3111[0...n]	BI: External fault 3, enable / Ext fault 3 enab
p3112[0...n]	BI: External fault 3 enable negated / Ext flt 3 enab neg
p3784[0...n]	BI: Sync line-drive external increase voltage / Sync ext U incr
p3785[0...n]	BI: Sync line-drive external decrease voltage / Sync ext U decr
p3802[0...n]	BI: Sync line-drive enable / Sync enable

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1.3.2 Parameters for drive data sets (DDS)

The following list contains the drive-data-set-dependent parameters.

Product: SINAMICS G, Version: 2402300, Label: ., Language: eng

p0186[0...n] Motor Data Sets (MDS) number / MDS number
p0187[0...n] Encoder 1 encoder data set number / Enc 1 EDS number
p0188[0...n] Encoder 2 encoder data set number / Enc 2 EDS number
p0189[0...n] Encoder 3 encoder data set number / Enc 3 EDS number
p0340[0...n] Automatic calculation of motor/control parameters / Calc auto par
p0578[0...n] Calculate parameters that are dependent on the technology/units / Calc techn par
p0640[0...n] Current limit / Current limit
p1001[0...n] CO: Fixed speed setpoint 1 / n_set_fixed 1
p1002[0...n] CO: Fixed speed setpoint 2 / n_set_fixed 2
p1003[0...n] CO: Fixed speed setpoint 3 / n_set_fixed 3
p1004[0...n] CO: Fixed speed setpoint 4 / n_set_fixed 4
p1005[0...n] CO: Fixed speed setpoint 5 / n_set_fixed 5
p1006[0...n] CO: Fixed speed setpoint 6 / n_set_fixed 6
p1007[0...n] CO: Fixed speed setpoint 7 / n_set_fixed 7
p1008[0...n] CO: Fixed speed setpoint 8 / n_set_fixed 8
p1009[0...n] CO: Fixed speed setpoint 9 / n_set_fixed 9
p1010[0...n] CO: Fixed speed setpoint 10 / n_set_fixed 10
p1011[0...n] CO: Fixed speed setpoint 11 / n_set_fixed 11
p1012[0...n] CO: Fixed speed setpoint 12 / n_set_fixed 12
p1013[0...n] CO: Fixed speed setpoint 13 / n_set_fixed 13
p1014[0...n] CO: Fixed speed setpoint 14 / n_set_fixed 14
p1015[0...n] CO: Fixed speed setpoint 15 / n_set_fixed 15
p1030[0...n] Motorized potentiometer, configuration / Mop configuration
p1037[0...n] Motorized potentiometer, maximum speed / Mop n_max
p1038[0...n] Motorized potentiometer, minimum speed / Mop n_min
p1040[0...n] Motorized potentiometer, starting value / Mop start value
p1047[0...n] Motorized potentiometer, ramp-up time / Mop ramp-up time
p1048[0...n] Motorized potentiometer, ramp-down time / Mop ramp-down time
p1058[0...n] Jog 1 speed setpoint / Jog 1 n_set
p1059[0...n] Jog 2 speed setpoint / Jog 2 n_set
p1063[0...n] Speed limit, setpoint channel / n_limit setp.
p1080[0...n] Minimum speed / Minimum speed
p1082[0...n] Maximum speed / Maximum speed
p1083[0...n] CO: Speed limit in positive direction of rotation / n_limit pos
p1086[0...n] CO: Speed limit negative direction of rotation / n_limit neg
p1091[0...n] Skip speed 1 / Skip speed 1
p1092[0...n] Skip speed 2 / Skip speed 2
p1093[0...n] Skip speed 3 / Skip speed 3
p1094[0...n] Skip speed 4 / Skip speed 4
p1101[0...n] Skip speed bandwidth / Skip_n bandwidth
p1120[0...n] Ramp-function generator ramp-up time / RFG ramp-up time
p1121[0...n] Ramp-function generator ramp-down time / RFG ramp-down time
p1130[0...n] Ramp-function generator initial rounding-off time / RFG t_start_round
p1131[0...n] Ramp-function generator final rounding-off time / RFG t_end_delay
p1134[0...n] Ramp-function generator rounding-off type / RFG round-off type
p1135[0...n] OFF3 ramp-down time / RFG OFF3 t_ramp-dn
p1136[0...n] OFF3 initial rounding-off time / RFGOFF3 t_strt_rnd
p1137[0...n] OFF3 final rounding-off time / RFG OFF3 t_end_del

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p1145[0...n] Ramp-function generator tracking intensity. / RFG track intens
p1148[0...n] Ramp-function gen., tolerance for ramp-up and ramp-down active / RFG tol HL/RL act
p1151[0...n] Ramp-function generator configuration / RFG config
p1189[0...n] Speed setpoint configuration / n_ctrl config
p1200[0...n] FlyRest oper mode / FlyRest oper mode
p1202[0...n] FlyRest srch curr / FlyRest srch curr
p1203[0...n] Flying restart search rate factor / FlyRst v_Srch Fact
p1240[0...n] Vdc controller configuration / Vdc_ctrl config
p1243[0...n] Vdc_max controller dynamic factor / Vdc_max dyn_factor
p1245[0...n] Vdc_min controller switch-in level (kinetic buffering) / Vdc_min on_level
p1247[0...n] Vdc_min controller dynamic factor (kinetic buffering) / Vdc_min dyn_factor
p1250[0...n] Vdc controller proportional gain / Vdc_ctrl Kp
p1251[0...n] Vdc controller integral time / Vdc_ctrl Tn
p1252[0...n] Vdc controller rate time / Vdc_ctrl t_rate
p1255[0...n] Vdc_min controller time threshold / Vdc_min t_thresh
p1256[0...n] Vdc_min controller response (kinetic buffering) / Vdc_min response
p1257[0...n] Vdc_min controller speed threshold / Vdc_min n_thresh
p1262[0...n] Bypass deadtime / Bypass t_dead
p1280[0...n] Vdc controller configuration (U/f) / Vdc_ctrl config
p1283[0...n] Vdc_max controller dynamic factor (U/f) / Vdc_max dyn_factor
p1285[0...n] Vdc_min controller switch-in level (kinetic buffering) (U/f) / Vdc_min on_level
p1287[0...n] Vdc_min controller dynamic factor (kinetic buffering) (U/f) / Vdc_min dyn_factor
p1290[0...n] Vdc controller proportional gain (U/f) / Vdc_ctrl Kp
p1291[0...n] Vdc controller integral time (U/f) / Vdc_ctrl Tn
p1292[0...n] Vdc controller rate time (U/f) / Vdc_ctrl t_rate
p1293[0...n] Vdc controller output limit (U/f) / Vdc_ctrl outp_lim
p1295[0...n] Vdc_min controller time threshold (U/f) / Vdc_min t_thresh
p1296[0...n] Vdc_min controller response (kinetic buffering) (U/f / Vdc_min response
p1297[0...n] Vdc_min controller speed threshold (U/f) / Vdc_min n_thresh
p1300[0...n] Open-loop/closed-loop control operating mode / Control mode
p1310[0...n] Voltage boost permanent / U_boost perm
p1311[0...n] Voltage boost at acceleration / U_boost accelerate
p1320[0...n] U/f control programmable characteristic frequency 1 / Uf char f1
p1321[0...n] U/f control programmable characteristic voltage 1 / Uf char U1
p1322[0...n] U/f control programmable characteristic frequency 2 / Uf char f2
p1323[0...n] U/f control programmable characteristic voltage 2 / Uf char U2
p1324[0...n] U/f control programmable characteristic frequency 3 / Uf char f3
p1325[0...n] U/f control programmable characteristic voltage 3 / Uf char U3
p1326[0...n] U/f control programmable characteristic frequency 4 / Uf char f4
p1327[0...n] U/f control programmable characteristic voltage 4 / Uf char U4
p1335[0...n] Slip compensation, scaling / Slip comp scal
p1336[0...n] Slip compensation limit value / Slip comp lim val
p1338[0...n] U/f mode resonance damping gain / Uf Res_damp gain
p1339[0...n] U/f mode resonance damping filter time constant / Uf Res_damp T
p1340[0...n] I_max frequency controller proportional gain / I_max_ctrl Kp
p1341[0...n] I_max frequency controller integral time / I_max_ctrl Tn
p1345[0...n] I_max voltage controller proportional gain / I_max_U_ctrl Kp
p1346[0...n] I_max voltage controller integral time / I_max_U_ctrl Tn
p1349[0...n] U/f mode resonance damping maximum frequency / Uf res_damp F_max
p1350[0...n] Soft starting / Soft starting
p1358[0...n] Angular difference, symmetrizing, actual angle / Sym act angle
p1400[0...n] Speed control configuration / n_ctrl config
p1401[0...n] Flux control configuration / F_ctrl config

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p1402[0...n] Closed-loop current control and motor model configuration / I_ctrl config
p1416[0...n] Speed setpoint filter 1 time constant / n_set_filt 1 T
p1428[0...n] Speed precontrol symmetrizing deadtime / n_prectrSym t_dead
p1429[0...n] Speed precontrol symmetrizing time constant / n_prectr sym T
p1433[0...n] Speed controller reference model natural frequency / n_ctrl RefMod fn
p1434[0...n] Speed controller reference model damping / n_ctrl RefMod D
p1435[0...n] Speed controller reference model deadtime / n_ctrRefMod t_dead
p1441[0...n] Actual speed smoothing time / n_act T_smooth
p1442[0...n] Speed controller speed actual value smoothing time / n_ctr n_act T_smth
p1452[0...n] Speed controller speed actual value smoothing time (SLVC) / n_C n_act T_s SLVC
p1456[0...n] Speed controller P gain adaptation lower starting point / n_ctrl AdaptKpLow.
p1457[0...n] Speed controller P gain adaptation upper starting point / n_ctrl AdaptKp up.
p1458[0...n] Adaptation factor, lower / Adapt_factor lower
p1459[0...n] Adaptation factor, upper / Adapt_factor upper
p1460[0...n] Speed controller P gain adaptation speed, lower / n_ctrl Kp n lower
p1461[0...n] Speed controller Kp adaptation speed, upper scaling / n_ctrl Kp n upper
p1462[0...n] Speed controller integral time adaptation speed, lower / n_ctrl Tn n lower
p1463[0...n] Speed controller Tn adaptation speed, upper scaling / n_ctrl Tn n upper
p1464[0...n] Speed controller adaptation speed, lower / n_ctrl n lower
p1465[0...n] Speed controller adaptation speed, upper / n_ctrl n upper
p1470[0...n] Speed controller sensorless operation P-gain / n_ctrl SLVC Kp
p1472[0...n] Speed controller sensorless operation integral time / n_ctrl SLVC Tn
p1488[0...n] Droop input source / Droop input,source
p1489[0...n] Droop feedback scaling / Droop scaling
p1496[0...n] Acceleration pre-control scaling / a_before scaling
p1499[0...n] Accelerating for torque control, scaling / a for M_ctrl scal
p1514[0...n] Supplementary torque 2 scaling / M_suppl 2 scal
p1517[0...n] Accelerating torque smoothing time constant / M_accel T_smooth
p1520[0...n] CO: Torque limit, upper/motoring / M_max upper/mot
p1521[0...n] CO: Torque limit, lower/regenerative / M_max lower/regen
p1524[0...n] CO: Torque limit, upper/motoring, scaling / M_max up/mot scal
p1525[0...n] CO: Torque limit, lower/regenerating scaling / M_max low/gen scal
p1530[0...n] Power limit, motoring / P_max mot
p1531[0...n] Power limit, regenerating / P_max gen
p1556[0...n] Power limit scaling / P_max_scale
p1570[0...n] CO: Flux setpoint / Flux setpoint
p1572[0...n] Supplementary flux setpoint / Suppl flux setp
p1574[0...n] Voltage reserve dynamic / U_reserve dyn
p1576[0...n] Flux boost, adaptation speed, lower / Flux boost n lower
p1577[0...n] Flux boost adaptation speed, upper / Flux boost n upper
p1580[0...n] Efficiency optimization / Efficiency opt.
p1582[0...n] Flux setpoint smoothing time / Flux setp T_smth
p1584[0...n] Field weakening operation, flux setpoint smoothing time / Field weak T_smth
p1585[0...n] Flux actual value, smoothing time / Flux actVal T_smth
p1590[0...n] Flux controller P gain / Flux controller Kp
p1592[0...n] Flux controller integral.action time / Flux controller Tn
p1594[0...n] Field-weakening controller, P gain / Field_ctrl Kp
p1596[0...n] Field weakening controller integral-action time / Field_ctrl Tn
p1599[0...n] Flux controller, excitation current difference / Flux ctr I_excDiff
p1600[0...n] P flux controller, P gain / P flux ctrl Kp
p1609[0...n] Current setpoint for I/f operation / I_set I/f oper
p1610[0...n] Torque setpoint static (SLVC) / M_set static
p1611[0...n] Supplementary accelerating torque (SLVC) / M_suppl_accel

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p1616[0...n] Current setpoint smoothing time / I_set T_smooth
p1619[0...n] Setpoint/actual value tracking threshold / SetAct track thrsh
p1620[0...n] Stator current, minimum / I_stator min
p1621[0...n] Changeover speed, inner cos phi = 1 / n_chngov cos phi=1
p1622[0...n] Field-generating current setpoint smoothing time constant / Id_setp T_smth
p1625[0...n] Excitation current setpoint calibration / I_exc_setp cal
p1628[0...n] Current model controller, dynamic factor / I_mod_ctr dyn_fact
p1629[0...n] Current model controller P gain / I_mod_ctrl Kp
p1630[0...n] Current model controller integral time / I_ctrl Tn
p1642[0...n] Minimum excitation current / Min I_exc
p1643[0...n] Gain factor, minimum excitation current closed-loop control / Min I_exc Kp
p1653[0...n] Current setpoint torque-generating minimum smoothing time / Isq_s T_smth_min
p1654[0...n] Curr. setpoint torque-gen. smoothing time field weakening range / Isq_s T_smth FW
p1656[0...n] Activates current setpoint filter / I_set_filt active
p1657[0...n] Current setpoint filter 1 type / I_set_filt 1 Typ
p1658[0...n] Current setpoint filter 1 denominator natural frequency / I_set_filt 1 fn_n
p1659[0...n] Current setpoint filter 1 denominator damping / I_set_filt 1 D_n
p1660[0...n] Current setpoint filter 1 numerator natural frequency / I_set_filt 1 fn_z
p1661[0...n] Current setpoint filter 1 numerator damping / I_set_filt 1 D_z
p1662[0...n] Current setpoint filter 2 type / I_set_filt 2 Typ
p1663[0...n] Current setpoint filter 2 denominator natural frequency / I_set_filt 2 fn_n
p1664[0...n] Current setpoint filter 2 denominator damping / I_set_filt 2 D_n
p1665[0...n] Current setpoint filter 2 numerator natural frequency / I_set_filt 2 fn_z
p1666[0...n] Current setpoint filter 2 numerator damping / I_set_filt 2 D_z
p1702[0...n] Isd current controller pre-control scaling / Isd_ctr_prectrScal
p1703[0...n] Isq current controller pre-control scaling / Isq_ctr_prectrScal
p1704[0...n] EMF scaling of the Isq current controller pre-control / EMF scal Isq_ctrl
p1705[0...n] Flux setpoint/actual value tracking threshold / Flux track thresh
p1715[0...n] Current controller P gain / I_ctrl Kp
p1717[0...n] Current controller integral-action time / I_ctrl Tn
p1726[0...n] Quadrature arm decoupling, scaling / Transv_decpl scal
p1727[0...n] Quadrature arm decoupling at voltage limit, scaling / TrnsvDecplVmaxScal
p1740[0...n] Gain resonance damping for sensorless closed loop control / Gain res_damp
p1744[0...n] Motor model speed threshold stall detection / MotMod n_thr stall
p1745[0...n] Motor model error threshold stall detection / MotMod ThreshStall
p1750[0...n] Motor model configuration / MotMod config
p1752[0...n] Motor model changeover speed operation with encoder / MotMod n_chgov enc
p1754[0...n] Flux angle difference smoothing time / Angle diff T_smth
p1755[0...n] Motor model changeover speed sensorless operation / MotMod n_chgSnsorl
p1757[0...n] Motor model w/o enc. op./cl.-loop controlled stab. controller Kp / MotMod w/o enc Kp
p1758[0...n] Motor model changeover delay time, closed/open-loop control / MotMod t cl_op
p1759[0...n] Motor model changeover delay time open/closed loop control / MotMod t op_cl
p1760[0...n] Motor model with encoder speed adaptation Kp / MotMod wE n_ada Kp
p1761[0...n] Motor model with encoder speed adaptation Tn / MotMod wE n_ada Tn
p1764[0...n] Motor model without encoder speed adaptation Kp / MotMod woE n_adaKp
p1767[0...n] Motor model without encoder speed adaptation Tn / MotMod woE n_adaTn
p1774[0...n] Motor model, offset voltage compensation alpha / MotMod offs comp A
p1775[0...n] Motor model, offset voltage compensation beta / MotMod offs comp B
p1780[0...n] Motor model adaptation configuration / MotMod adapt conf
p1781[0...n] Motor model ASM Rs adaptation integral time / MotMod Rs Tn
p1783[0...n] Motor model ASM Rs adaptation Kp / MotMod Rs Kp
p1785[0...n] Motor model ASM Lh adaptation Kp / MotMod Lh Kp
p1786[0...n] Motor model ASM Lh adaptation integral time / MotMod Lh Tn

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p1795[0...n] Motor model PEM kT adaptation integral time / MotMod kT Tn
p1800[0...n] Pulse frequency / Pulse frequency
p1802[0...n] Modulator mode / Modulator mode
p1803[0...n] Maximum modulation depth / Modulat depth max
p1804[0...n] Filter time constant smoothed modulation index / T_filt mod_idxSmth
p1806[0...n] Filter time constant Vdc correction / T_filt Vdc_corr
p1820[0...n] Output phase direction of rotation / Phase revers. outp
p1821[0...n] Direction reversal / Direction reversal
p1840[0...n] Actual value correction, configuration / ActVal_corr config
p1845[0...n] Actual value correction evaluation factor Lsig / ActV_corr FactLsig
p1846[0...n] Actual value correction damping factor / ActV_corr D_factor
p1959[0...n] Rotating measurement configuration / Rot meas config
p2140[0...n] Hysteresis speed 2 / n_hysteresis 2
p2141[0...n] Speed threshold 1 / n_thresh val 1
p2142[0...n] Hysteresis speed 1 / n_hysteresis 1
p2149[0...n] Monitoring, configuration / Monit config
p2150[0...n] Hysteresis speed 3 / n_hysteresis 3
p2153[0...n] Speed actual value filter time constant / n_act_filt T
p2155[0...n] Speed threshold 2 / n_thresh val 2
p2156[0...n] On delay, comparison value reached / t_on cmpr val rchd
p2161[0...n] Speed threshold 3 / n_thresh val 3
p2162[0...n] Hysteresis speed n_act > n_max / Hyst n_act>n_max
p2163[0...n] Speed threshold 4 / n_thresh val 4
p2164[0...n] Hysteresis speed 4 / n_hysteresis 4
p2166[0...n] Off delay n_act = n_set / t_del_off n_i=n_so
p2167[0...n] Switch-on delay n_act = n_set / t_on n_act=n_set
p2174[0...n] Torque threshold value 1 / M_thresh val 1
p2175[0...n] Motor locked speed threshold / Mot lock n_thresh
p2177[0...n] Motor locked delay time / Mot lock t_del
p2178[0...n] Motor stalled delay time / Mot stall t_del
p2181[0...n] Load monitoring, response / Load monit. resp.
p2182[0...n] Load monitoring, speed threshold value 1 / n_thresh 1
p2183[0...n] Load monitoring, speed threshold value 2 / n_thresh 2
p2184[0...n] Load monitoring, speed threshold value 3 / n_thresh 3
p2185[0...n] Load monitoring torque threshold 1, upper / M_thresh 1 upper
p2186[0...n] Load monitoring torque threshold 1, lower / M_thresh 1 lower
p2187[0...n] Load monitoring torque threshold 2, upper / M_thresh 2 upper
p2188[0...n] Load monitoring torque threshold 2, lower / M_thresh 2 lower
p2189[0...n] Load monitoring torque threshold 3, upper / M_thresh 3 upper
p2190[0...n] Load monitoring torque threshold 3, lower / M_thresh 3 lower
p2192[0...n] Load monitoring, delay time / Load monit t_del
p2194[0...n] Torque threshold value 2 / M_thresh val 2
p2195[0...n] Torque utilization switch-off delay / M_util t_off
p2201[0...n] CO: Technology controller, fixed value 1 / Tec_ctr fix val 1
p2202[0...n] CO: Technology controller, fixed value 2 / Tec_ctr fix val 2
p2203[0...n] CO: Technology controller, fixed value 3 / Tec_ctr fix val 3
p2204[0...n] CO: Technology controller, fixed value 4 / Tec_ctr fix val 4
p2205[0...n] CO: Technology controller, fixed value 5 / Tec_ctr fix val 5
p2206[0...n] CO: Technology controller, fixed value 6 / Tec_ctr fix val 6
p2207[0...n] CO: Technology controller, fixed value 7 / Tec_ctr fix val 7
p2208[0...n] CO: Technology controller, fixed value 8 / Tec_ctr fix val 8
p2209[0...n] CO: Technology controller, fixed value 9 / Tec_ctr fix val 9
p2210[0...n] CO: Technology controller, fixed value 10 / Tec_ctr fix val 10

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p2211[0...n] CO: Technology controller, fixed value 11 / Tec_ctr fix val 11
p2212[0...n] CO: Technology controller, fixed value 12 / Tec_ctr fix val 12
p2213[0...n] CO: Technology controller, fixed value 13 / Tec_ctr fix val 13
p2214[0...n] CO: Technology controller, fixed value 14 / Tec_ctr fix val 14
p2215[0...n] CO: Technology controller, fixed value 15 / Tec_ctr fix val 15
p2230[0...n] Technology controller motorized potentiometer configuration / Tec_ctr mop config
p2237[0...n] Technology controller motorized potentiometer maximum value / Tec_ctr mop max
p2238[0...n] Technology controller motorized potentiometer minimum value / Tec_ctr mop min
p2240[0...n] Technology controller motorized potentiometer starting value / Tec_ctrl mop start
p2247[0...n] Technology controller motorized potentiometer ramp-up time / Tec_ctr mop t_r-up
p2248[0...n] Technology controller motorized potentiometer ramp-down time / Tec_ctrMop t_rdown
p2502[0...n] LR encoder assignment / Encoder assignment
p2503[0...n] LR length unit LU per 10 mm / LU per 10 mm
p2504[0...n] LR motor/load motor revolutions / Mot/load motor rev
p2505[0...n] LR motor/load motor revolutions / Mot/load motor rev
p2506[0...n] LR length unit LU per load revolution / LU per load rev
p2533[0...n] LR position setpoint filter, time constant / s_set_filt T
p2534[0...n] LR speed precontrol factor / n_prectrl fact
p2535[0...n] LR speed precontrol symmetrizing filter deadtime / n_ffCtr flt t_dead
p2536[0...n] LR speed precontrol, symmetrizing filter PT1 / n_prectrl filt PT1
p2538[0...n] LR proportional gain / Kp
p2539[0...n] LR integral time / Tn
p2546[0...n] LR dynamic following error monitoring tolerance / s_delta_monit tol
p2900[0...n] CO: Fixed value 1 [%] / Fixed value 1 [%]
p2901[0...n] CO: Fixed value 2 [%] / Fixed value 2 [%]
p2930[0...n] CO: Fixed value M [Nm] / Fixed value M [Nm]
p3201[0...n] Excitation current outside the tolerance threshold value / I_exc n.Tol thresh
p3202[0...n] Excitation current outside the tolerance hysteresis / I_exc n.Tol hyst
p3203[0...n] Excitation current outside the tolerance delay time / I_exc n.Tol t_del
p3204[0...n] Flux outside the tolerance threshold value / Flux n. tol thresh
p3205[0...n] Flux outside the tolerance hysteresis / Flux n. tol hyst
p3206[0...n] Flux outside tolerance delay time / Flux n. tol t_del
p3207[0...n] Zero current signal, threshold value / I_0_sig thresh
p3208[0...n] Zero current signal, hysteresis / I_0_sig hyst
p3209[0...n] Zero current signal, delay time / I_0_sig t_del
p3800[0...n] Sync line-drive activation / Sync activ.
p3801[0...n] Sync line-drive, drive object number / Sync DO_No.
p3806[0...n] Sync line-drive frequency difference threshold value / Sync f_diff thresh
p3809[0...n] Sync line-drive phase setpoint / Sync phase setp
p3811[0...n] Sync line-drive frequency limiting / Sync f_lim
p3813[0...n] Sync line-drive phase synchronism threshold value / Sync Ph_sync thrsh
p3815[0...n] Sync line-drive voltage difference threshold value / Sync U_diff thresh
p3820[0...n] Friction characteristic, value n0 / Friction n0
p3821[0...n] Friction characteristic, value n1 / Friction n1
p3822[0...n] Friction characteristic, value n2 / Friction n2
p3823[0...n] Friction characteristic, value n3 / Friction n3
p3824[0...n] Friction characteristic, value n4 / Friction n4
p3825[0...n] Friction characteristic, value n5 / Friction n5
p3826[0...n] Friction characteristic, value n6 / Friction n6
p3827[0...n] Friction characteristic, value n7 / Friction n7
p3828[0...n] Friction characteristic, value n8 / Friction n8
p3829[0...n] Friction characteristic, value n9 / Friction n9
p3830[0...n] Friction characteristic, value M0 / Friction M0

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p3831[0...n]	Friction characteristic, value M1 / Friction M1
p3832[0...n]	Friction characteristic, value M2 / Friction M2
p3833[0...n]	Friction characteristic, value M3 / Friction M3
p3834[0...n]	Friction characteristic, value M4 / Friction M4
p3835[0...n]	Friction characteristic, value M5 / Friction M5
p3836[0...n]	Friction characteristic, value M6 / Friction M6
p3837[0...n]	Friction characteristic, value M7 / Friction M7
p3838[0...n]	Friction characteristic, value M8 / Friction M8
p3839[0...n]	Friction characteristic, value M9 / Friction M9
p3846[0...n]	Friction characteristic plot ramp-up/ramp-down time / Fric plot t_RFG
p3847[0...n]	Friction characteristic plot warm-up time / Frict plot t_warm
r3925[0...n]	Identification final display / Ident final_disp
r3927[0...n]	Motor data identification control word / MotID STW
r3928[0...n]	Rotating measurement configuration / Rot meas config
p7035[0...n]	Par_circuit circulating current control, operating mode / Circ_I mode
p7036[0...n]	Par_circuit circulating current control, proportional gain / Circ_I Kp
p7037[0...n]	Par_circuit circulating current control, integral time / Circ_I TN
p7038[0...n]	Par_circuit circulating current control, limit / Circ_I limit

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1.3.3 Parameters for encoder data sets (EDS)

The following list contains the encoder-data-set-dependent parameters.

Product: SINAMICS G, Version: 2402300, Label: ., Language: eng

p0141[0...n] Encoder interface (Sensor Module) component number / Enc_interf comp_no
p0142[0...n] Encoder component number / Encoder comp_no
p0144[0...n] Sensor Module detection via LED / SM detection LED
p0145[0...n] Activate/de-activate encoder interface / Enc_intf act/deact
r0146[0...n] Encoder interface active/inactive / Enc_intf act/inact
r0147[0...n] Sensor Module EPROM data version / SM EEPROM version
r0148[0...n] Sensor Module firmware version / SM FW_version
p0400[0...n] Enc type selection / Enc type selection
p0401[0...n] Encoder type, OEM selection / Enc type OEM sel
p0402[0...n] Gearbox type selection / Gearbox type
p0404[0...n] Encoder configuration effective / Enc_config eff
p0405[0...n] Square-wave encoder track A/B / Sq-wave enc A/B
p0407[0...n] Linear encoder grid division / Enc grid div
p0408[0...n] Rotary encoder pulse No. / Rot enc pulse No.
p0410[0...n] Encoder inversion actual value / Enc inv act value
p0411[0...n] Measuring gearbox, configuration / Config
p0413[0...n] Measuring gearbox, position tracking tolerance window / Pos track window
p0418[0...n] Fine resolution Gx_XIST1 (in bits) / Enc fine Gx_XIST1
p0419[0...n] Fine resolution absolute value Gx_XIST2 (in bits) / Enc fine Gx_XIST2
p0420[0...n] Encoder connection / Encoder connection
p0421[0...n] Absolute encoder rotary multi-turn resolution / Enc abs multiturn
p0422[0...n] Absolute encoder linear measuring step resolution / Enc abs meas step
p0423[0...n] Absolute encoder rotary single-turn resolution / Enc abs singleturn
p0424[0...n] Encoder, linear zero mark distance / Enc lin ZM_dist
p0425[0...n] Encoder, rotary zero mark distance / Enc rot dist ZM
p0427[0...n] Encoder SSI baud rate / Enc SSI baud rate
p0428[0...n] Encoder SSI monoflop time / Enc SSI t_monoflop
p0429[0...n] Encoder SSI configuration / Enc SSI config
p0430[0...n] Sensor Module configuration / SM config
p0431[0...n] Angular commutation offset / Ang_com offset
p0432[0...n] Gearbox factor, encoder revolutions / Grbx_fact enc_rev
p0433[0...n] Gearbox factor, motor/load revolutions / Grbx_fact mot_rev
p0434[0...n] Encoder SSI error bit / Enc SSI error bit
p0435[0...n] Encoder SSI alarm bit / Enc SSI alarm bit
p0436[0...n] Encoder SSI parity bit / Enc SSI parity bit
p0440[0...n] Copy encoder serial number / Copy enc ser_no
p0441[0...n] Encoder commissioning serial number part 1 / Enc comm ser_no 1
p0442[0...n] Encoder commissioning serial number part 2 / Enc comm ser_no 2
p0443[0...n] Encoder commissioning serial number part 3 / Enc comm ser_no 3
p0444[0...n] Encoder commissioning serial number part 4 / Enc comm ser_no 4
p0445[0...n] Encoder commissioning serial number part 5 / Enc comm ser_no 5
p0446[0...n] Encoder SSI number of bits before the absolute value / Enc SSI bit before
p0447[0...n] Encoder SSI number of bits absolute value / Enc SSI bit val
p0448[0...n] Encoder SSI number of bits after the absolute value / Enc SSI bit after
p0449[0...n] Encoder SSI number of bits, filler bits / Enc SSI fill bits
p2507[0...n] LR absolute encoder adjustment status / Abs_enc_adj stat
p2525[0...n] CO: LR encoder adjustment, offset / Enc_adj offset
p4600[0...n] SME motor temperature sensor 1 sensor type / MotTemp_sens typ 1

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p4601[0...n]	SME motor temperature sensor 2 sensor type / MotTemp_sens typ 2
p4602[0...n]	SME motor temperature sensor 3 sensor type / MotTemp_sens typ 3
p4603[0...n]	SME motor temperature sensor 4 sensor type / MotTemp_sens typ 4

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1.3.4 Parameters for motor data sets (MDS)

The following list contains the motor-data-set-dependent parameters.

Product: SINAMICS G, Version: 2402300, Label: ., Language: eng

p0131[0...n] Motor component number / Mot comp_no
p0300[0...n] Mot type selection / Mot type selection
p0301[0...n] Motor code number selection / Mot code No. sel
r0302[0...n] Motor code number of motor with DRIVE-CLiQ / Motor code Mot DLQ
p0304[0...n] Rated motor voltage / Mot U_rated
p0305[0...n] Rated motor current / Mot I_rated
p0307[0...n] Rated motor power / Mot P_rated
p0308[0...n] Rated motor power factor / Mot cos_phi_rated
p0309[0...n] Rated motor efficiency / Mot eta_rated
p0310[0...n] Rated motor frequency / Mot f_rated
p0311[0...n] Rated motor speed / Mot n_rated
r0313[0...n] Motor pole pair number, actual (or calculated) / Mot PolePairNo act
p0314[0...n] Motor pole pair number / Mot pole pair No.
p0316[0...n] Motor torque constant / Mot kT
p0320[0...n] Motor rated magnetization current/short-circuit current / Mot I_mag_rated
p0322[0...n] Maximum motor speed / Mot n_max
p0323[0...n] Maximum motor current / Mot I_max
p0325[0...n] Motor pole position identification current, 1st phase / Mot PolID I 1st ph
p0327[0...n] Optimum motor load angle / Mot phi_load opt
p0328[0...n] Motor reluctance torque constant / Mot kT_reluctance
p0329[0...n] Motor pole position identification current / Mot PolID current
r0330[0...n] Rated motor slip / Mot slip_rated
r0331[0...n] Motor magnetizing current/short-circuit current actual / Mot I_mag_ratedAct
r0332[0...n] Rated motor power factor / Mot cos_phi_rated
r0333[0...n] Rated motor torque / Mot M_rated
r0334[0...n] Motor-torque constant, actual / Mot kT act
p0335[0...n] Motor cooling type / Motor cooling type
r0336[0...n] Rated motor frequency actual / Mot f_rated act
r0337[0...n] Rated motor EMF / Mot EMF_rated
r0339[0...n] Rated motor voltage / Mot U_rated
p0341[0...n] Motor moment of inertia / Mot M_mom of inert
p0342[0...n] Ratio between the total and motor moment of inertia / Mot MomInert Ratio
p0344[0...n] Motor weight / Motor weight
r0345[0...n] Nominal motor starting time / Mot t_start_rated
p0346[0...n] Motor excitation build-up time / Mot t_excitation
p0347[0...n] Motor de-excitation time / Mot t_de-excitat.
p0350[0...n] Motor stator resistance, cold / Mot R_stator cold
p0352[0...n] Cable resistance / Mot R_cable cold
p0353[0...n] Motor series inductance / Mot L_series
p0354[0...n] Motor rotor resistance cold / damping resistance d axis / Mot R_r cold / RDd
p0355[0...n] Motor damping resistance, q axis / Mot R_damping_q
p0356[0...n] Motor stator leakage inductance / Mot L_stator leak.
p0357[0...n] Motor stator inductance, d axis / Mot L_stator_d
p0358[0...n] Motor rotor leakage inductance / damping inductance, d axis / Mot L_r leak / LDd
p0359[0...n] Motor damping inductance, q axis / Mot L_damping_q
p0360[0...n] Motor magnetizing inductance/magn. inductance, d axis saturated / Mot Lh/Lh d sat
p0361[0...n] Motor magnetizing inductance, q axis, saturated / Mot Lh q_sat
p0362[0...n] Saturation characteristic flux 1 / Mot saturat.flux 1

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p0363[0...n] Saturation characteristic flux 2 / Mot saturat.flux 2
p0364[0...n] Saturation characteristic flux 3 / Mot saturat.flux 3
p0365[0...n] Saturation characteristic flux 4 / Mot saturat.flux 4
p0366[0...n] Saturation characteristic I_mag 1 / Mot sat. I_mag 1
p0367[0...n] Saturation characteristic I_mag 2 / Mot sat. I_mag 2
p0368[0...n] Saturation characteristic I_mag 3 / Mot sat. I_mag 3
p0369[0...n] Saturation characteristic I_mag 4 / Mot sat. I_mag 4
r0370[0...n] Motor stator resistance, cold / Mot R_stator cold
r0372[0...n] Cable resistance / Mot R_cable
r0373[0...n] Motor rated stator resistance / Mot R_stator rated
r0374[0...n] Motor rotor resistance cold / damping resistance d axis / Mot R_r cold / RDd
r0375[0...n] Motor damping resistance, q axis / Mot R_damping_q
r0376[0...n] Rated motor rotor resistance / Mot R_rotor rated
r0377[0...n] Motor leakage inductance, total / Mot L_leak total
r0378[0...n] Motor stator inductance, d axis / Mot L_stator_d
r0380[0...n] Motor damping inductance, d axis / Mot L_damping_d
r0381[0...n] Motor damping inductance, q axis / Mot L_damping_q
r0382[0...n] Motor magnetizing inductance transformed / Lh d axis saturated / Mot Lh t. / Lh d_s
r0383[0...n] Motor magnetizing inductance q axis, saturated / Mot Lh q_sat
r0384[0...n] Motor rotor time constant / damping time constant d axis / Mot T_rot / T_Dd
r0385[0...n] Motor damping time constant, q axis / Mot T_Dq
r0386[0...n] Motor stator leakage time constant / Mot T_stator leak
r0387[0...n] Motor stator leakage time constant, q axis / Mot T_Sleak / T_Sq
p0389[0...n] Motor no-load excitation current / Mot I_exc_no-load
p0390[0...n] Motor rated excitation current / Mot I_exc_rated
r0395[0...n] Stator resistance, actual / R_stator active
r0396[0...n] Rotor resistance, actual / R_rotor active
p0600[0...n] Motor temperature sensor for monitoring / Mot temp_sensor
p0601[0...n] Motor temperature sensor type / Mot temp_sensortyp
p0604[0...n] Motor overtemperature alarm threshold / Mot TempAlrmThresh
p0605[0...n] Motor overtemperature fault threshold / MotTempFaultThresh
p0606[0...n] Motor overtemperature timer / Mot TempTimeStage
p0607[0...n] Temperature sensor fault timer / Sensor fault time
p0610[0...n] Response to motor overtemperature condition / Mot temp response
p0620[0...n] Thermal adaptation, stator and rotor resistance / Mot therm_adapt R
p0621[0...n] Temperature identification after restart / Temp_ident restart
p0622[0...n] Motor excitation time for temp_ident after powering-up again / t_excit temp_id
p0625[0...n] Motor ambient temperature / Mot T_ambient
p0626[0...n] Motor overtemperature, stator core / Mot T_over core
p0627[0...n] Motor overtemperature, stator winding / Mot T_over stator
p0628[0...n] Rotor winding overtemperature / Mot T_over rotor
r0630[0...n] Motor temperature model ambient temperature / MotTMod T_amb.
r0631[0...n] Motor temperature model, stator core temperature / MotTMod T_iron
r0632[0...n] Motor temperature model, stator winding temperature / MotTMod T_copper
r0633[0...n] Motor temperature model, rotor temperature / MotTMod T_rotor
p0650[0...n] Actual motor operating hours / Mot t_oper act
p0651[0...n] Motor operating hours maintenance interval / Mot t_op maint
p0652[0...n] Motor stator resistance, scaling / Mot R_stator scal
p0653[0...n] Motor stator leakage inductance, scaling / Mot L_S_leak scal
p0655[0...n] Motor magnetizing inductance, d axis, saturated scaling / Mot Lhd_sat scal
p0656[0...n] Motor magnetizing inductance, q axis, saturated scaling / Mot Lhq_sat scal
p0657[0...n] Motor damping inductance, d axis scaling / Mot L_damp_d scal
p0658[0...n] Motor damping inductance, q axis scaling / Mot L_damp_q scal

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p0659[0...n]	Motor damping resistance, d axis scaling / Mot R_damp_d scal
p0660[0...n]	Motor damping resistance, q axis scaling / Mot R_damp_q scal
p0826[0...n]	Motor changeover, motor number / Mot_chng mot No.
p0827[0...n]	Motor changeover status word bit number / Mot_chg ZSW bitNo.
p1231[0...n]	Configuration, armature short-circuit / ASC config
p1236[0...n]	Ext. armature short-cct., contactor feedback signal monit. time / ASC ext t_monit
p1237[0...n]	External armature short-circuit, waiting time when opening / ASC ext t_wait
p1909[0...n]	Motor data identification control word / MotID STW
p1980[0...n]	Pole position identification technique / PolID technique
p1982[0...n]	Pole position identification selection / PolID selection
p1991[0...n]	Motor changeover, angular commutation correction / Ang_com corr
p1999[0...n]	Ang. commutation offset calibr. and pole position ID - scaling / ComOffsCalib scal

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1.3.5 Parameters for Power unit Data Sets (PDS)

The following list contains the parameters that are dependent on the Power unit Data Sets.

Product: SINAMICS G, Version: 2402300, Label: ., Language: eng

p0121[0...n] Power unit component number / LT comp_no
p0124[0...n] Power unit detection via LED / LT detection LED
p0125[0...n] Activate/de-activate power unit components / LT_comp act/de-act
r0126[0...n] Power unit components active/inactive / LT comp act/inact
r0127[0...n] Power unit version EPROM data / LT EPROM version
r0128[0...n] Power unit firmware version / LT FW_version
r0200[0...n] Power unit, actual code number / LT code no. actual
p0201[0...n] Power unit code number / LT code number
r0203[0...n] Actual power unit type / LT actual type
r0204[0...n] Power unit hardware properties / LT HW property
p0251[0...n] Operating hours counter, power unit fan / LT fan t_oper
p0895[0...n] BI: Activate/de-activate power unit components / LT_comp act/de-act
p3902[0...n] Power unit EEPROM Vdc calibration / LT EEPROM Vdc_cal
p7001[0...n] Par_circuit enable power units / Enable LT
r7002[0...n] Par_circuit status power units / Status LT
r7020[0...n] CO: Par_circuit deviation current in phase U / Phase U curr dev
r7021[0...n] CO: Par_circuit deviation current in phase V / Phase V curr dev
r7022[0...n] CO: Par_circuit deviation current in phase W / Phase W curr dev
r7030[0...n] CO: Par_circuit DC link voltage deviation / Vdc deviation
p7040[0...n] Par_circuit correction, valve lockout time phase U / Comp t_lockout U
p7042[0...n] Par_circuit correction, valve lockout time phase V / Comp t_lockout V
p7044[0...n] Par_circuit correction, valve lockout time phase W / Comp t_lockout W
r7050[0...n] Par_circuit circulating current phase U / Circ_I_phase U
r7051[0...n] Par_circuit circulating current phase V / Circ_I_phase V
r7052[0...n] Par_circuit circulating current phase W / Circ_I_phase W
r7200[0...n] Par_circuit power unit overload I2T / LT overload I2T
r7201[0...n] Par_circuit power unit temperatures max. inverter / LT temp max inv
r7202[0...n] Par_circuit power unit temperatures max. depletion layer / LT TempMaxDepLayer
r7203[0...n] Par_circuit power unit temperatures max. rectifier / LT temp max rect
r7204[0...n] Par_circuit power unit temperatures air intake / LT temp air intake
r7205[0...n] Par_circuit power unit temperatures electronics / LT temp electr
r7206[0...n] Par_circuit power unit temperatures inverter 1 / LT temp inv 1
r7207[0...n] Par_circuit power unit temperatures inverter 2 / LT temp inv 2
r7208[0...n] Par_circuit power unit temperatures inverter 3 / LT temp inv 3
r7209[0...n] Par_circuit power unit temperatures inverter 4 / LT temp inv 4
r7210[0...n] Par_circuit power unit temperatures inverter 5 / LT temp inv 5
r7211[0...n] Par_circuit power unit temperatures inverter 6 / LT temp inv 6
r7212[0...n] Par_circuit power unit temperatures inverter 1 / LT temp rect 1
r7213[0...n] Par_circuit power unit temperatures inverter 2 / LT temp rect 2
r7214[0...n] Par_circuit power unit temperatures depletion layer 1 / LT temp DepLayer 1
r7215[0...n] Par_circuit power unit temperatures depletion layer 2 / LT temp DepLayer 2
r7216[0...n] Par_circuit power unit temperatures depletion layer 3 / LT temp DepLayer 3
r7217[0...n] Par_circuit power unit temperatures depletion layer 4 / LT temp DepLayer 4
r7218[0...n] Par_circuit power unit temperatures depletion layer 5 / LT temp DepLayer 5
r7219[0...n] Par_circuit power unit temperatures depletion layer 6 / LT temp DepLayer 6
r7220[0...n] CO: Par_circuit drive output current, maximum / Drv I_output max
r7222[0...n] CO: Par_circuit absolute current actual value / I_act abs.val.
r7223[0...n] CO: Par_circuit phase current, actual value phase U / I_phase U act val

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r7224[0...n]	CO: Par_circuit phase current, actual value phase V / I_phase V act val
r7225[0...n]	CO: Par_circuit phase current, actual value phase W / I_phase W act val
r7226[0...n]	CO: Par_circuit phase current actual value, phase U offset / I_phase U offset
r7227[0...n]	CO: Par_circuit phase current, actual value, phase V offset / I_phase V offset
r7228[0...n]	CO: Par_circuit phase current, actual value, phase W offset / I_phase W offset
r7229[0...n]	CO: Par_circuit phase current actual value sum U, V, W / I_phase sum UVW
r7230[0...n]	CO: Par_circuit DC link voltage actual value / Vdc_act
r7231[0...n]	CO: Par_circuit phase voltage, actual value phase U / U_phase U act val
r7232[0...n]	CO: Par_circuit phase voltage, actual value phase V / U_phase V act val
r7233[0...n]	CO: Par_circuit phase voltage, actual value phase W / U_phase W act val

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Function diagrams

2

Contents

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2.1 Contents: function diagrams

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2.2 Explanations for the function diagrams

Function diagrams

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Parameter

Symbol	Meaning
Parameter name [Units] rxxxx [x..y]	Monitoring parameter (parameter may appear multiple times).
Parameter name [Units] Index name rxxxx[x]	Monitoring parameter with index (parameter may appear multiple times).
[aaaa.b] Parameter name from ... to [Units] pxxxx[y...z] (Def)	Setting parameter (if the parameter appears a multiple number of times, then diagram references are specified).
[aaaa.b] Parameter name Index name from ... to [Units] pxxxx[y] (Def)	Setting parameter with index (if the parameter appears a multiple number of times, then diagram references are specified).

Connectors

Symbol	Meaning
Parameter name pxxxx[y...z] (xxxx [y])	Connector input CI with index range [y...z]
Parameter name Index name pxxxx[y] (xxxx[x])	Connector input CI with index [y]
Parameter name [Units] rxxxx[y...z]	Connector output CO with [dimension units] and index range [y...z] (the parameter may appear multiple times).
Parameter name [Units] Index name rxxxx[y]	Connector output CO [dimension units] and with index [y] (the parameter may appear multiple times).

Binectors

Symbol	Meaning
Parameter name pxxxx[y...z] (Def.x)	Binector input BI with index range [y...z] and factory setting (Def.x) with bit x.
Parameter name Bit name pxxxx[y] (Def.x)	Binector input BI with index [y] and factory setting (Def.x) with bit x.
Parameter name rxxxx	Binector output BO (the parameter may appear multiple times).
Parameter name Bit name rxxxx.yy	Binector output BO with bit yy (the parameter may appear multiple times).

Connectors/binectors

Symbol	Meaning
Parameter name rxxxx rxxxx	Connector/binector output CO/BO

Cross references between diagrams

Symbol	Meaning
Signal path	The function diagrams are sub-divided into signal paths 1...8 for faster orientation.
Text → [aaaa.b]	Text = Unique signal designation aaaa = Signal goes to the target diagram aaa b = Signal goes to signal path b
[cccc.d] → Text	Text = Unique signal designation cccc = Comes from source diagram cccc d = Signal comes from signal path d

To "function diagram name" [aaaa.b] = for binectors.

Important: No cross-reference to the main diagrams or that go to or from overview diagrams.

Cross references for control bits

Symbol	Meaning
pxxxx [aaaa.b]	pxxxx = Original parameter of signal aaaa = Signal comes from the source diagram aaaa b = Signal comes from signal path b

Data sets

Symbol	Meaning
pxxxx[C]	Parameter belongs to the Command Data Set (CDS).
pxxxx[D]	Parameter belongs to the Drive Data Set (DDS).
pxxxx[E]	Parameter belongs to the Encoder Data Set (EDS).
pxxxx[M]	Parameter belongs to the Motor Data Set (MDS).
pxxxx[P]	Parameter belongs to the Power unit Data Set (PDS).

Information on parameters, binectors, connectors

Symbol	Meaning
Parameter name	Parameter name (max. 18 characters)
[Units]	[dimension units]
rxxxx[y] or rxxxx[y...z] or rxxxx.ww[y] or rxxxx.ww	"r" = monitoring parameter. These parameters are read-only "xxxx" stands for a four-digit parameter number "[y]" specifies the valid index, "[y...z]" specifies the applicable index range ".ww" specifies the bit number (e.g. 0...15).
pxxxx[y] or pxxxx[y...z] or pxxxx.ww[y] or pxxxx.ww	"p" = setting parameter. These parameters can be changed. "xxxx" stands for a four-digit parameter number, "[y]" specifies the applicable index, "[y...z]" specifies the applicable index range ".ww" specifies the bit number (e.g. 0...15).
from ... to	Value range
(xxxx[y])	Parameter number (xxxx) and Index number [y].
(Def)	Factory setting.
(Def.w)	Factory setting with bit number as prefix.
[aaaa.b]	Diagram references for setting parameters that occur a multiple number of times. [Function diagram number, signal path]

Sampling times

Symbol	Meaning
pxxxx[Y] (ZZZ.ZZ µs)	Setting parameter with factory setting to select the time slice.
p0115[y] (Drive Object)	Time slice depending on the pre-setting p0112 of the drive object.
p0115[y] (Motor Modules)	Time slide depending on the rated pulse frequency of the motor module.
PROFIBUS sampling time	4000.00 µs.
CAN bus sampling time	Time slice 4000.00 µs.
Background Refer to [1020.7]	There is no fixed sampling time for this function. The processing is made in the background. The cycle time depends on the computational load of the control unit.
Not relevant Refer to [1020.7]	A static state is displayed here. The sampling time data is not relevant.

1	2	3	4	5	6	7	8
DO: All objects					fp_1020_01_eng.vsd	Function diagram	- 1020 -
General - explanation of the symbols (part 1)					10.04.06 V02.04.00	SINAMICS G	

Figure 2-1 1020 – Explanation of the symbols (part 1)

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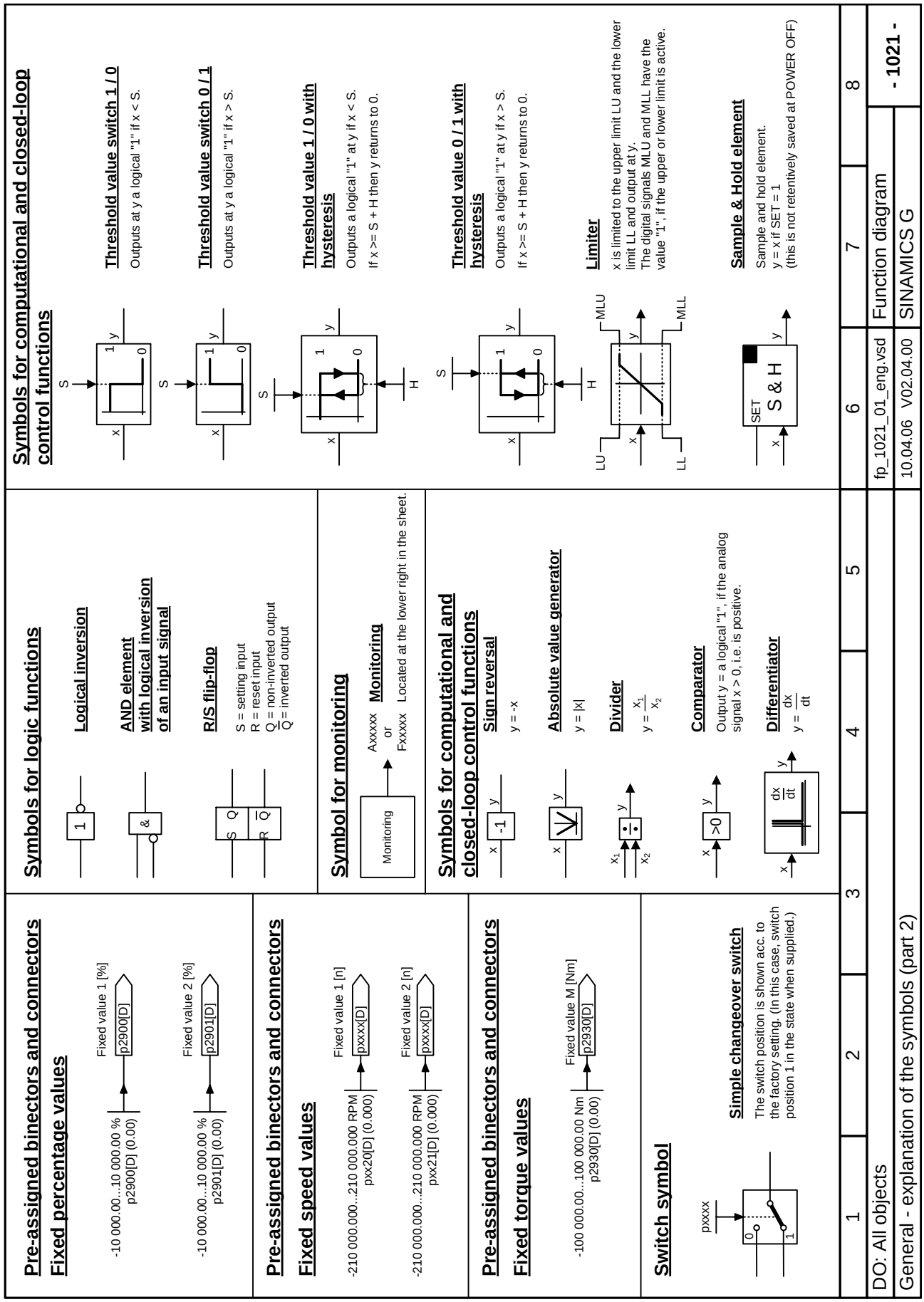

Figure 2-2 1021 – Explanation of the symbols (part 2)

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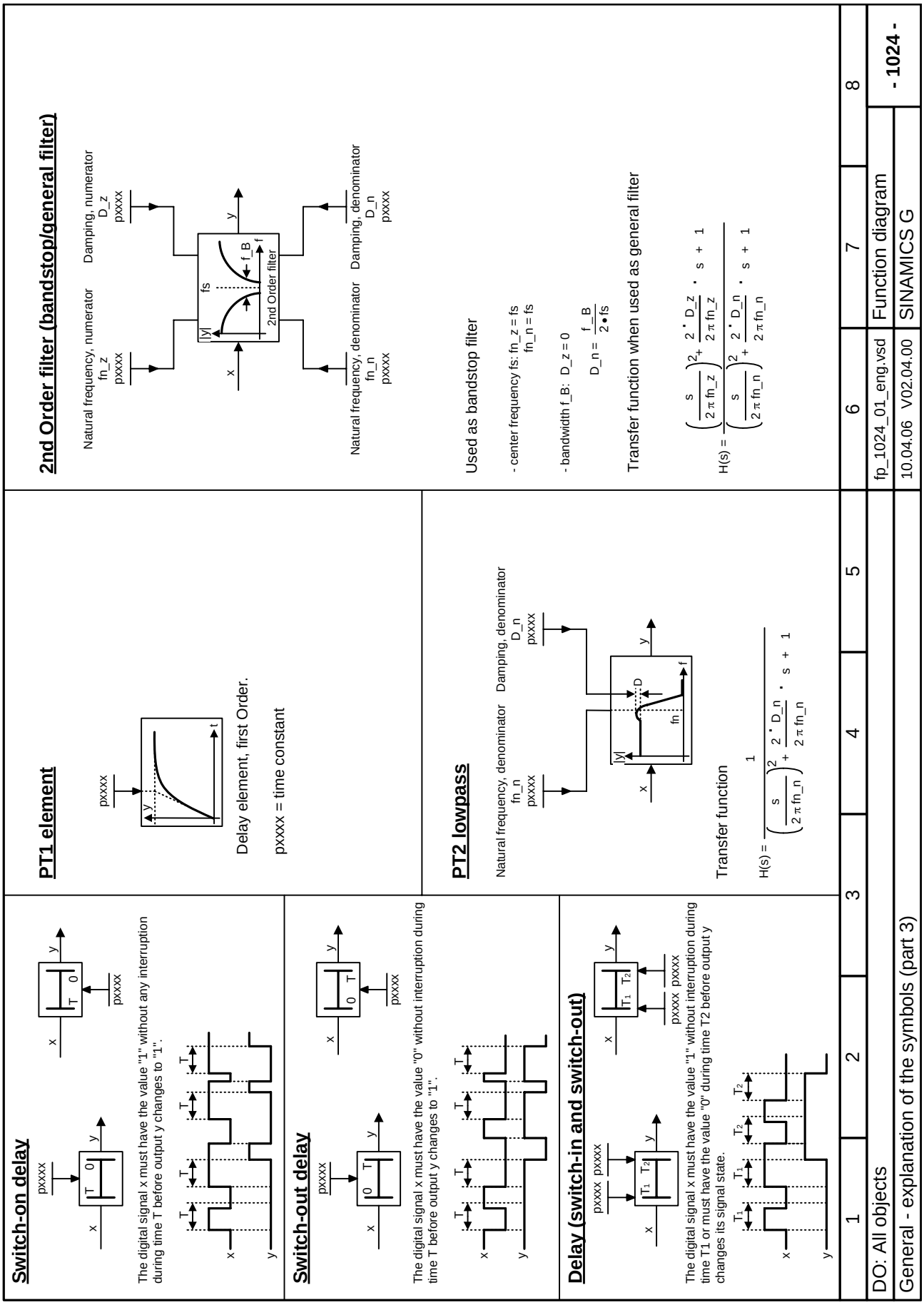

Figure 2-3 1024 – Explanation of the symbols (part 3)

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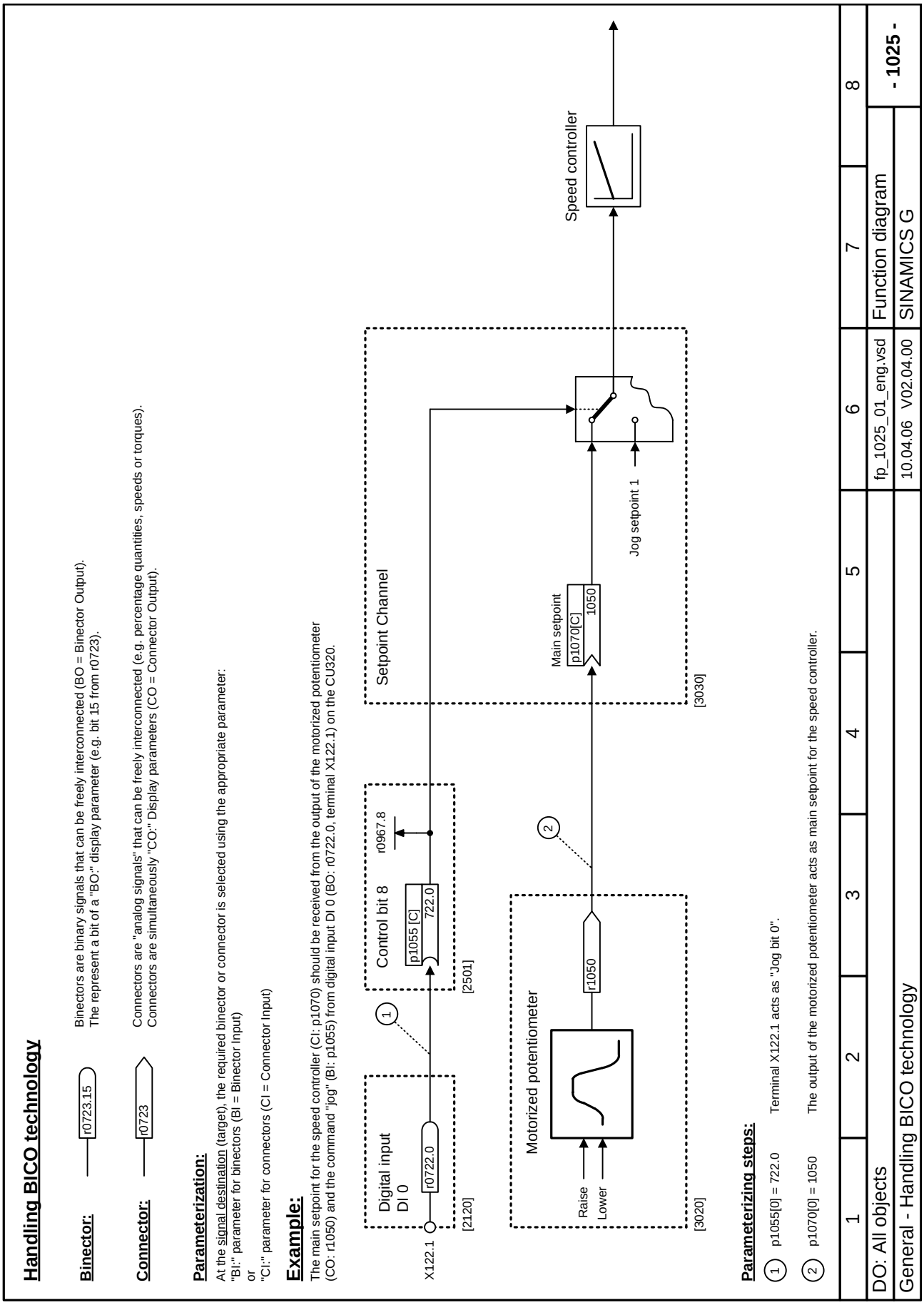

Figure 2-4 1025 – Handling BICO technology

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2.3 Overview

Function diagrams

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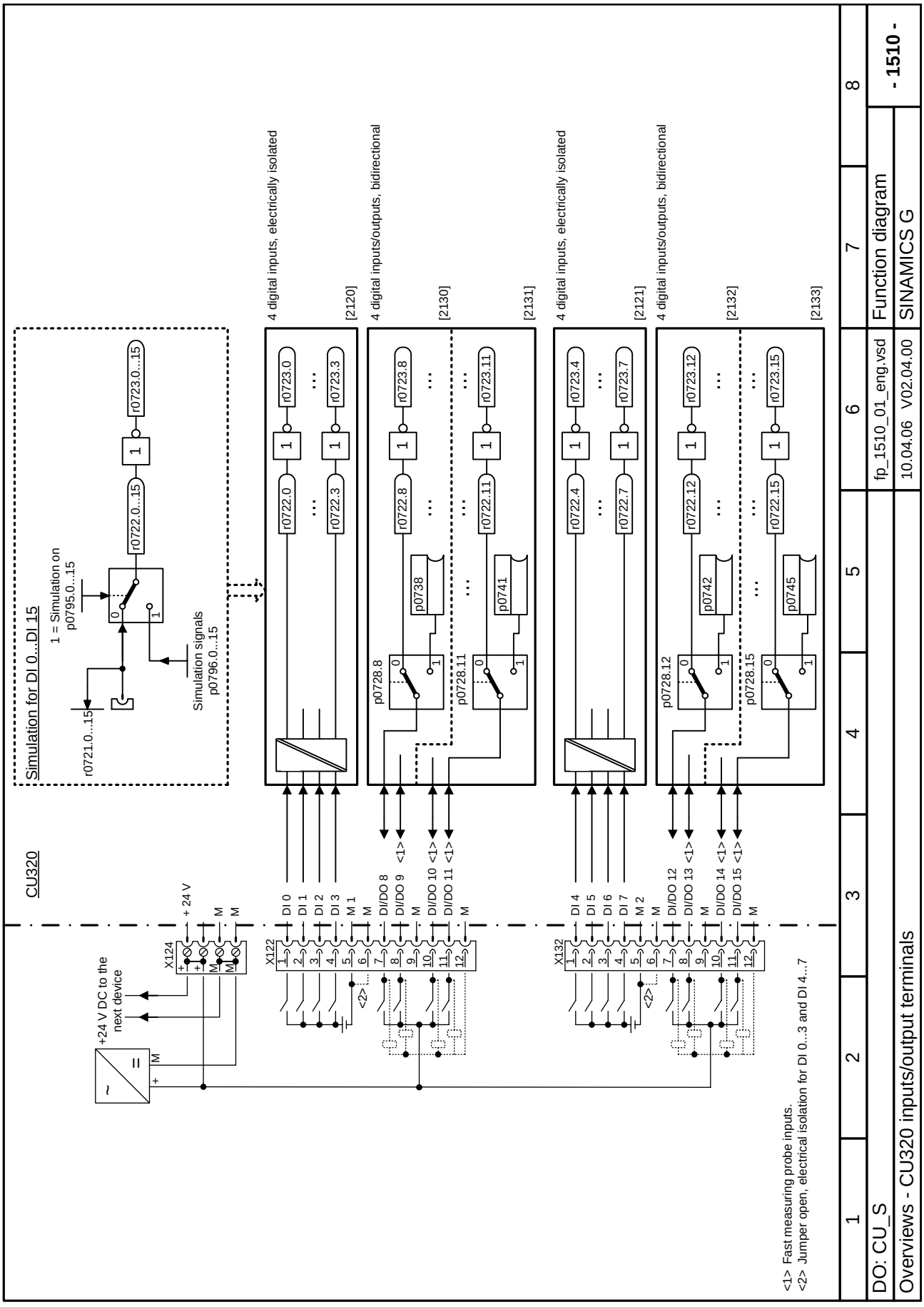

Figure 2-5 1510 – CU320 input/output terminals

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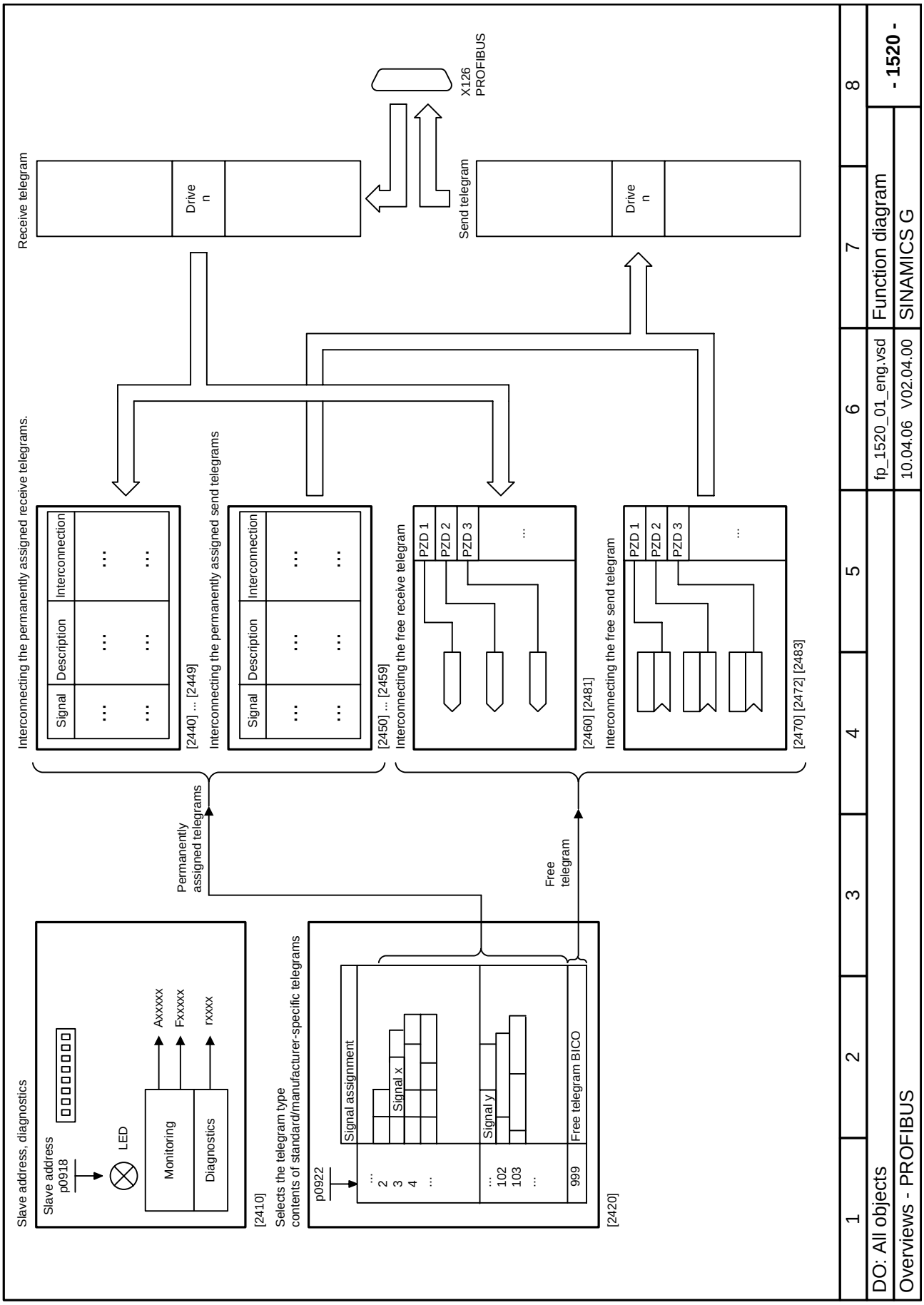

Figure 2-6 1520 – PROFIBUS

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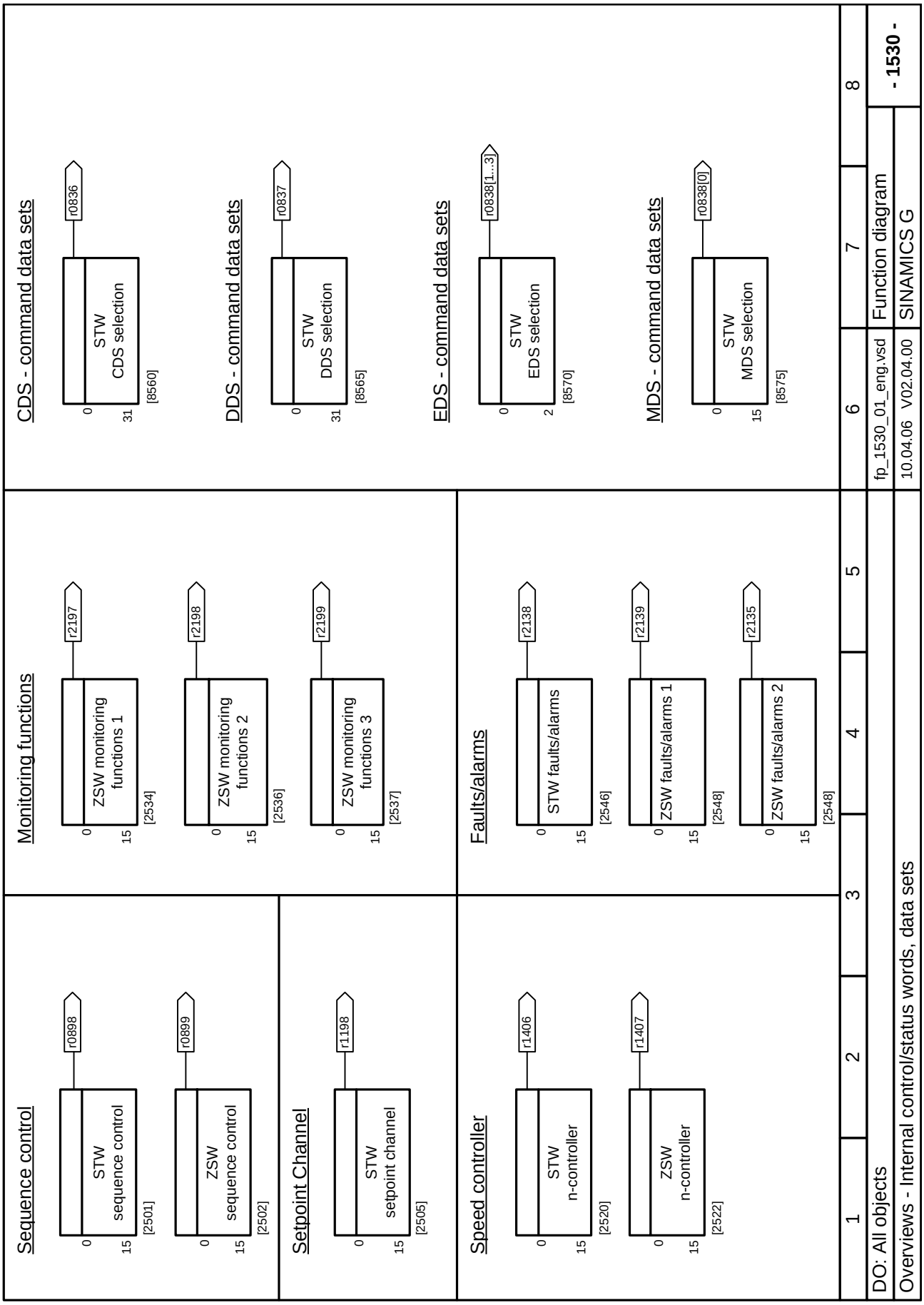

Figure 2-7 1530 – Internal control/status words, data sets

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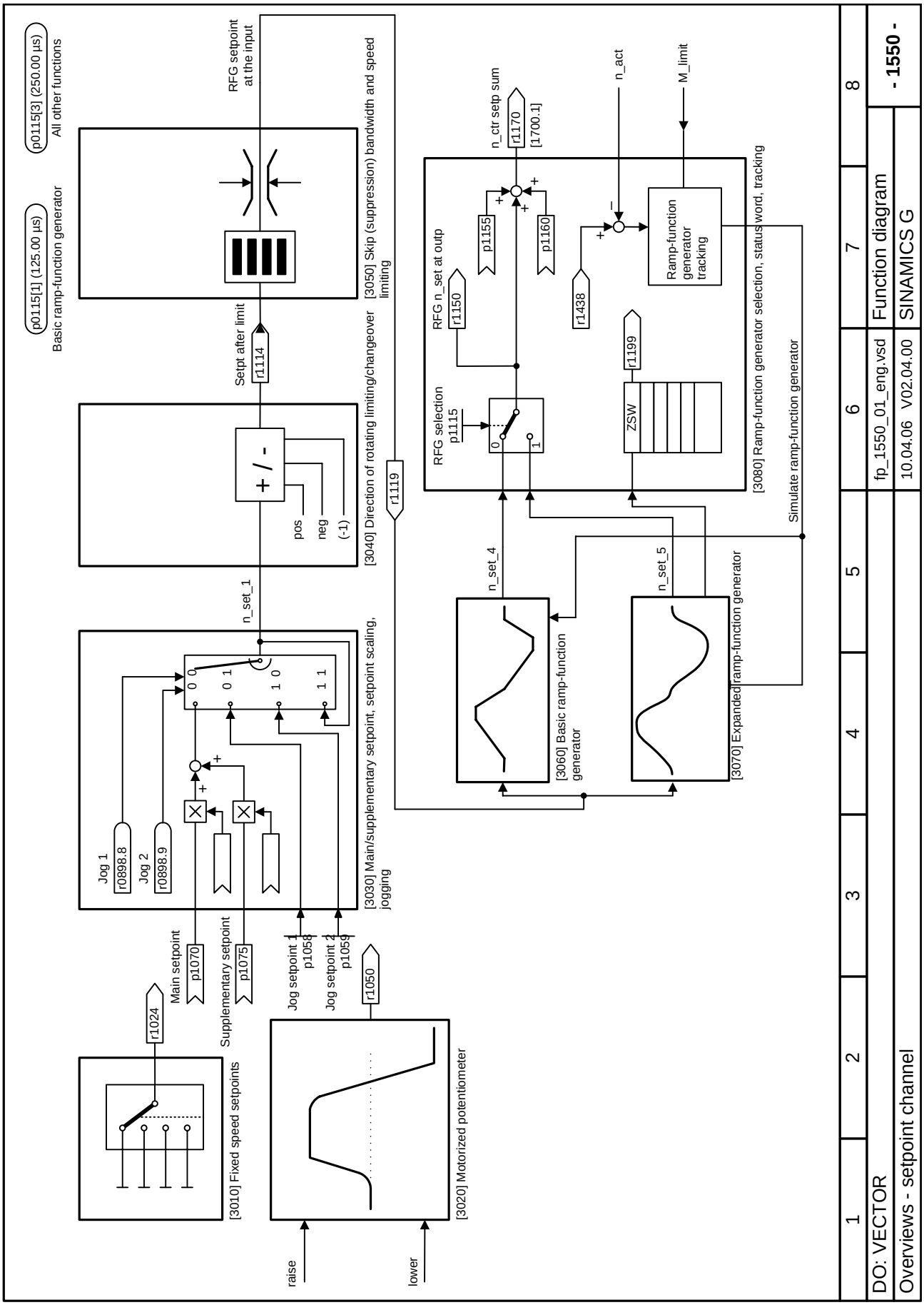

Figure 2-8 1550 – Setpoint channel

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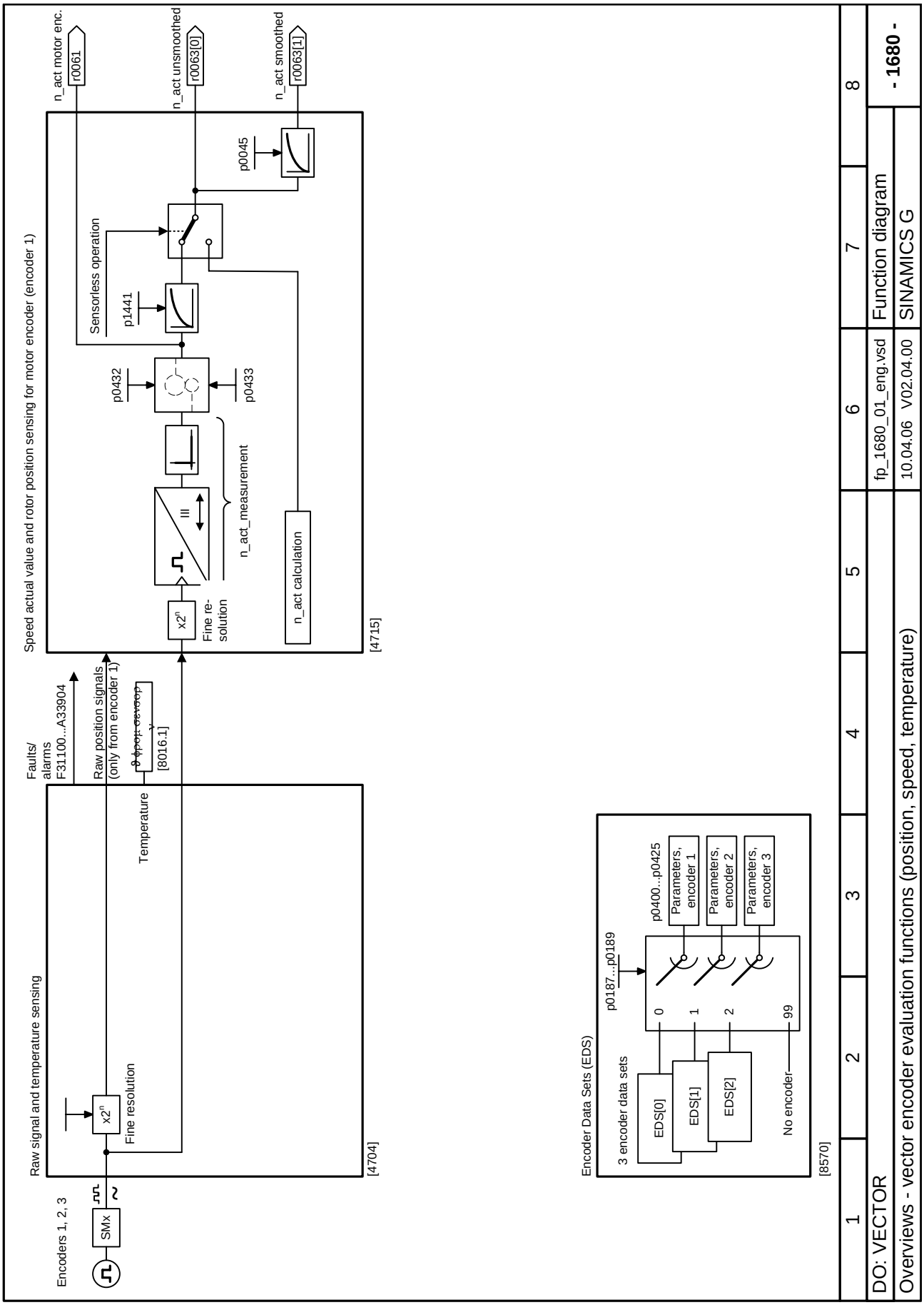

Figure 2-9 1680 – Vector encoder evaluation functions (position, speed, temperature)

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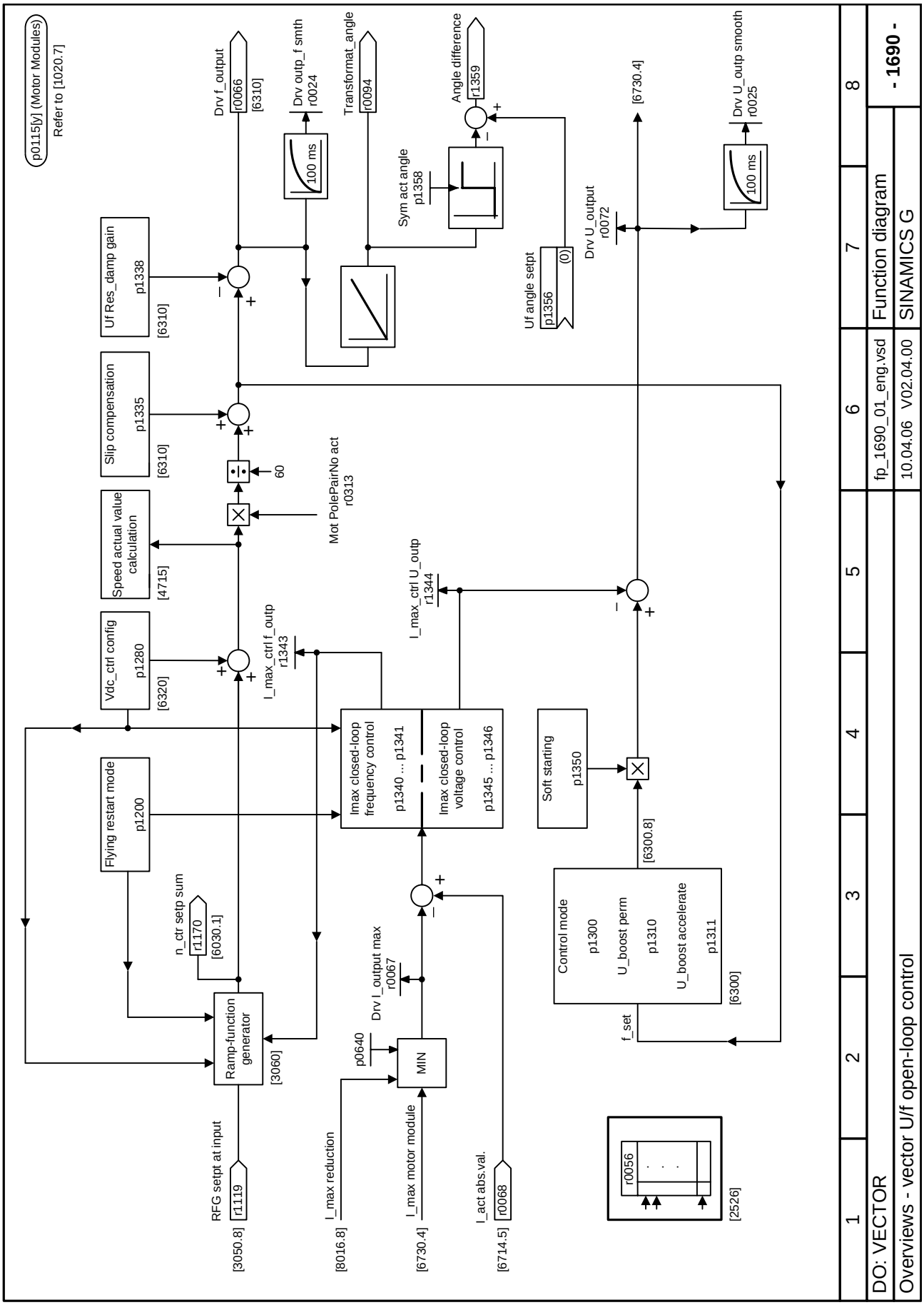

Figure 2-10 1690 – Vector V/f control

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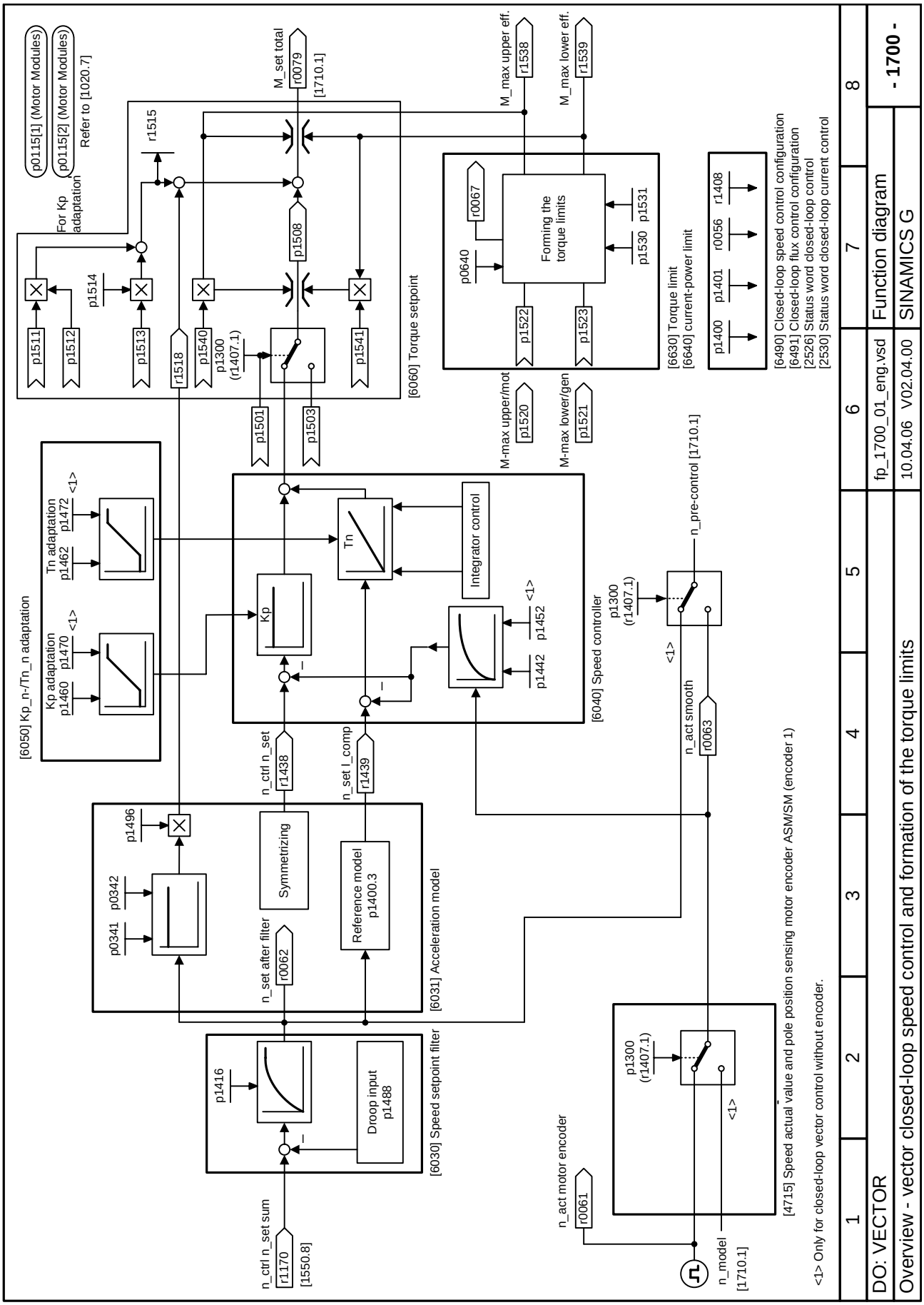

Figure 2-11 1700 – Vector closed-loop speed control and formation of the torque limits

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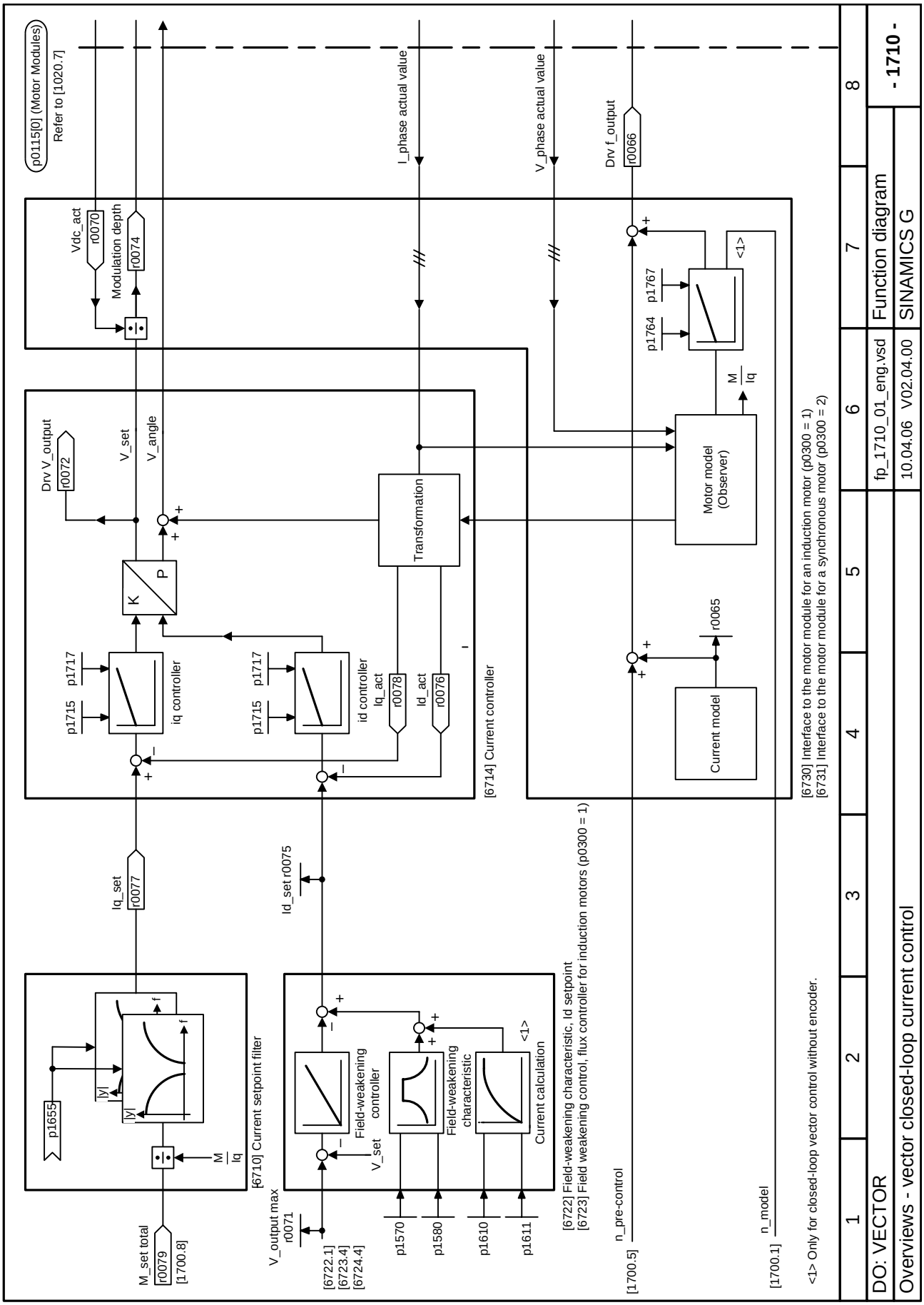

Figure 2-12 1710 – Vector closed-loop current control

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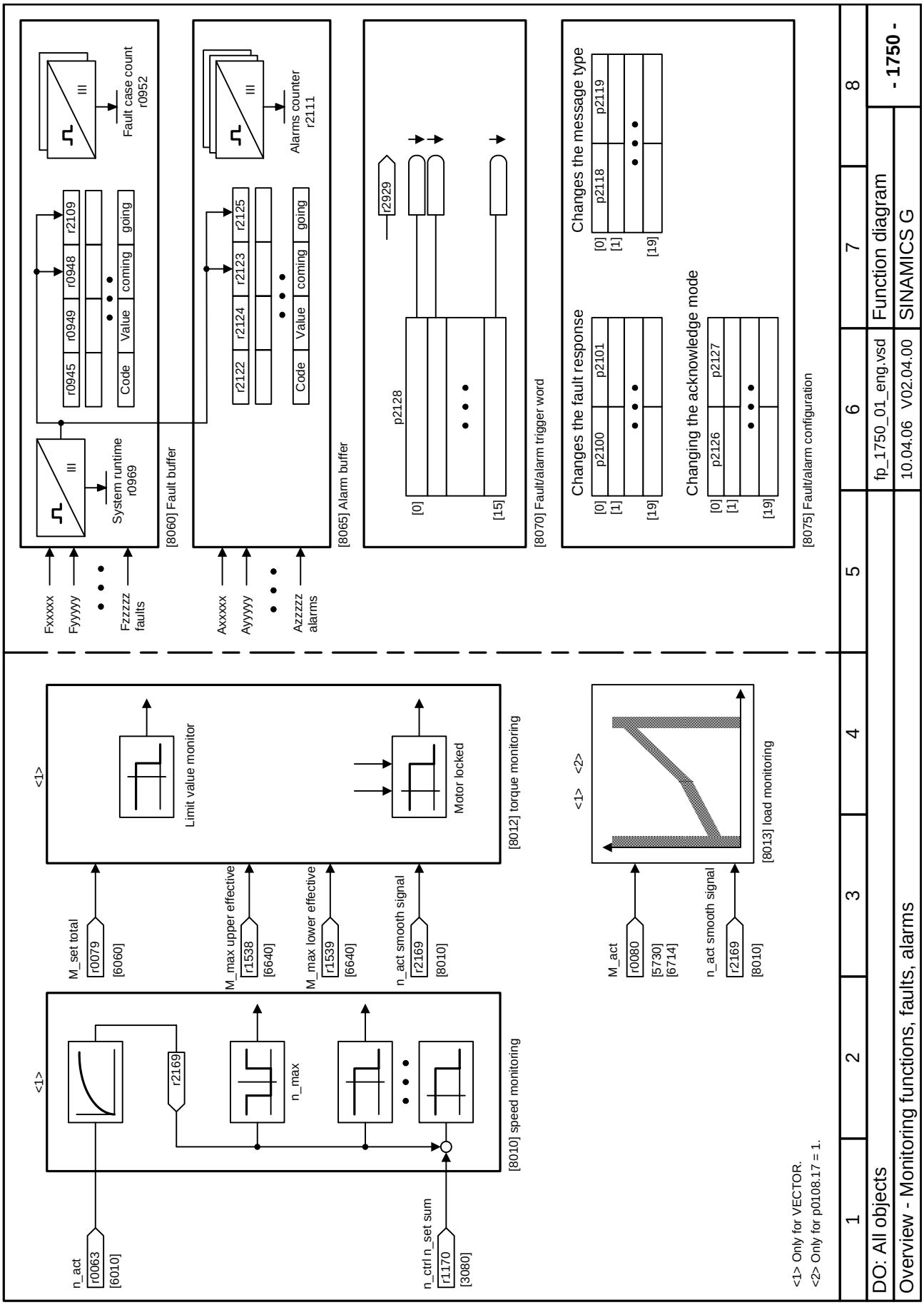

Figure 2-13 1750 – Monitoring functions, faults, alarms

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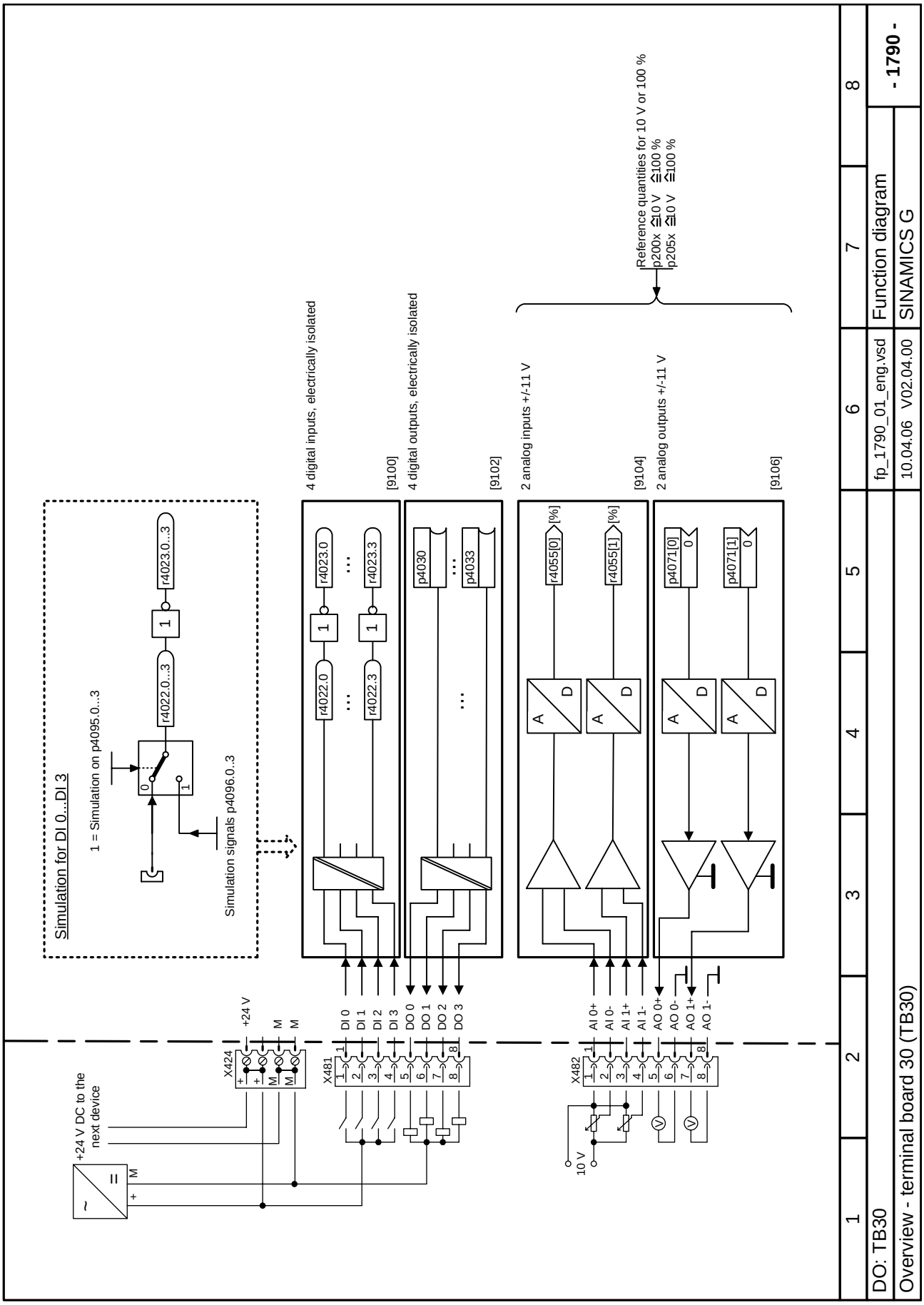

Figure 2-14 1790 – Terminal Board 30 (TB30)

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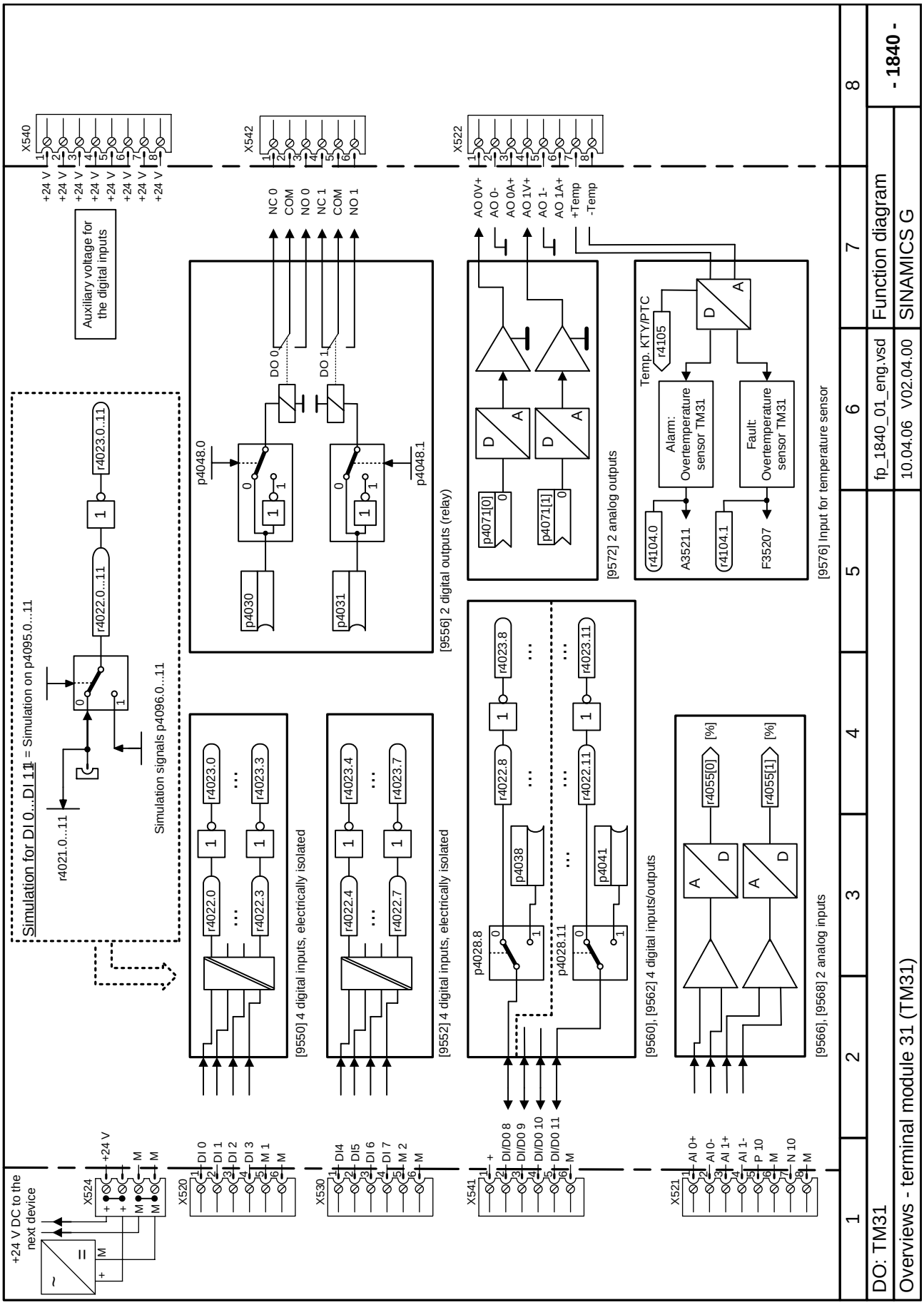

Figure 2-15 1840 – Terminal Module 31 (TM31)

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2.4 CU320 input/output terminals

Function diagrams

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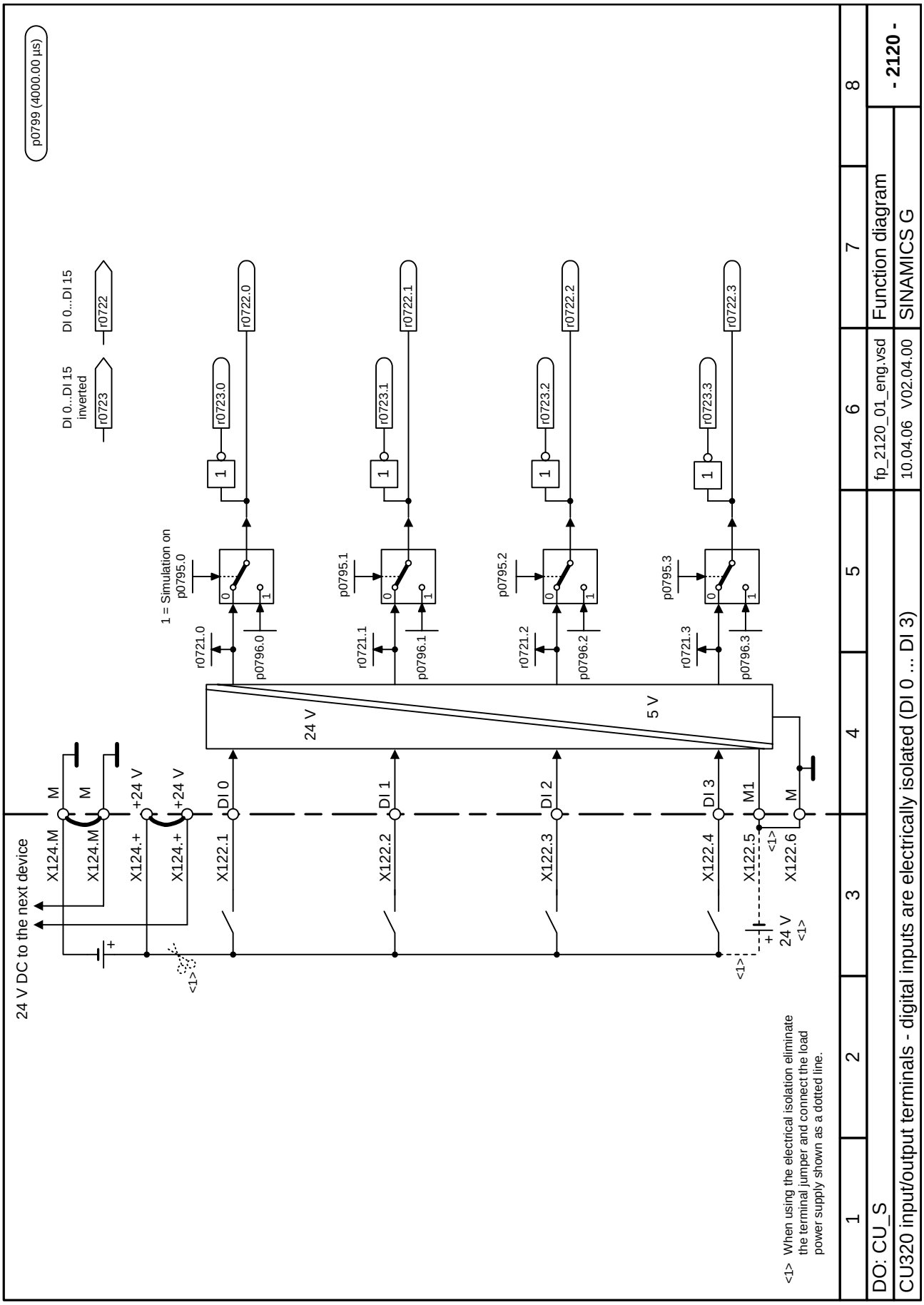

Figure 2-16 2120 – Digital inputs, electrically isolated (DI 0 ... DI 3)

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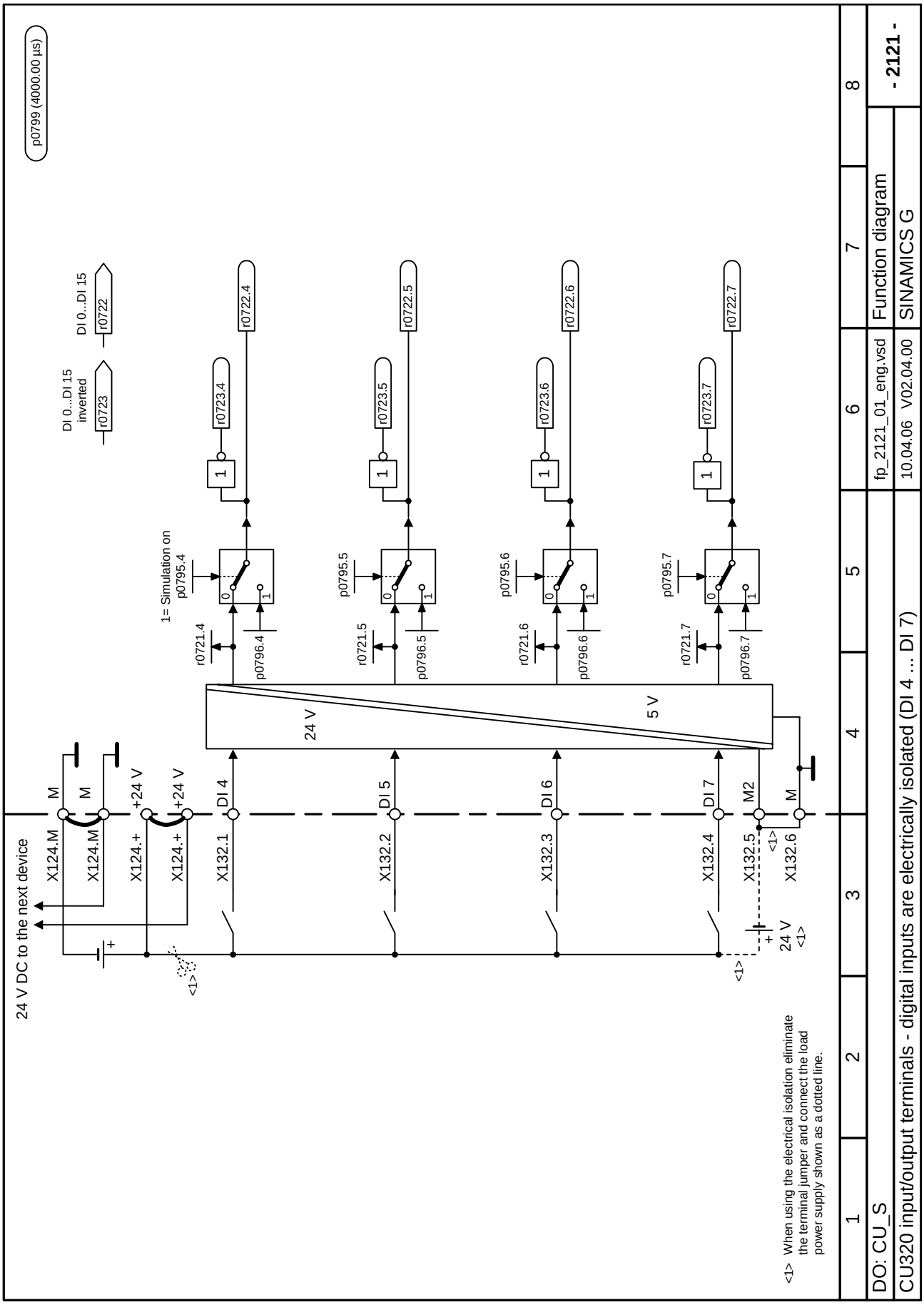

Figure 2-17 2121 – Digital inputs, electrically isolated (DI 4 ... DI 7)

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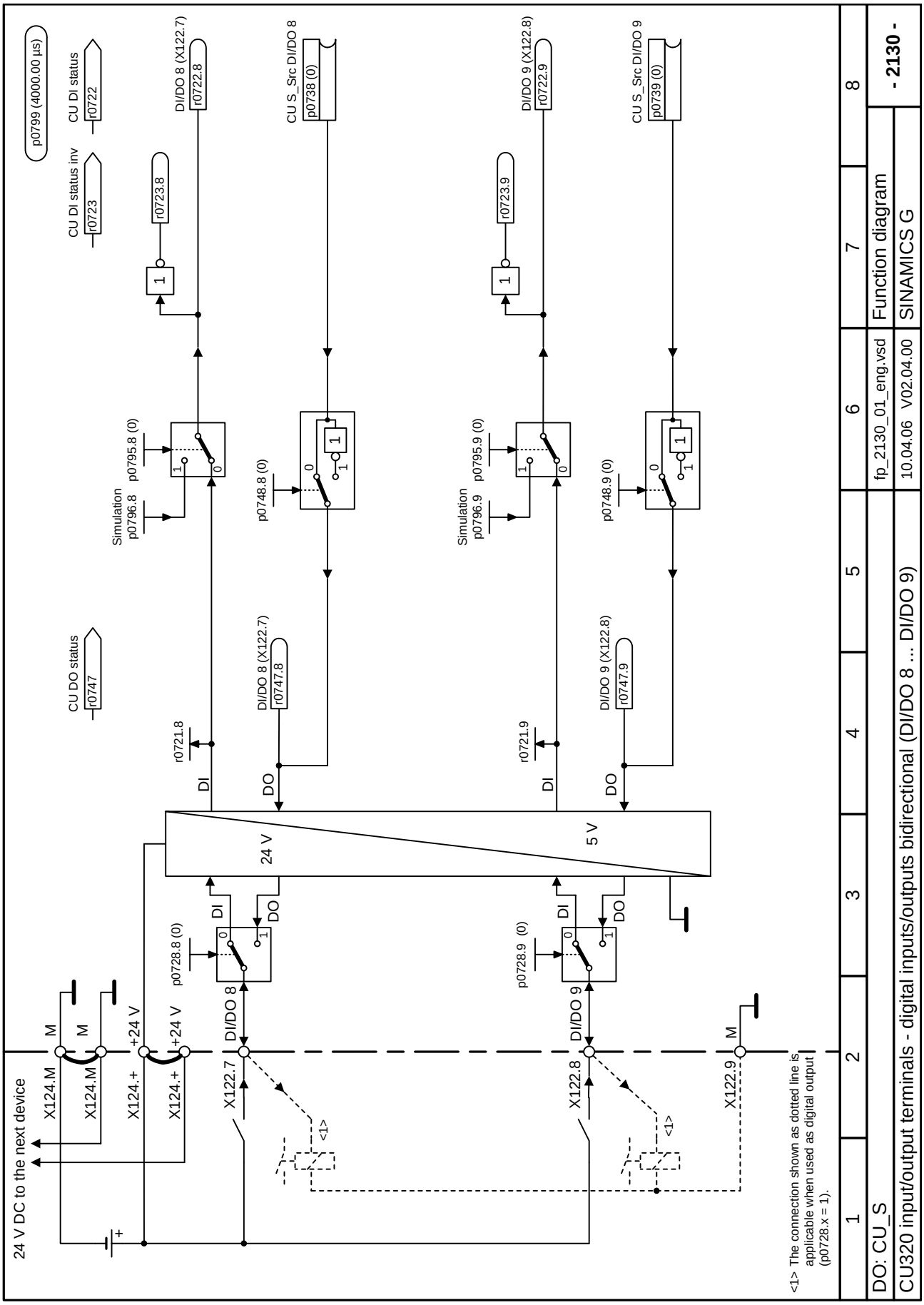

Figure 2-18 2130 – Digital inputs/outputs, bidirectional (DI/DO 8 ... DI/DO 9)

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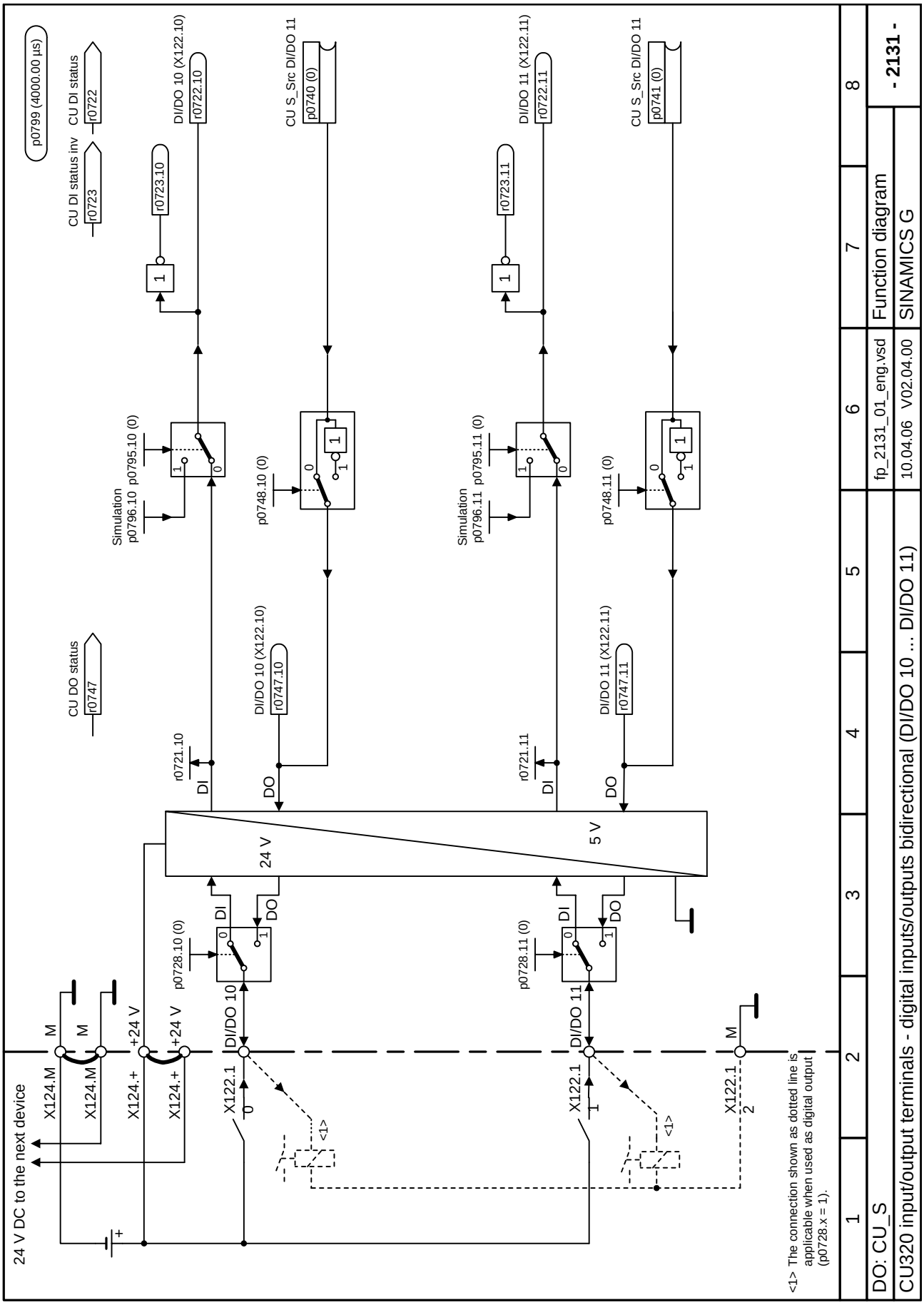

Figure 2-19 2131 – Digital inputs/outputs, bidirectional (DI/DO 10 ... DI/DO 11)

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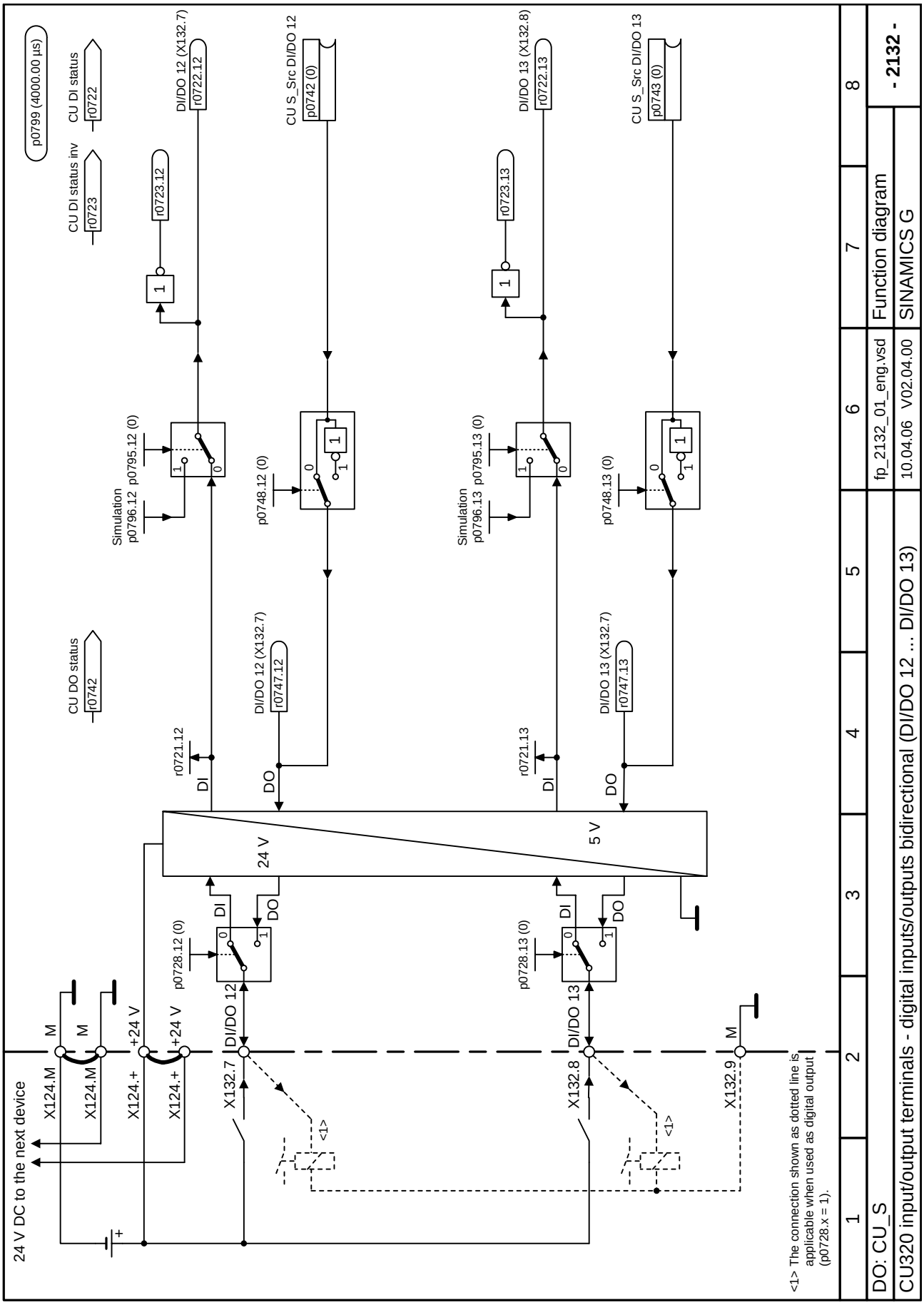

Figure 2-20 2132 – Digital inputs/outputs, bidirectional (DI/DO 12 ... DI/DO 13)

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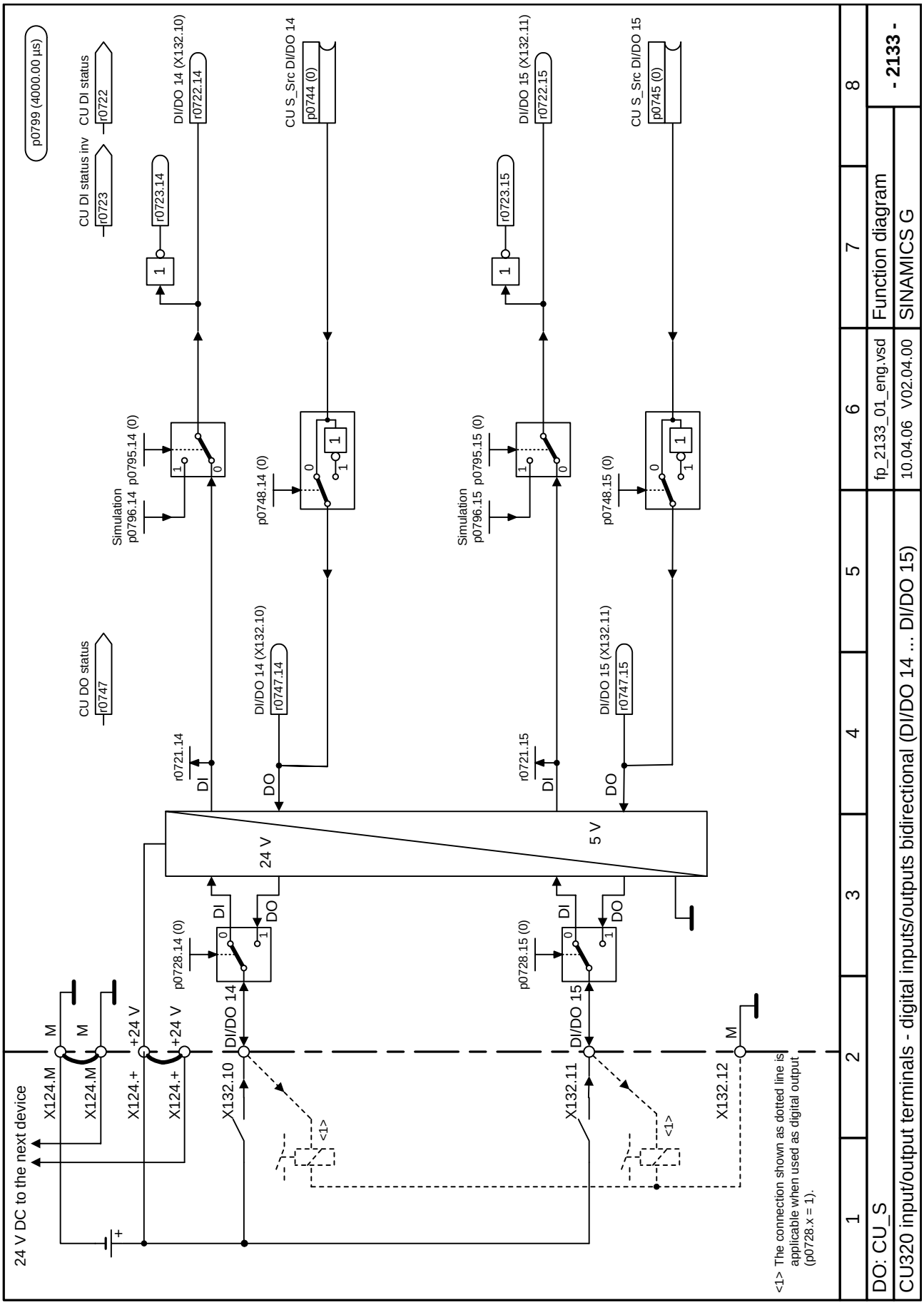

Figure 2-21 2133 – Digital inputs/outputs, bidirectional (DI/DO 14 ... DI/DO 15)

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2.5 PROFIBUS

Function diagrams

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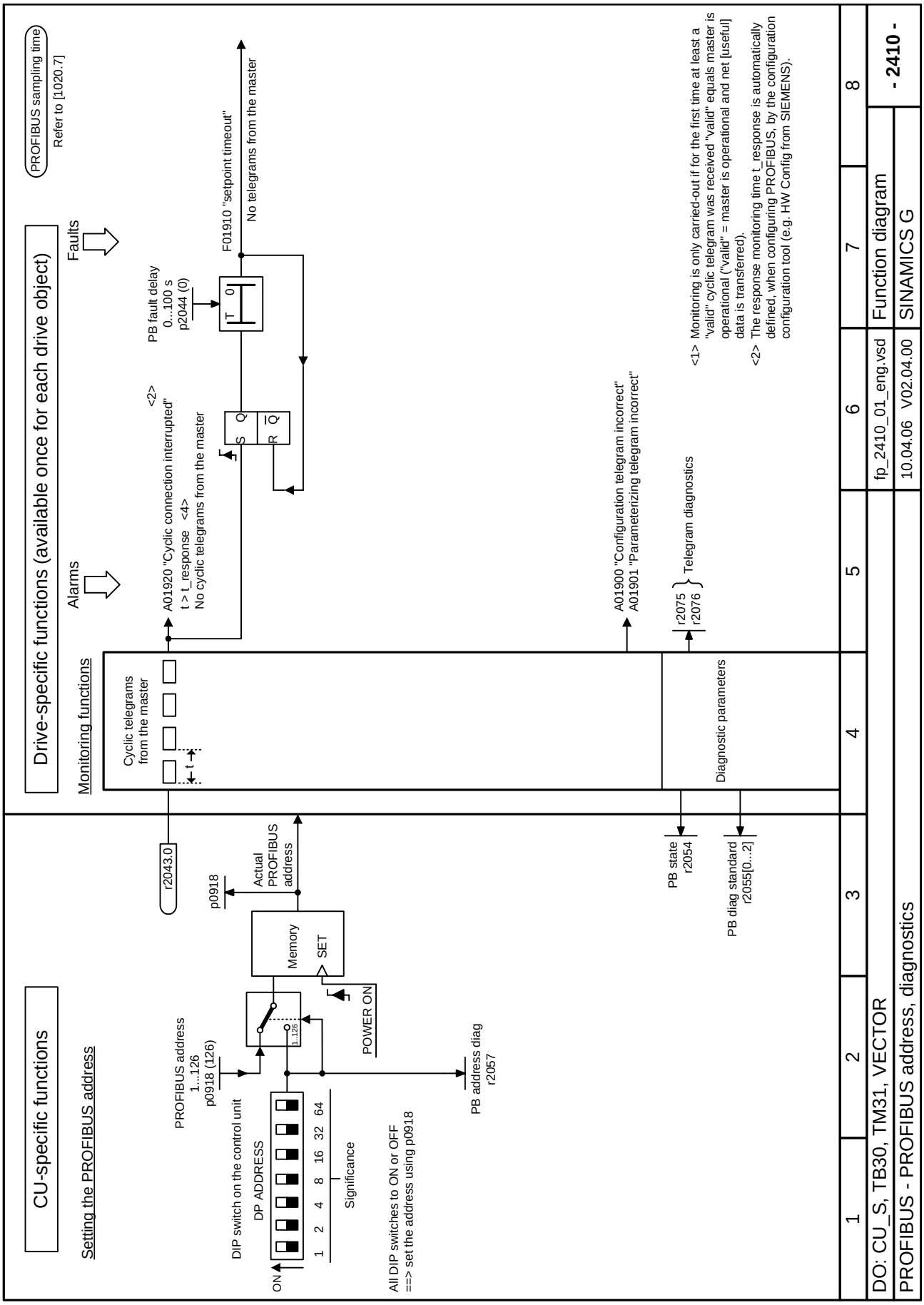

Figure 2-22 2410 – PROFIBUS address, diagnostics

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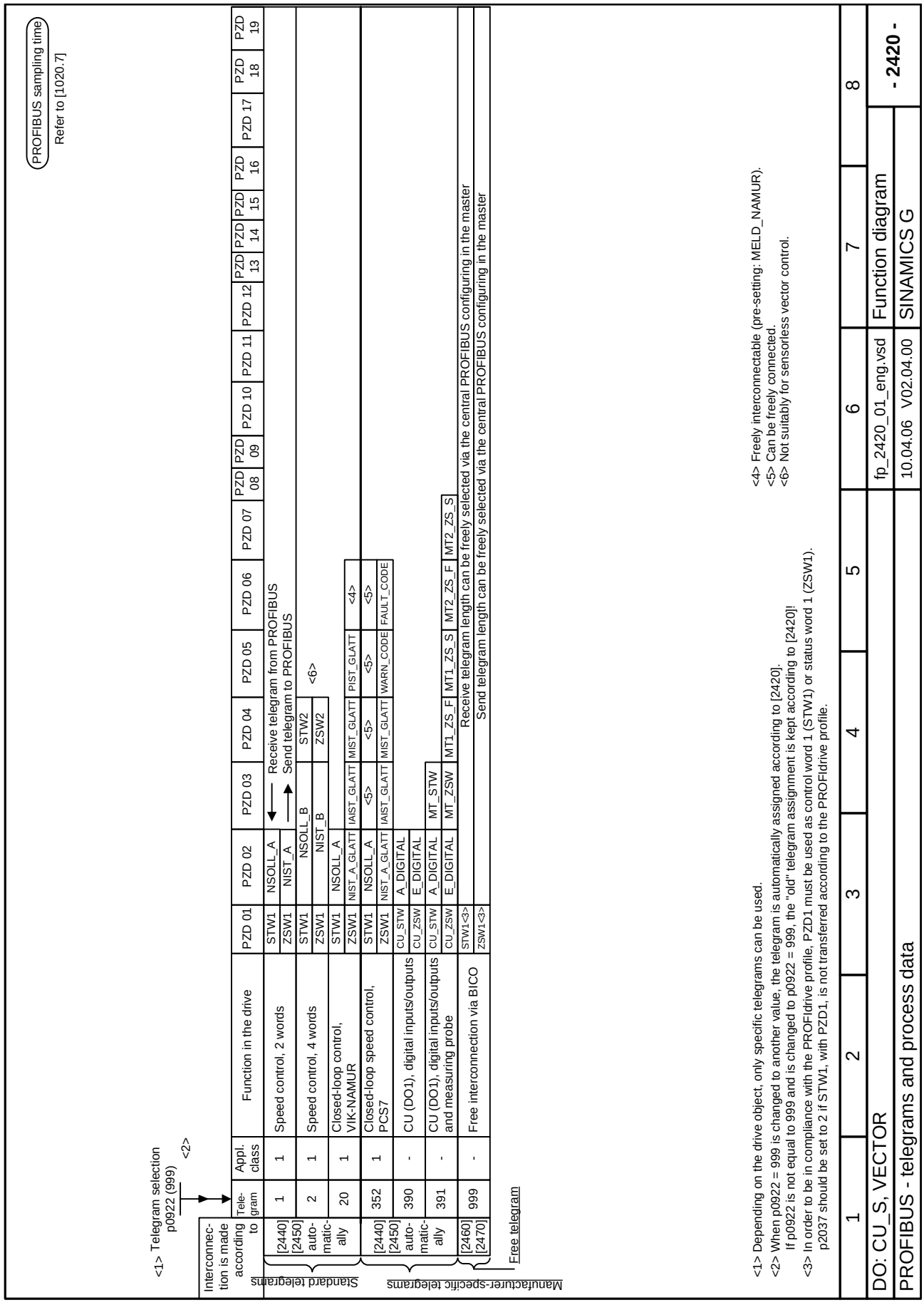

Figure 2-23 2420 – Telegrams and process data

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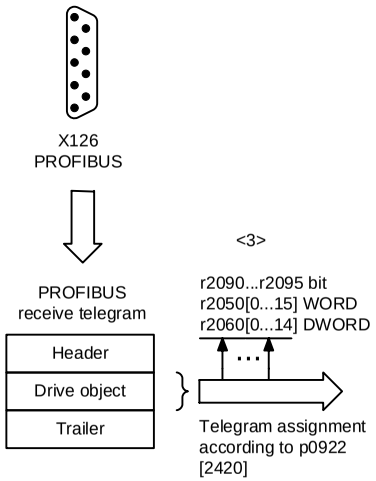
PROFIBUS sampling time
Refer to [1020.7]



Signal receivers for PZD receive signals

Signal	Meaning	PROFIdrive Signal No.	<1> Interconnection parameter	Function diagram	<2> Data type	Normalization
STW1	Control word 1 for telegram 1	1	(bit serial)	[2442]	U16	-
STW2	Control word 2 for telegram 2	3	(bit serial)	[2444]	U16	-
NSOLL_A	Speed setpoint A (16-bit)	5	p1070	[3030.2]	I16	4000 hex ≙ p2000
NSOLL_B	Speed setpoint B (32-bit)	7	p1155	[3080.4]	I32	4000 0000 hex ≙ p2000
A_DIGITAL	Digital outputs	22	(bit serial)	[2449]	U16	
CU_STW	Control Unit control word	500	(bit serial)	[2448]	U16	

<1> When selecting a standard telegram or a manufacturer-specific telegram using p0922, these interconnection parameters of the command data set CDS are automatically set to 0.
<2> Data type according to to the PROFIdrive profile: I16 = Integer16, I32 = Integer32, U16 = Unsigned16, U32 = Unsigned32.
<3> Display parameters for receive data according to [2460].

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2440_01_eng.vsd	Function diagram	- 2440 -
PROFIBUS – PZD receive signals interconnection					10.04.06 V02.04.00	SINAMICS G	

Figure 2-24 2440 – PZD receive signals interconnection

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PROFIBUS sampling time
Refer to [1020.7]

Signal targets for STW1 (Interface Mode PROFIdrive VIK-NAMUR, p2038 = 2) <1>

Signal	Meaning	Interconnection parameters	[Function diagram] internal control word	[Function diagram] signal target	Inverted
STW1.0	1 = ON (pulses can be enabled) **0 = OFF1** (braking with ramp-function generator, then pulse cancllation & ready-to-power-up)	p0840[0] = r2090.0	[2501.3]	[2610]	-
STW1.1	**1 = No OFF2** (enable is possible) 0 = OFF2 (immediate pulse cancellation and power-on inhibit)	p0844[0] = r2090.1	[2501.3]	[2610]	-
STW1.2	**1 = No OFF3** (enable possible) 0 = OFF3 (braking with the OFF3 ramp p1135, then pulse cancellation and power-on inhibit)	p0848[0] = r2090.2	[2501.3]	[2610]	-
STW1.3	**1 = Enable operation** (pulses can be enabled) 0 = Inhibit operation (cancel pulses)	p0852[0] = r2090.3	[2501.3]	[2610]	-
STW1.4	**1 = Operating condition** (the ramp-function generator can be enabled) 0 = Inhibit ramp-function generator (set the ramp-function generator output to zero)	p1140[0] = r2090.4	[2501.3]	[3060] [3070] [3080]	-
STW1.5	**1 = Enable the ramp-function generator** 0 = Stop the ramp-function generator (freeze the ramp-function generator output)	p1141[0] = r2090.5	[2501.3]	[3060] [3070]	-
STW1.6	**1 = Enable setpoint** 0 = Inhibit setpoint (set the ramp-function generator input to zero)	p1142[0] = r2090.6	[2501.3]	[3060] [3070] [3080]	-
STW1.7	**1 = Acknowledge faults**	p2103[0] = r2090.7	[2546.1]	[8060]	-
STW1.8	**Reserved**	-	-	-	-
STW1.9	**Reserved**	-	-	-	-
STW1.10	**1 = Control via PLC** <2>	p0854[0] = r2090.10	[2501.3]	[2501]	-
STW1.11	**1 = Dir of rot reversal**	p1113[0] = r2090.11	[2505.3]	[3040]	-
STW1.12	**Reserved**	-	-	-	-
STW1.13	**Reserved**	-	-	-	-
STW1.14	**Reserved**	-	-	-	-
STW1.15	**1 = CDS selection**	p0810[0] = 2090.15	-	[8565]	-

<1> Used in telegram 20.
<2> Bit 10 must be set in the first PZD word of the telegram received from PROFIBUS in order that the drive accepts the process data.

Figure 2-25 2441 – STW1 control word interconnection (p2038 = 2)

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2441_01_eng.vsd	Function diagram	- 2441 -
PROFIBUS - STW1 control word interconnection (p2038 = 2)					10.04.06 V02.04.00	SINAMICS G	

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PROFIBUS sampling time
Refer to [1020.7]

Signal targets for STW1 (Interface Mode SINAMICS/MICROMASTER, p2038 = 0) <1>

Signal	Meaning	Interconnection parameters	[Function diagram] internal control word	[Function diagram] signal target	Inverted
STW1.0	= ON (pulses can be enabled) **0 = OFF1** (braking with ramp-function generator, then pulse cancellation and ready-to-power-up)	p0840[0] = r2090.0	[2501.3]	[2610]	-
STW1.1	**1 = No OFF2** (enable is possible) 0 = OFF2 (immediate pulse cancellation and power-on inhibit)	p0844[0] = r2090.1	[2501.3]	[2610]	-
STW1.2	**1 = No OFF3** (enable possible) 0 = OFF3 (braking with the OFF3 ramp p1135, then pulse cancellation and power-on inhibit)	p0848[0] = r2090.2	[2501.3]	[2610]	-
STW1.3	**1 = Enable operation** (pulses can be enabled) 0 = Inhibit operation (cancel pulses)	p0852[0] = r2090.3	[2501.3]	[2610]	-
STW1.4	**1 = Operating condition** (the ramp-function generator can be enabled) 0 = inhibit ramp-function generator (set the ramp-function generator output to zero)	p1140[0] = r2090.4	[2501.3]	[3060] [3070] [3080]	-
STW1.5	**1 = Enable the ramp-function generator** 0 = stop the ramp-function generator (freeze the ramp-function generator output)	p1141[0] = r2090.5	[2501.3]	[3060] [3070]	-
STW1.6	**1 = Enable setpoint** 0 = inhibit setpoint (set the ramp-function generator input to zero)	p1142[0] = r2090.6	[2501.3]	[3060] [3070] [3080]	-
STW1.7	**= Acknowledge faults**	p2103[0] = r2090.7	[2546.1]	[8060]	-
STW1.8	**Reserved**	-	-	-	-
STW1.9	**Reserved**	-	-	-	-
STW1.10	**1 = Control via PLC** <2>	p0854[0] = r2090.10	[2501.3]	[2501]	-
STW1.11	**1 = Dir of rot reversal** <3>	p1113[0] = r2090.11	[2505.3]	[3040]	-
STW1.12	**Reserved**	-	-	-	-
STW1.13	**1 = Motorized potentiometer, setpoint, raise** <3>	p1035[0] = r2090.13	[2505.3]	[3020]	-
STW1.14	**1 = Motorized potentiometer, setpoint, lower** <3>	p1036[0] = r2090.14	[2505.3]	[3020]	-
STW1.15	**Reserved**	-	-	-	-

<1> Used in telegram 1, 2, 3, 4, 352.
<2> Bit 10 must be set in the first PZD word of the telegram received from PROFIBUS in order that the drive accepts the process data.
<3> Only for "expanded setpoint channel" and "expanded ramp-function generator"

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2442_01_eng.vsd	Function diagram	- 2442 -
PROFIBUS - STW1 control word interconnection (p2038 = 0)					10.04.06 V02.04.00	SINAMICS G	

Figure 2-26 2442 – STW1 control word interconnection (p2038 = 0)

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PROFIBUS sampling time
Refer to [1020.7]

Signal targets for STW2 (Interface Mode SINAMICS/MICROMASTER, p2038 = 0) <1>

Signal	Meaning	Interconnection parameters	[Function diagram] internal control word	[Function diagram] signal target	Inverted
STW2.0	**Drive data set selection DDS, bit 0**	p0820[0] = r2093.0	-	[8565]	-
STW2.1	**Drive data set selection DDS, bit 1**	p0821[0] = r2093.1	-	[8565]	-
STW2.2	**Drive data set selection DDS, bit 2**	p0822[0] = r2093.2	-	[8565]	-
STW2.3	**Drive data set selection DDS, bit 3**	p0823[0] = r2093.3	-	[8565]	-
STW2.4	**Drive data set selection DDS, bit 4**	p0824[0] = r2093.4	-	[8565]	-
STW2.5	**Reserved**	-	-	-	-
STW2.6	**Reserved**	-	-	-	-
STW2.7	**1 = Parking axis**	p0897 = r2093.7	-	-	-
STW2.8	**Reserved**	-	-	-	-
STW2.9	**Reserved**	-	-	-	-
STW2.10	**Reserved**	-	-	-	-
STW2.11	**1 = Motor changeover, feedback Signal**	p0828 = r2093.11	-	-	-
STW2.12	**Master sign-of-life, bit 0**	p2045 = r2050[3]	-	[2410]	-
STW2.13	**Master sign-of-life, bit 1**	p2045 = r2050[3]	-	[2410]	-
STW2.14	**Master sign-of-life, bit 2**	p2045 = r2050[3]	-	[2410]	-
STW2.15	**Master sign-of-life, bit 3**	p2045 = r2050[3]	-	[2410]	-

<1> Used in telegram 2, 3, 4

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2444_01_eng.vsd	Function diagram	- 2444 -
PROFIBUS - STW2 control word interconnection (p2038 = 0)					10.04.06 V02.04.00	SINAMICS G	

Figure 2-27 2444 – STW2 control word interconnection (p2038 = 0)

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PROFIBUS sampling time
Refer to [1020.7]

Signal targets for CU_STW <1>

Signal	Meaning	Interconnection parameters	[Function diagram] internal control word	[Function diagram] signal target	Inverted
CU_STW.0	**Synchronisation**	p0681[0] = r2090.0	-	-	-
CU_STW.1	**Reserved**	-	-	-	-
CU_STW.2	**Reserved**	-	-	-	-
CU_STW.3	**Reserved**	-	-	-	-
CU_STW.4	**Reserved**	-	-	-	-
CU_STW.5	**Reserved**	-	-	-	-
CU_STW.6	**Reserved**	-	-	-	-
CU_STW.7	**Acknowledge faults**	p2103[0] = r2090.7	-	-	-
CU_STW.8	**Reserved**	-	-	-	-
CU_STW.9	**Reserved**	-	-	-	-
CU_STW.10	**Reserved**	-	-	-	-
CU_STW.11	**Reserved**	-	-	-	-
CU_STW.12	**Master sign-of-life, Bit 0**	p2045[0] =r2050[0]	-	-	-
CU_STW.13	**Master sign-of-life, Bit 1**	p2045[0] =r2050[0]	-	-	-
CU_STW.14	**Master sign-of-life, Bit 2**	p2045[0] =r2050[0]	-	-	-
CU_STW.15	**Master sign-of-life, Bit 3**	p2045[0] =r2050[0]	-	-	-

<1> Used in telegram 390 and 391.

Figure 2-28 2448 – CU_STW control word Control Unit interconnection

1	2	3	4	5	6	7	8
DO: CU_S					fp_2448_01_eng.vsd	Function diagram	- 2448 -
PROFIBUS - CU_STW control word Control Unit interconnection					10.04.06 V02.04.00	SINAMICS G	

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PROFIBUS sampling time
Refer to [1020.7]

Signal targets for A_DIGITAL <1>

Signal	Meaning	Interconnection parameters <3>	[Function diagram] internal status word	[Function diagram] signal target	Inverted
A_DIGITAL.0	**Digital output 8 (DI/DO 8)** <2>	p0738[0] = r2091[0]	-	-	-
A_DIGITAL.1	**Digital output 9 (DI/DO 9)** <2>	p0739[0] = r2091[1]	-	-	-
A_DIGITAL.2	**Digital output 10 (DI/DO 10)** <2>	p0740[0] = r2091[2]	-	-	-
A_DIGITAL.3	**Digital output 11 (DI/DO 11)** <2>	p0741[0] = r2091[3]	-	-	-
A_DIGITAL.4	**Digital output 12 (DI/DO 12)** <2>	p0742[0] = r2091[4]	-	-	-
A_DIGITAL.5	**Digital output 13 (DI/DO 13)** <2>	p0743[0] = r2091[5]	-	-	-
A_DIGITAL.6	**Digital output 14 (DI/DO 14)** <2>	p0744[0] = r2091[6]	-	-	-
A_DIGITAL.7	**Digital output 15 (DI/DO 15)** <2>	p0745[0] = r2091[7]	-	-	-
A_DIGITAL.8	**Reserved**	-	-	-	-
A_DIGITAL.9	**Reserved**	-	-	-	-
A_DIGITAL.10	**Reserved**	-	-	-	-
A_DIGITAL.11	**Reserved**	-	-	-	-
A_DIGITAL.12	**Reserved**	-	-	-	-
A_DIGITAL.13	**Reserved**	-	-	-	-
A_DIGITAL.14	**Reserved**	-	-	-	-
A_DIGITAL.15	**Reserved**	-	-	-	-

<1> Used in telegram 390 and 391.
<2> Can be set via p0728 as input (DI) or output (DO).
<3> Pre-assignment, can be freely changed.

1	2	3	4	5	6	7	8
DO: CU_S					fp_2449_01_eng.vsd	Function diagram	- 2449 -
PROFIBUS - A_DIGITAL interconnection					10.04.06 V02.04.00	SINAMICS G	

Figure 2-29 2449 – A_DIGITAL interconnection

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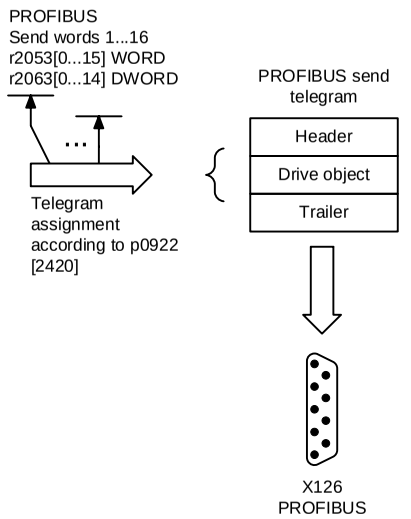
PROFIBUS sampling time
Refer to [1020.7]

Signal sources for PZD send signals

<1>

Signal	Description	PROFIdrive Signal No.	Interconnection parameter	Function diagram	Data type	Normalization
ZSW1	Status word 1	2	r2089[0]	[2452]	U16	-
ZSW2	Status word 2	4	r2089[1]	[2454]	U16	-
NIST_A	Speed setpoint A (16 bit)	6	r0063[0]	[4715]	I16	4000 hex≙ p2000
NIST_B	Speed setpoint B (32 bit)	8	r0063	-	I32	4000 0000 hex ≙ p2000
E_DIGITAL	Digital inputs	21	r2089[2]	[2459]	U16	
IAIST_GLATT	Absolute actual current, smoothed	51	r0068[1]	[6714]	I16	4000 hex≙ p2002
ITACT_SMOOTH	Current actual value, torque-generating	52	r0078[1]	[6714]	I16	4000 hex≙ p2002
MIST_GLATT	Actual torque smoothed	53	r0080[1]	[6714]	I16	4000 hex≙ p2003
PIST_GLATT	Power factor, smoothed	54	r0082[1]	[6714]	I16	4000 hex≙ p2004
NIST_A_GLATT	Actual speed, smoothed	57	r0063[1]	[4715]	I16	4000 hex≙ p2000
MELD_NAMUR	VIK-NAMUR message bit bar	58	r3113	-	U16	
MELDW	Message word	102	r2089[2]	[2456]	U16	
MSET_SMOOTH	Total speed setpoint	120	r0079[1]	-	I16	4000 hex≙ p2003
AACT_SMOOTH	Torque utilization	121	r0081	[8012]	I16	4000 hex≙ 100%
FAULT_CODE	Fault code	301	r2131	[8060]	U16	
WARN_CODE	Alarm code	303	r2132	[8065]	U16	
CU_ZSW	Control Unit status word	501	r2089[1]	[2458]	U16	



<1> Data type according to the PROFIdrive profile: I16 = Integer16, I32 = Integer32, U16 = Unsigned16, U32 = Unsigned32

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2450_01_eng.vsd	Function diagram	- 2450 -
PROFIBUS – PZD send signals interconnection					10.04.06 V02.04.00	SINAMICS G	

Figure 2-30 2450 – PZD send signals interconnection

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PROFIBUS sampling time
Refer to [1020.7]

Signal sources for ZSW1 (Interface Mode PROFIdrive VIK-NAMUR, p2038 = 2) <1>

Signal	Meaning	Interconnection parameters	[Function diagram] Internal status word	[Function diagram] Signal source	Inverted <2>
ZSW1.0	**1 = Ready to power-up**	p2080[0] = r0899.0	[2503.7]	[2610]	-
ZSW1.1	**1 = Ready to operate** (DC link loaded, pulses blocked)	p2080[1] = r0899.1	[2503.7]	[2610]	-
ZSW1.2	**1 = Operation enabled** (drive follows n_set)	p2080[2] = r0899.2	[2503.7]	[2610]	-
ZSW1.3	**1 = Fault present**	p2080[3] = r2139.3	[2548.7]	[8060]	-
ZSW1.4	**1 = No coast down active (OFF2 inactive)**	p2080[4] = r0899.4	[2503.7]	[2610]	-
ZSW1.5	**1 = No fast stop active (OFF3 inactive)**	p2080[5] = r0899.5	[2503.7]	[2610]	-
ZSW1.6	**1 = Power-on inhibit active**	p2080[6] = r0899.6	[2503.7]	[2610]	-
ZSW1.7	**1 = Alarm present**	p2080[7] = r2139.7	[2548.7]	[8065]	-
ZSW1.8	**1 = Speed setpoint - actual value deviation within tolerance t_off**	p2080[8] = r2197.7	[2534.7]	[8010]	-
ZSW1.9	**1 = Control requested** <3>	p2080[9] = r0899.9	[2503.7]	[2503]	-
ZSW1.10	**1 = f or n comparison value reached/exceeded**	p2080[10] = r2199.1	[2536.7]	[8010]	-
ZSW1.11	**1 = I, M, or P limit not reached**	p2080[11] = r0056.13	[2522.7]	[6060]	✔
ZSW1.12	**Reserved**	-	-	-	-
ZSW1.13	**1 = No motor overtemperature alarm**	p2080[13] = r2135.14	[2548.7]	[8016]	✔
ZSW1.14	**1 = Motor rotates forwards (n_act ≥ 0)** **0 = Motor rotates backwards (n_act < 0)**	p2080[14] = r2197.3	[2534.7]	[8010]	-
ZSW1.15	**1 = Display CDS**	p2080[15] = r0836.0	-	-	-

<1> Used in telegram 20.
<2> The status word is generated using the binector-connector converter p2088[0].
<3> The master system requests the process data.

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2451_01_eng.vsd	Function diagram	- 2451 -
PROFIBUS - ZSW1 status word interconnection (p2038 = 2)					10.04.06 V02.04.00	SINAMICS G	

Figure 2-31 2451 – ZSW1 status word interconnection (p2038 = 2)

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PROFIBUS sampling time
Refer to [1020.7]

Signal sources for ZSW1 (Interface Mode SINAMICS/MICROMASTER, p2038 = 0) <1>

Signal	Meaning	Interconnection parameters	[Function diagram] Internal status word	[Function diagram] signal source	Inverted <2>
ZSW1.0	**1 = Ready to power-up**	p2080[0] = r0899.0	[2503.7]	[2610]	-
ZSW1.1	**1 = Ready to operate** (DC link loaded, pulses blocked)	p2080[1] = r0899.1	[2503.7]	[2610]	-
ZSW1.2	**1 = Operation enabled** (drive follows n_set)	p2080[2] = r0899.2	[2503.7]	[2610]	-
ZSW1.3	**1 = Fault present**	p2080[3] = r2139.3	[2548.7]	[8060]	-
ZSW1.4	**1 = No coast down active (OFF2 inactive)**	p2080[4] = r0899.4	[2503.7]	[2610]	-
ZSW1.5	**1 = No fast stop active (OFF3 inactive)**	p2080[5] = r0899.5	[2503.7]	[2610]	-
ZSW1.6	**1 = Power-on inhibit active**	p2080[6] = r0899.6	[2503.7]	[2610]	-
ZSW1.7	**1 = Alarm present**	p2080[7] = r2139.7	[2548.7]	[8065]	-
ZSW1.8	**1 = Speed setpoint - actual value deviation within tolerance t_off**	p2080[8] = r2197.7	[2534.7]	[8010]	-
ZSW1.9	**1 = Control requested** <3>	p2080[9] = r0899.9	[2503.7]	[2503]	-
ZSW1.10	**1 = f or n comparison value reached/exceeded**	p2080[10] = r2199.1	[2536.7]	[8010]	-
ZSW1.11	**1 = I, M, or P limit not reached** <4>	p2080[11] = r1407.7	[2522.7]	[6060]	✔
ZSW1.12	**1 = Open holding brake**	p2080[12] = r0899.12	[2503.7]	[2701]	-
ZSW1.13	**1 = No motor overtemperature alarm**	p2080[13] = r2135.14	[2548.7]	[8016]	✔
ZSW1.14	**1 = Motor rotates forwards (n_act 0)** **0 = Motor rotates backwards (n_act < 0)**	p2080[14] = r2197.3	[2534.7]	[8010]	-
ZSW1.15	**1 = No alarm, thermal overload, power unit**	p2080[15] = r2135.15	[2548.7]	[8014]	✔

<1> Used in telegram 1, 2, 3, 4, 352.
<2> The status word is generated using the binector-connector converter p2088[0].
<3> The master system requests the process data.
<4> Not for Vector V/f.

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2452_01_eng.vsd	Function diagram	- 2452 -
PROFIBUS - ZSW1 status word interconnection (p2038 = 0)					10.04.06 V02.04.00	SINAMICS G	

Figure 2-32 2452 – ZSW1 status word interconnection (p2038 = 0)

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PROFIBUS sampling time
Refer to [1020.7]

Signal sources for ZSW2 (Interface Mode SINAMICS/MICROMASTER, p2038 = 0) <1>

	Signal	Meaning	Interconnection parameters	[Function diagram] internal status word	[Function diagram] signal source	Inverted
	ZSW2.0	**1 = Drive data set DDS effective, bit 0**	p2081[0] = r0051.0	-	[8565]	-
	ZSW2.1	**1 = Drive data set DDS effective, bit 1**	p2081[1] = r0051.1	-	[8565]	-
	ZSW2.2	**1 = Drive data set DDS effective, bit 2**	p2081[2] = r0051.2	-	[8565]	-
	ZSW2.3	**1 = Drive data set DDS effective, bit 3**	p2081[3] = r0051.3	-	[8565]	-
	ZSW2.4	**1 = Drive data set DDS effective, bit 4**	p2081[4] = r0051.4	-	[8565]	-
	ZSW2.5	**Reserved**	-	-	-	-
	ZSW2.6	**Reserved**	-	-	-	-
	ZSW2.7	**1 = Parking axis active**	p2081[7] = r0896.0	-	-	-
	ZSW2.8	**Reserved**	-	-	-	-
	ZSW2.9	**Reserved**	-	-	-	-
	ZSW2.10	**Reserved**	-	-	-	-
	ZSW2.11	**1 = Data set changeover active**	p2081[11] = r0835.0	-	-	-
<2>	ZSW2.12	**Slave sign-of-life bit 0**	Implicitly interconnected	-	-	-
<2>	ZSW2.13	**Slave sign-of-life bit 1**	Implicitly interconnected	-	-	-
<2>	ZSW2.14	**Slave sign-of-life bit 2**	Implicitly interconnected	-	-	-
<2>	ZSW2.15	**Slave sign-of-life bit 3**	Implicitly interconnected	-	-	-

<1> Used in telegrams 2, 3, 4.
<2> These signals are automatically interconnected for clock-cycle synchronous operation.

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2454_01_eng.vsd	Function diagram	- 2454 -
PROFIBUS - ZSW2 status word interconnection (p2038 = 0)					10.04.06 V02.04.00	SINAMICS G	

Figure 2-33 2454 – ZSW2 status word interconnection (p2038 = 0)

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PROFIBUS sampling time
Refer to [1020.7]

Signal sources for MELDW

Signal	Meaning	Interconnection parameters	[Function diagram] Internal status word	[Function diagram] signal source	Inverted <1>
MELDW.0	**1 = Ramp-up/ramp-down completed 0 = Ramp-function generator active**	p2082[0] = r2199.5	[2537.7]	[8010]	-
MELDW.1	**1 = Torque utilization [%] < torque threshold value 2 (p2194)**	p2082[1] = r2199.11	[2537.7]	[8012]	-
MELDW.2	**1 = |n_act| < speed threshold value 3 (p2161)**	p2082[2] = r2199.0	[2537.7]	[8010]	-
MELDW.3	**1 = |n_act| speed threshold value 2 (p2155)**	p2082[3] = r2197.1	[2534.7]	[8010]	-
MELDW.4	**Reserved**	-	-	-	-
MELDW.5	**Reserved**	-	-	-	-
MELDW.6	**1 = No motor overtemperature alarm**	p2082[6] = r2135.14	[2548.7]	[8016]	✔
MELDW.7	**1 = No alarm, thermal overload, power unit**	p2082[7] = r2135.15	[2548.7]	[8014]	✔
MELDW.8	**1 = Speed setpoint - actual value deviation within tolerance t_on**	p2082[8] = r2199.4	[2537.7]	[8010]	-
MELDW.9	**Reserved**	-	-	-	-
MELDW.10	**Reserved**	-	-	-	-
MELDW.11	**1 = Controller enable**	p2082[11] = r0899.8	[2503.7]	[2610]	-
MELDW.12	**1 = Drive ready**	p2082[12] = r0899.7	[2503.7]	[2610]	-
MELDW.13	**1 = Pulses enabled**	p2082[13] = r0899.11	[2503.7]	[2610]	-
MELDW.14	**Reserved**	-	-	-	-
MELDW.15	**Reserved**	-	-	-	-

<1> The status word is generated using the binector-connector converter p2088[2].

1	2	3	4	5	6	7	8
DO: VECTOR					fp_2456_01_eng.vsd	Function diagram	- 2456 -
PROFIBUS - MELDW status word interconnection					10.04.06 V02.04.00	SINAMICS G	

Figure 2-34 2456 – MELDW status word interconnection

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PROFIBUS sampling time
Refer to [1020.7]

Signal sources for CU_ZSW <1>

Signal	Meaning	Interconnection parameters	[Function diagram] Internal status word	[Function diagram] signal source	Inverted
CU_ZSW.0	**Reserved**	-	-	-	-
CU_ZSW.1	**Reserved**	-	-	-	-
CU_ZSW.2	**Reserved**	-	-	-	-
CU_ZSW.3	**Fault present**	p2081[3] = r2139.3	-	-	-
CU_ZSW.4	**Reserved**	-	-	-	-
CU_ZSW.5	**Reserved**	-	-	-	-
CU_ZSW.6	**Reserved**	-	-	-	-
CU_ZSW.7	**Alarm present**	p2081[7] = r2139.7	-	-	-
CU_ZSW.8	**Synchronisation (SYNC)**	p2081[8] = r0899.8	-	-	-
CU_ZSW.9	**Reserved**	-	-	-	-
CU_ZSW.10	**Reserved**	-	-	-	-
CU_ZSW.11	**Reserved**	-	-	-	-
CU_ZSW.12	**Slave-Sign-of-life Bit 0**	Implicitly interconnected	-	-	-
CU_ZSW.13	**Slave-Sign-of-life Bit 1**	Implicitly interconnected	-	-	-
CU_ZSW.14	**Slave-Sign-of-life Bit 2**	Implicitly interconnected	-	-	-
CU_ZSW.15	**Slave-Sign-of-life Bit 3**	Implicitly interconnected	-	-	-

<1> Used in telegram 390 and 391.

1	2	3	4	5	6	7	8
DO: CU_S					fp_2458_01_eng.vsd	Function diagram	- 2458 -
PROFIBUS - CU_ZSW status word Control Unit interconnection					10.04.06 V02.04.00	SINAMICS G	

Figure 2-35 2458 – CU_ZSW status word Control Unit interconnection

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PROFIBUS sampling time
Refer to [1020.7]

Signal targets for E_DIGITAL <1>

Signal	Meaning		Interconnection parameters <3>	[Function diagram] Internal status word	[Function diagram] signal target	Inverted
E_DIGITAL.0	**Digital input 8 (DI/DO 8)**	<2>	p2082[0] = r0722[8]	-	-	-
E_DIGITAL.1	**Digital input 9 (DI/DO 9)**	<2>	p2082[1] = r0722[9]	-	-	-
E_DIGITAL.2	**Digital input 10 (DI/DO 10)**	<2>	p2082[2] = r0722[10]	-	-	-
E_DIGITAL.3	**Digital input 11 (DI/DO 11)**	<2>	p2082[3] = r0722[11]	-	-	-
E_DIGITAL.4	**Digital input 12 (DI/DO 12)**	<2>	p2082[4] = r0722[12]	-	-	-
E_DIGITAL.5	**Digital input 13 (DI/DO 13)**	<2>	p2082[5] = r0722[13]	-	-	-
E_DIGITAL.6	**Digital input 14 (DI/DO 14)**	<2>	p2082[6] = r0722[14]	-	-	-
E_DIGITAL.7	**Digital input 15 (DI/DO 15)**	<2>	p2082[7] = r0722[15]	-	-	-
E_DIGITAL.8	**Digital input 0 (DI 0)**		p2082[8] = r0722[0]	-	-	-
E_DIGITAL.9	**Digital input 1 (DI 1)**		p2082[9] = r0722[1]	-	-	-
E_DIGITAL.10	**Digital input 2 (DI 2)**		p2082[10] = r0722[2]	-	-	-
E_DIGITAL.11	**Digital input 3 (DI 3)**		p2082[11] = r0722[3]	-	-	-
E_DIGITAL.12	**Digital input 4 (DI 4)**		p2082[12] = r0722[4]	-	-	-
E_DIGITAL.13	**Digital input 5 (DI 5)**		p2082[13] = r0722[5]	-	-	-
E_DIGITAL.14	**Digital input 6 (DI 6)**		p2082[14] = r0722[6]	-	-	-
E_DIGITAL.15	**Digital input 7 (DI 7)**		p2082[15] = r0722[7]	-	-	-

<1> Used in telegram 390 and 391.
<2> Can be set via p0728 as input (DI) or output (DO).
<3> Pre-assignment, can be freely changed.

1	2	3	4	5	6	7	8
DO: CU_S					fp_2459_01_eng.vsd	Function diagram	- 2459 -
PROFIBUS - E_DIGITAL interconnection					10.04.06 V02.04.00	SINAMICS G	

Figure 2-36 2459 – E_DIGITAL interconnection

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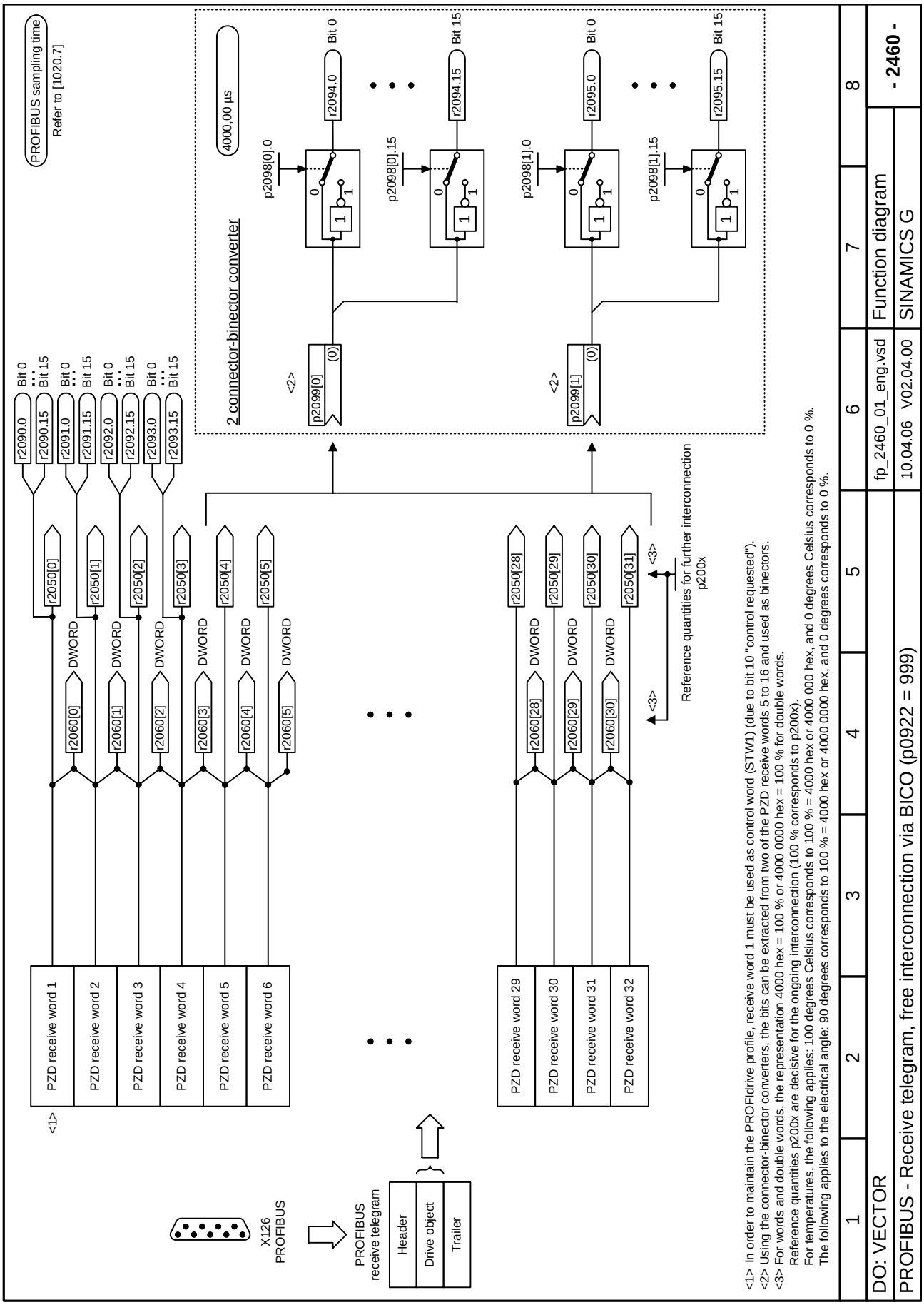

Figure 2-37 2460 – Receive telegram, free interconnection via BICO (p0922 = 999)

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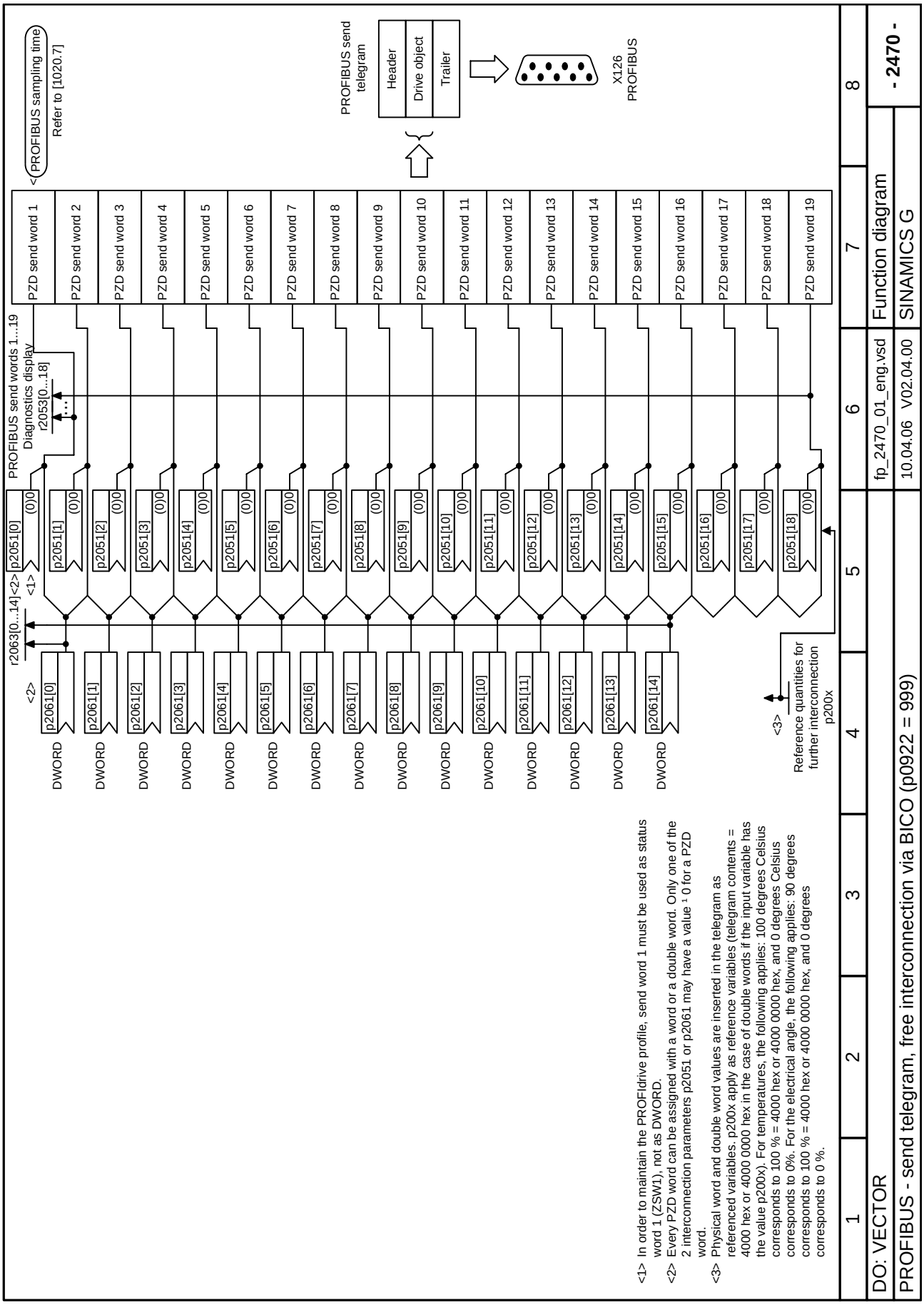

Figure 2-38 2470 – Send telegram, free interconnection via BICO (p0922 = 999)

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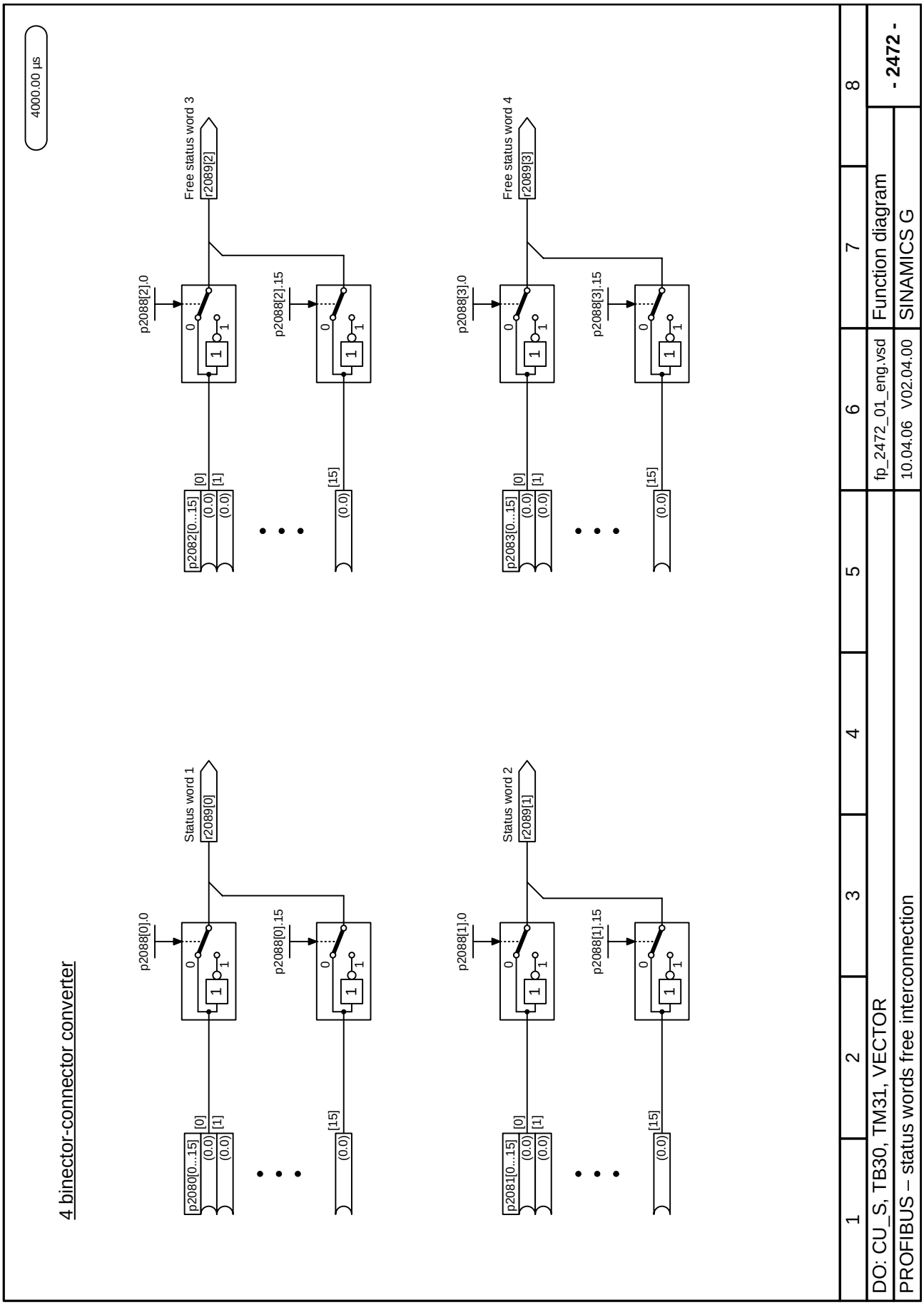

Figure 2-39 2472 – Status words, free interconnection

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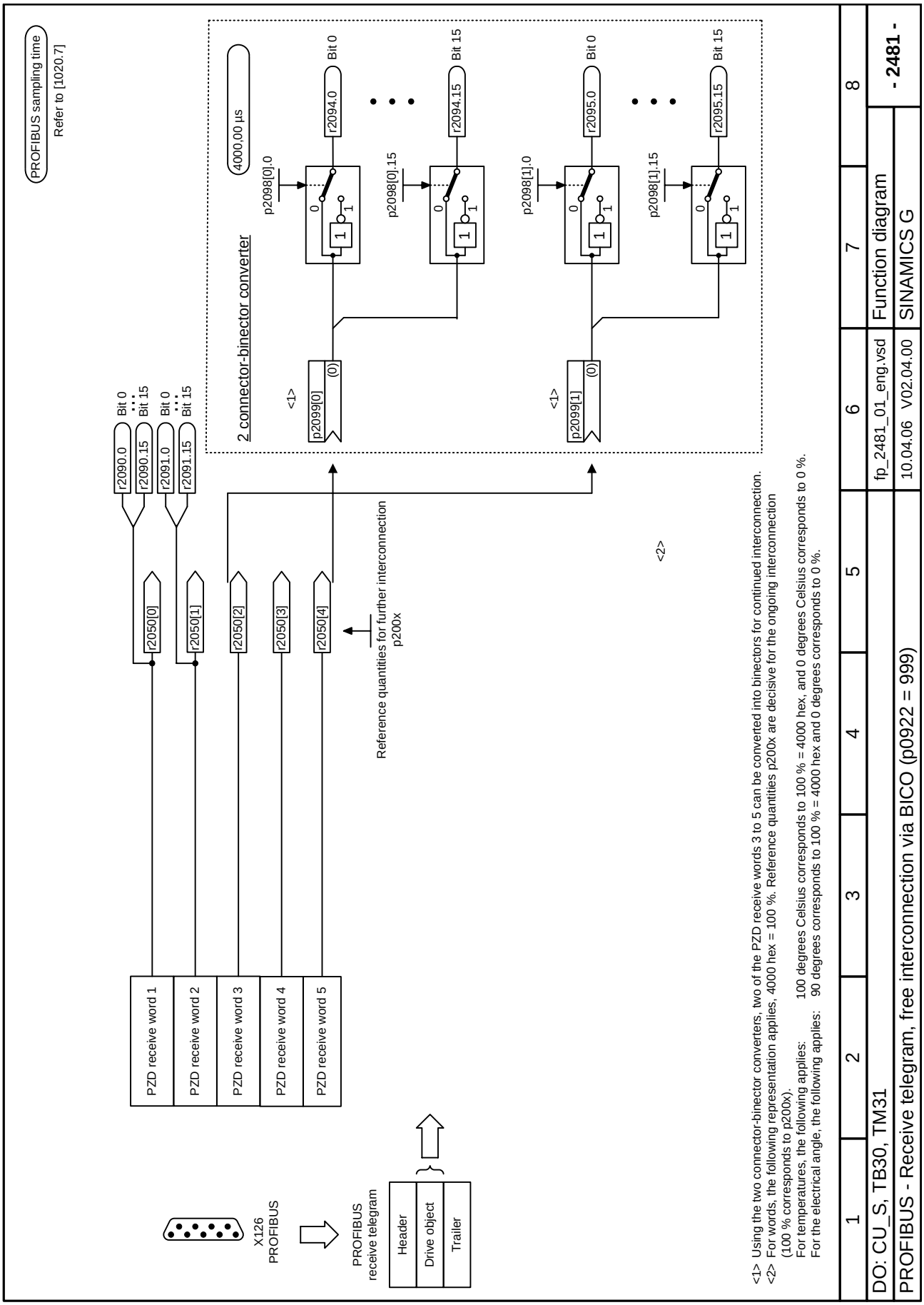

Figure 2-40 2481 – Receive telegram, free interconnection via BICO (p0922 = 999)

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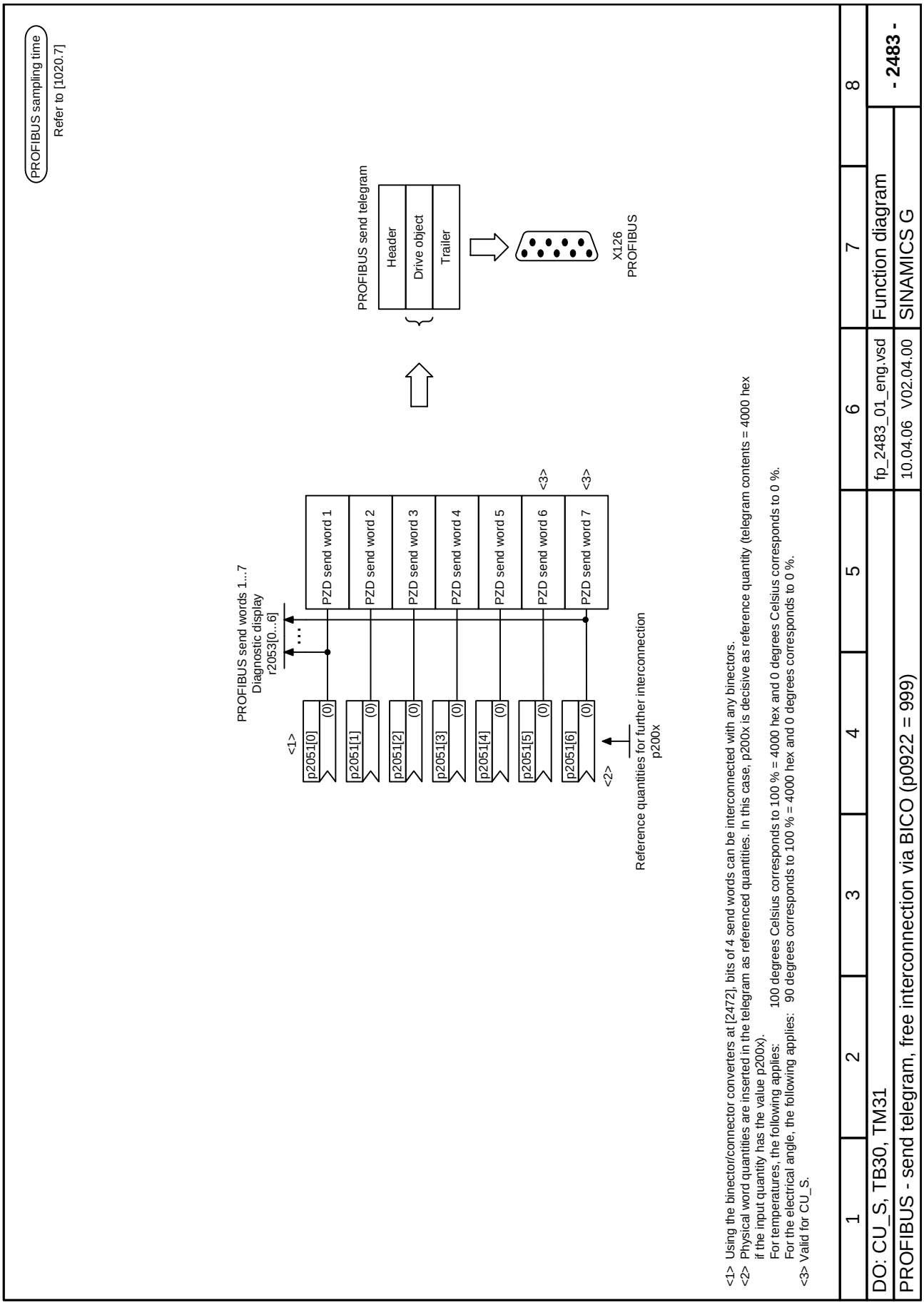

Figure 2-41 2483 – Send telegram, free interconnection via BICO (p0922 = 999)

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2.6 Internal control/status words

Function diagrams

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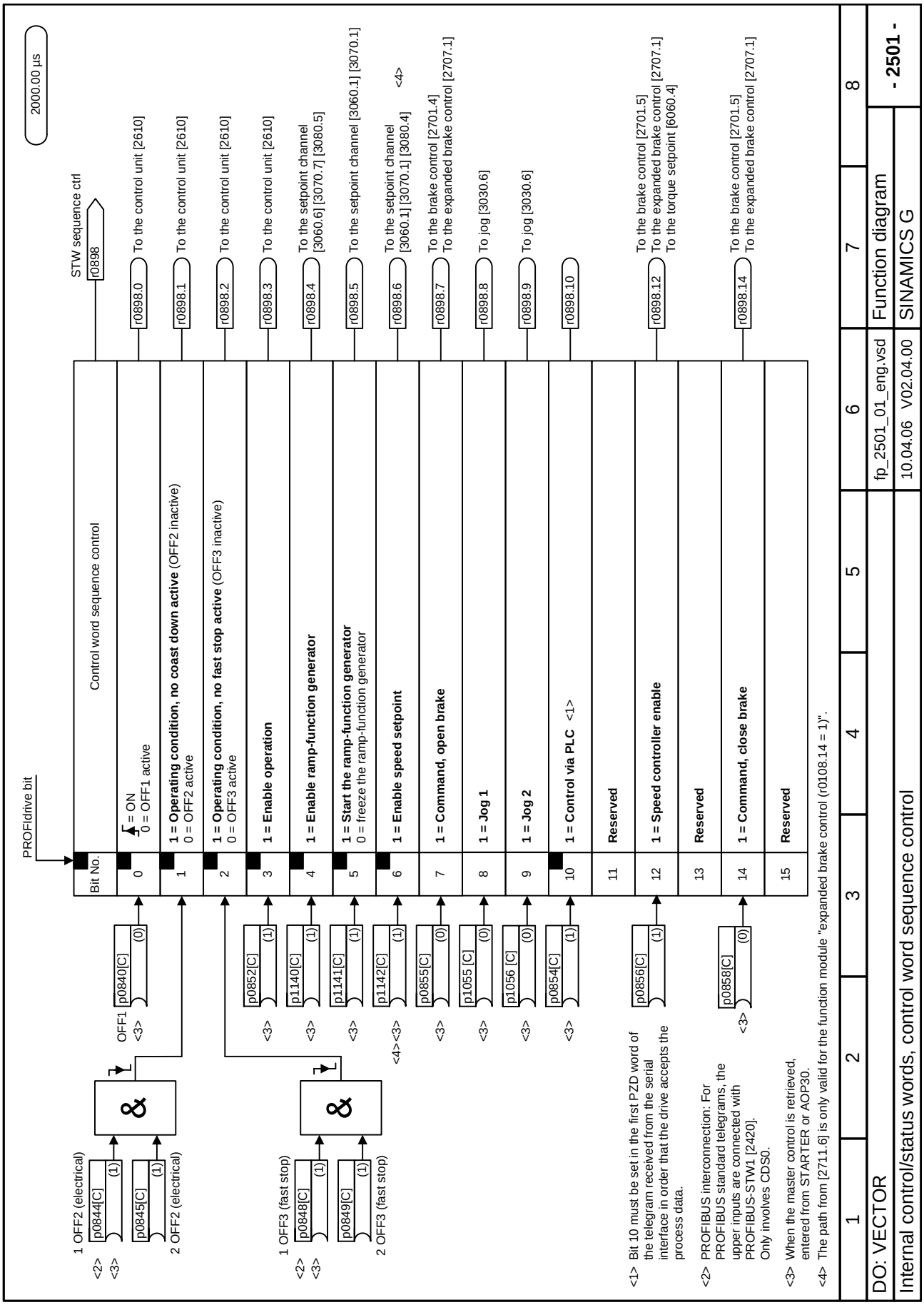

Figure 2-42 2501 – Control word sequence control

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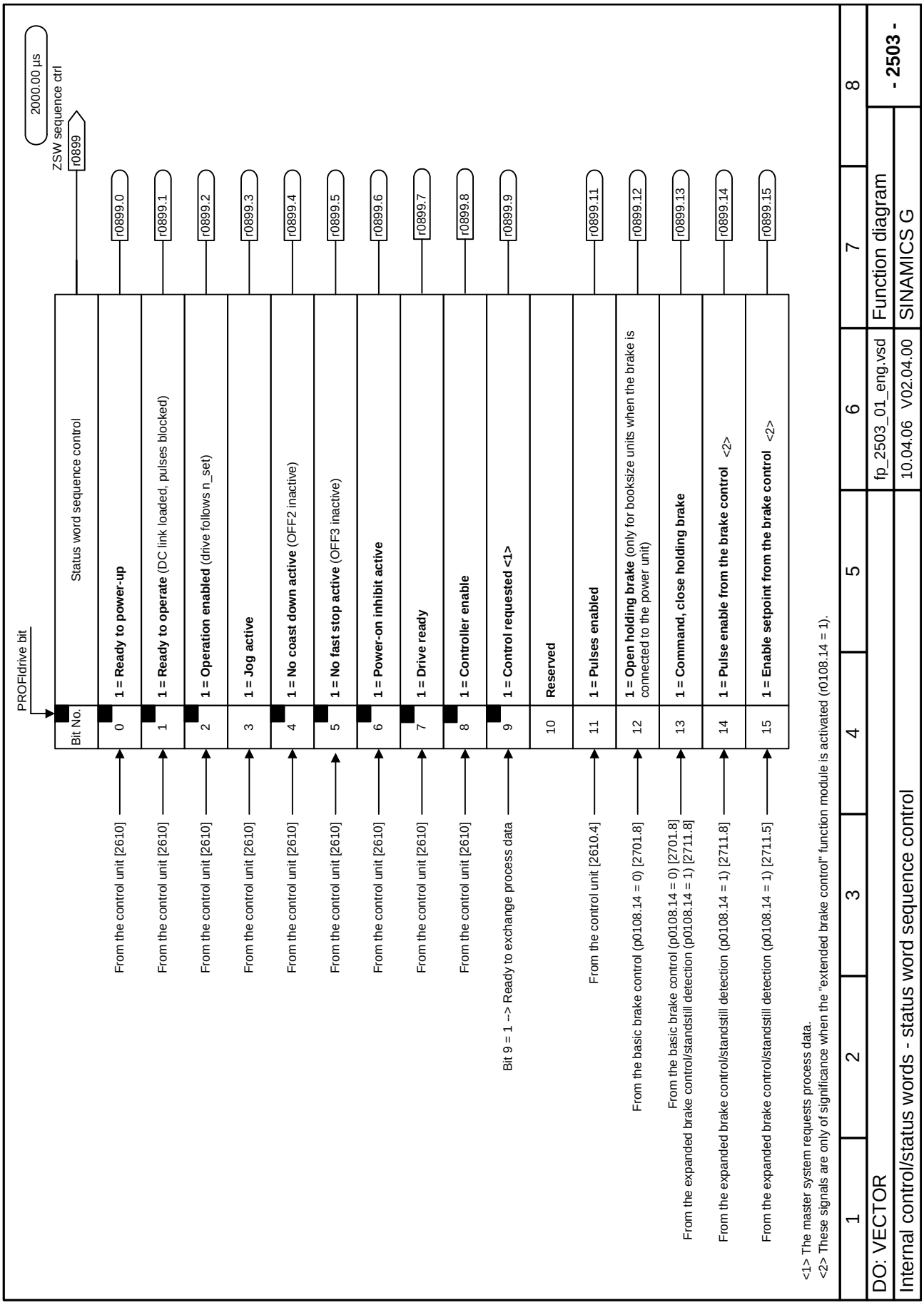

Figure 2-43 2503 – Status word sequence control

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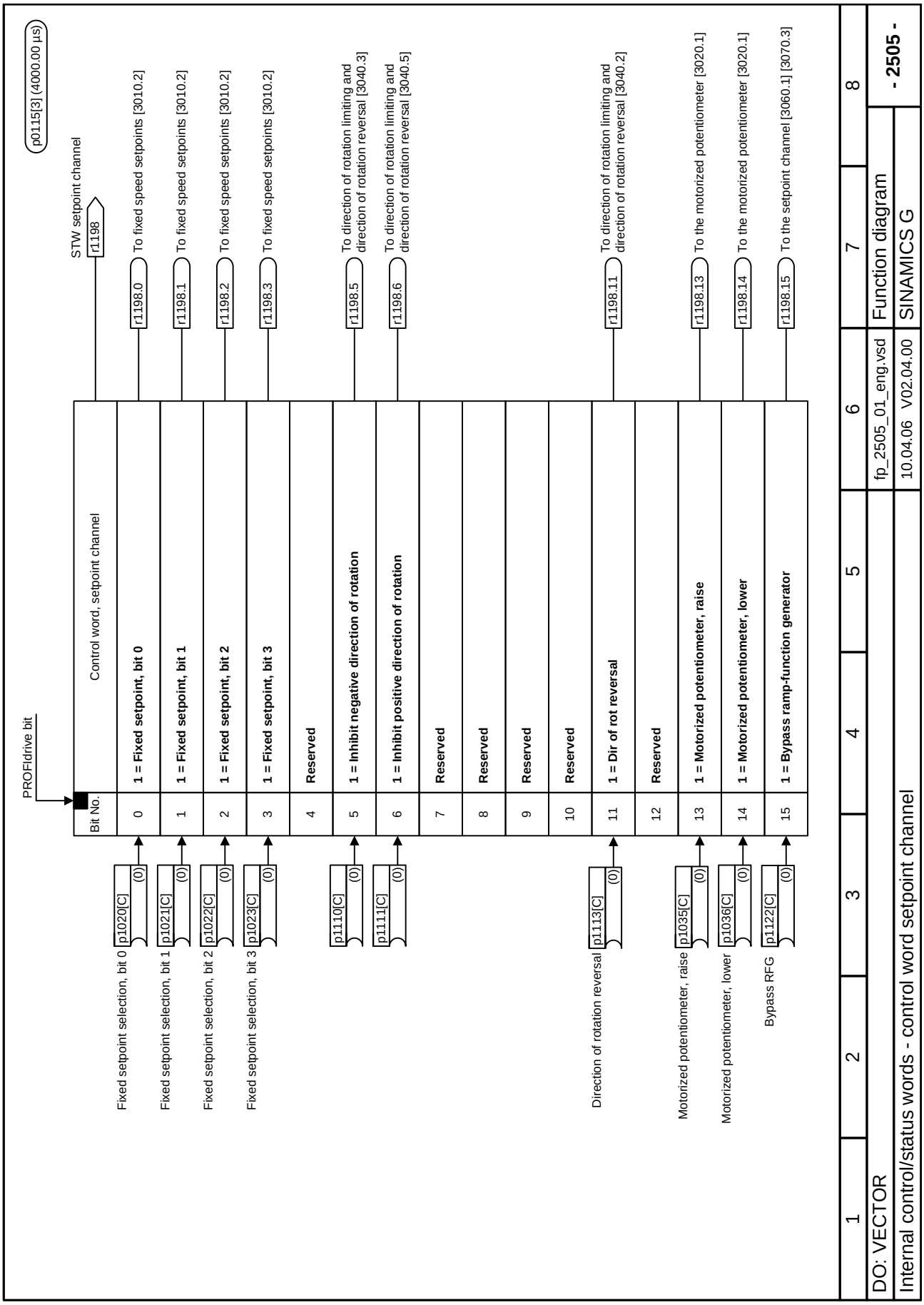

Figure 2-44 2505 – Control word setpoint channel

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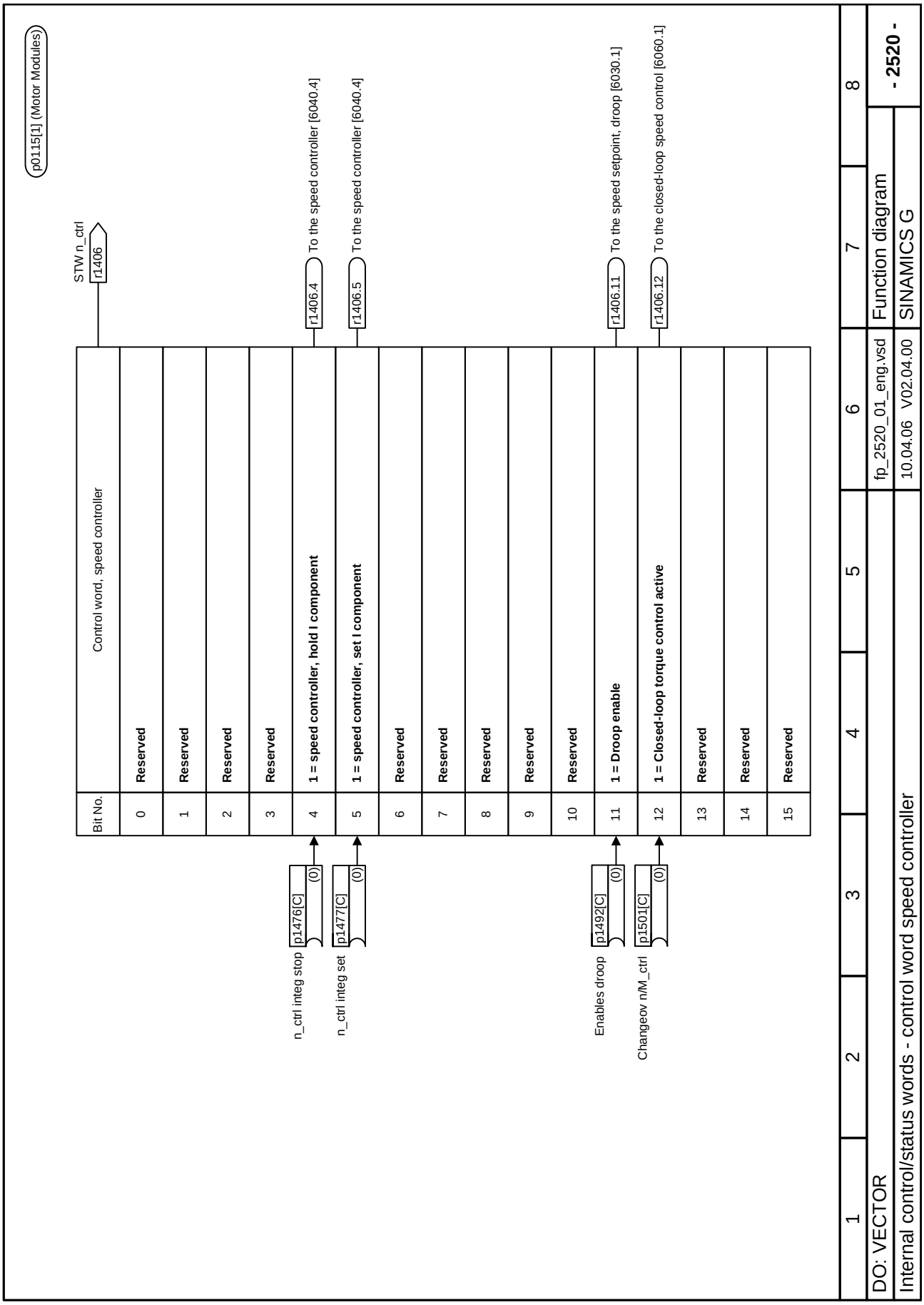

Figure 2-45 2520 – Control word speed controller

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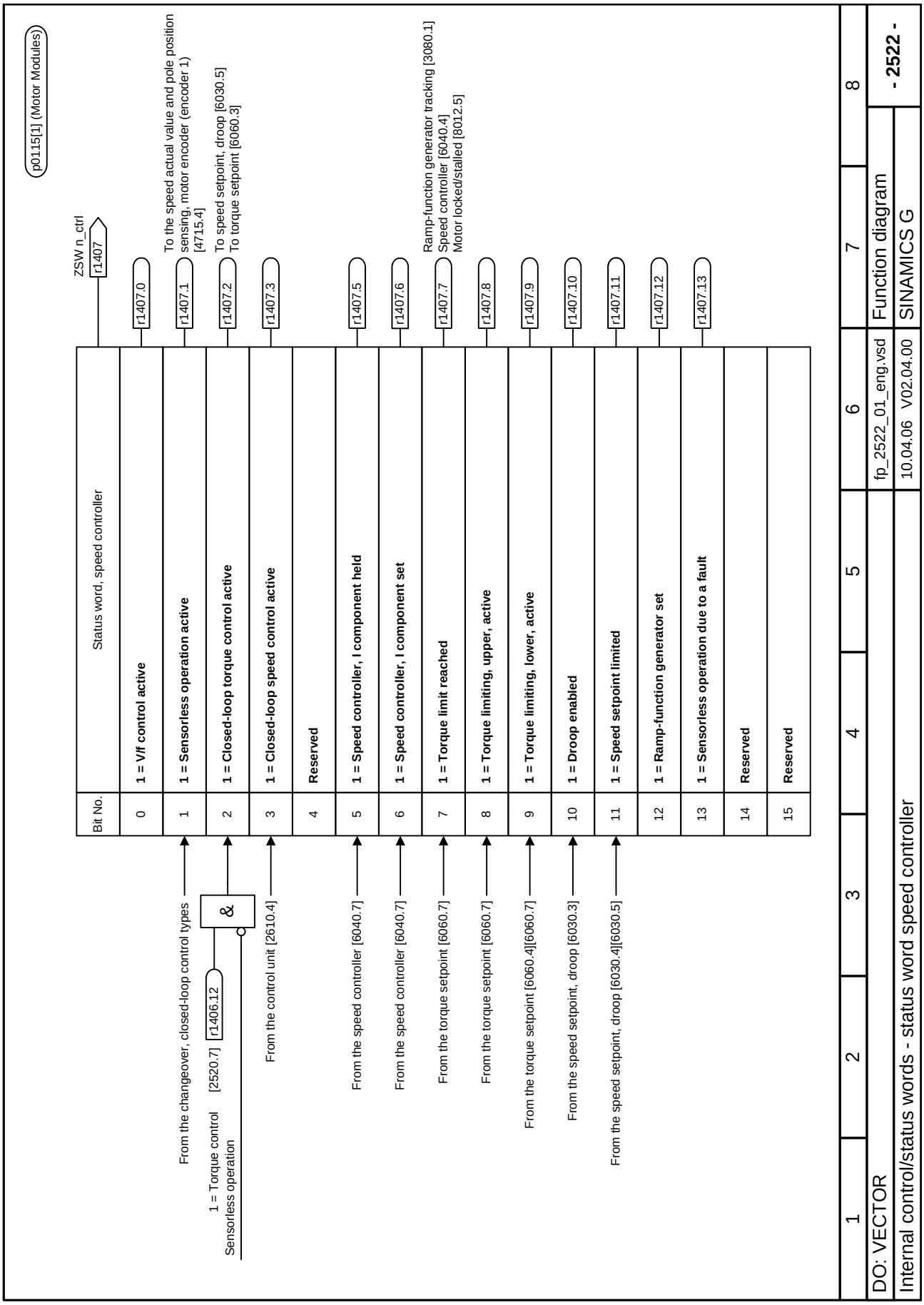

Figure 2-46 2522 – Status word speed controller

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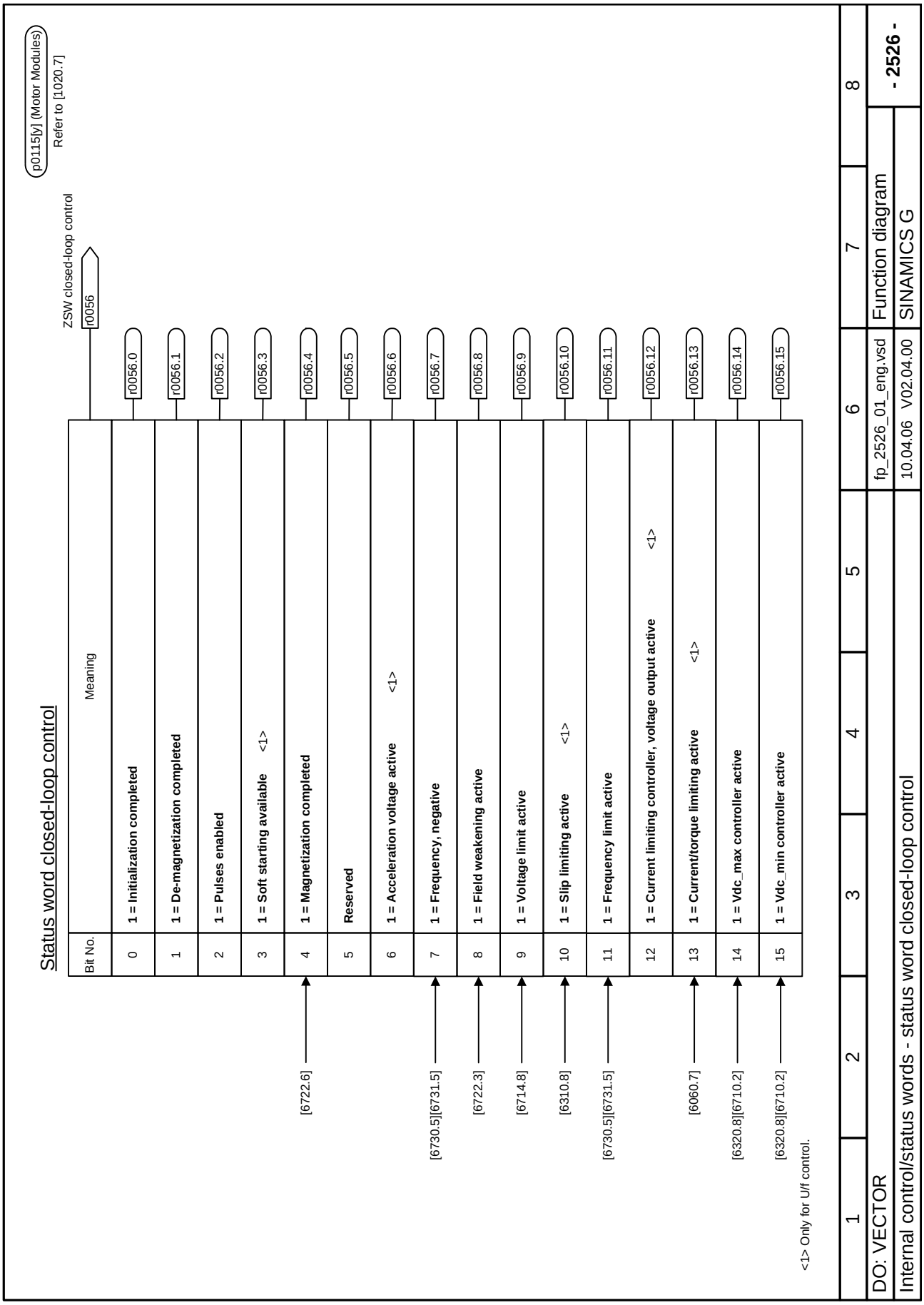

Figure 2-47 2526 – Status word closed-loop control

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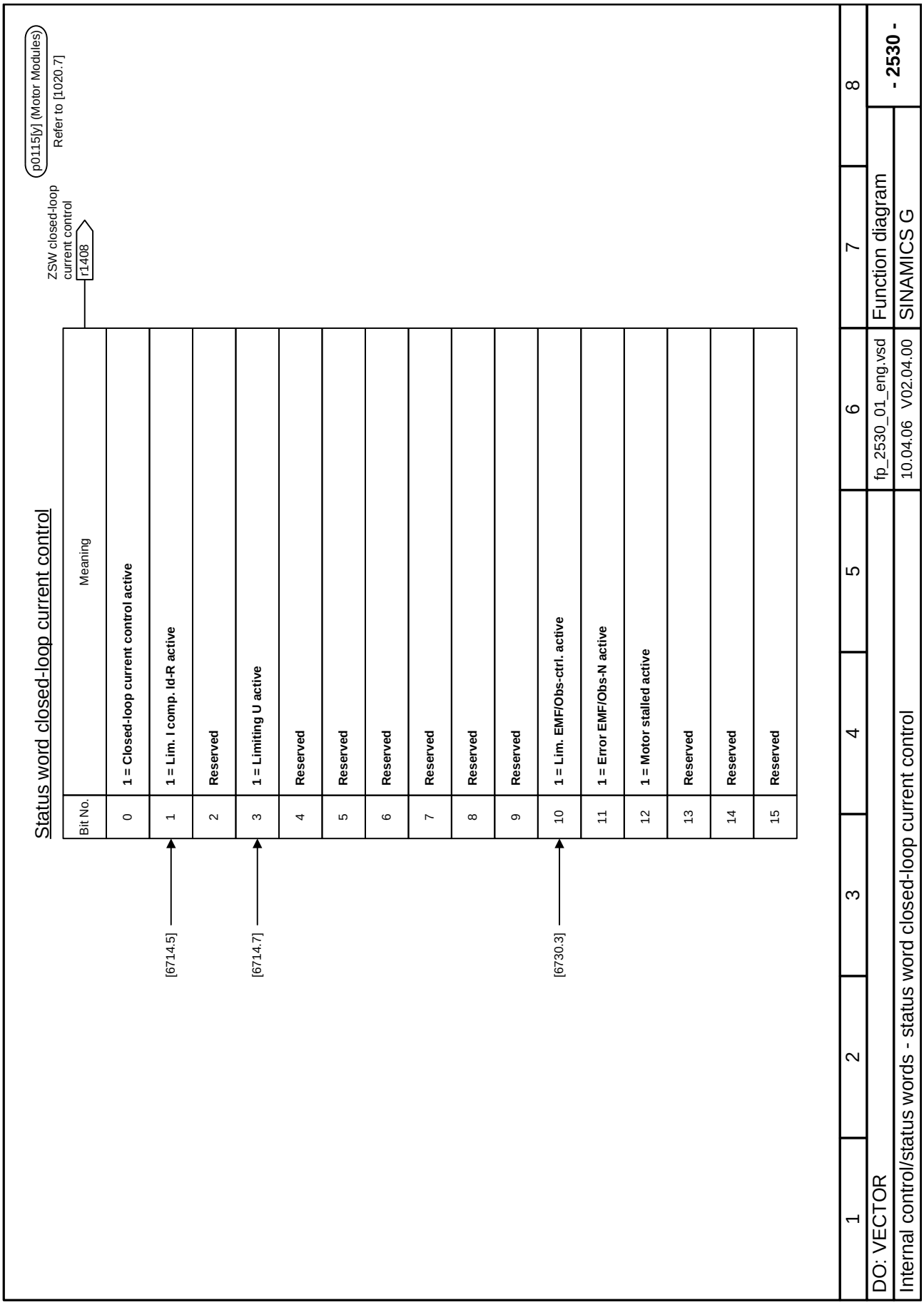

Figure 2-48 2530 – Status word closed-loop current control

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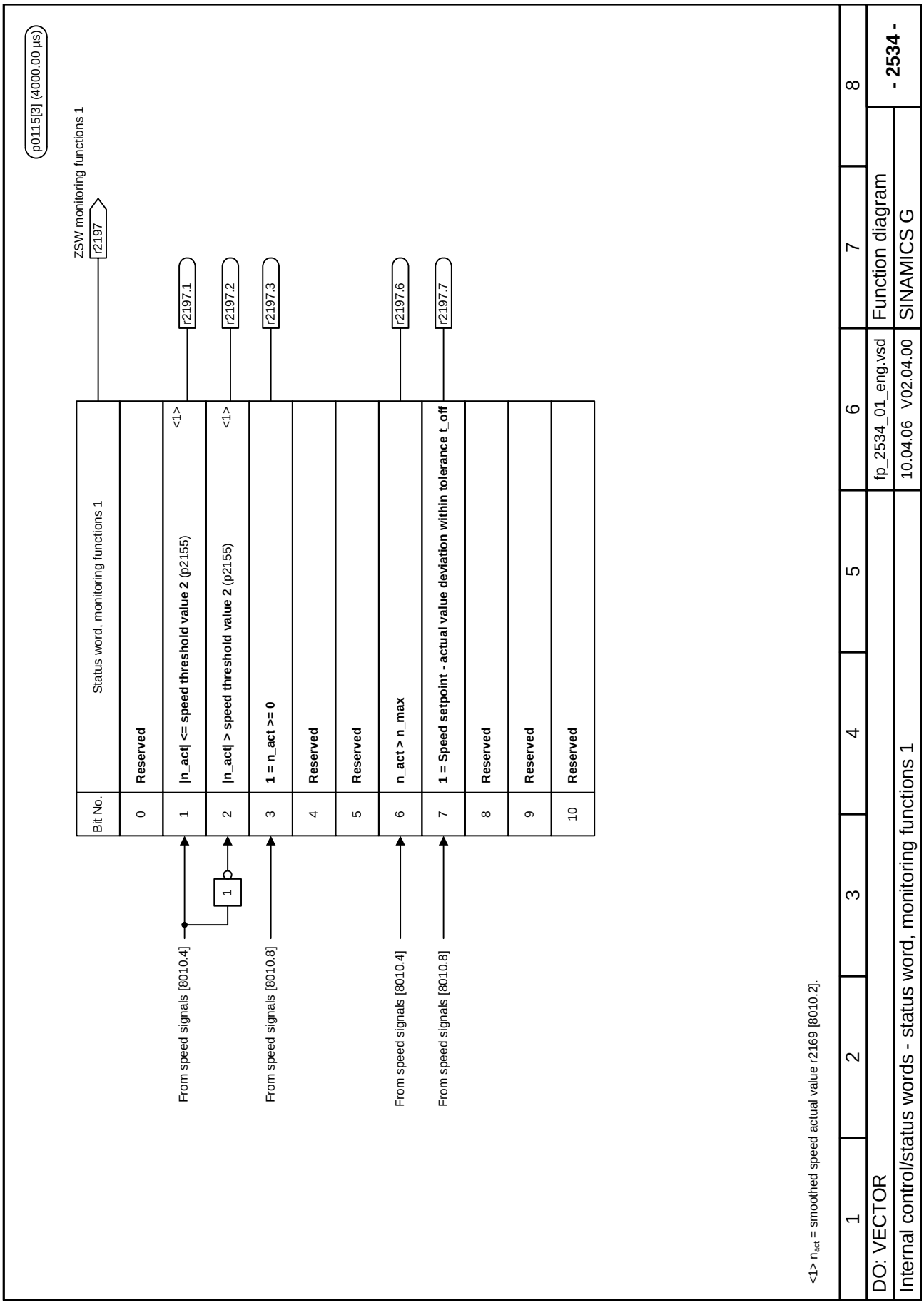

Figure 2-49 2534 – Status word monitoring 1

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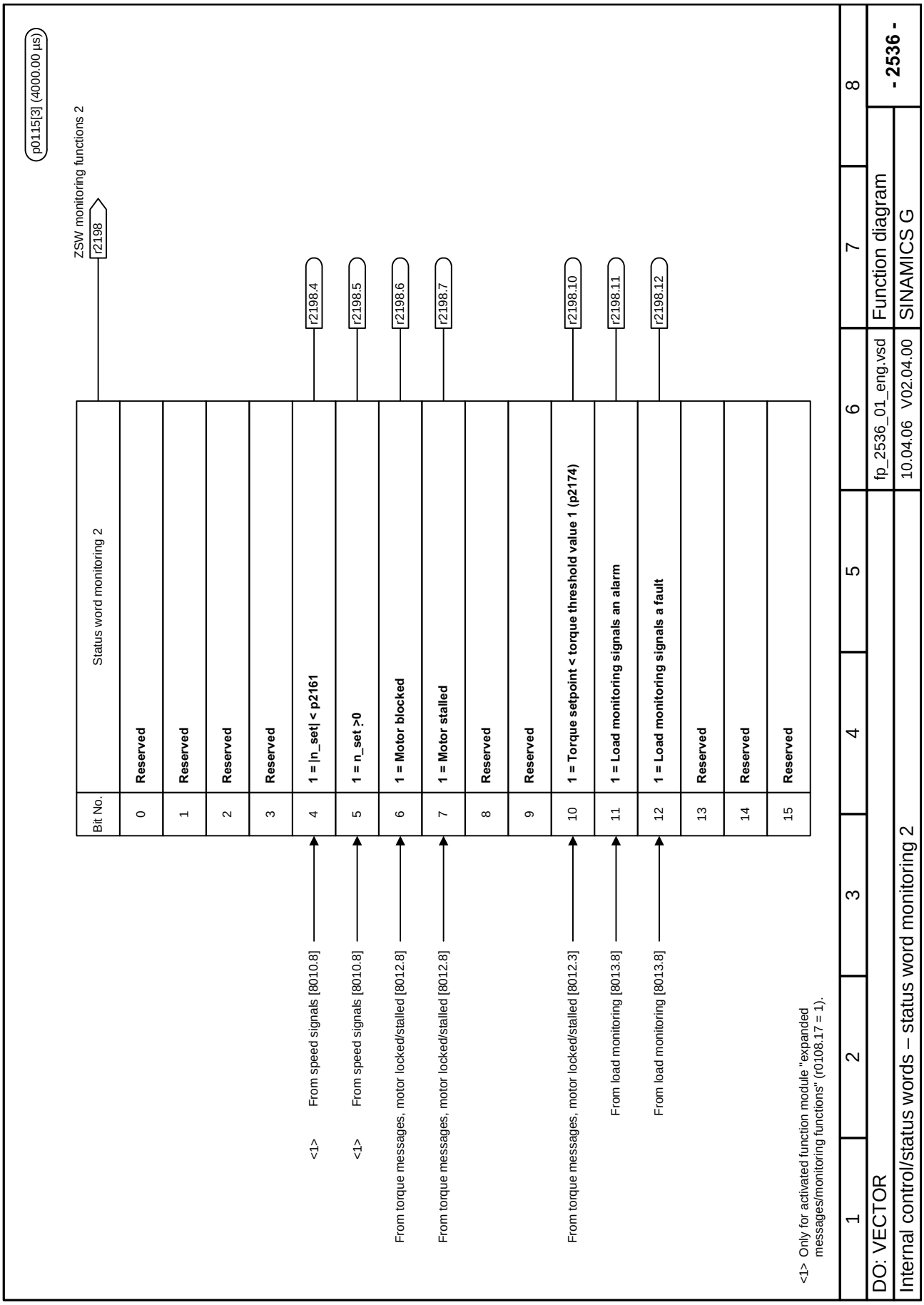

Figure 2-50 2536 – Status word monitoring 2

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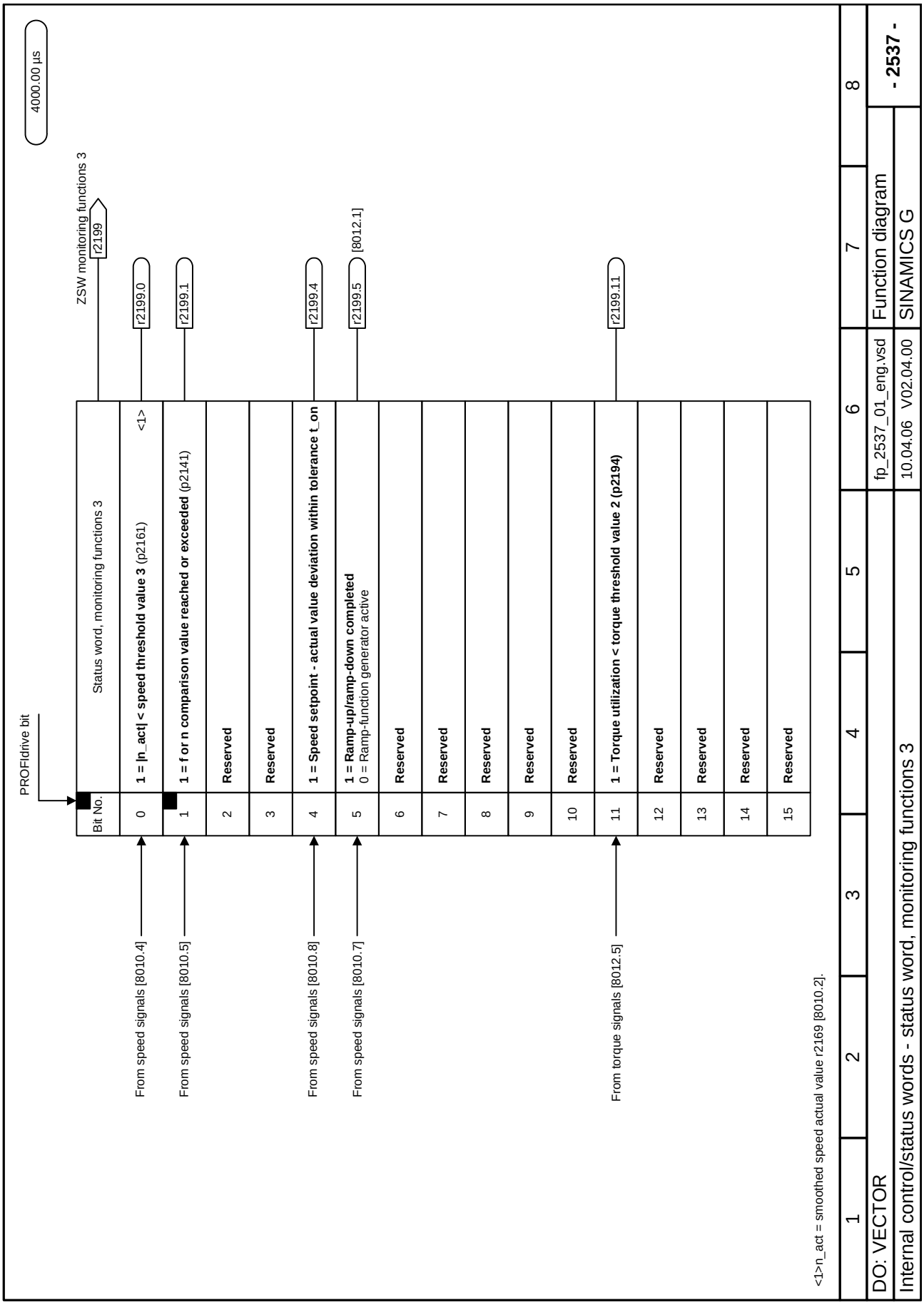

Figure 2-51 2537 – Status word monitoring 3

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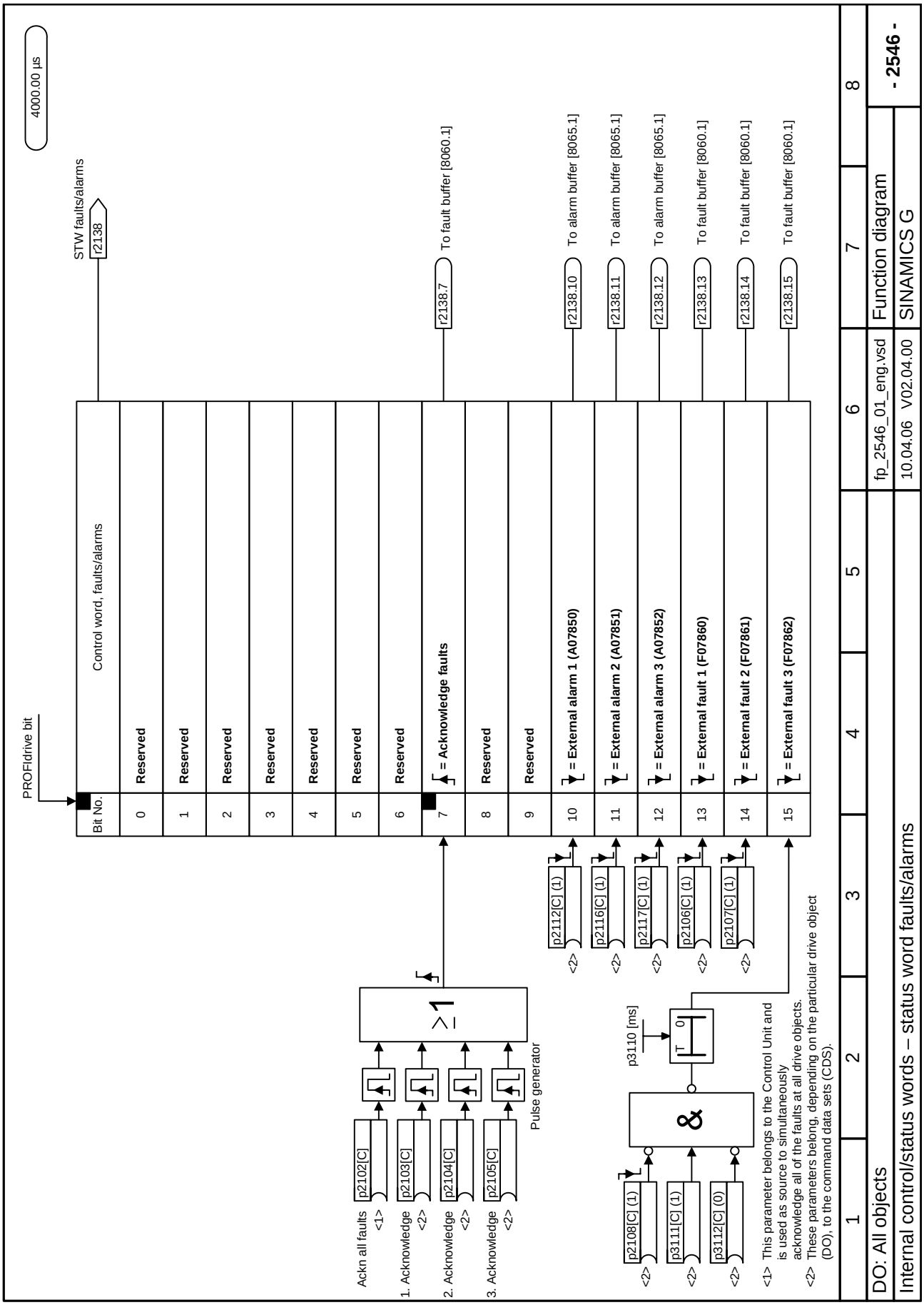

Figure 2-52 2546 – Control word faults/alarms

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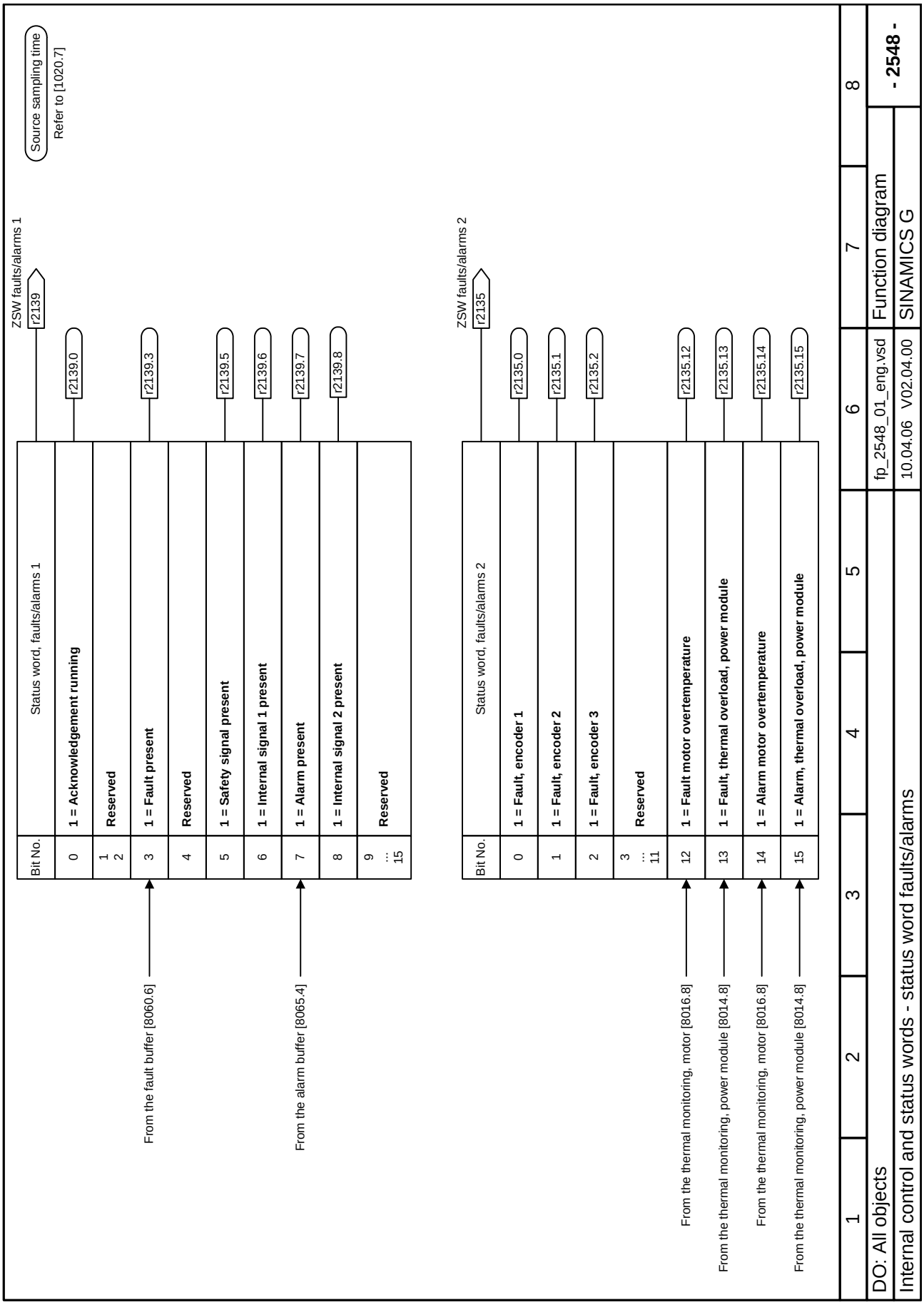

Figure 2-53 2548 – Status word, faults/warnings 1 and 2

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2.7 Sequence control

Function diagrams

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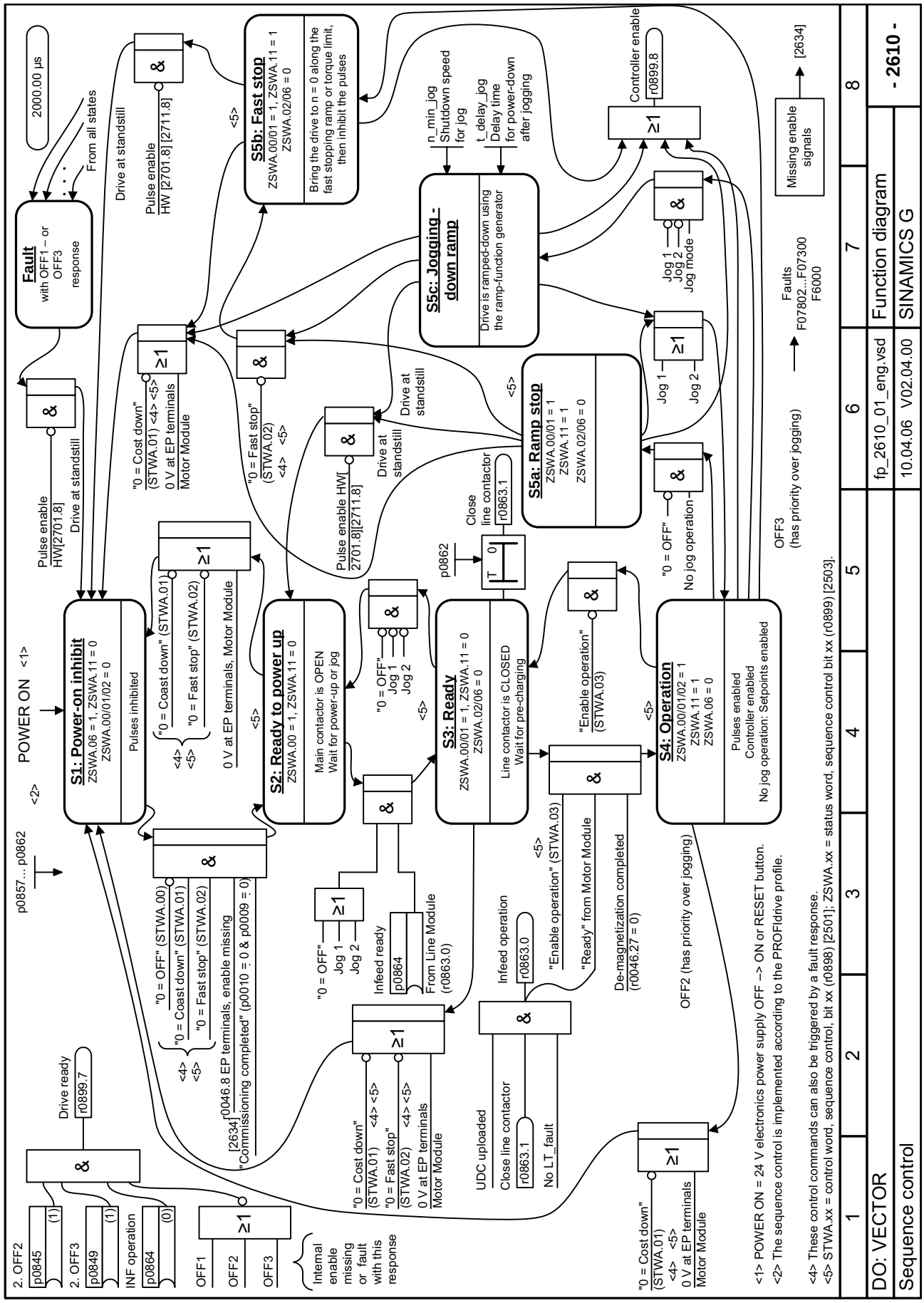

Figure 2-54 2610 – Control unit

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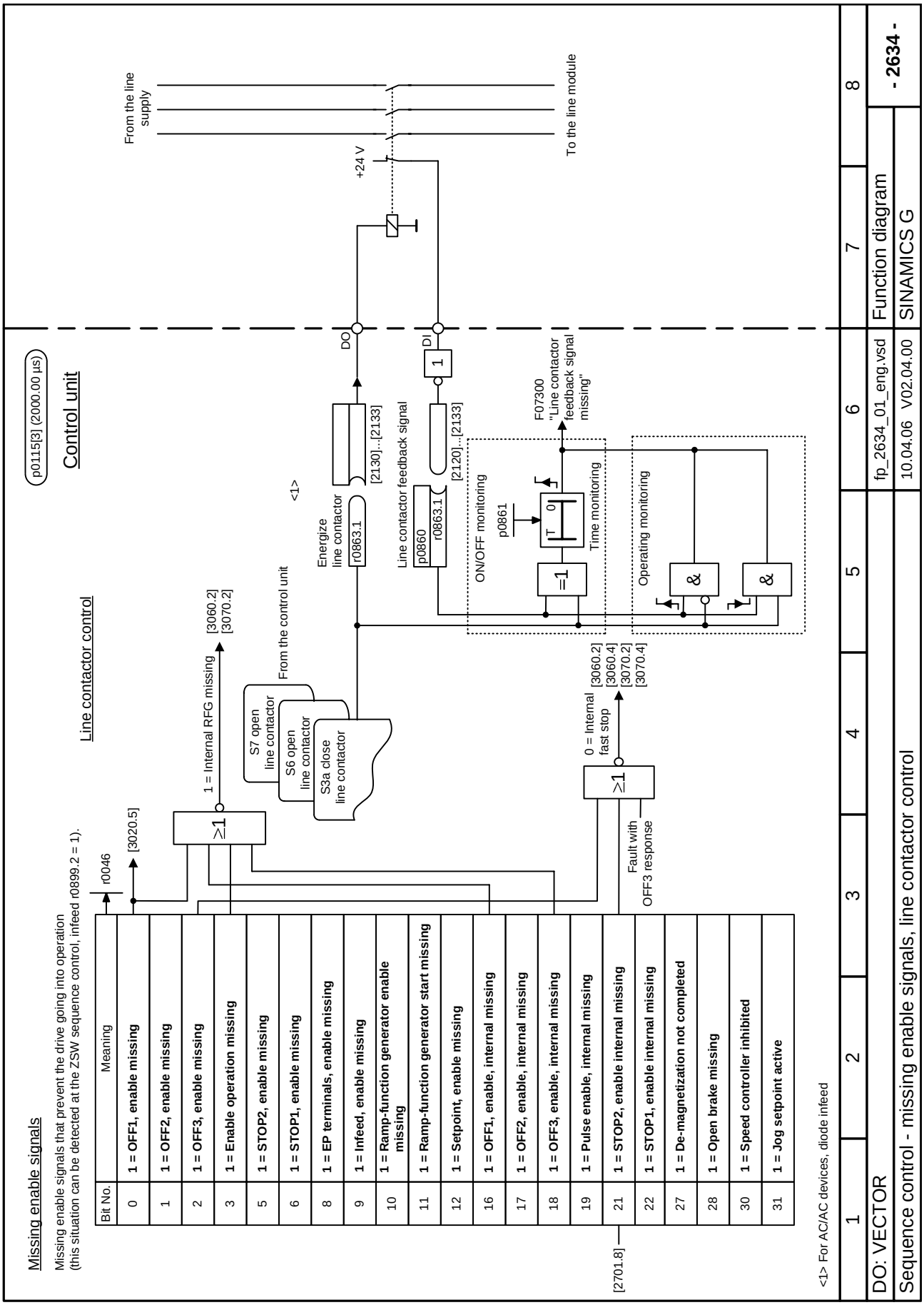

Figure 2-55 2634 – Missing enable signals, line contactor control

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2.8 Brake control

Function diagrams

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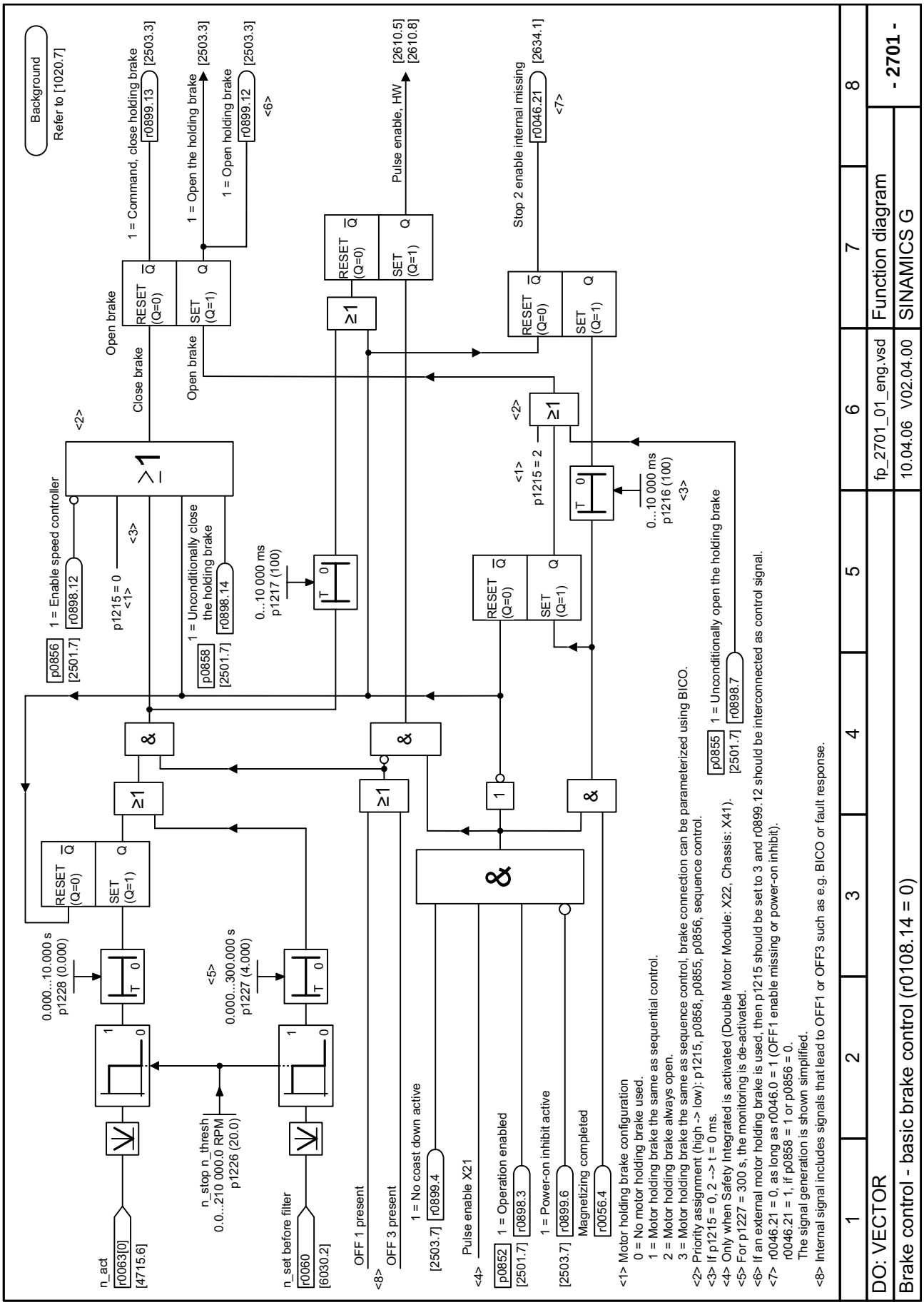

Figure 2-56 2701 – Basic brake control (r0108.14 = 0)

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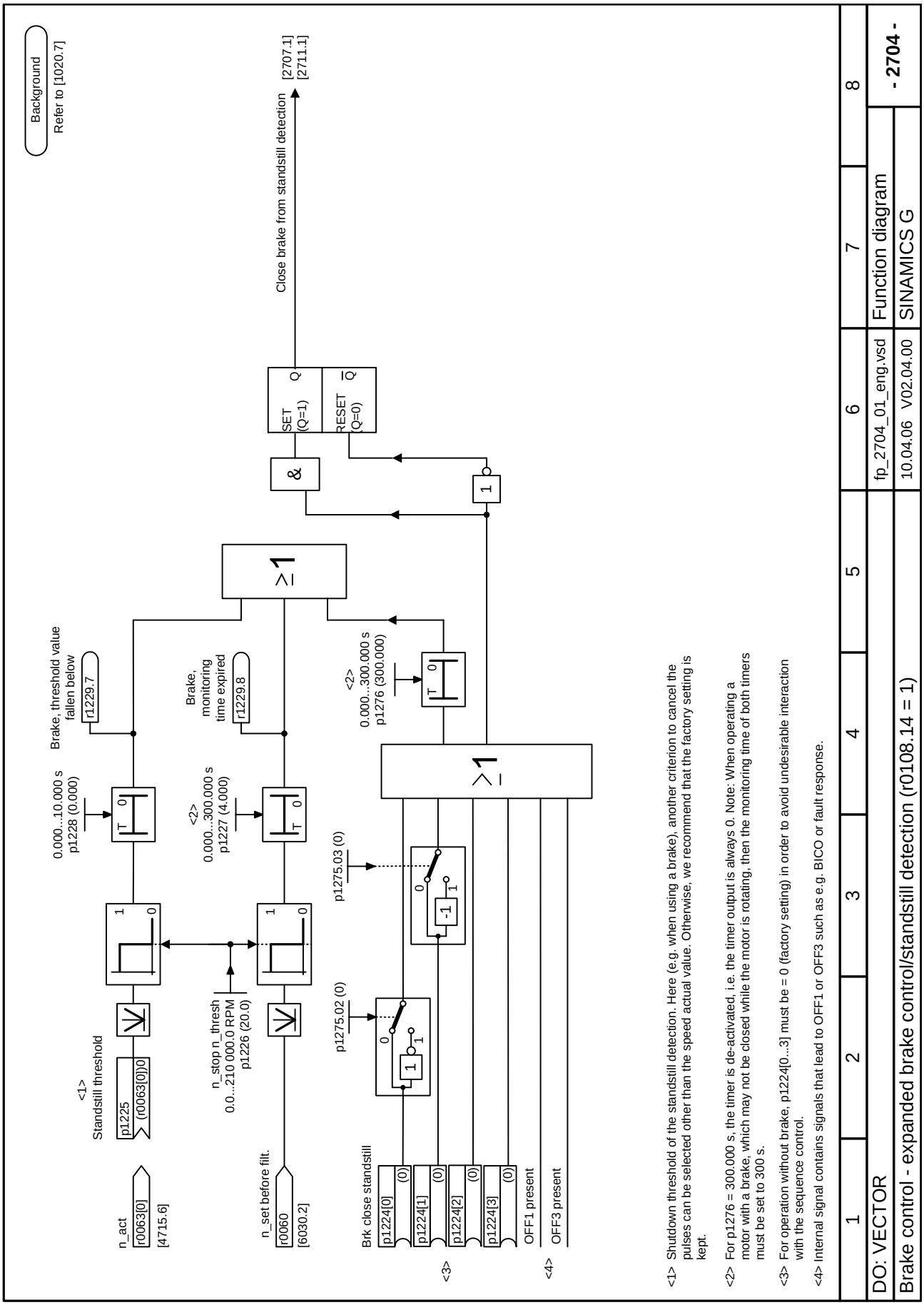

Figure 2-57 2704 – Extended brake control/zero speed detection (r0108.14 = 1)

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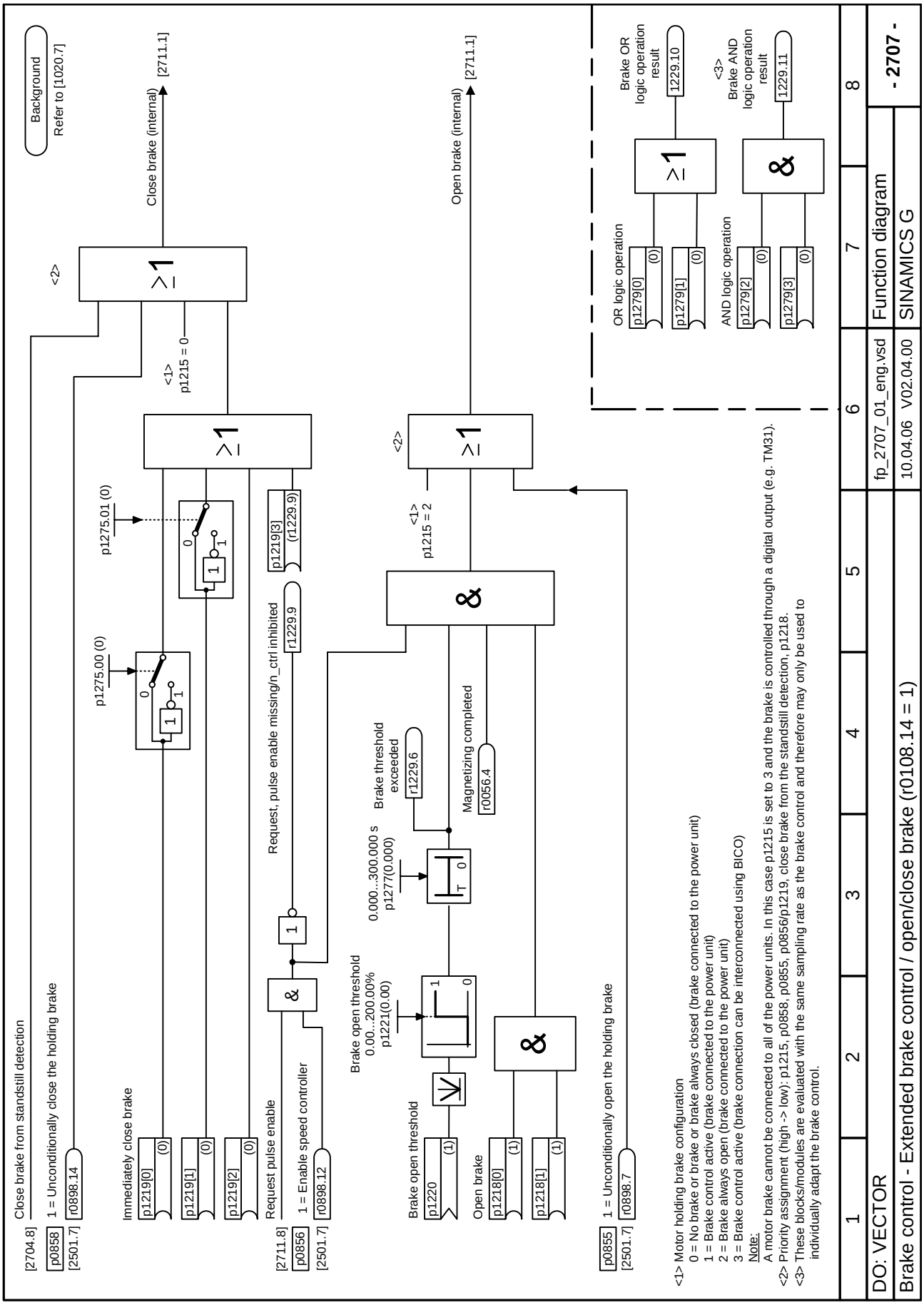

Figure 2-58 2707 – Extended brake control/open and close brake (r0108.14 = 1)

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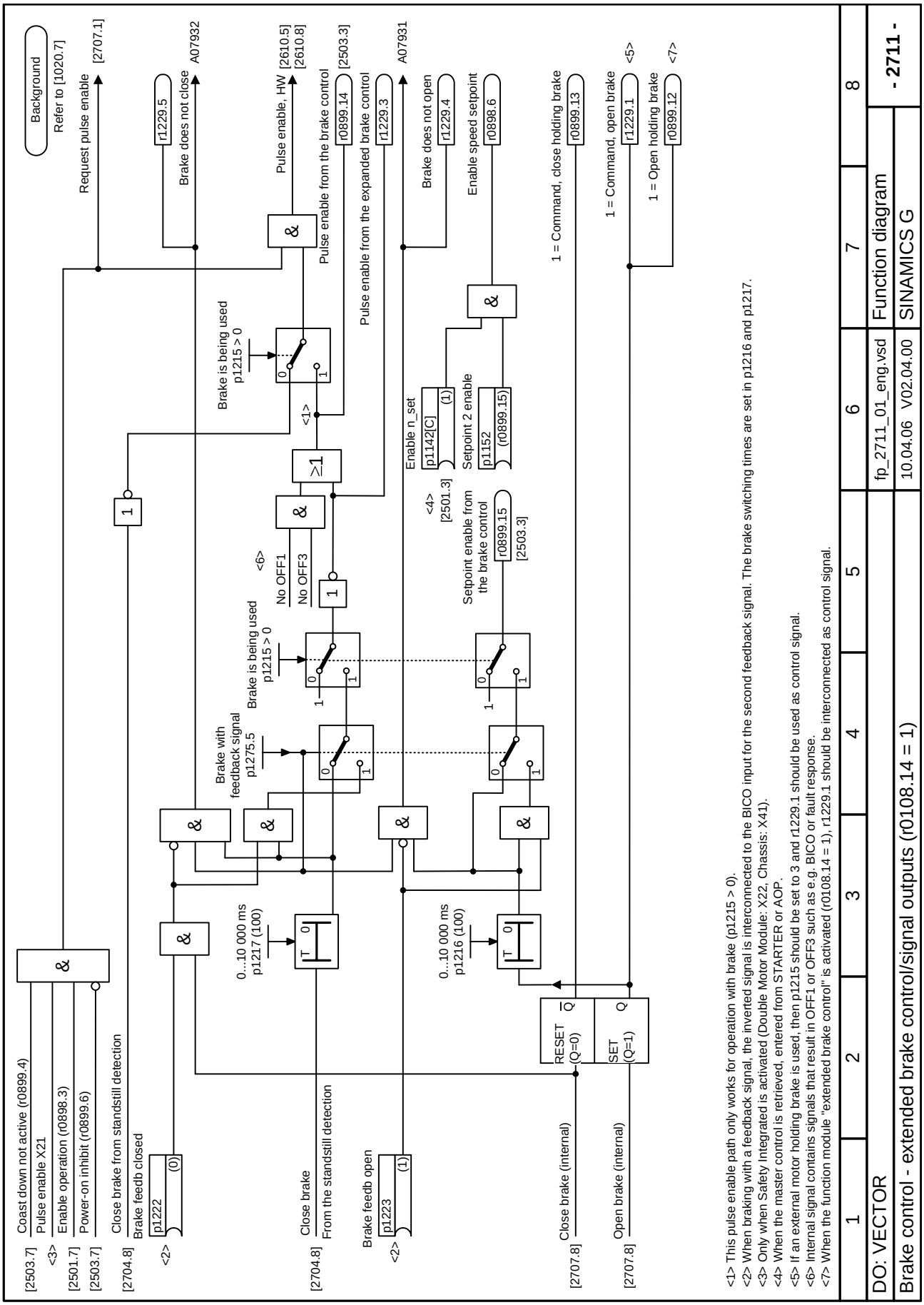

Figure 2-59 2711 – Extended brake control/signal outputs (r0108.14 = 1)

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2.9 Safety Integrated

Function diagrams

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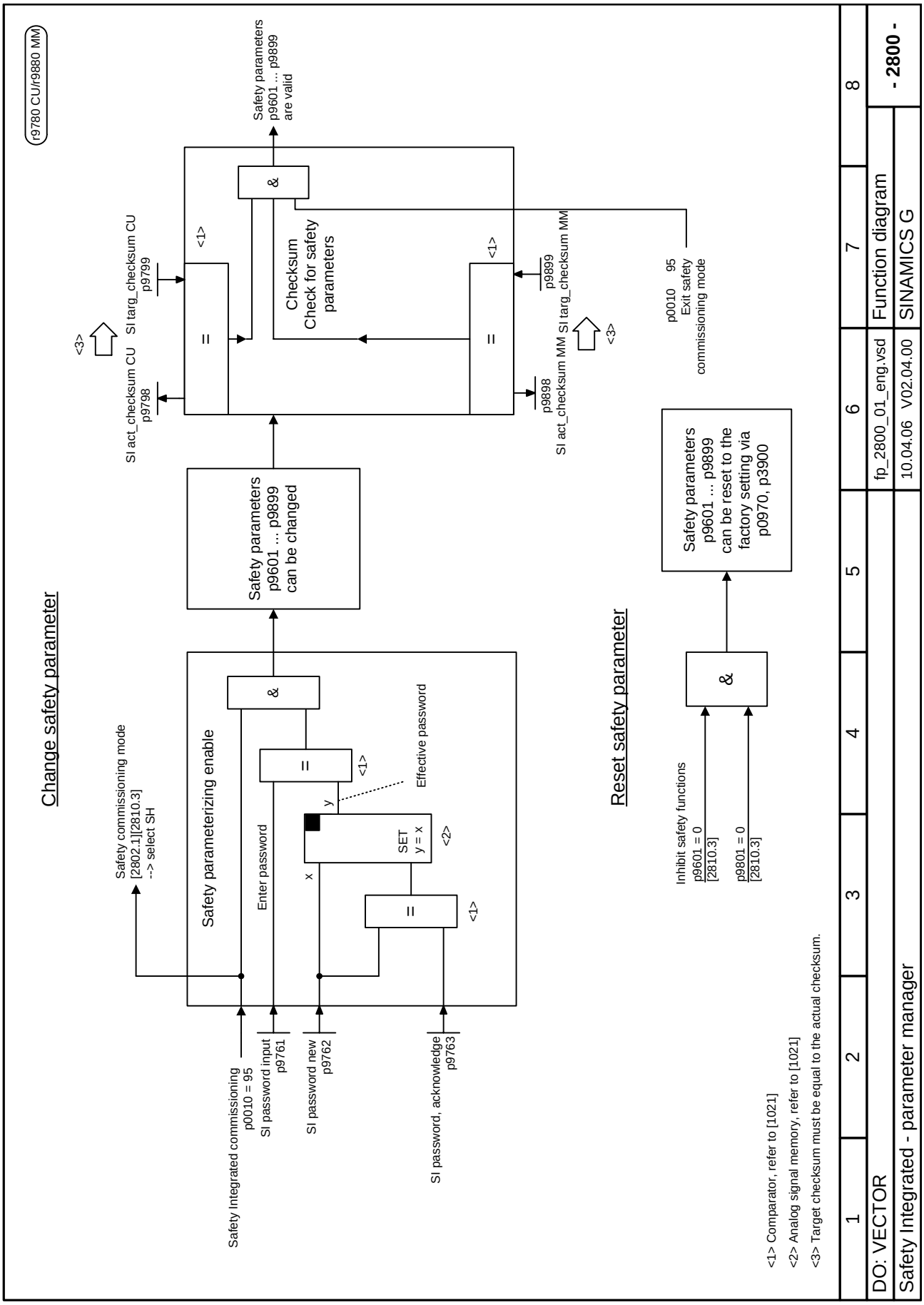

Figure 2-60 2800 – Parameter manager

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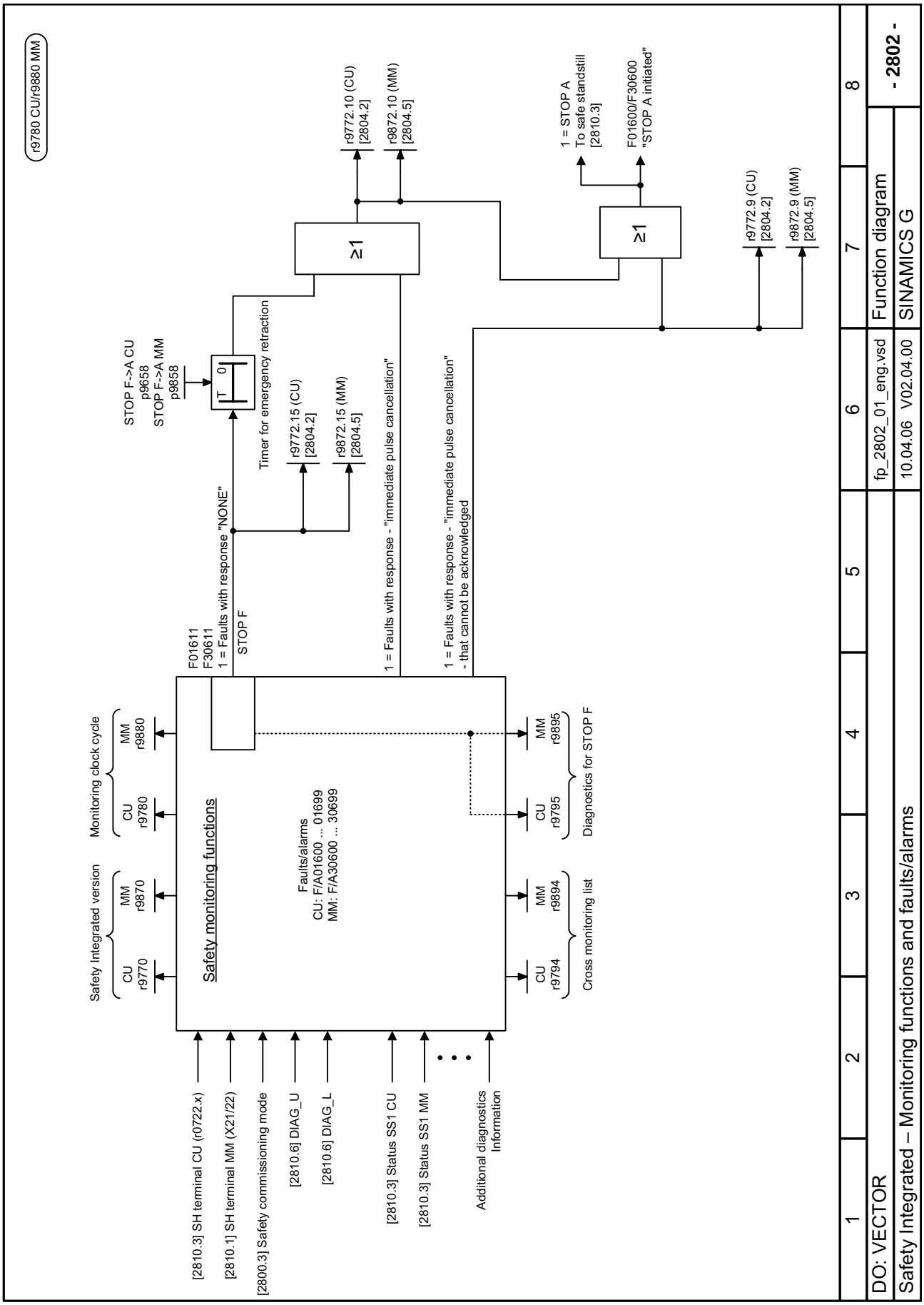

Figure 2-61 2802 – Monitoring functions and faults/alarms

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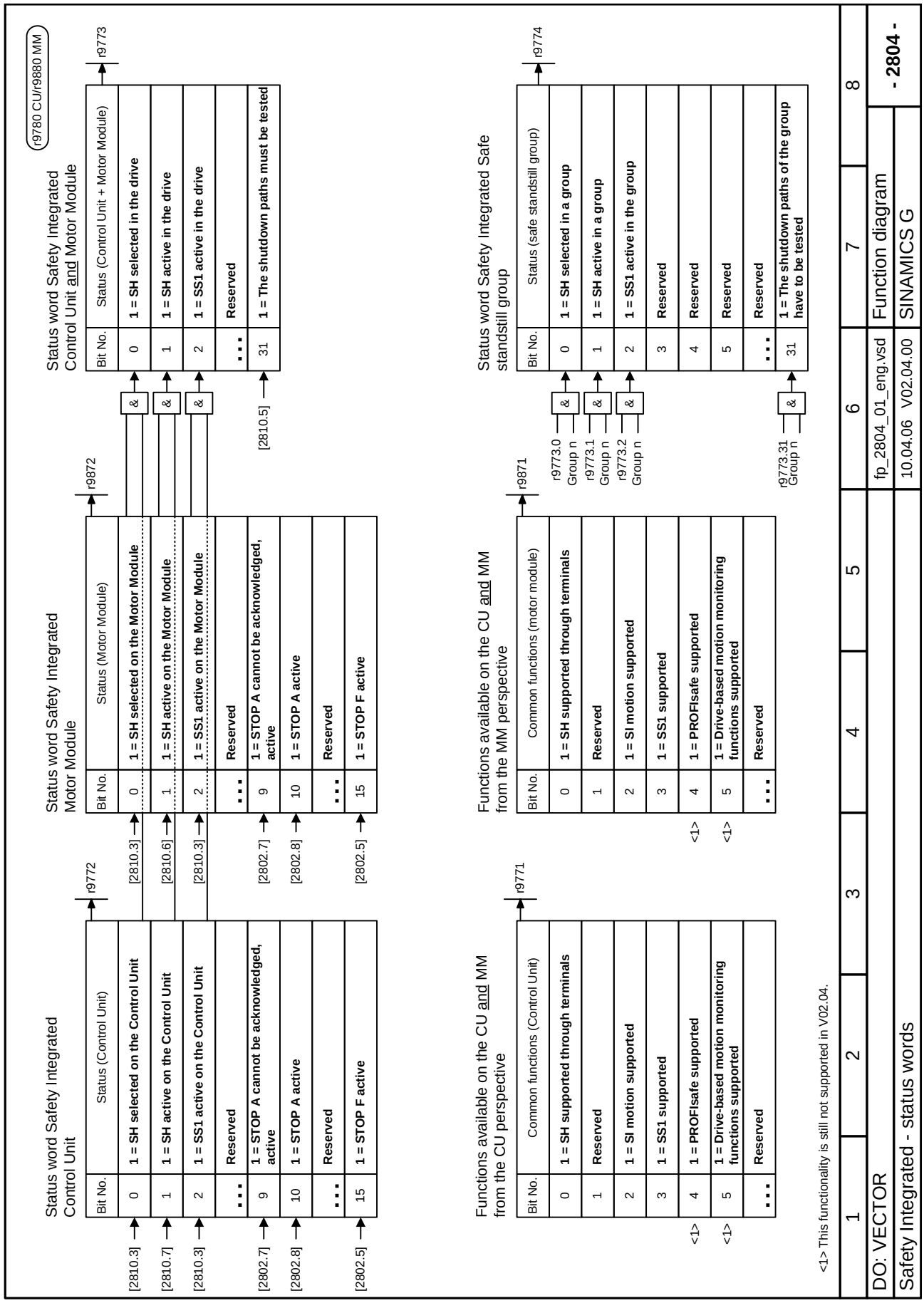

Figure 2-62 2804 – Status words

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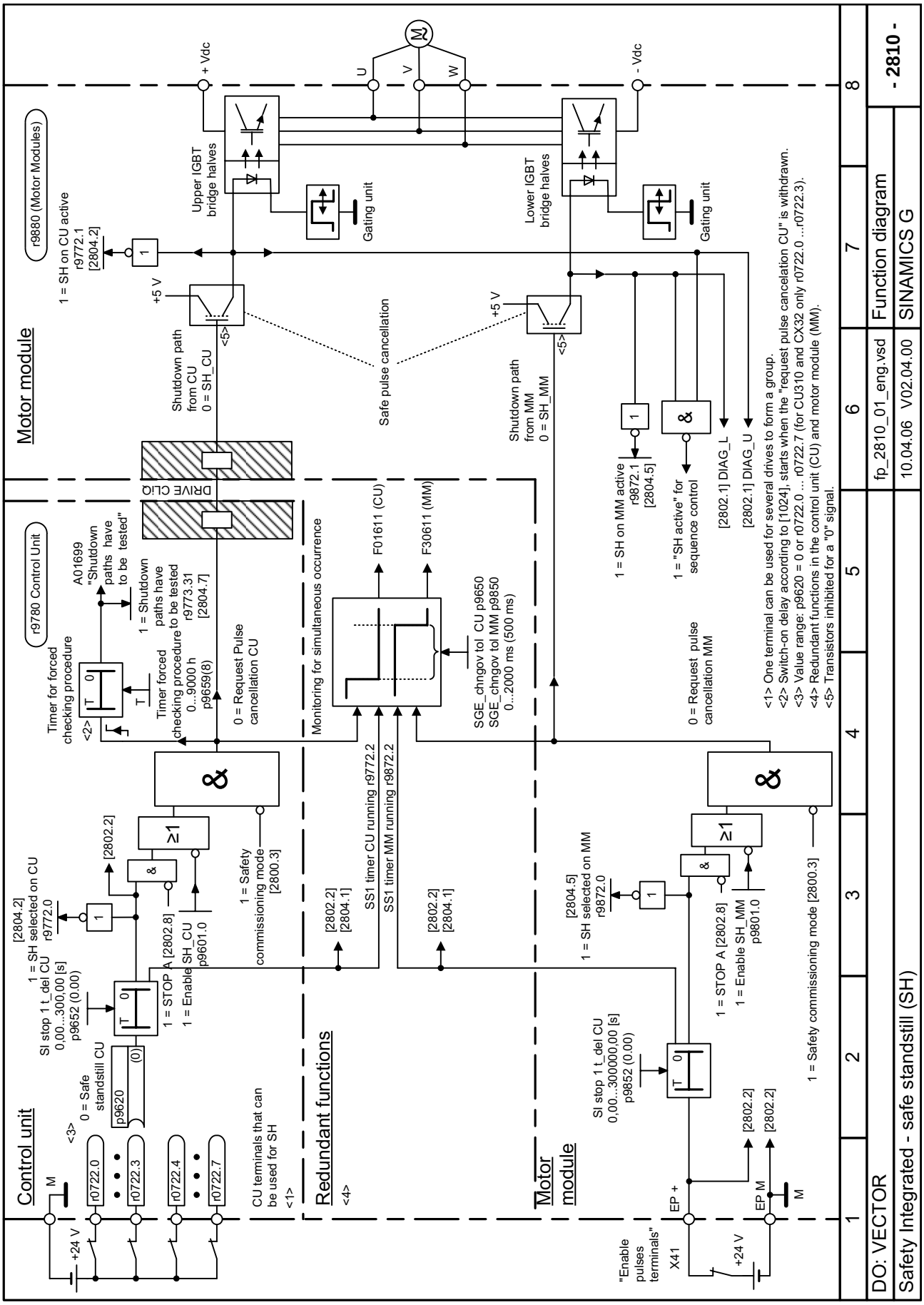

Figure 2-63 2810 – Safe standstill (SH)

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2.10 Setpoint channel

Function diagrams

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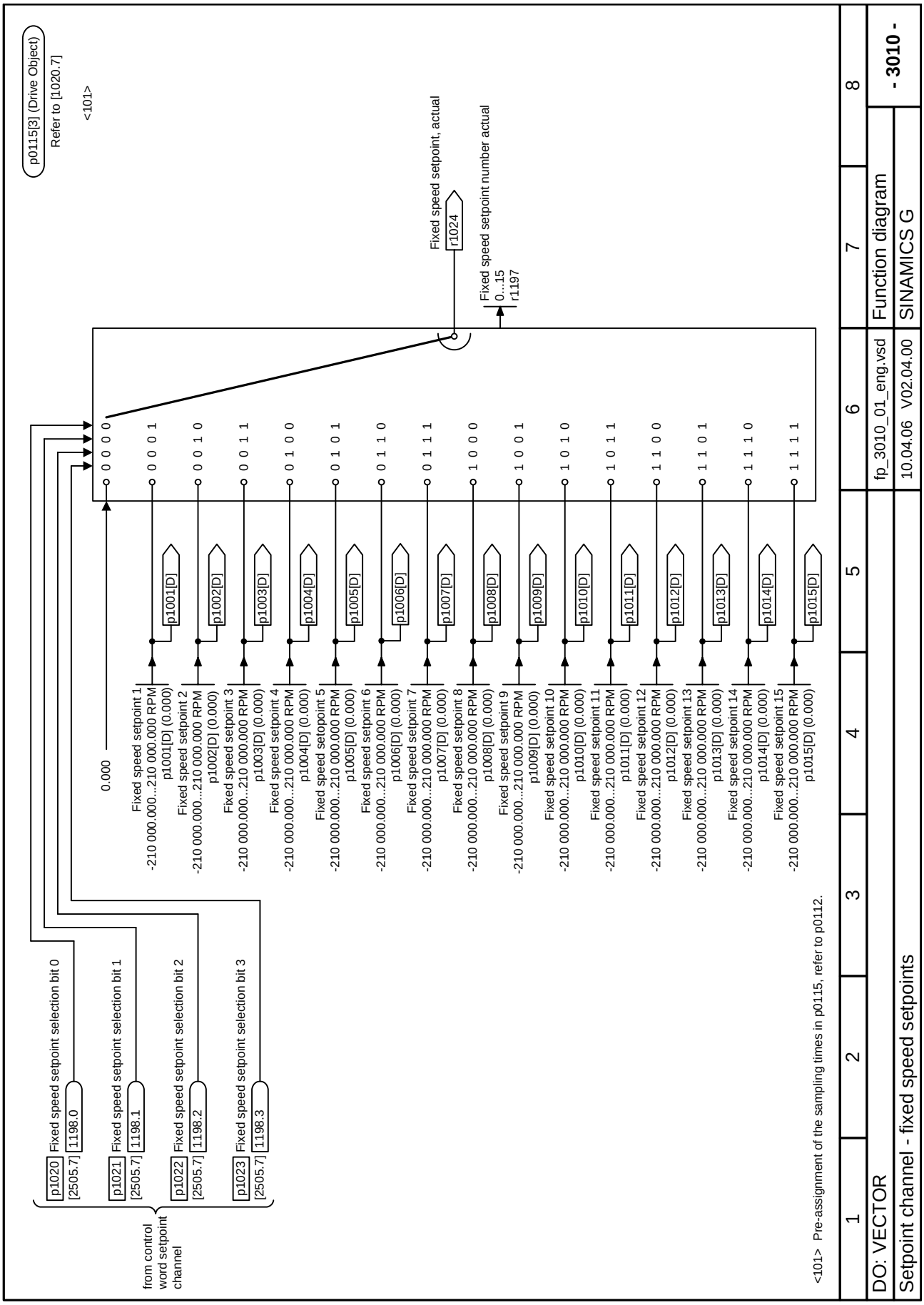

Figure 2-64 3010 – Fixed speed setpoints

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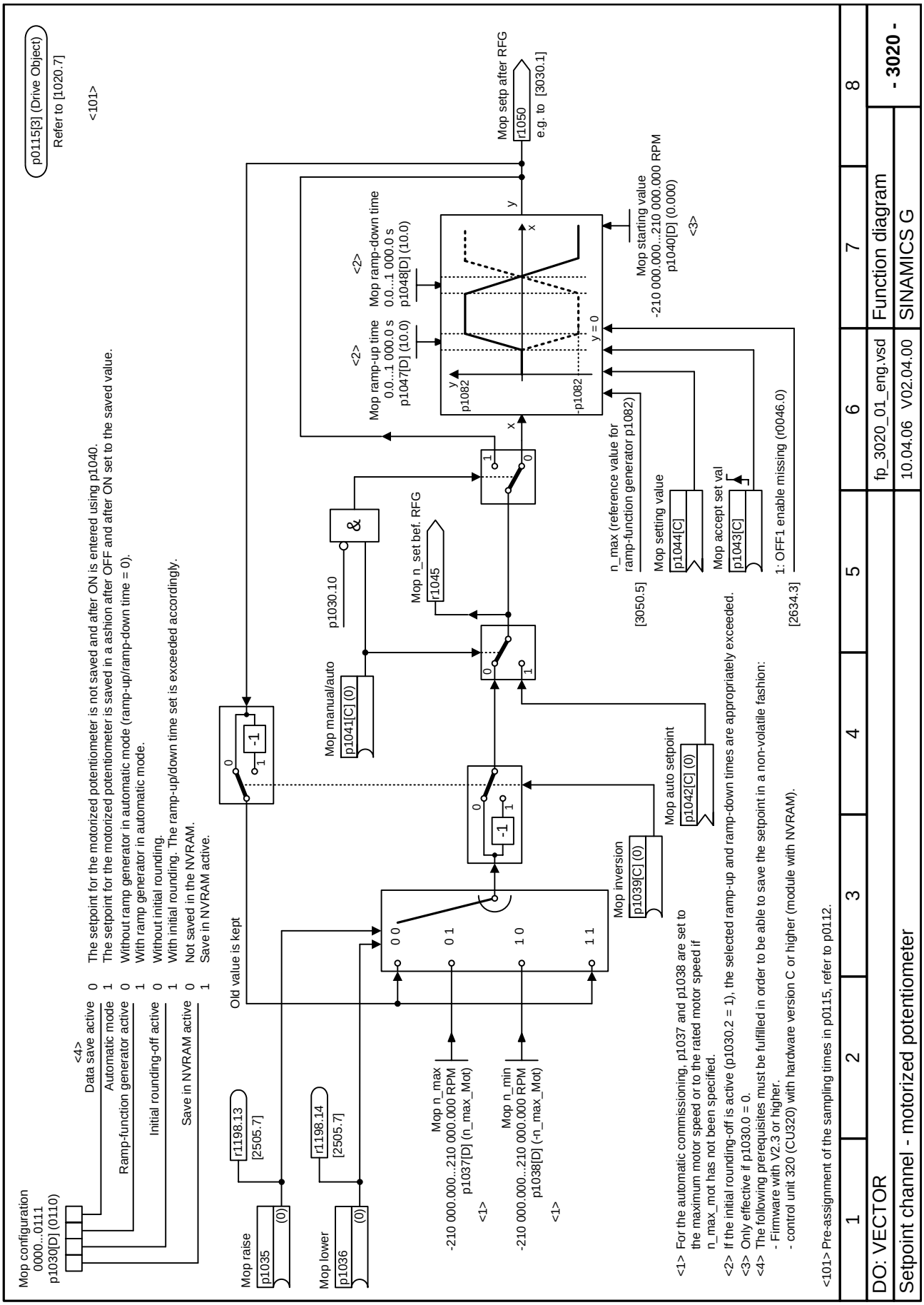

Figure 2-65 3020 – Motorized potentiometer

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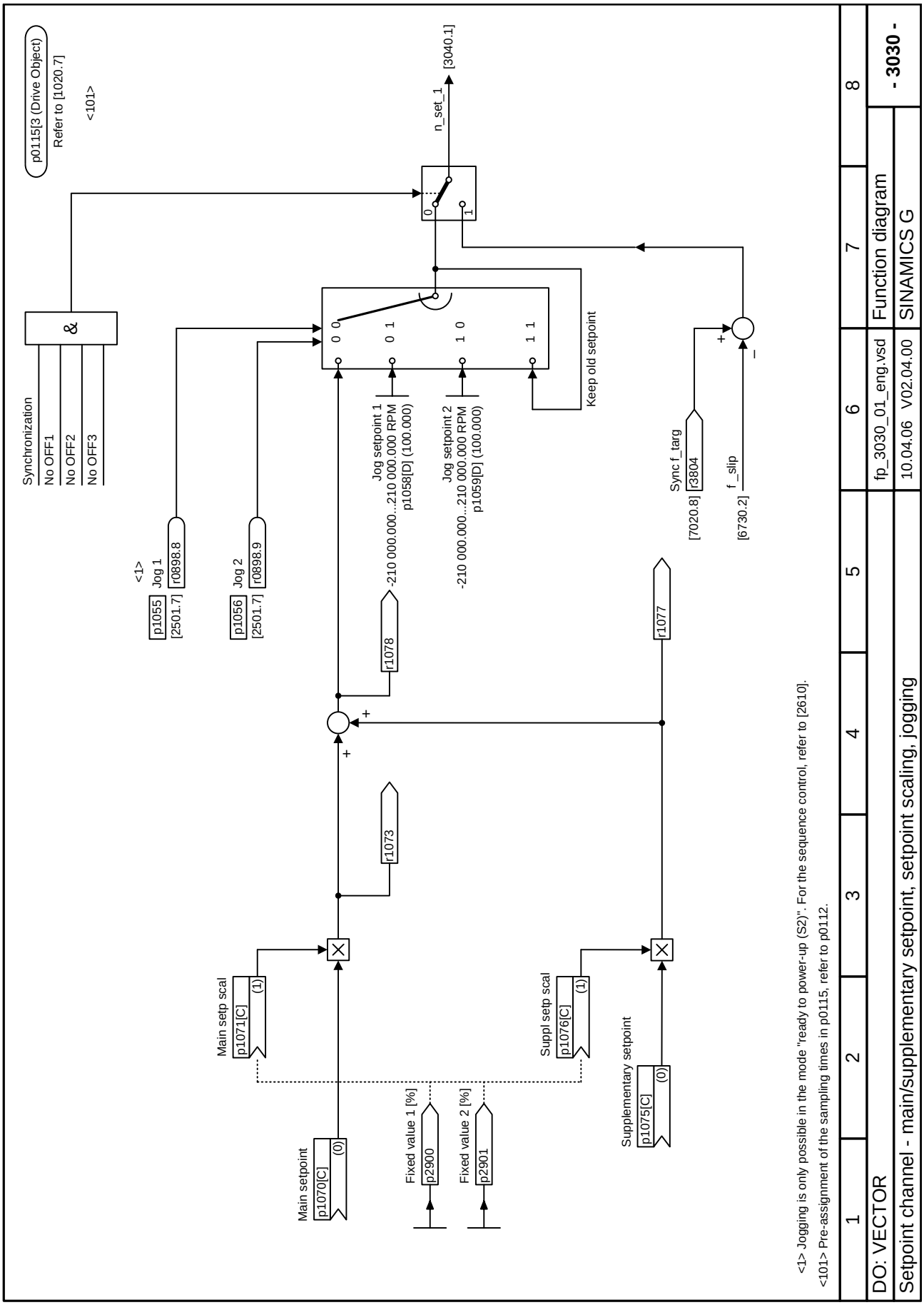

Figure 2-66 3030 – Main/supplementary setpoint, setpoint scaling, jogging

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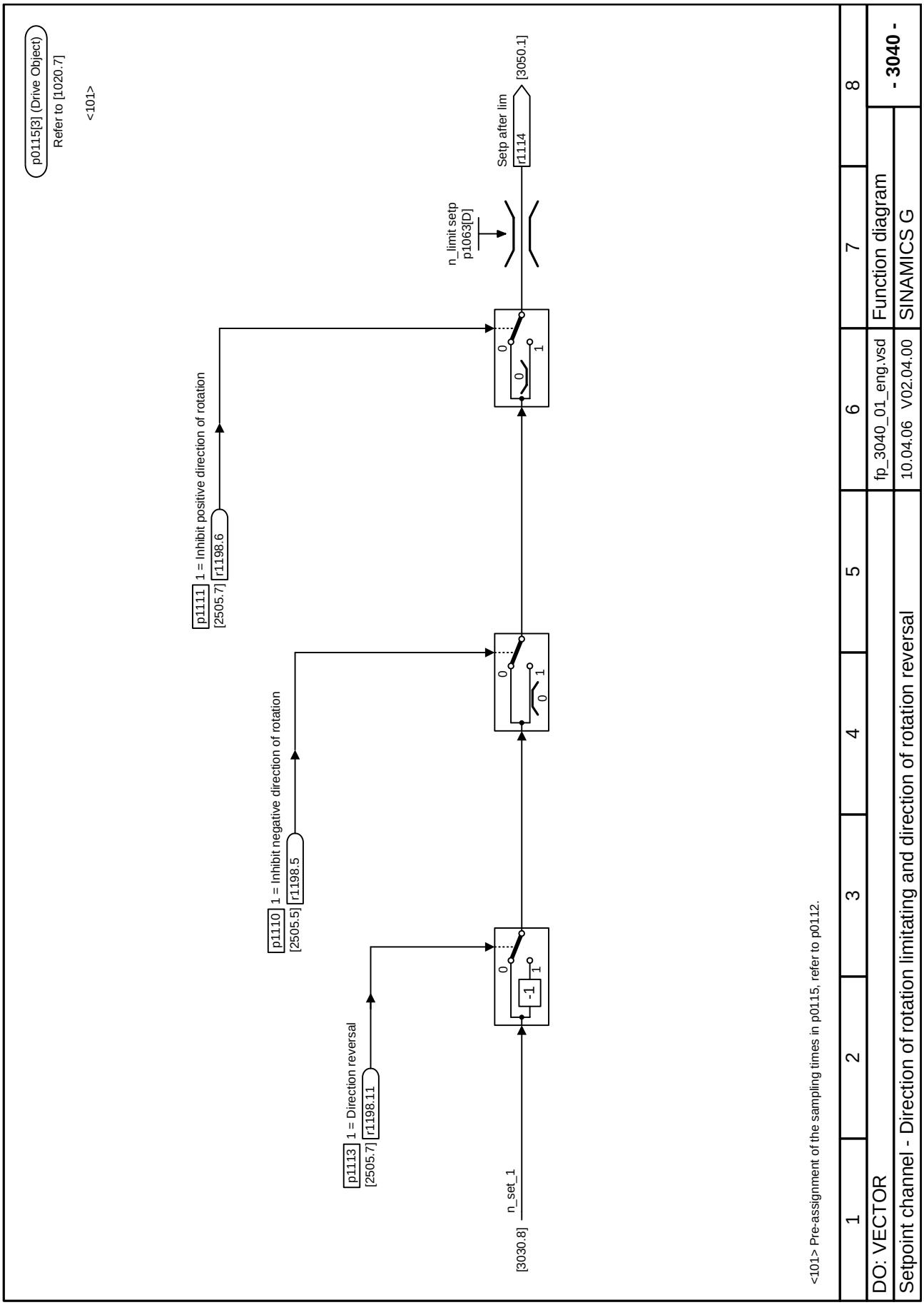

Figure 2-67 3040 – Direction of rotation limitation and direction of rotation reversal

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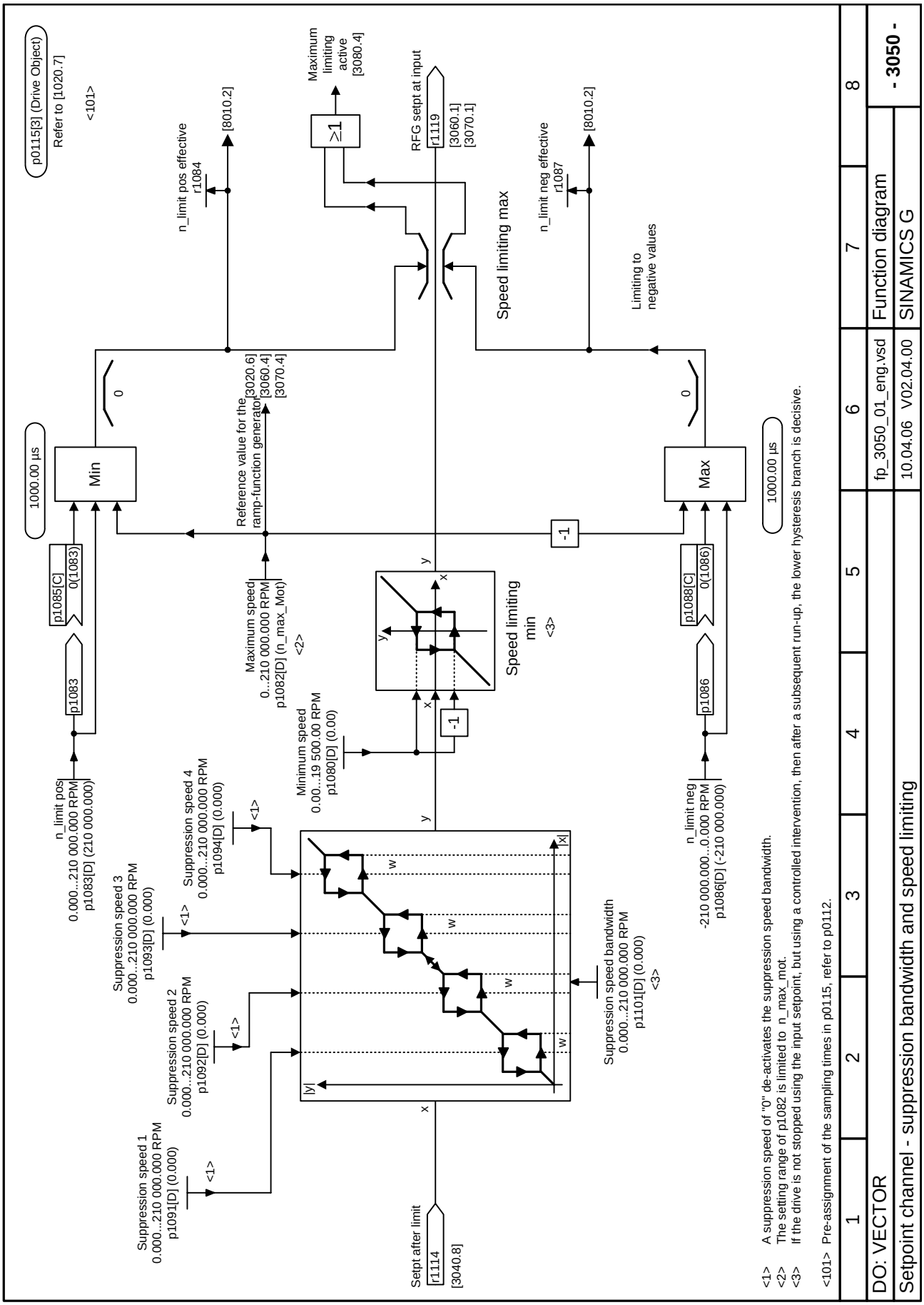

Figure 2-68 3050 – Suppression bandwidth and speed limiting

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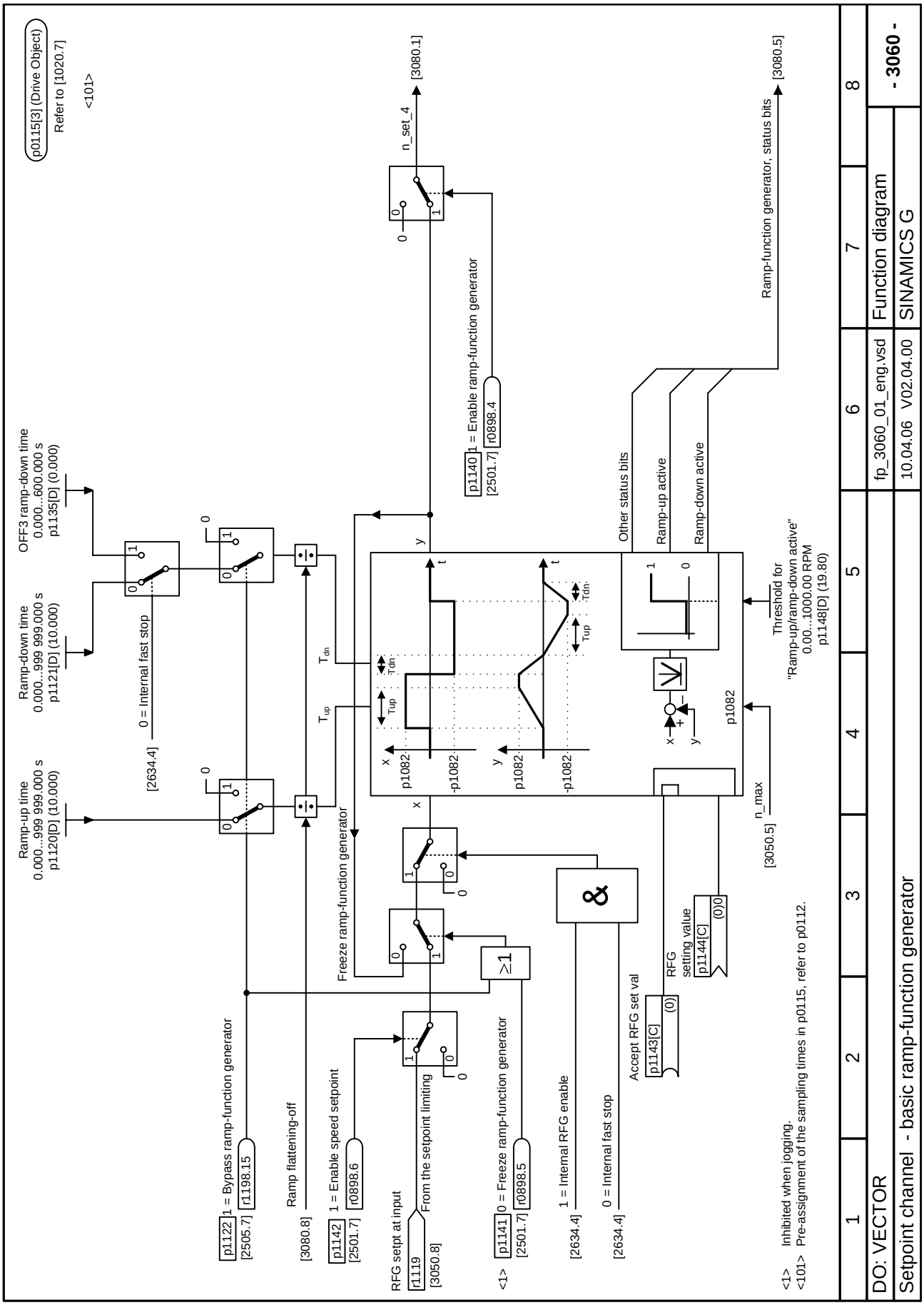

Figure 2-69 3060 – Simple ramp-function generator

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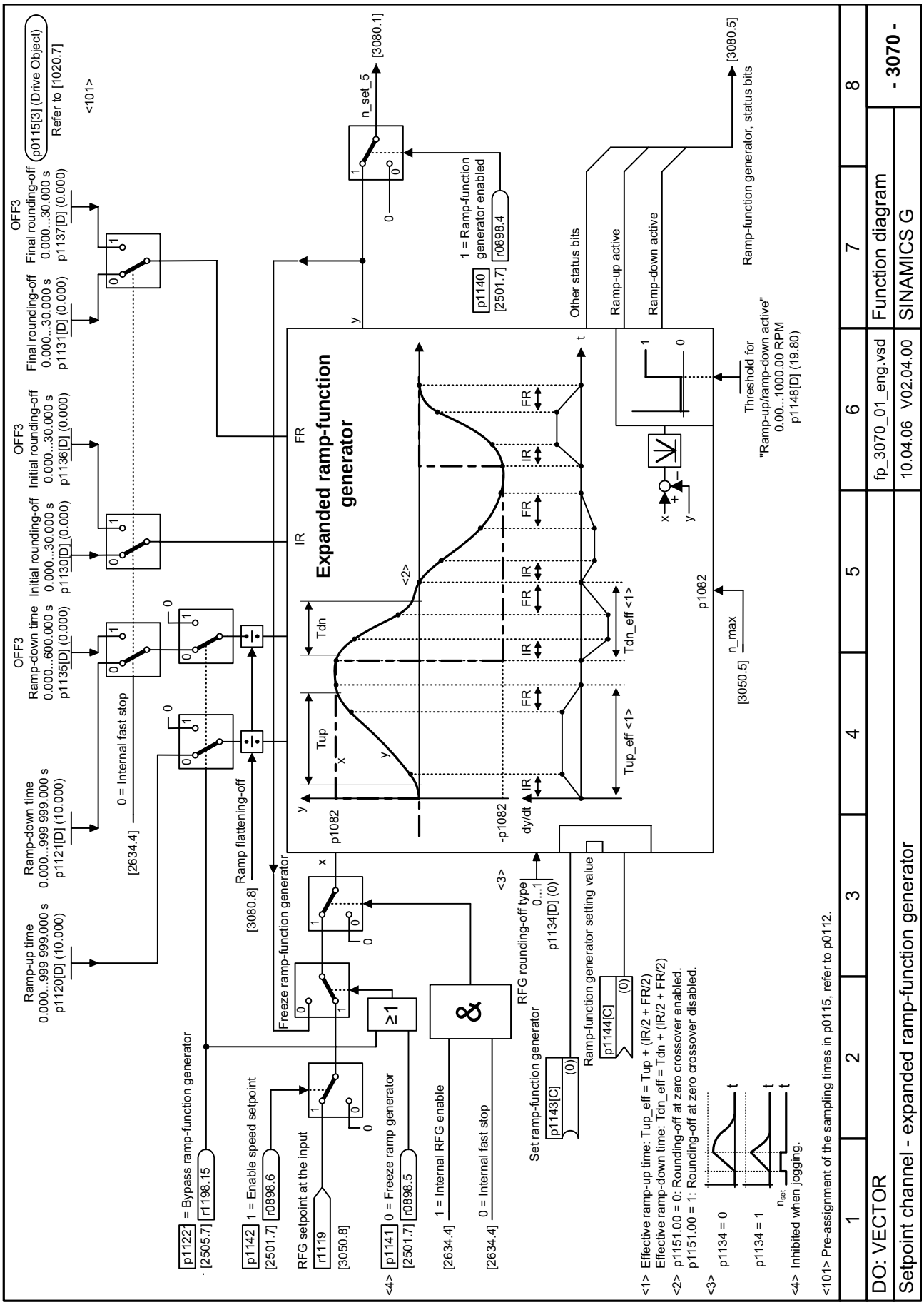

Figure 2-70 3070 – Expanded ramp-function generator

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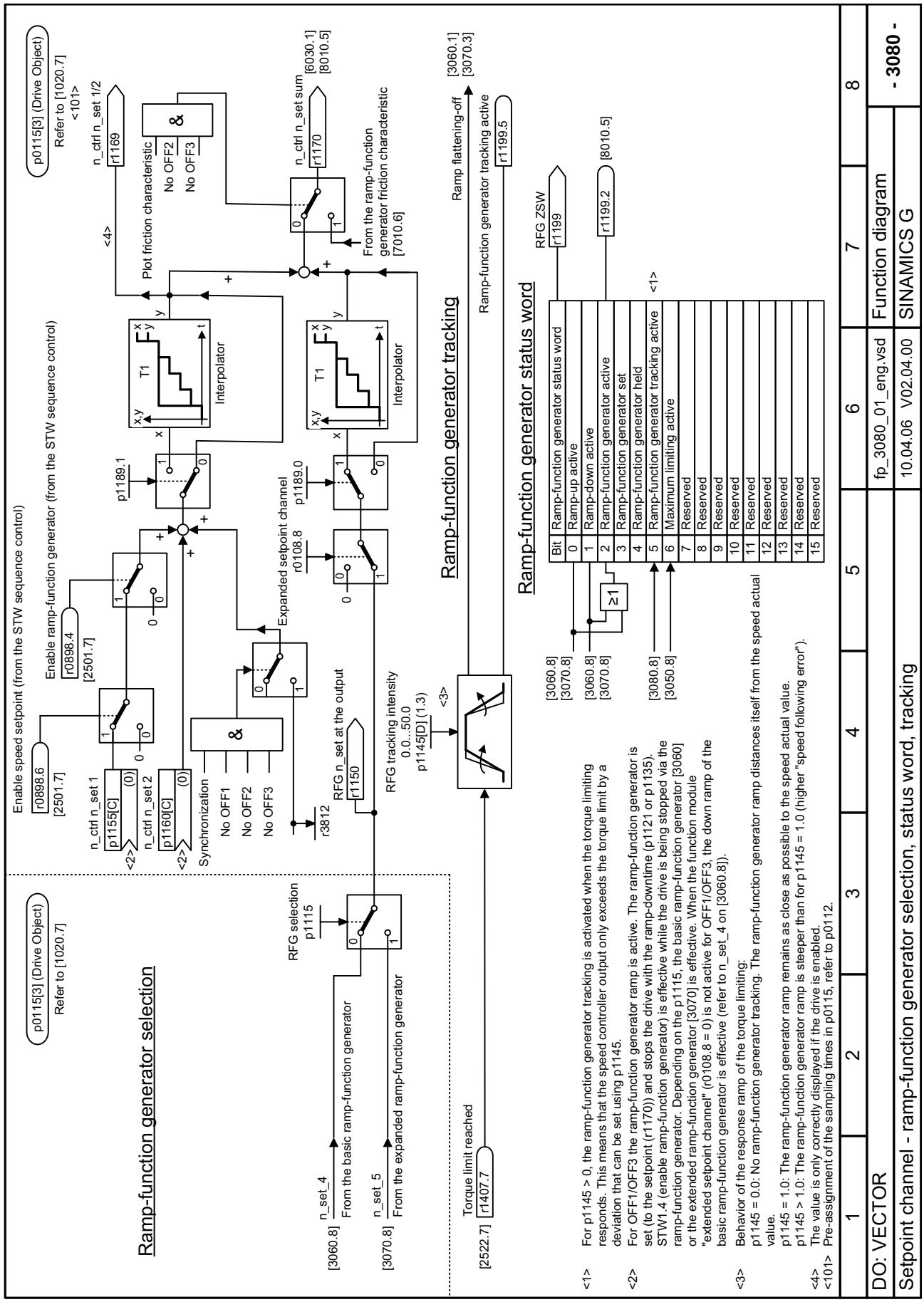

Figure 2-71 3080 – Ramp-function generator selection, status word, tracking

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2.11 Encoder evaluations

Function diagrams

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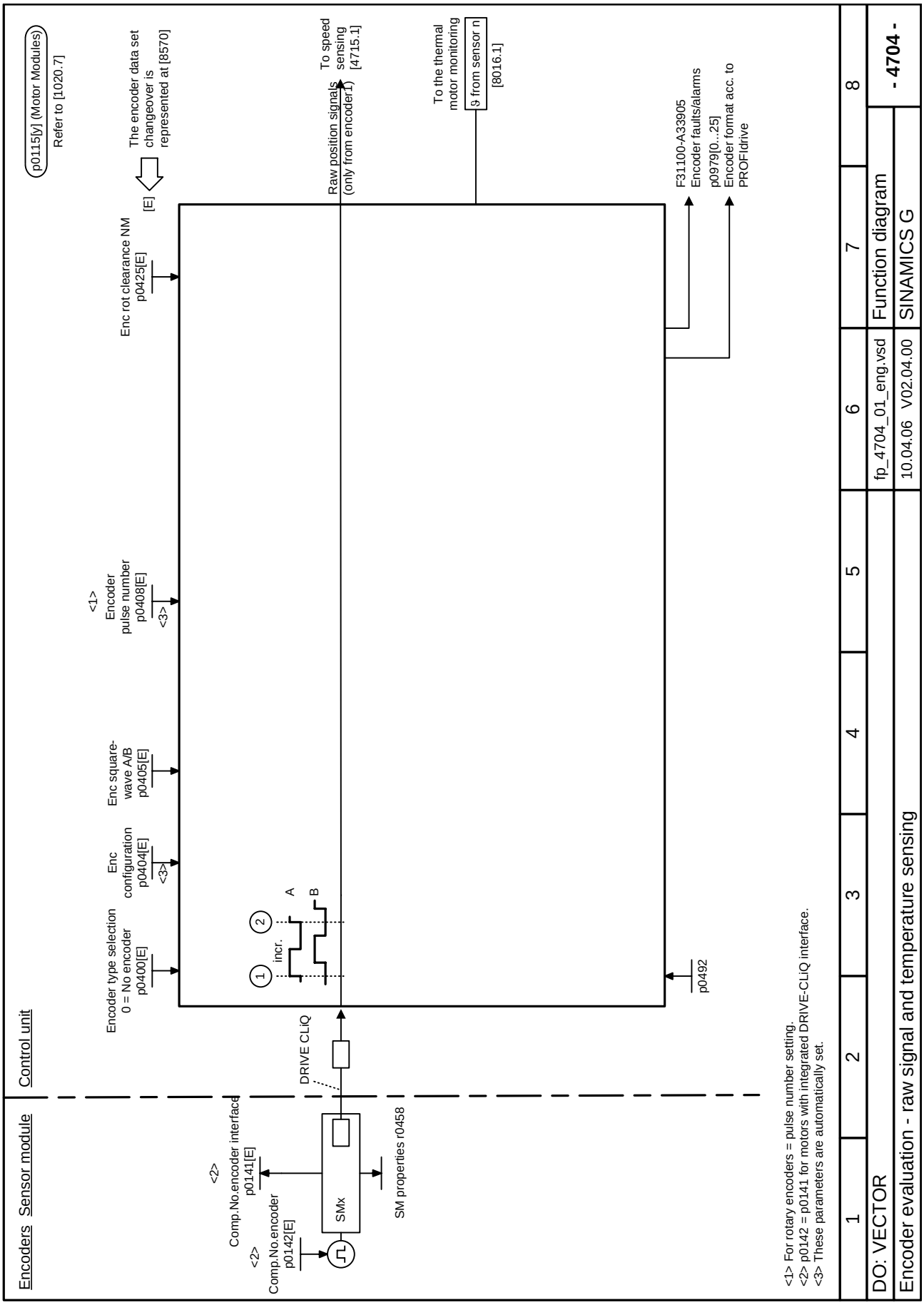

Figure 2-72 4704 – Position and temperature sensing, encoder 1 ... 3

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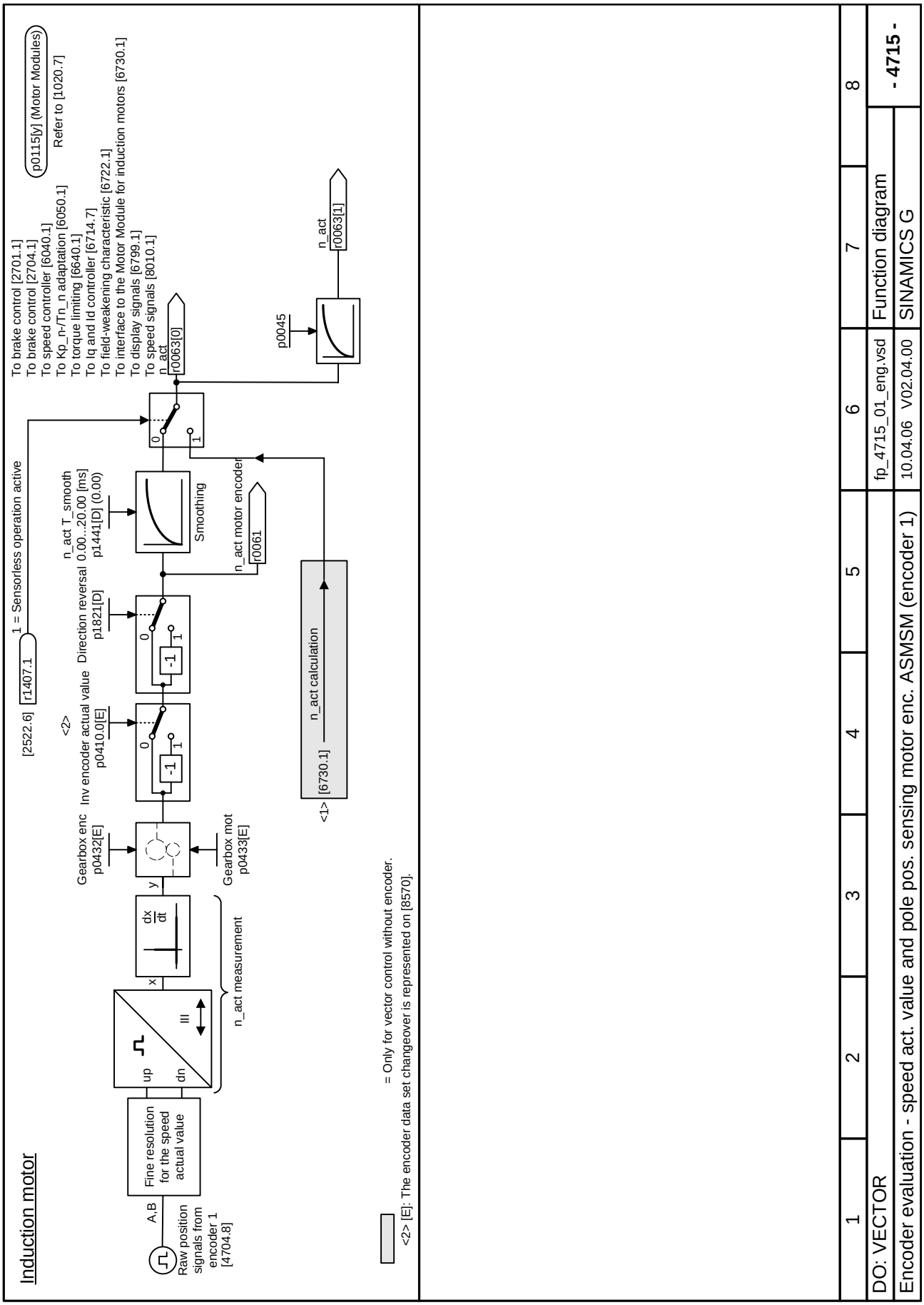

Figure 2-73 4715 – Speed actual value and pole position sensing for motor ASM/SM (encoder 1)

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2.12 Vector control

Function diagrams

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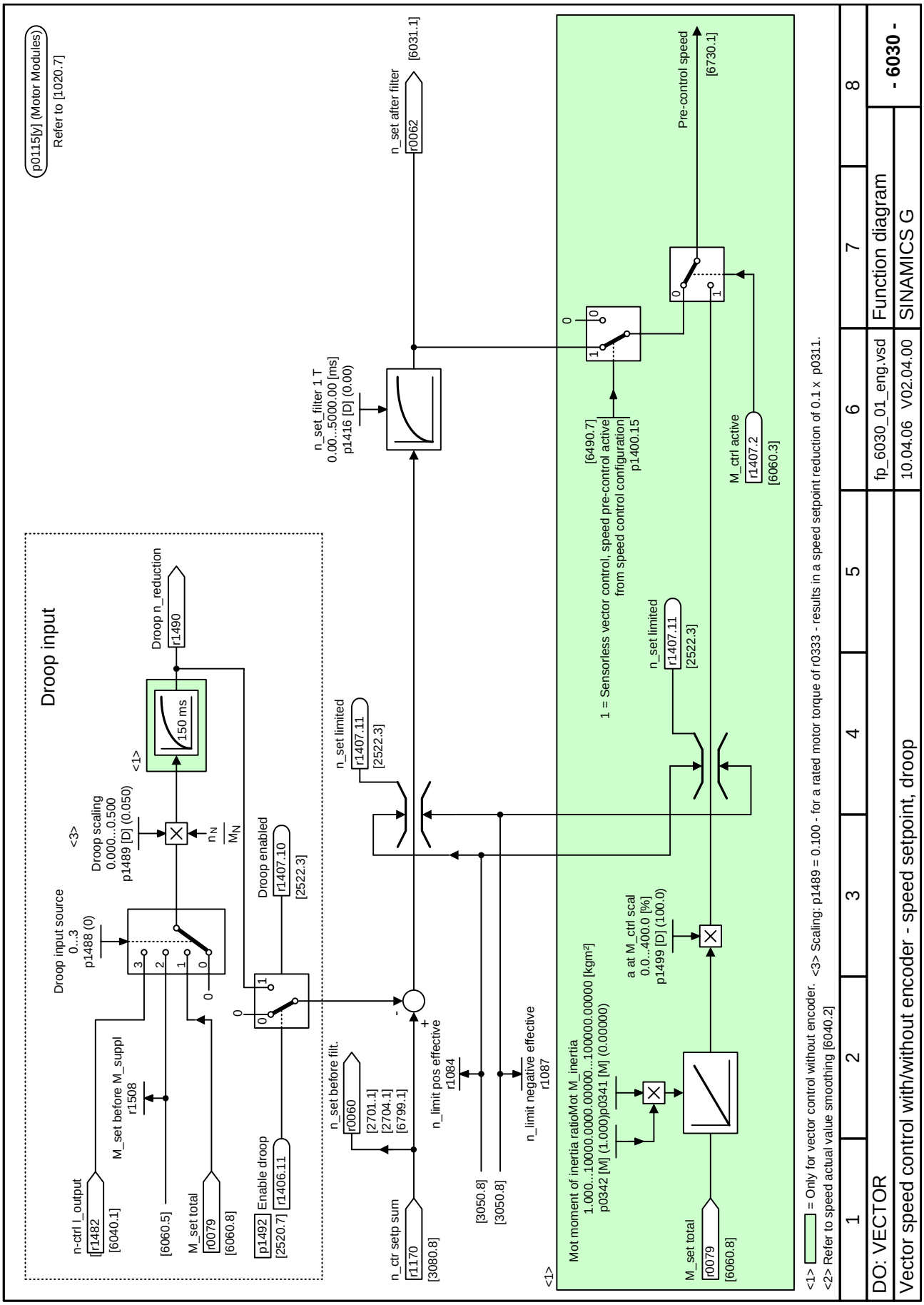

Figure 2-74 6030 – Speed setpoint, droop

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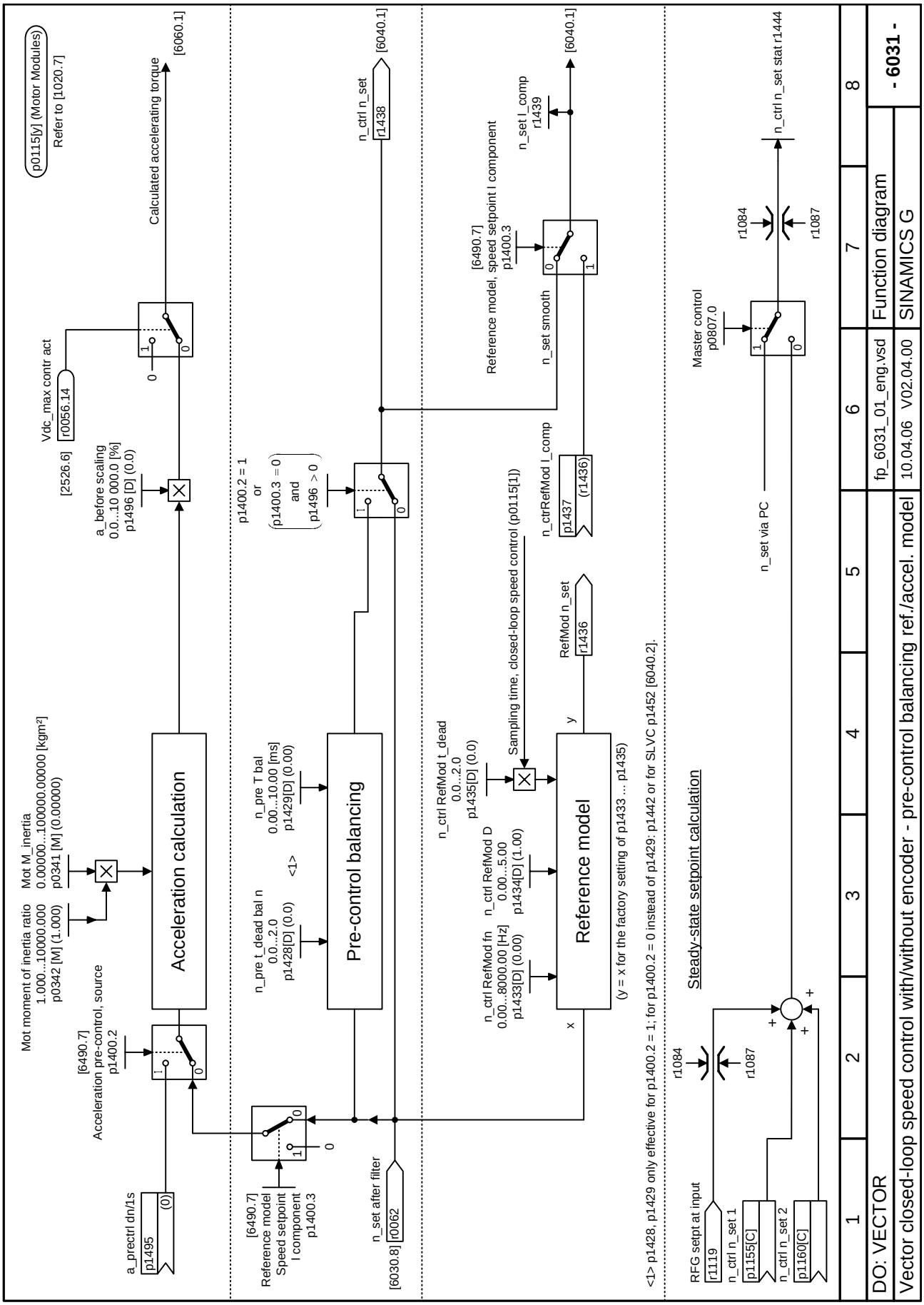

Figure 2-75 6031 – Pre-control balancing for reference/acceleration model

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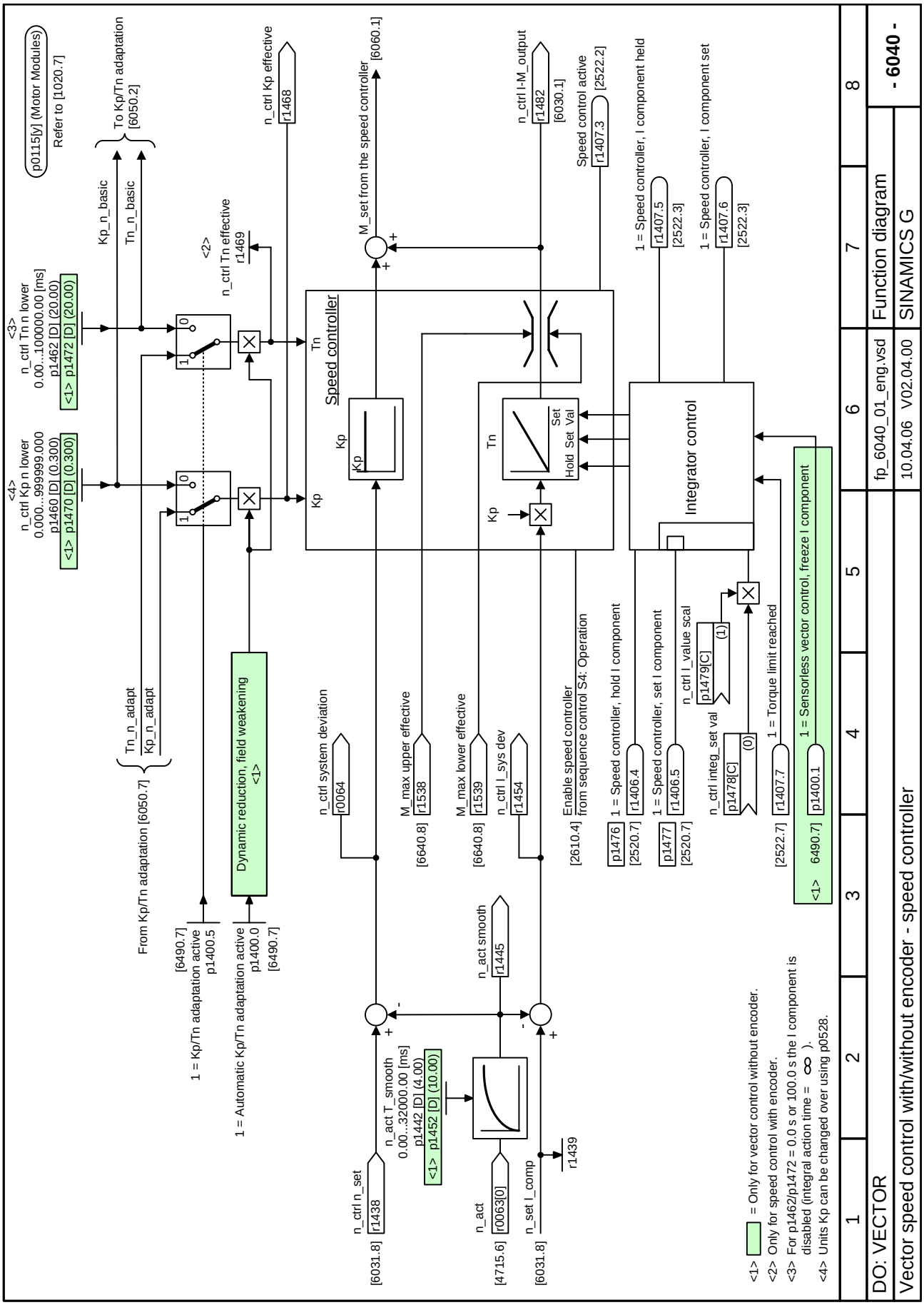

Figure 2-76 6040 – Speed controller with/without encoder

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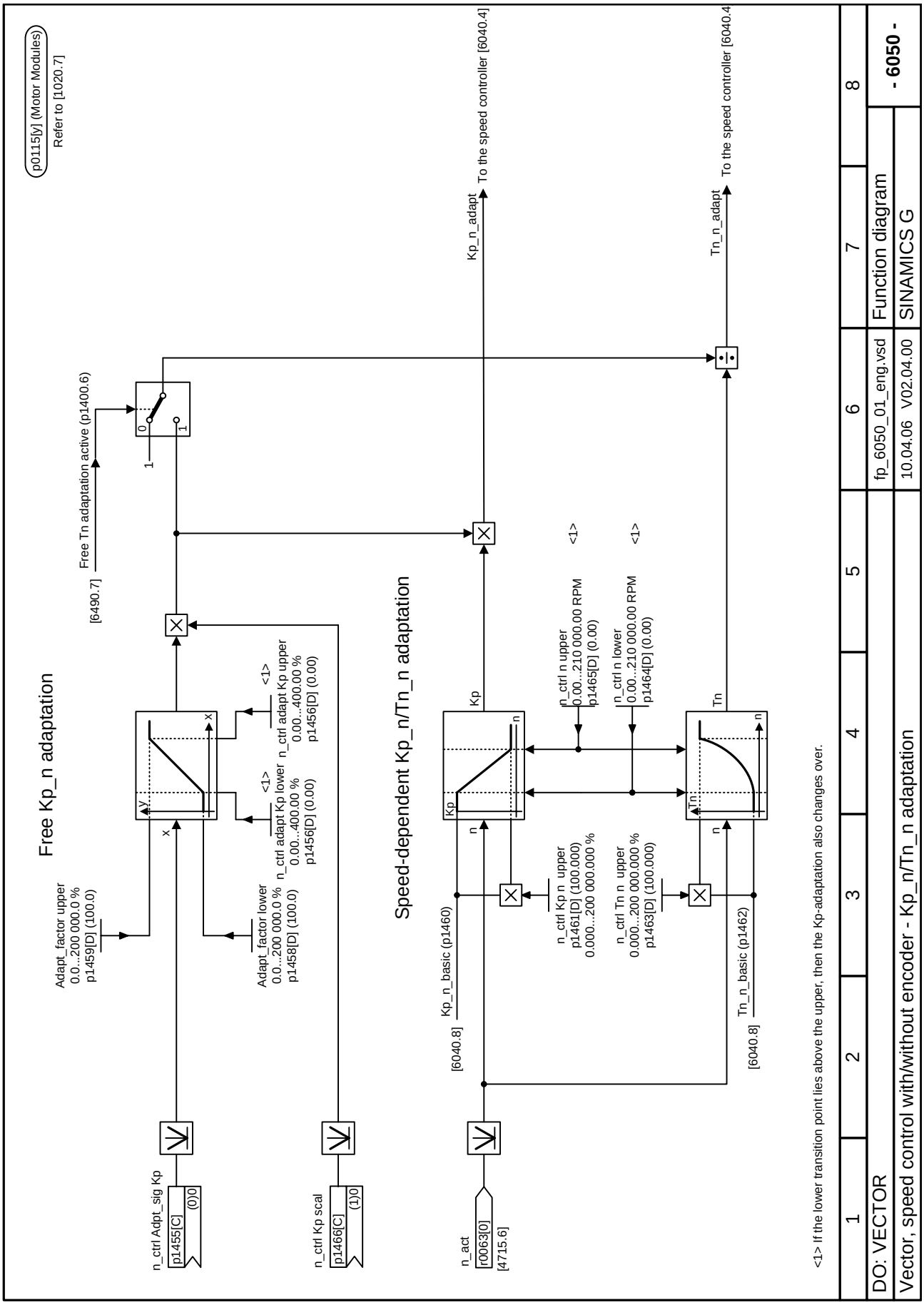

Figure 2-77 6050 – Kp_n/Tn_n adaptation

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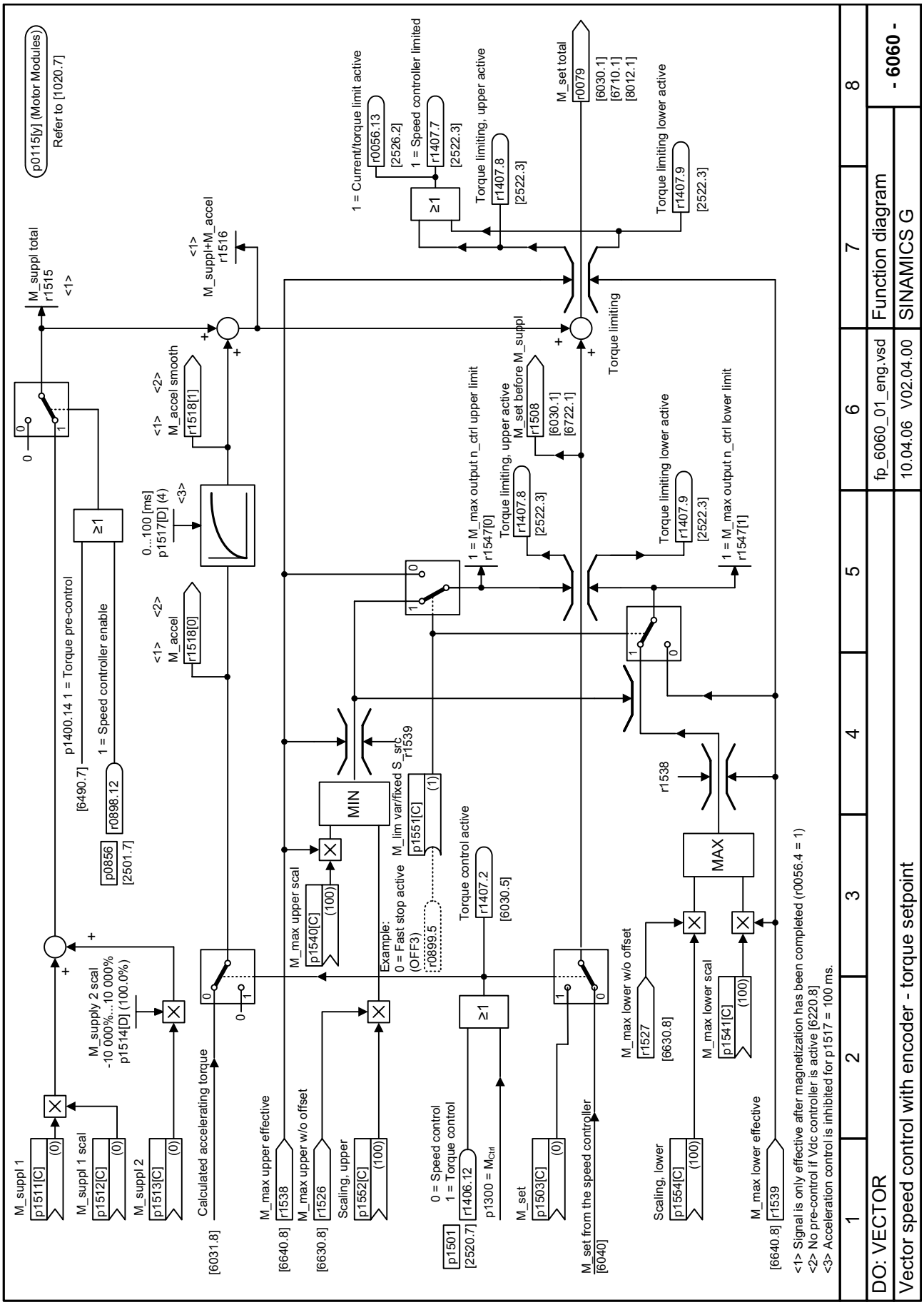

Figure 2-78 6060 – Torque setpoint

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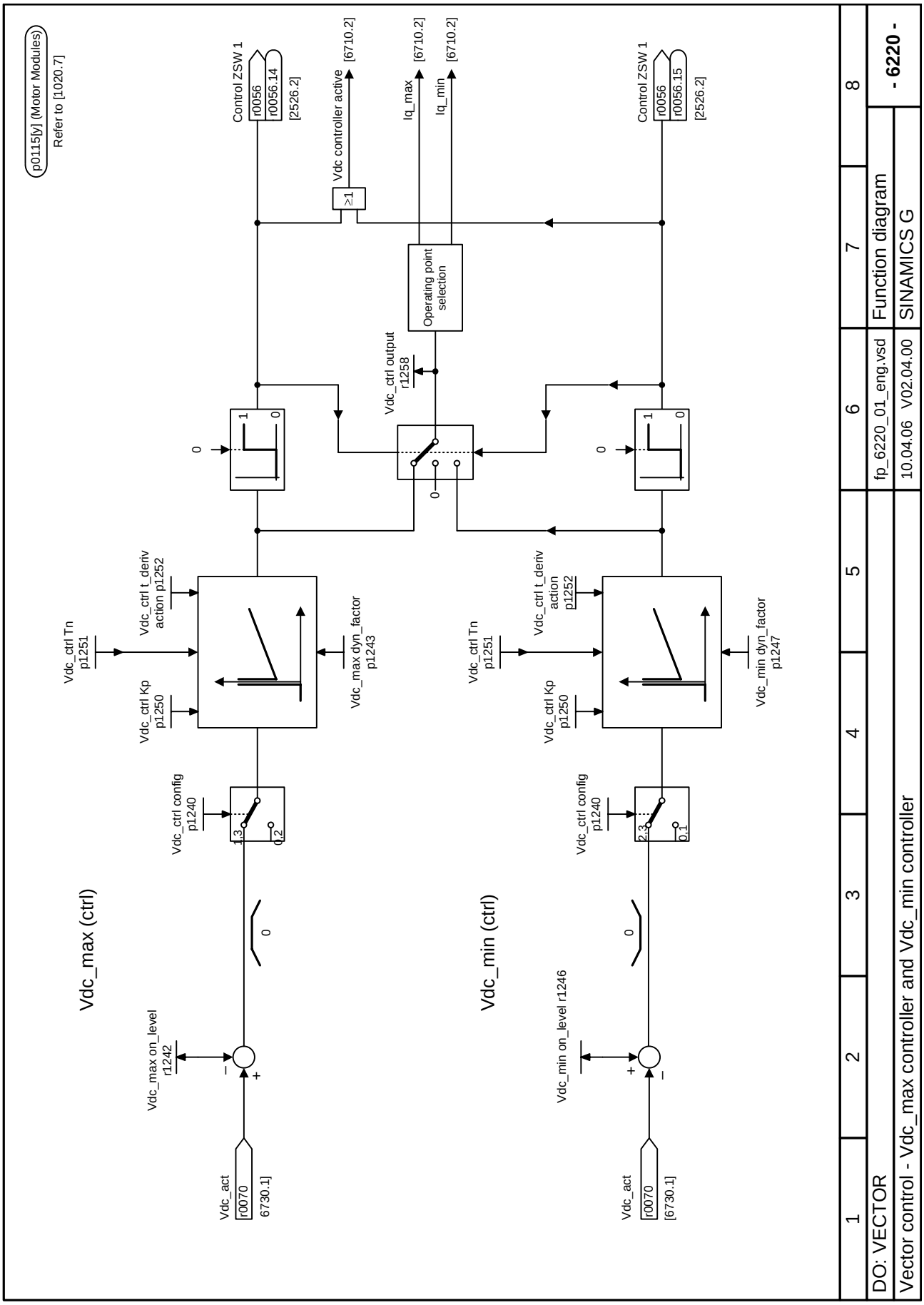

Figure 2-79 6220 – Vdc_max controller and Vdc_min controller

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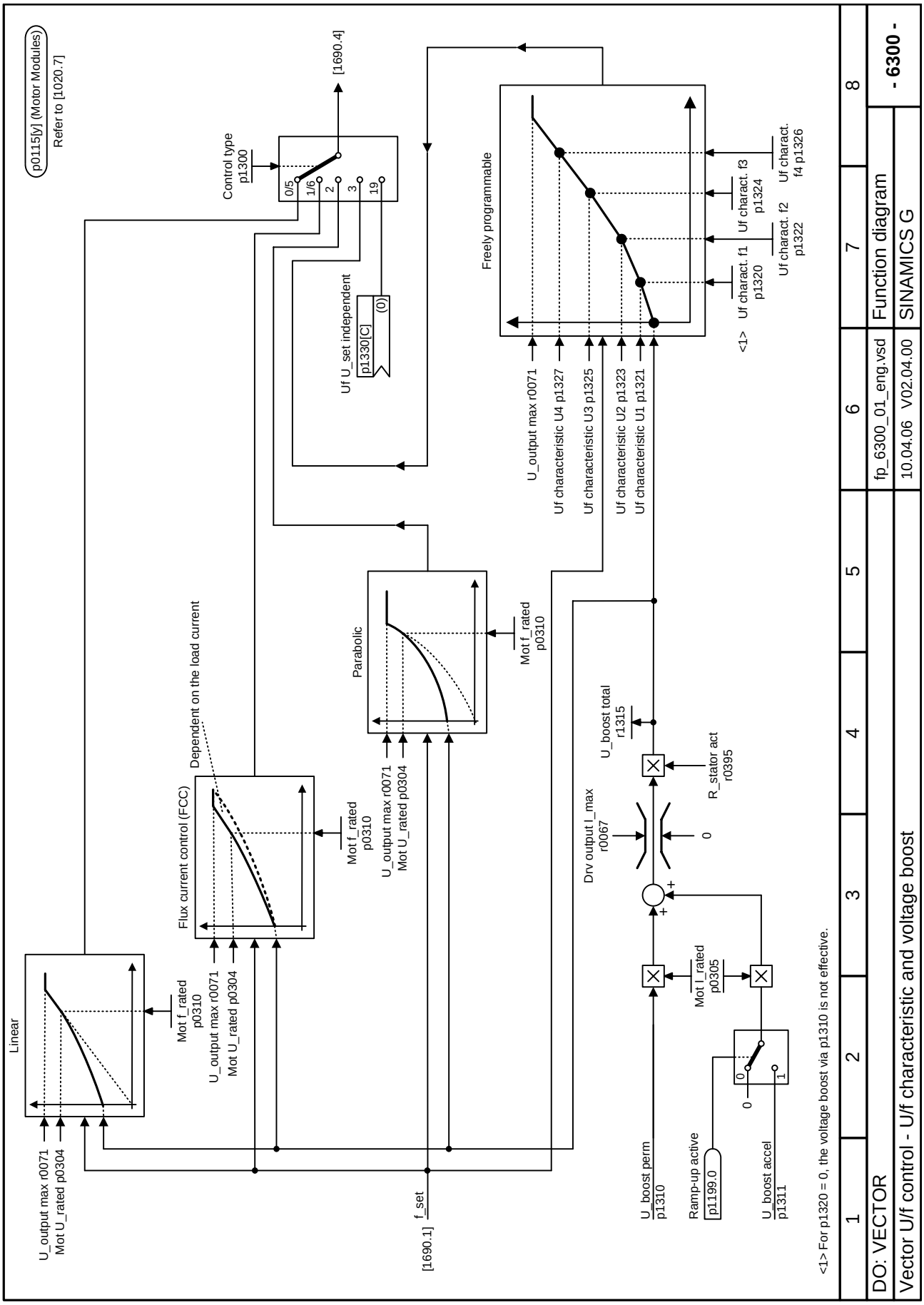

Figure 2-80 6300 – V/f characteristic and voltage boost

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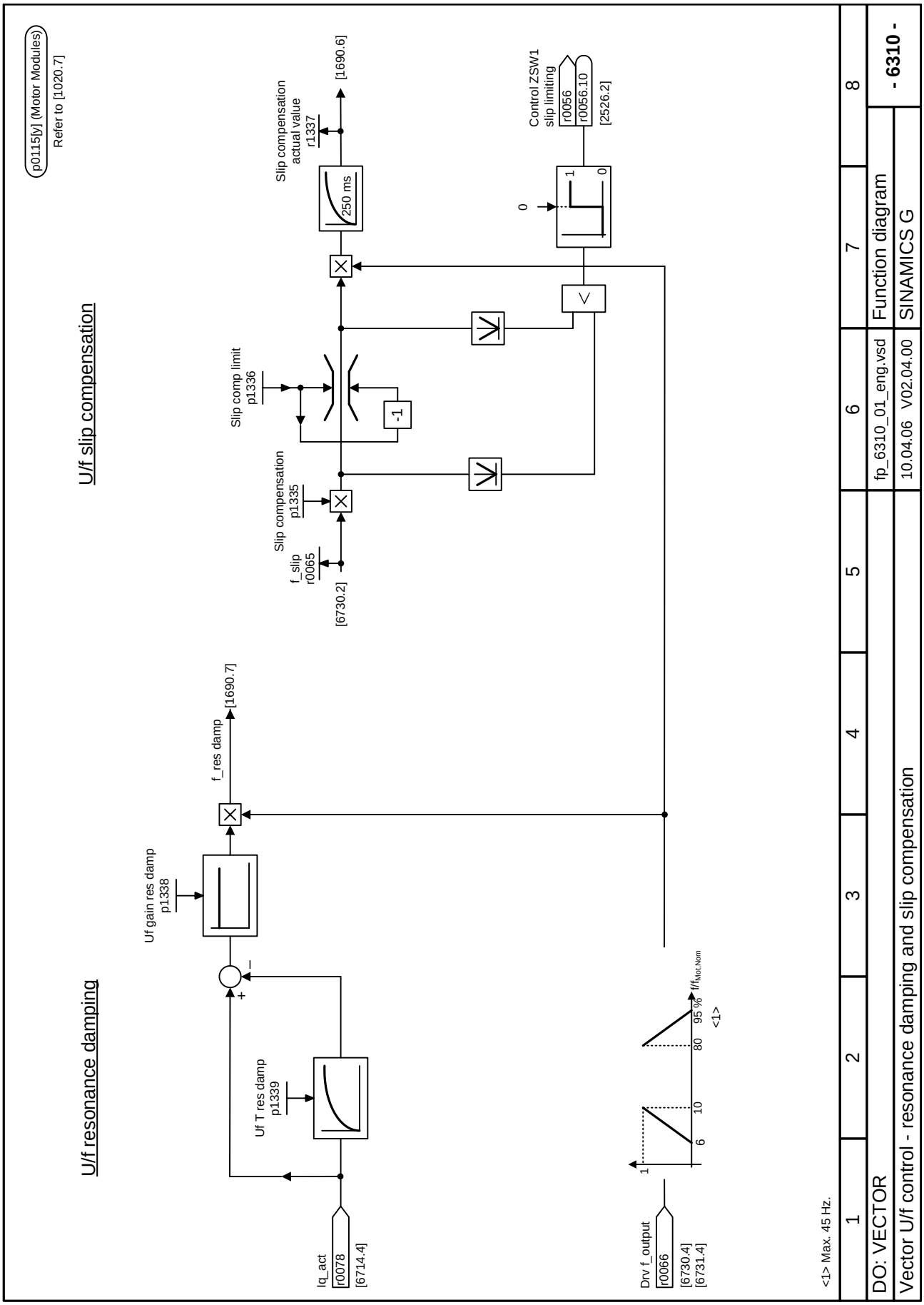

Figure 2-81 6310 – Resonance damping and slip compensation

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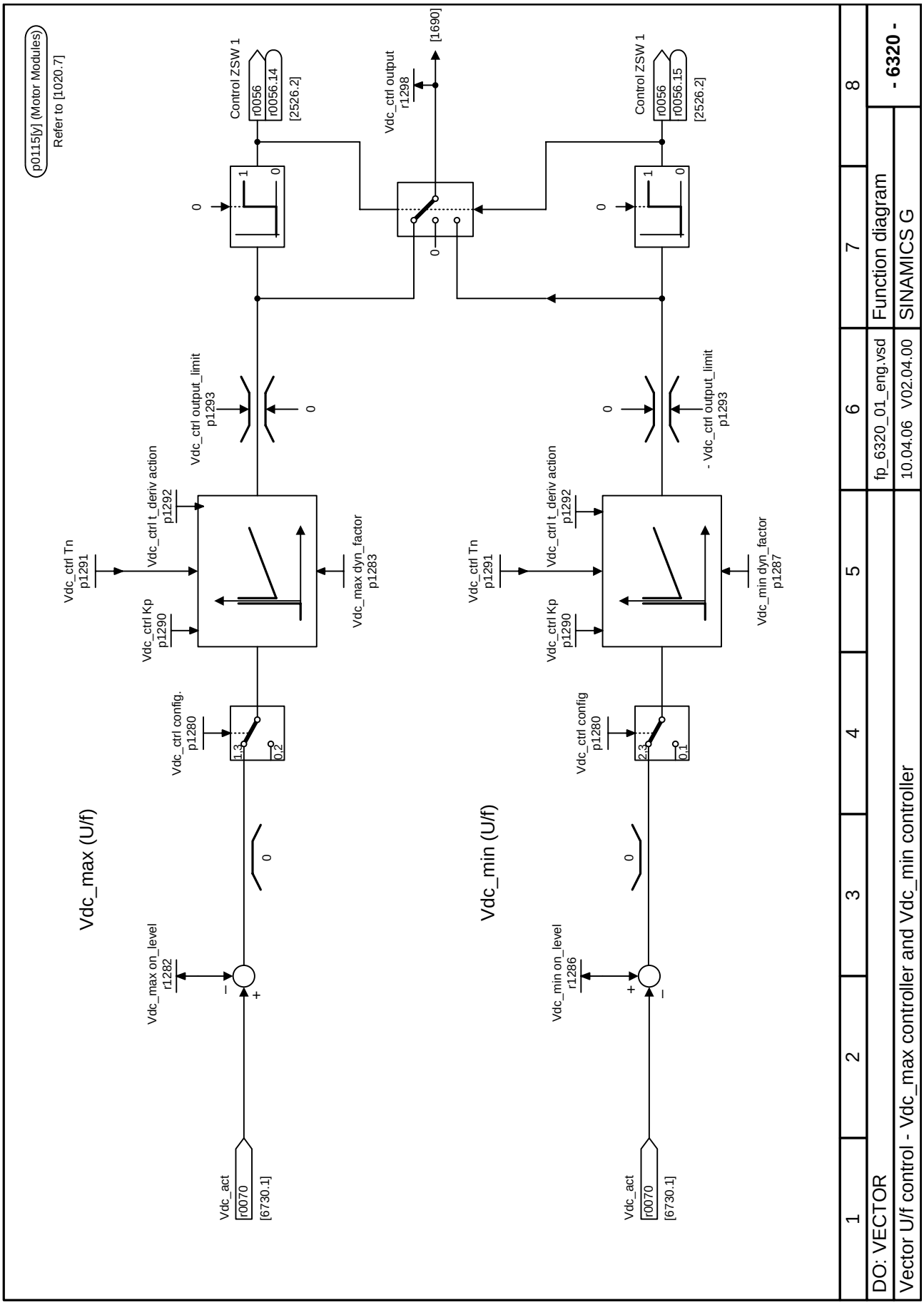

Figure 2-82 6320 – Vdc_max controller and Vdc_min controller

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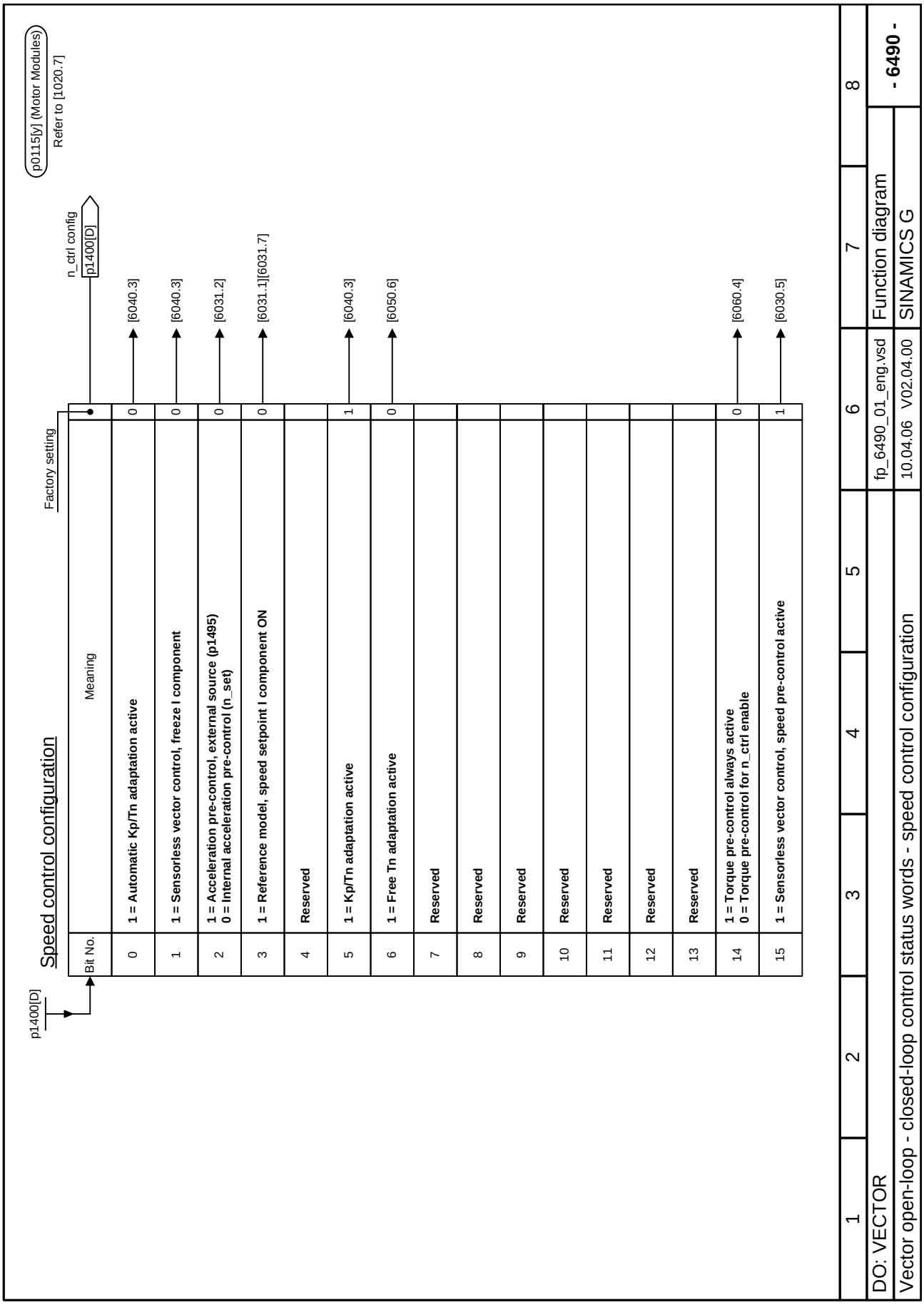

Figure 2-83 6490 – Speed control configuration

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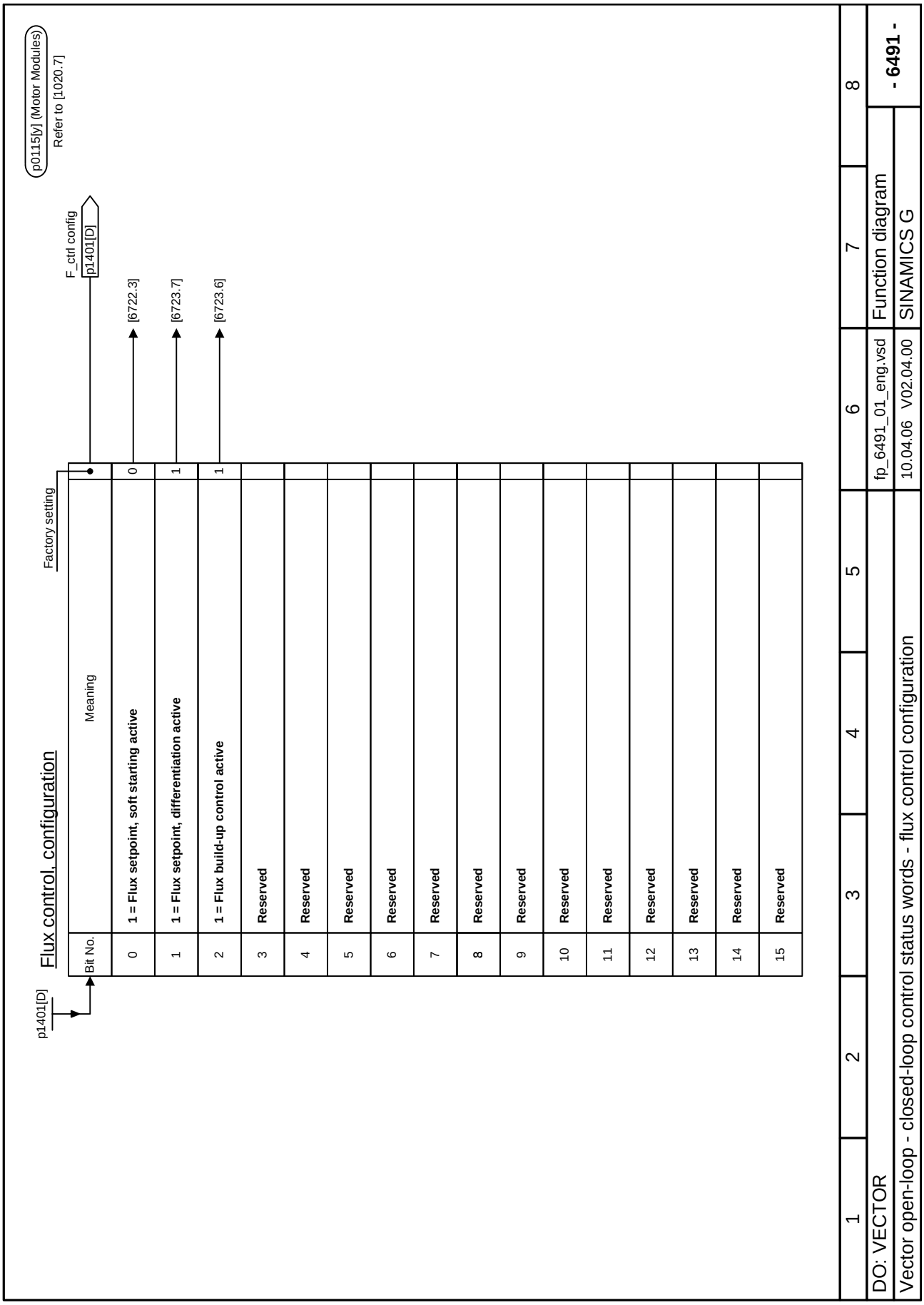

Figure 2-84 6491 – Flux control configuration

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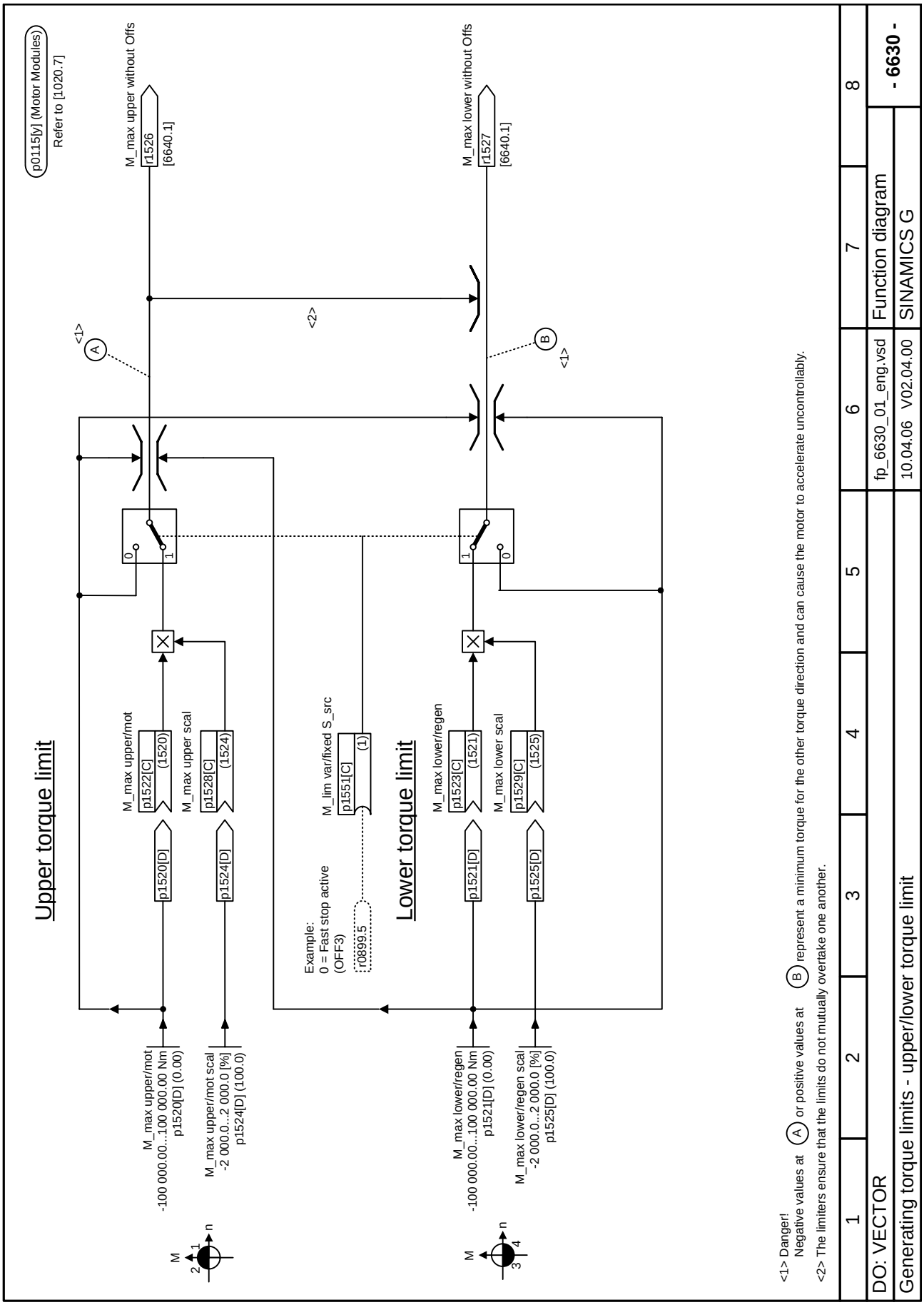

Figure 2-85 6630 – Upper/lower torque limit

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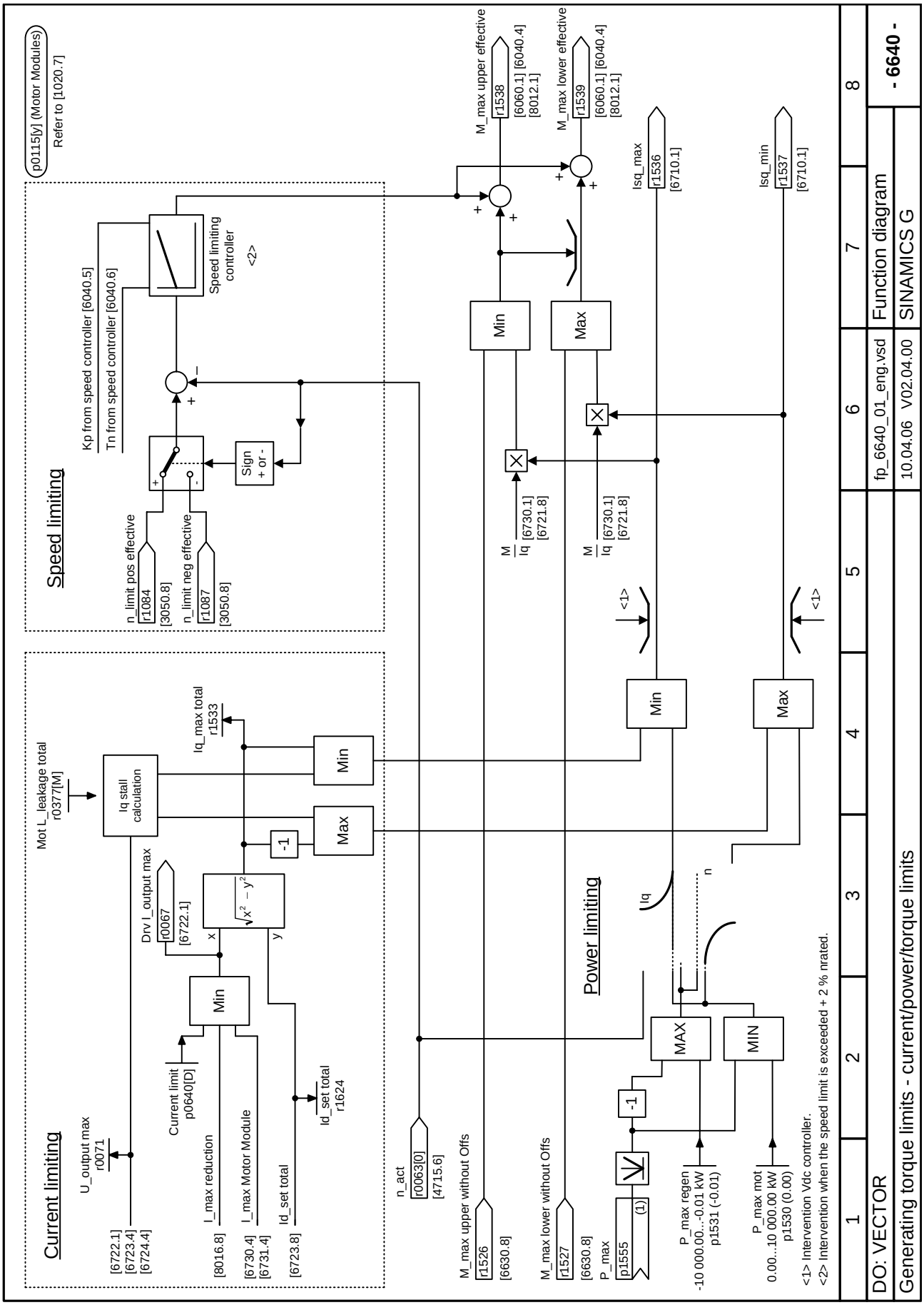

Figure 2-86 6640 – Current/power/torque limits

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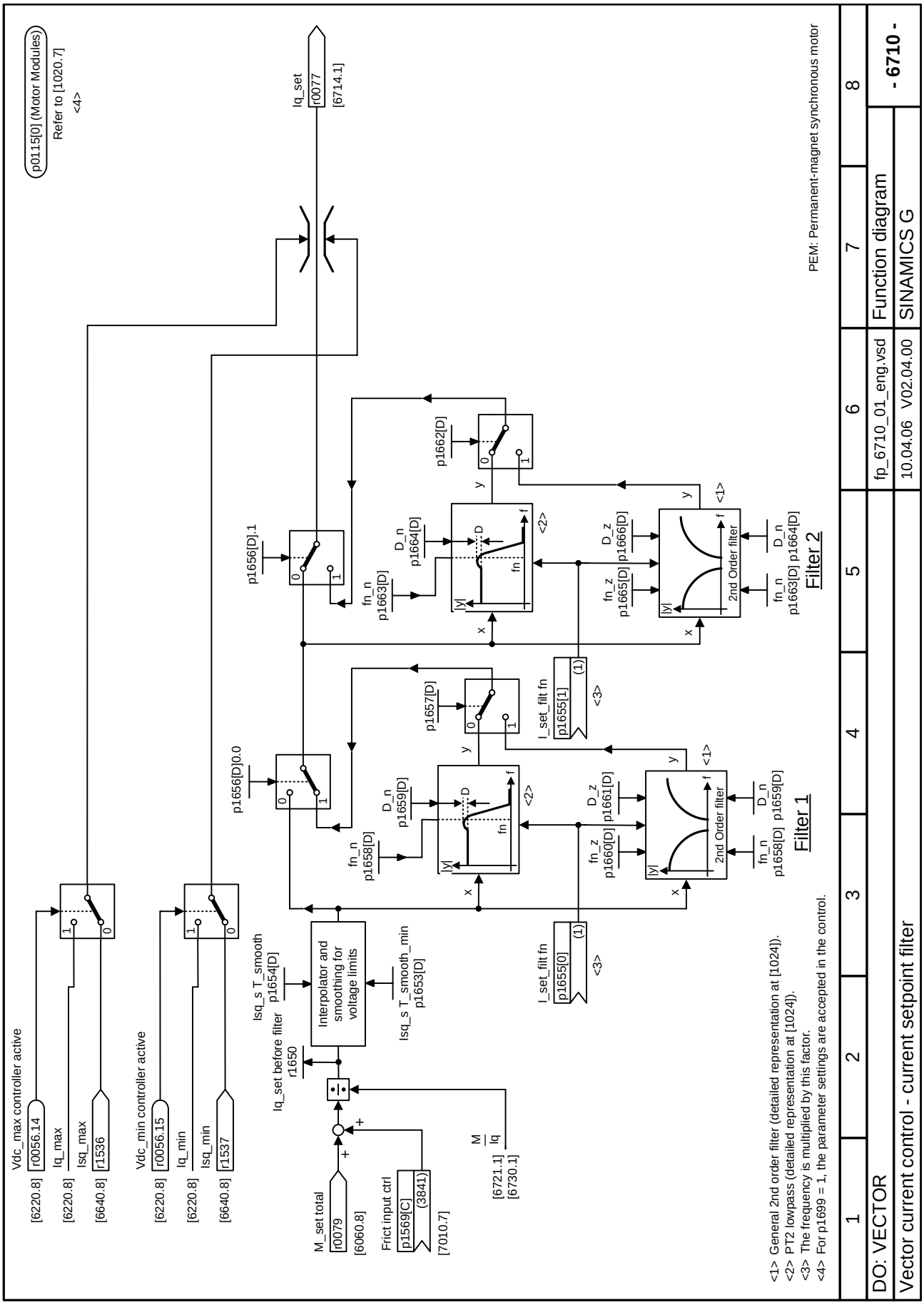

Figure 2-87 6710 – Current setpoint filter

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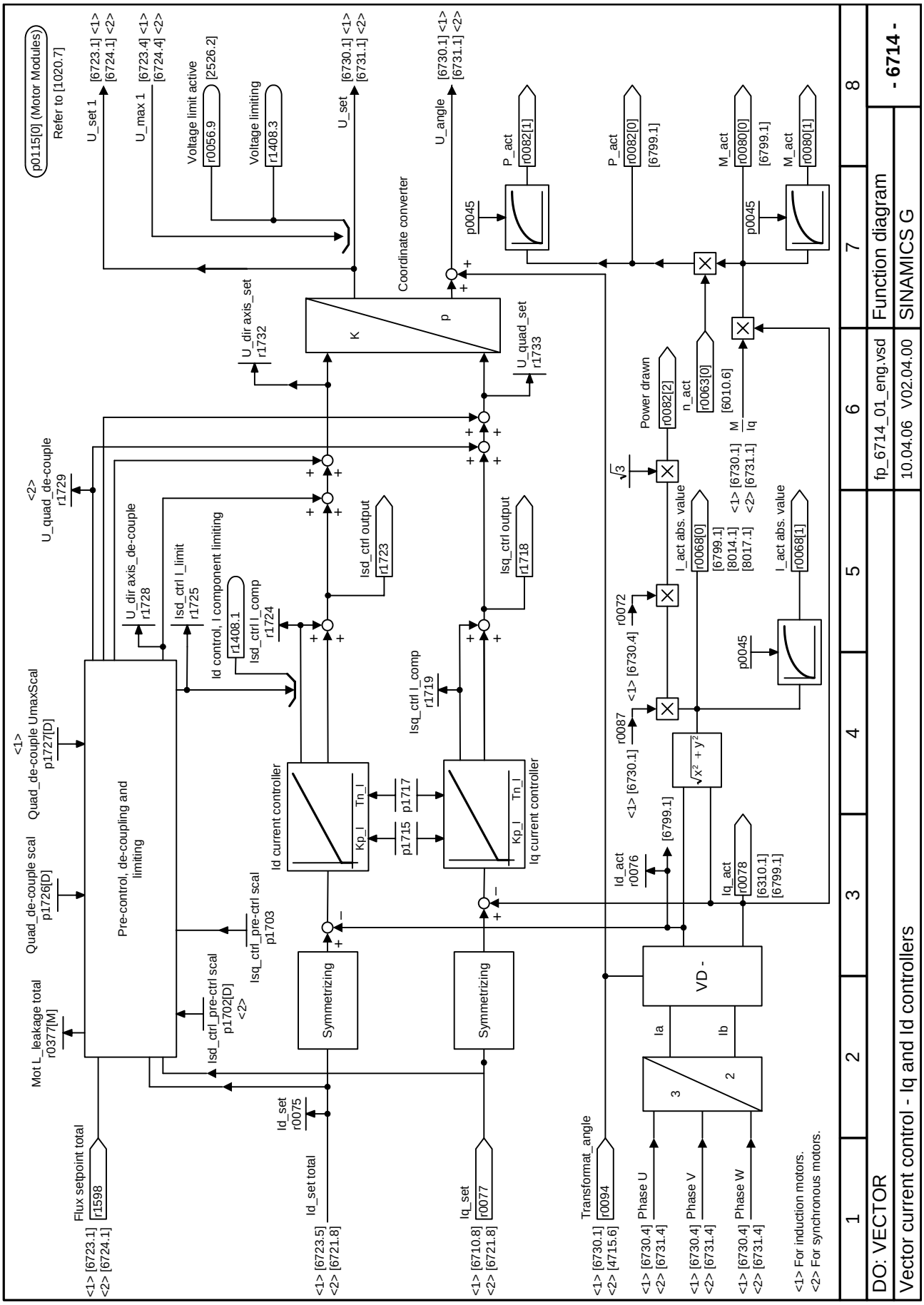

Figure 2-88 6714 – Iq and Id controllers

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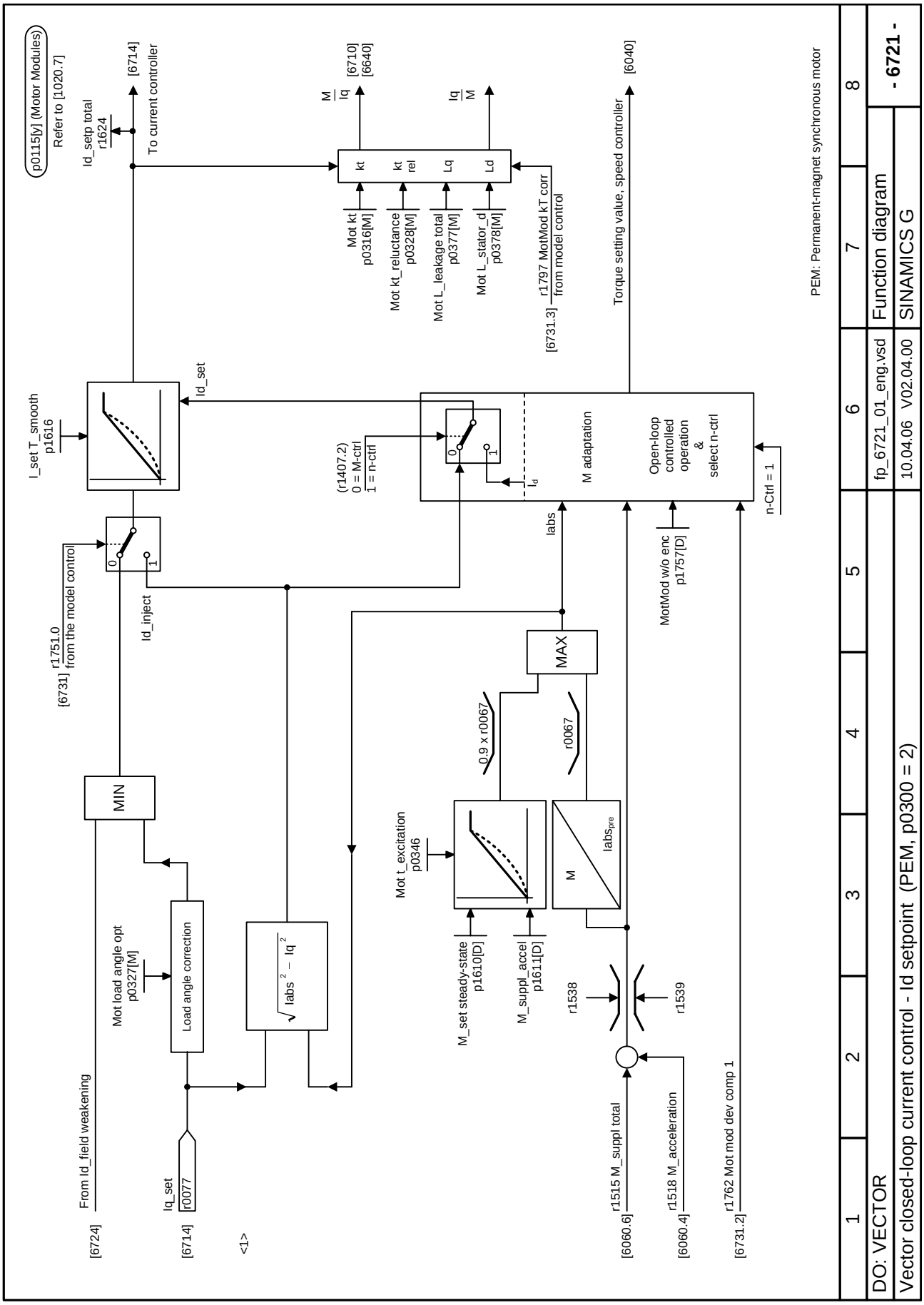

Figure 2-89 6721 – Id setpoint (PEM, p0300 = 2)

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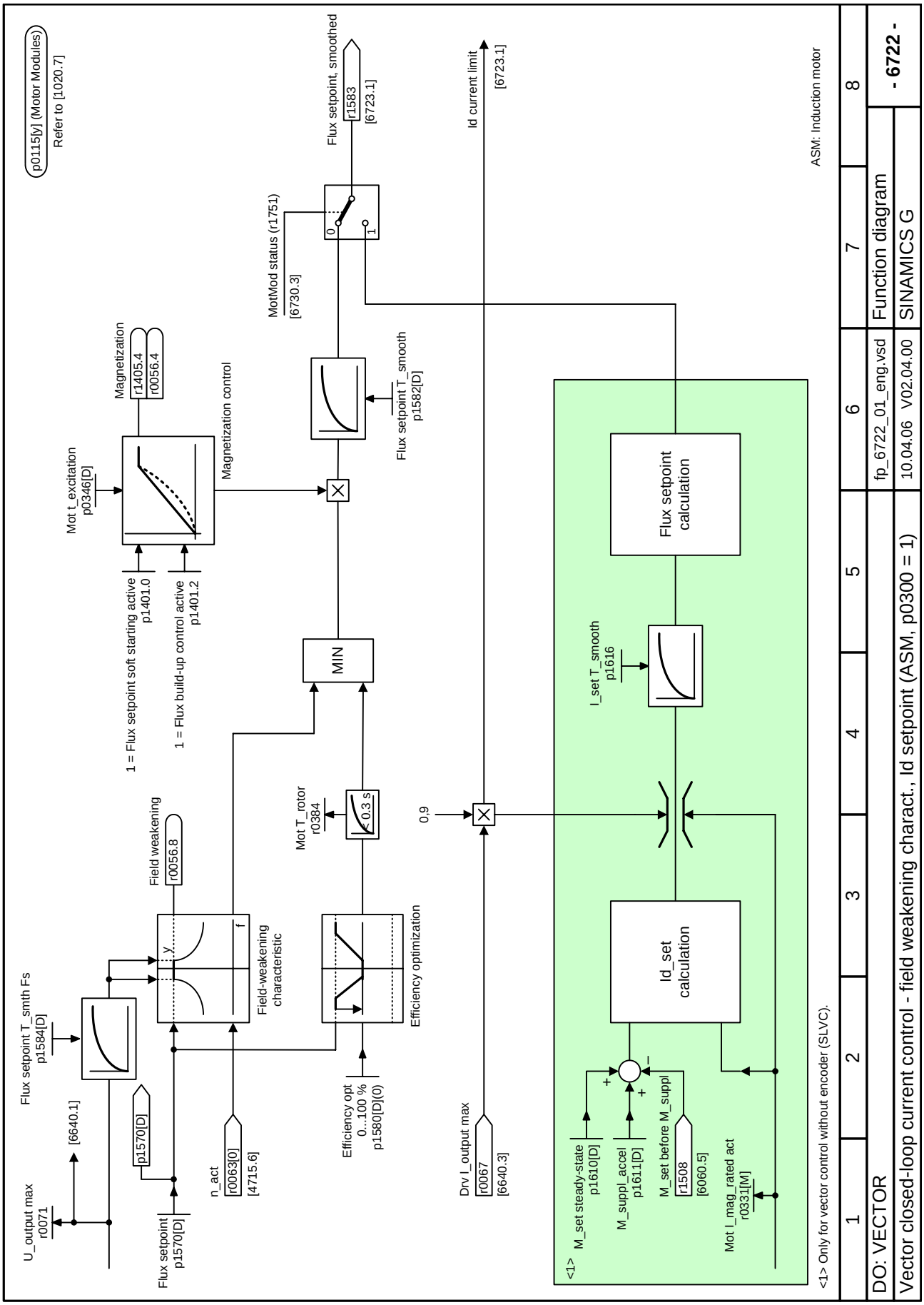

Figure 2-90 6722 – Field weakening characteristic, Id setpoint (ASM, p0300 = 1)

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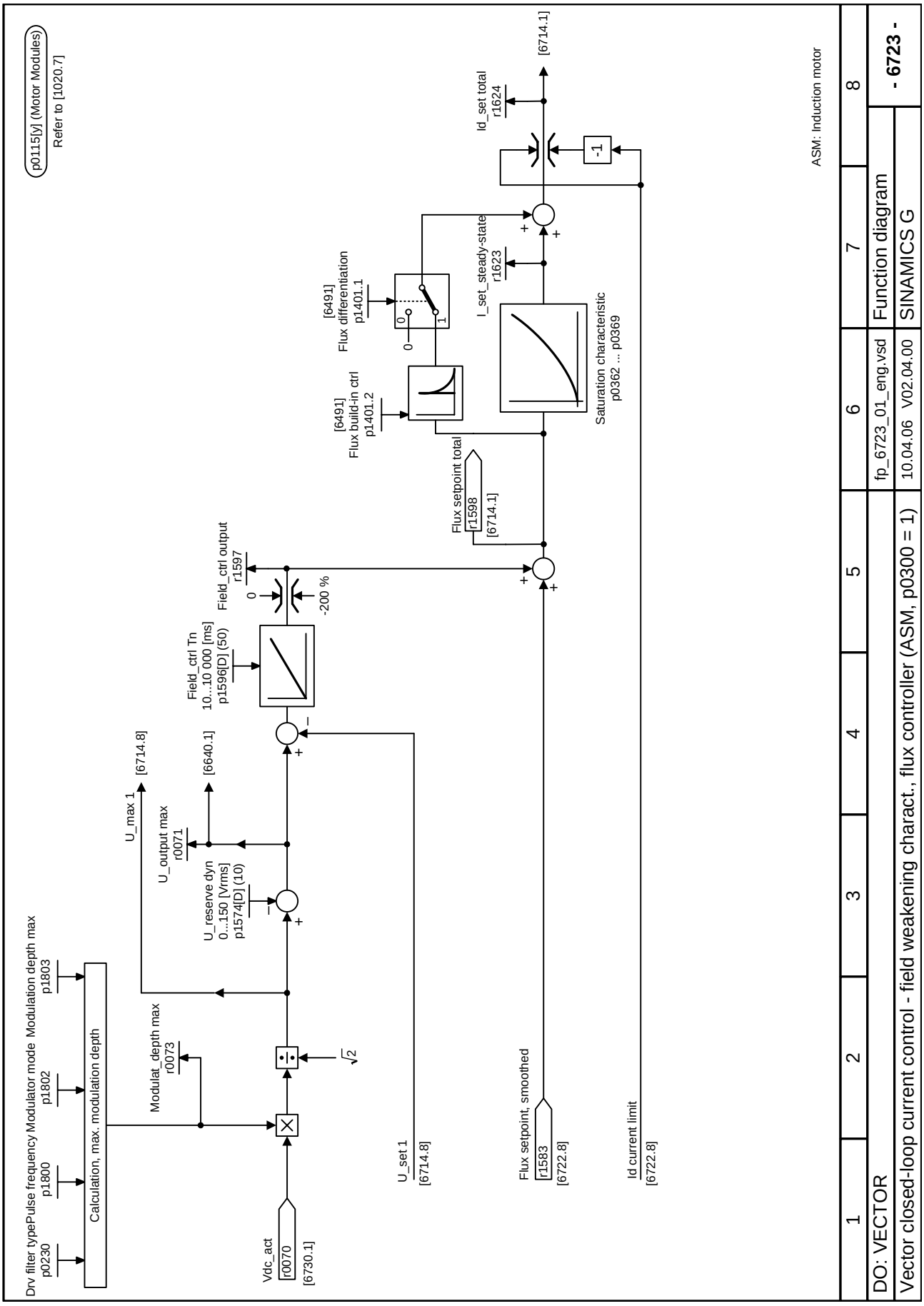

Figure 2-91 6723 – Field weakening characteristic, flux controller (ASM, p0300 = 1)

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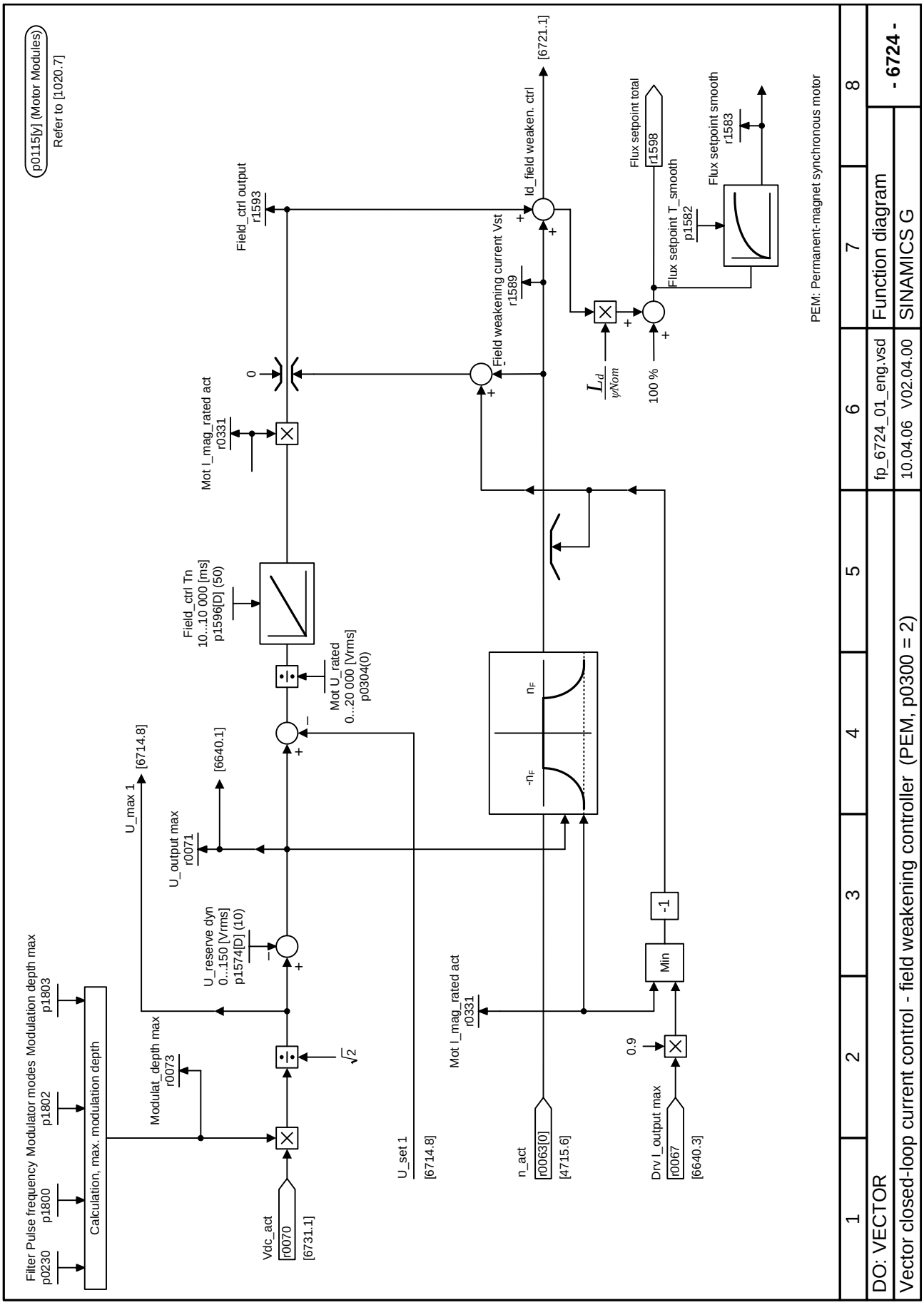

Figure 2-92 6724 – Field weakening controller (PEM, p0300 = 2)

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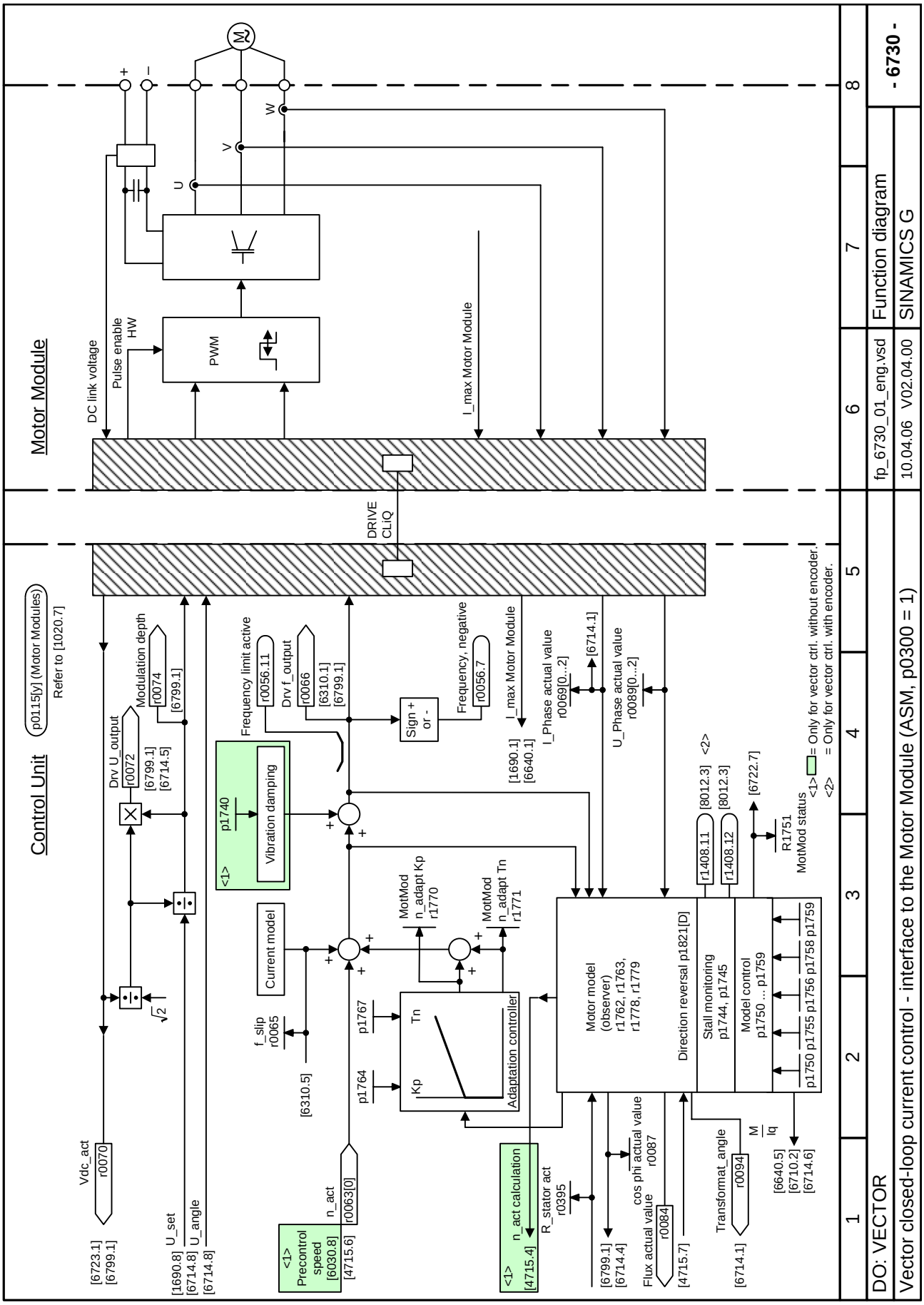

Figure 2-93 6730 – Interface to the motor module (ASM, p0300 = 1)

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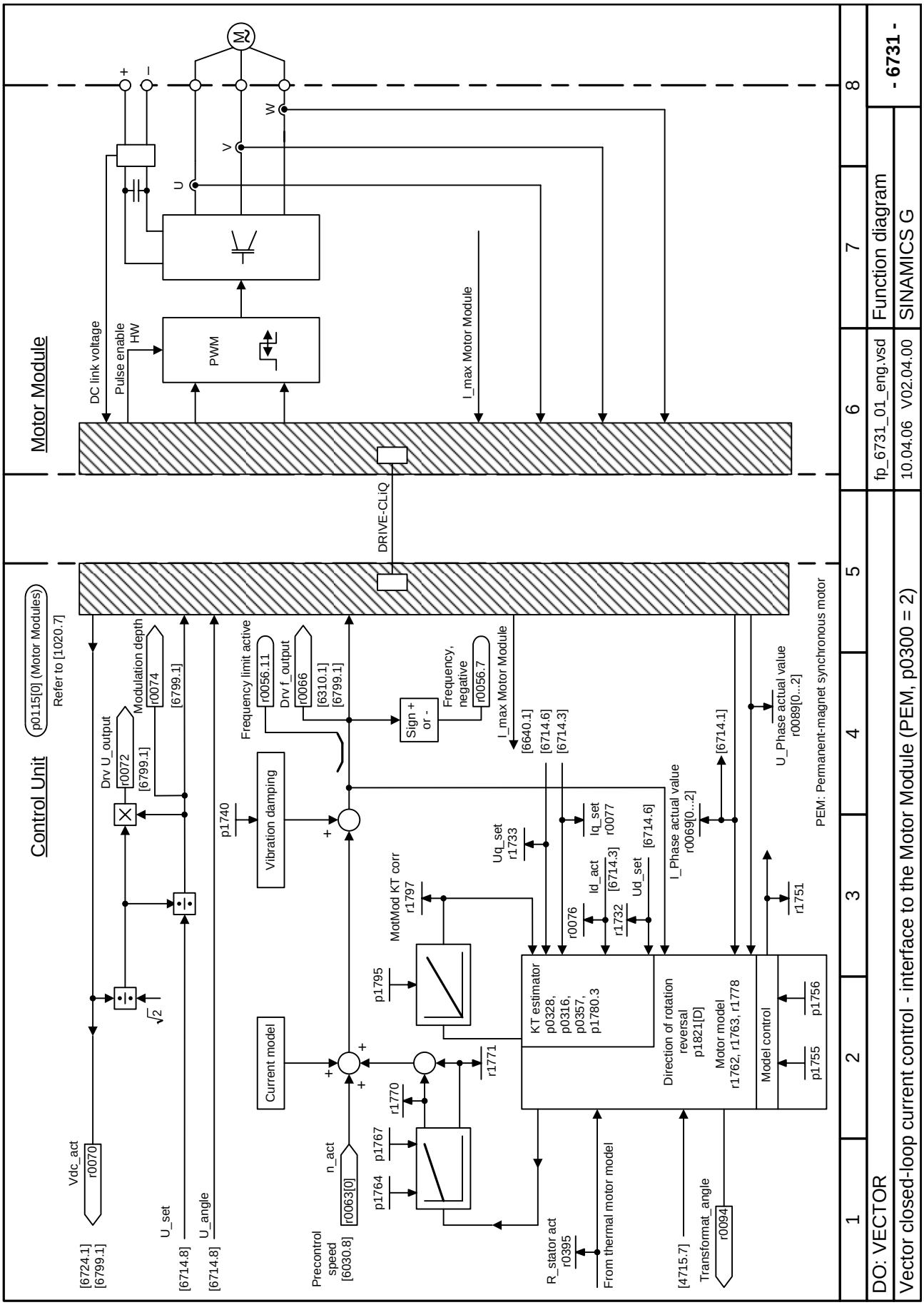

Figure 2-94 6731 – Interface to the motor module (PEM, p0300 = 2)

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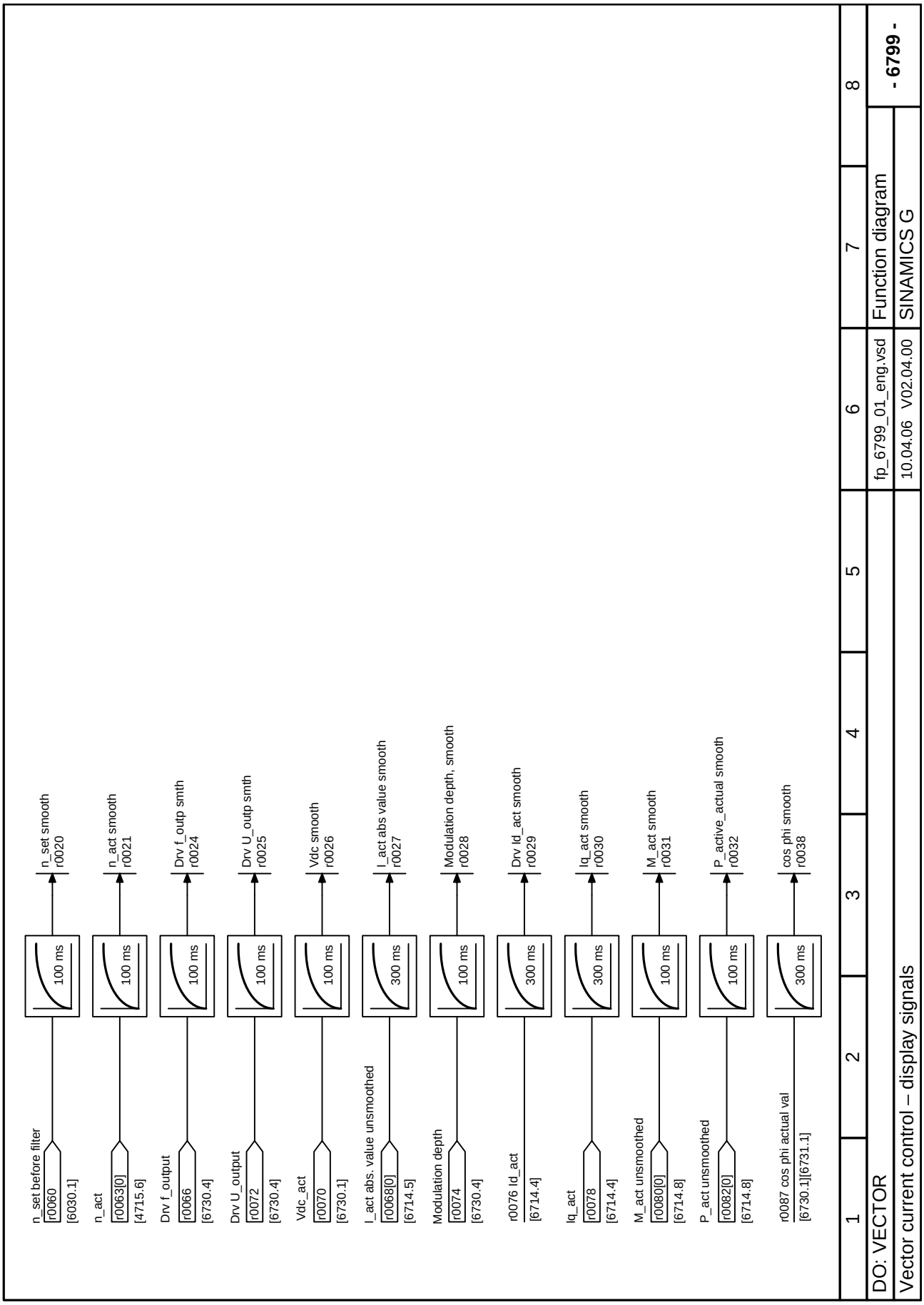

Figure 2-95 6799 – Display signals

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2.13 Technology functions

Function diagrams

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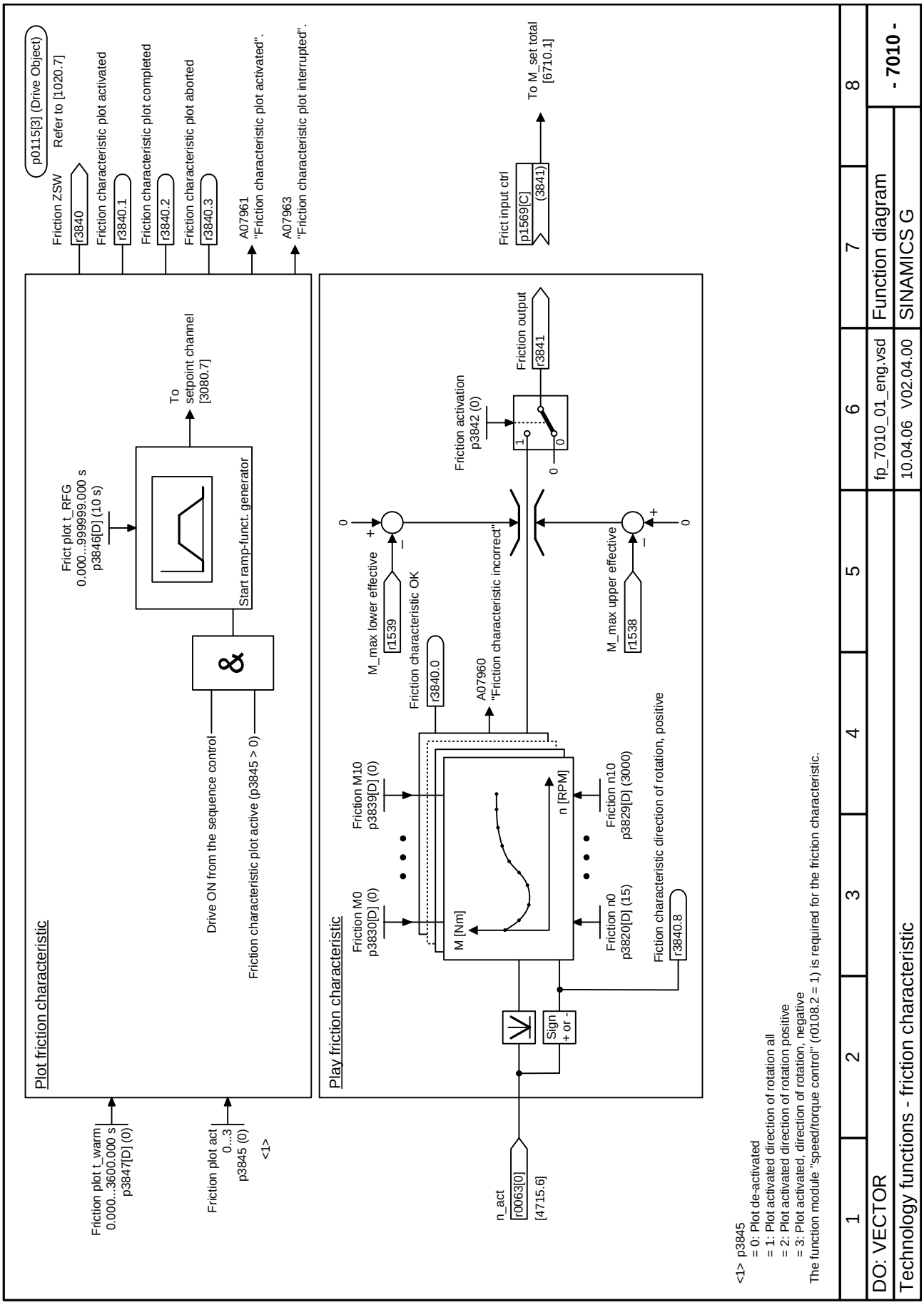

Figure 2-96 7010 – Friction characteristic

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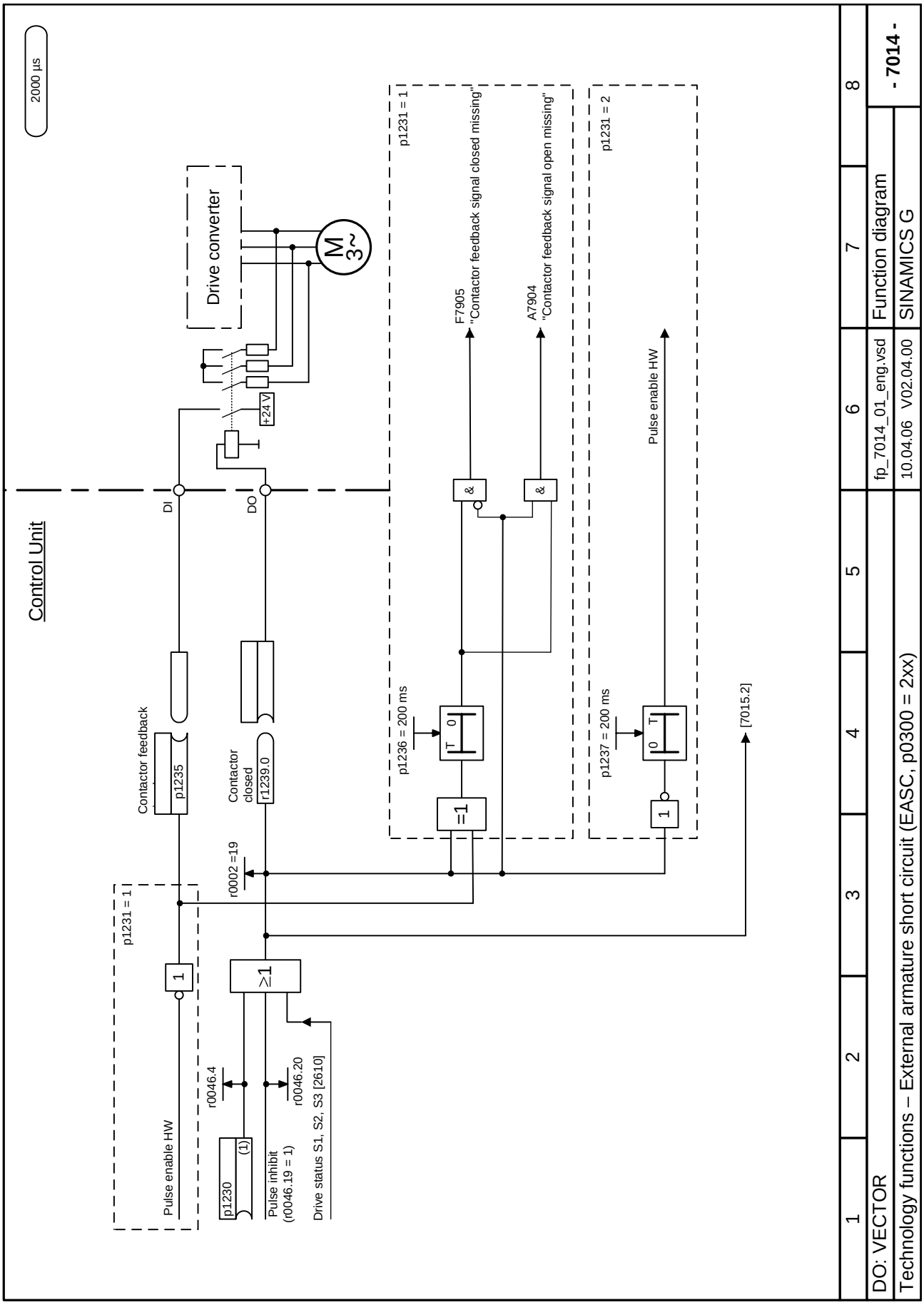

Figure 2-97 7014 – External armature short circuit (EASC, p0300 = 2xx)

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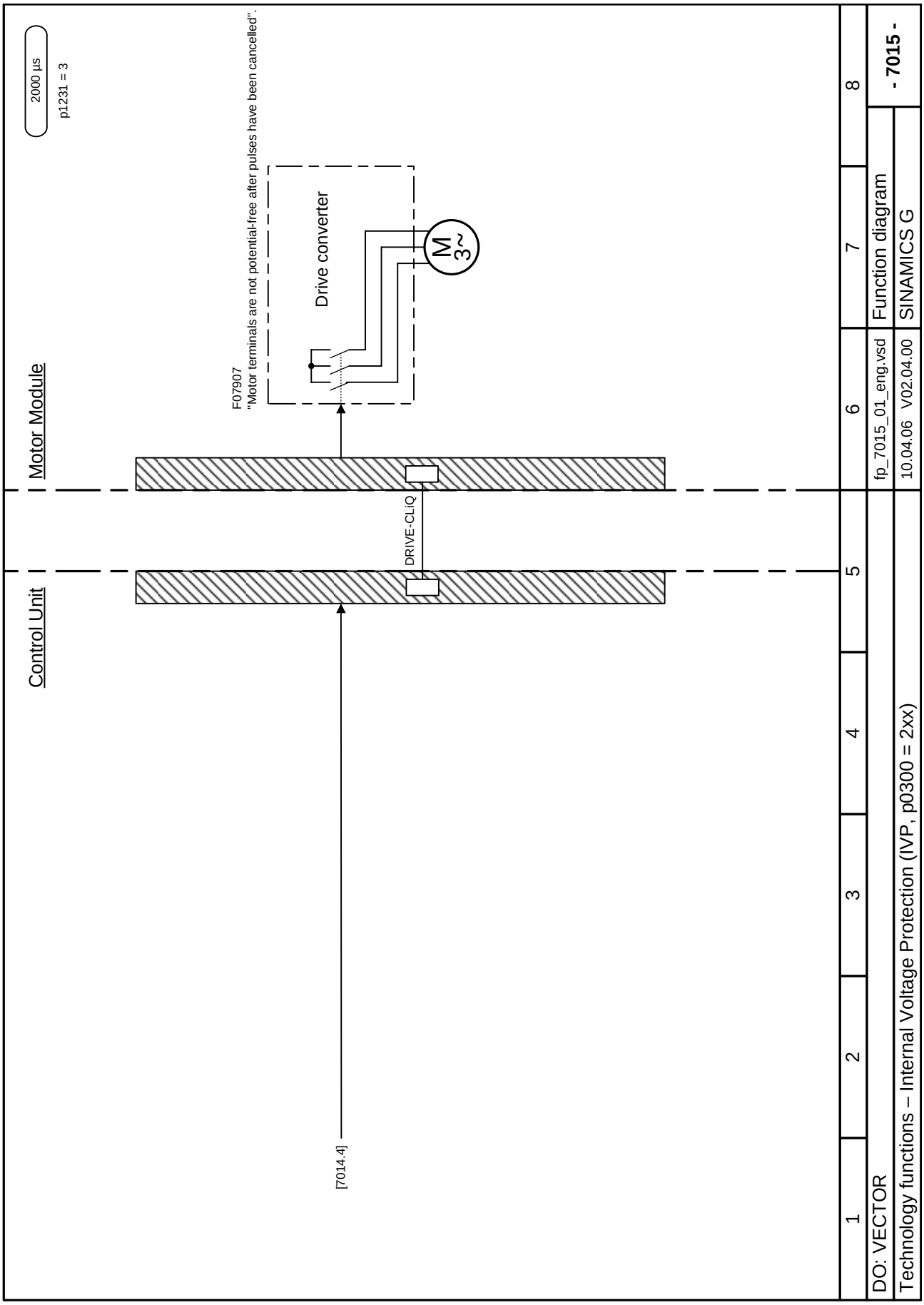

Figure 2-98 7015 – Internal voltage protection (IVP, p0300 = 2xx)

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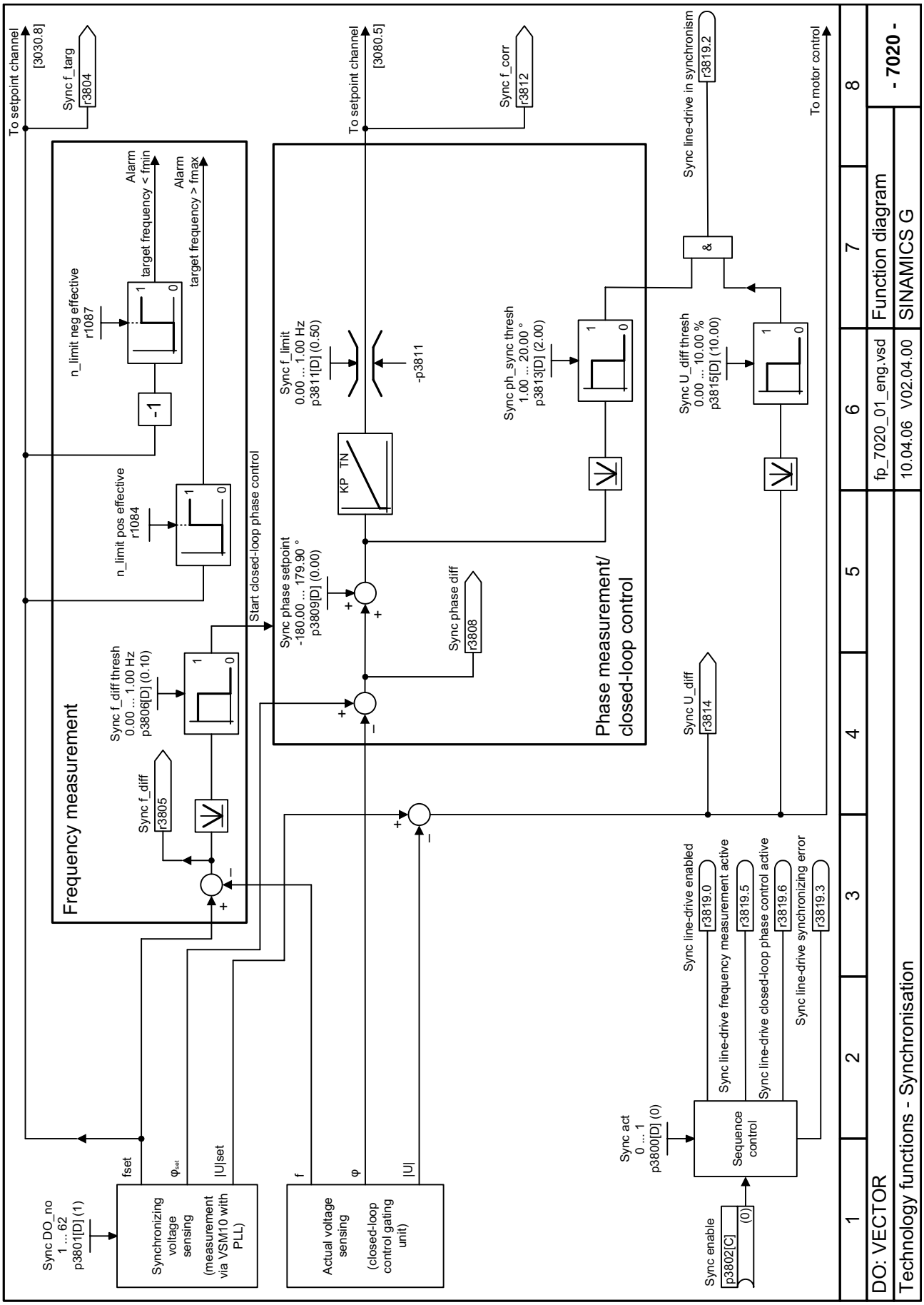

Figure 2-99 7020 – Synchronization

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2.14 Technology controller

Function diagrams

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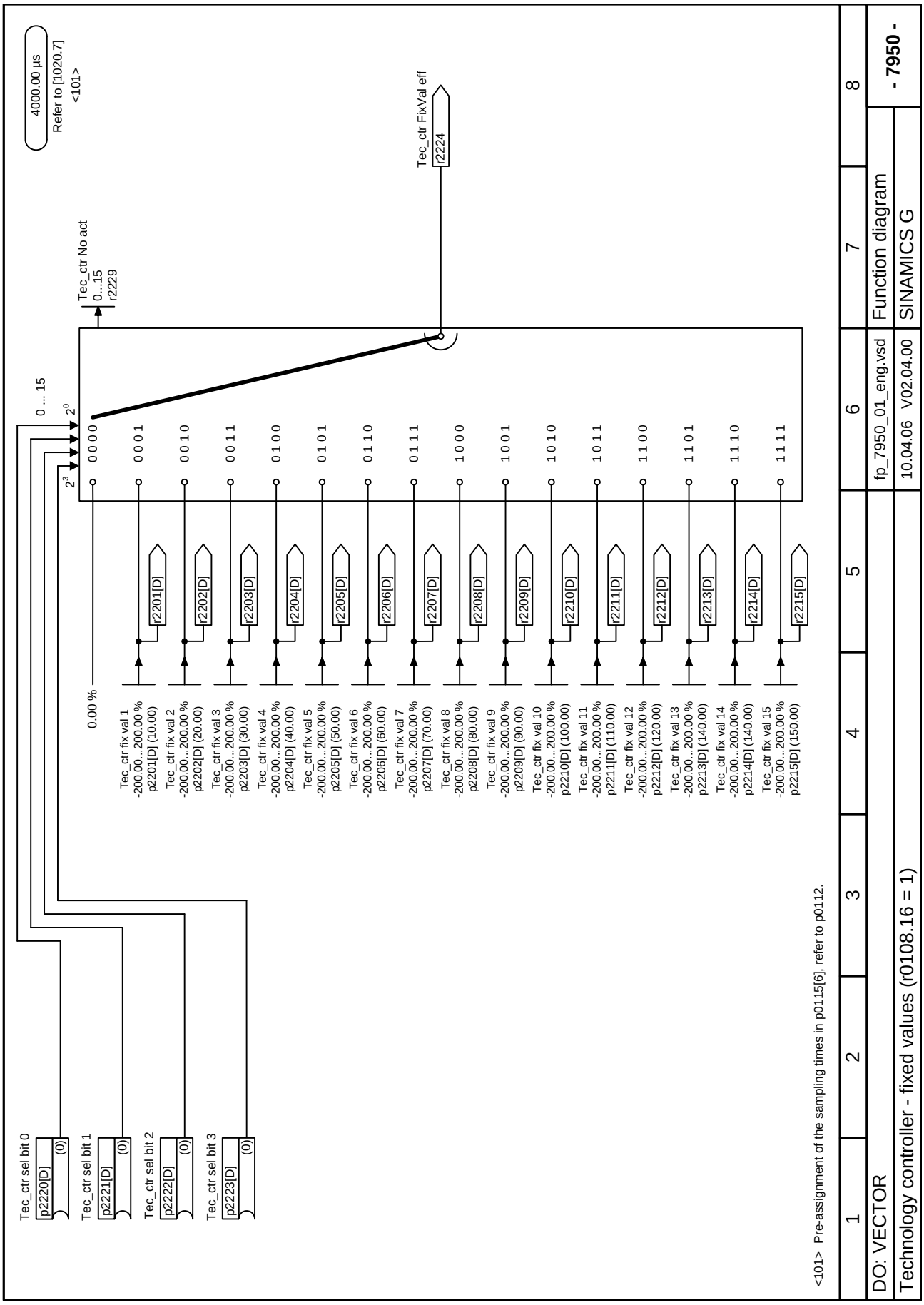

Figure 2-100 7950 – Fixed values (r0108.16 = 1)

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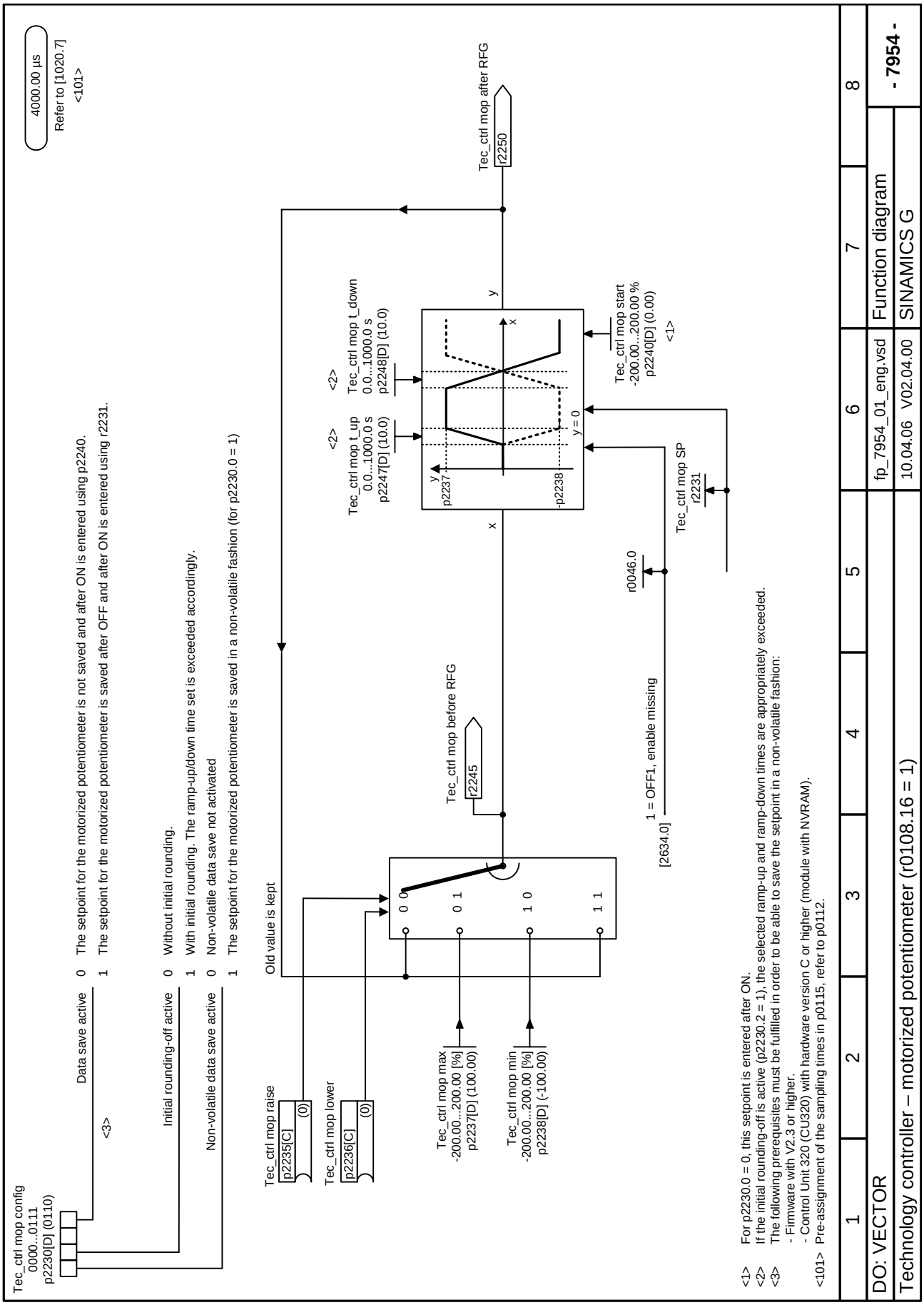

Figure 2-101 7954 – Motorized potentiometer (r0108.16 = 1)

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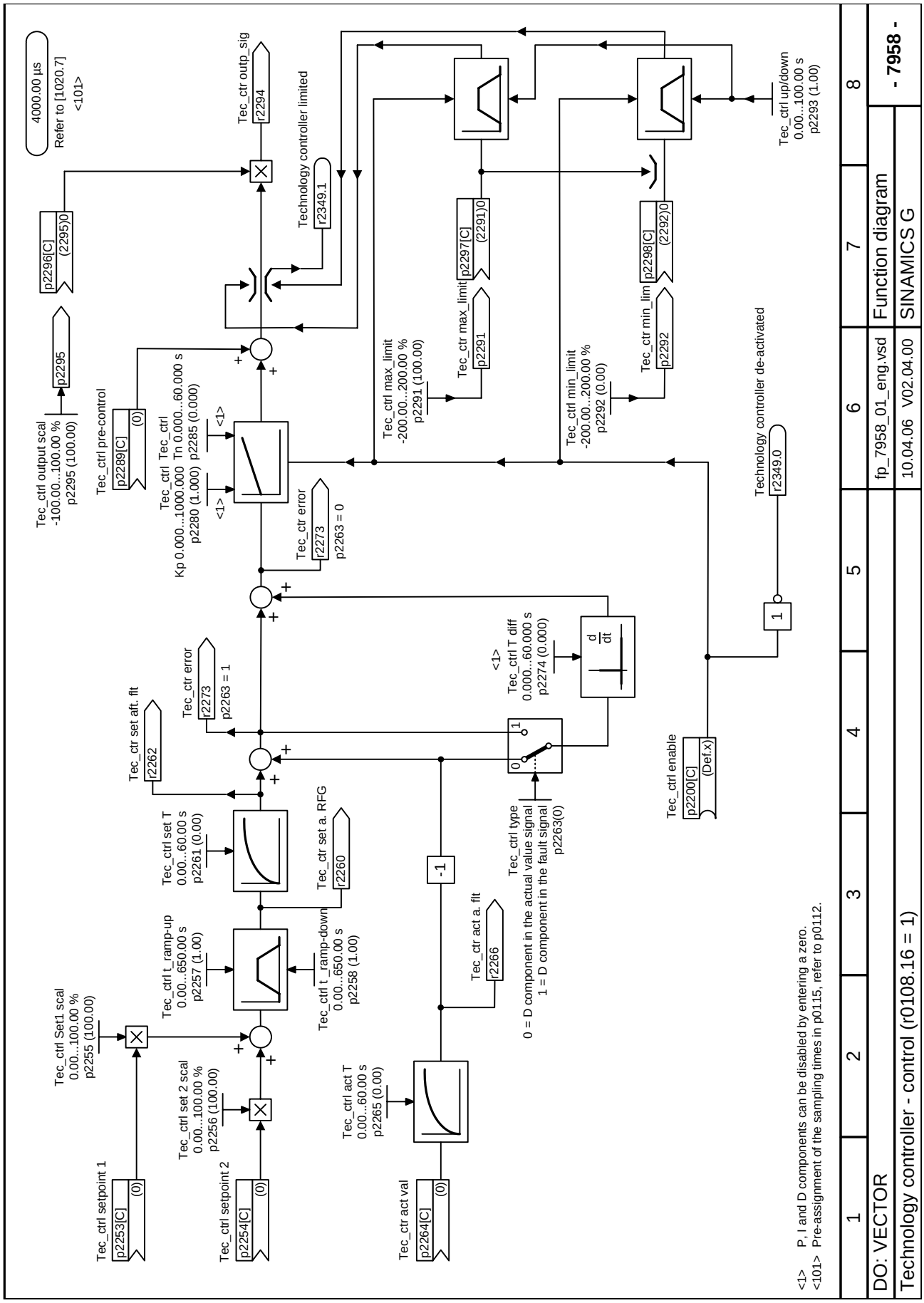

Figure 2-102 7958 – Closed-loop control (r0108.16 = 1)

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2.15 Messages and monitoring functions

Function diagrams

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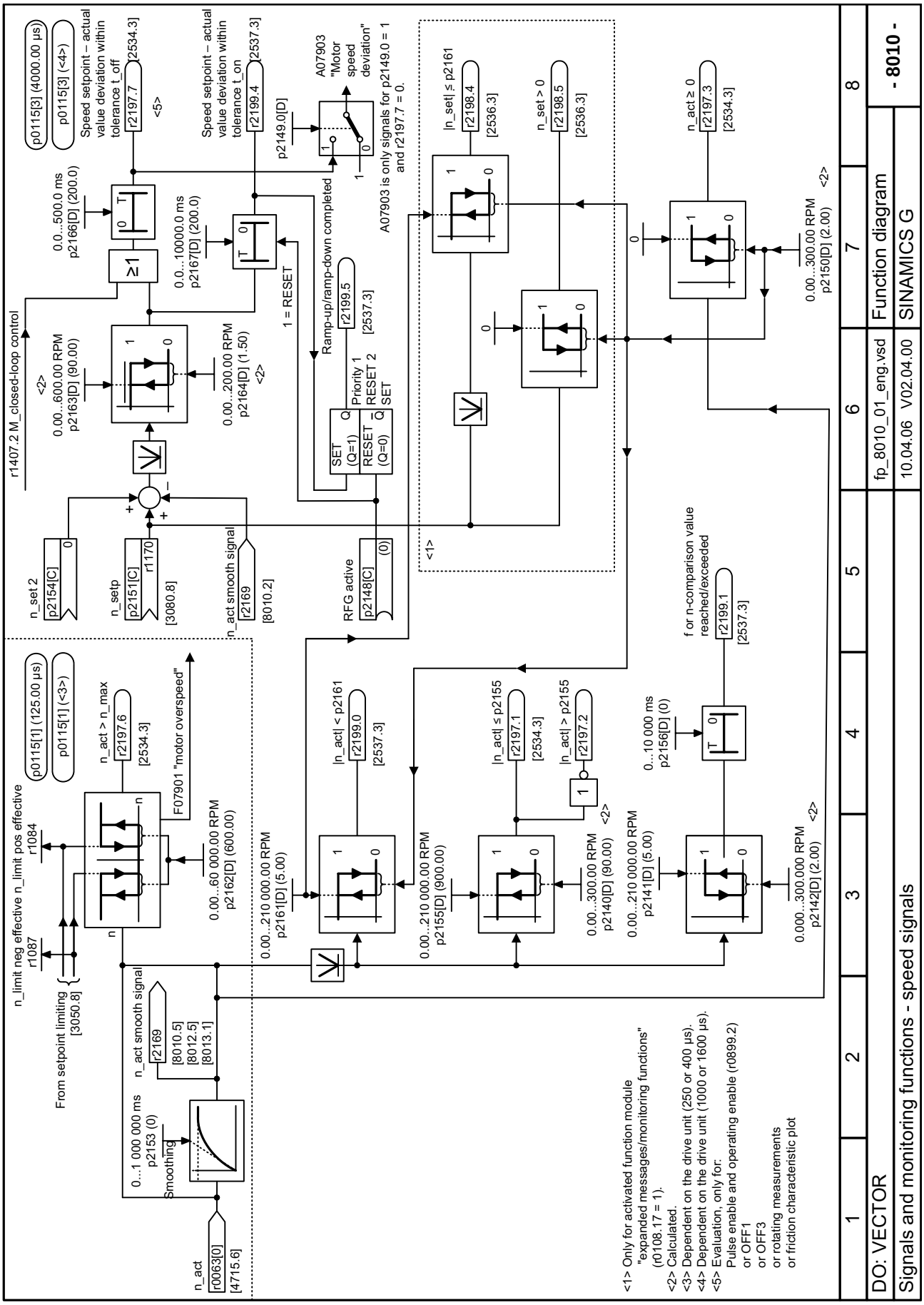

Figure 2-103 8010 – Speed messages/signals

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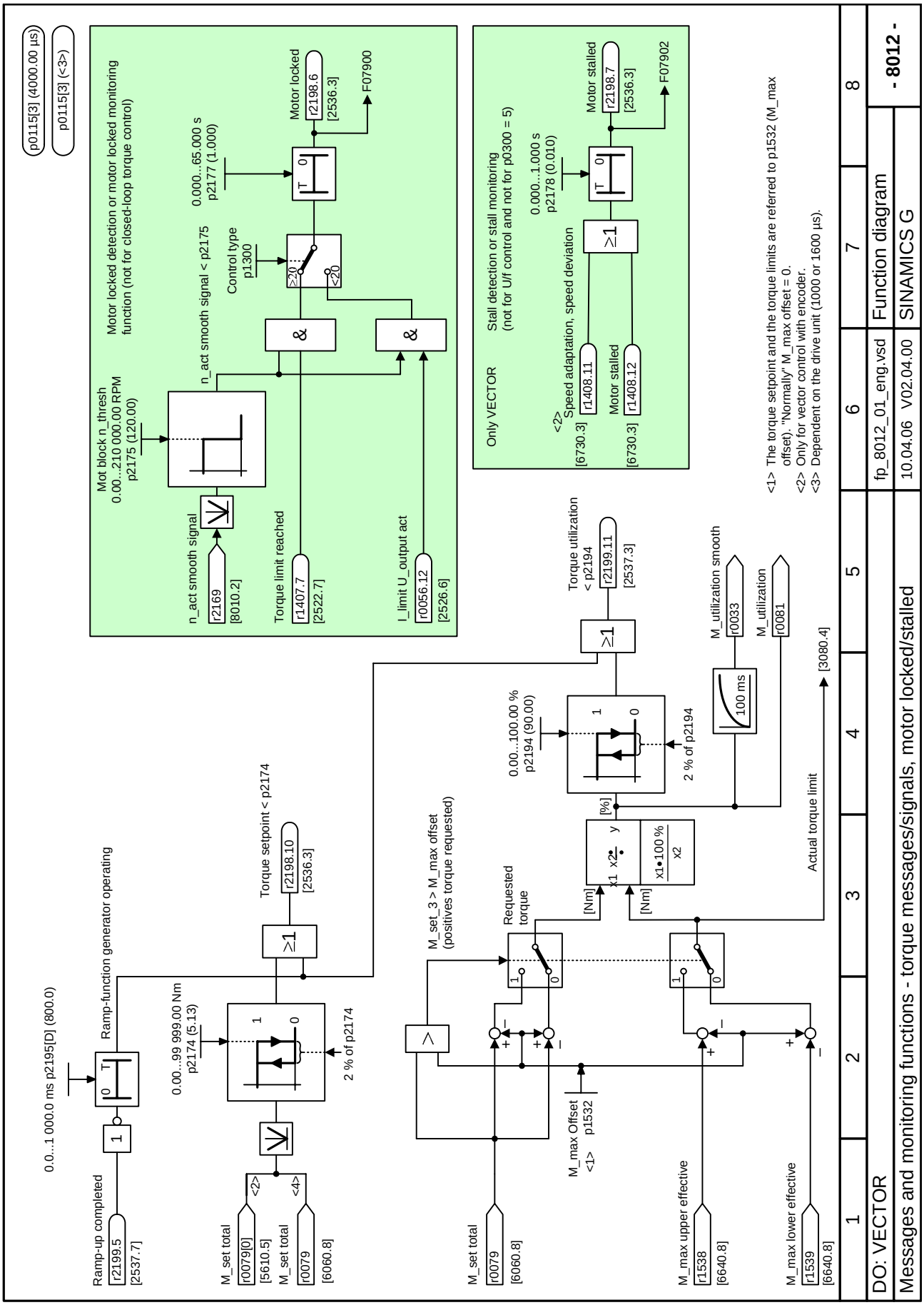

Figure 2-104 8012 – Torque messages/signals, motor locked/stalled

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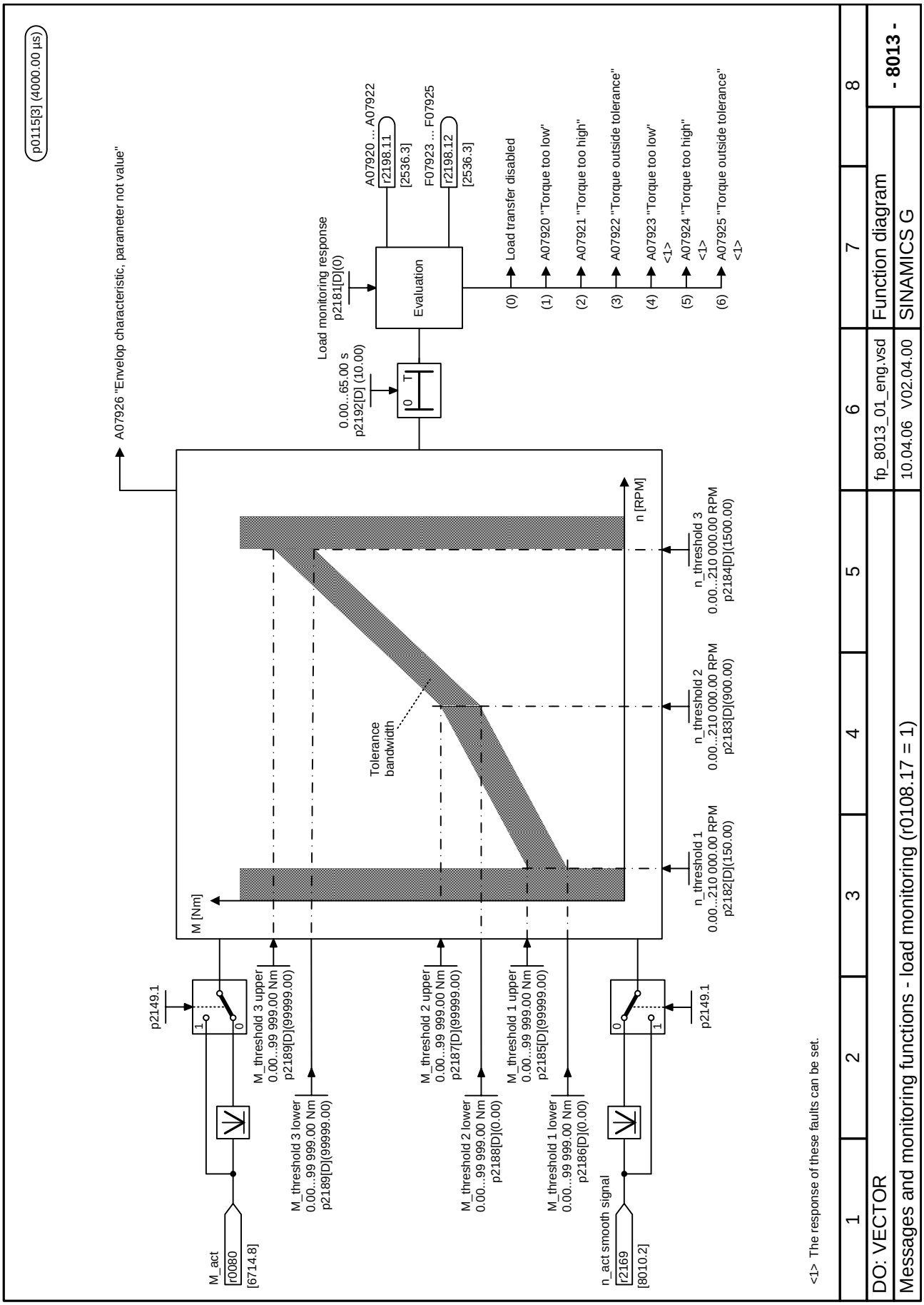

Figure 2-105 8013 – Load monitoring (r0108.17 = 1)

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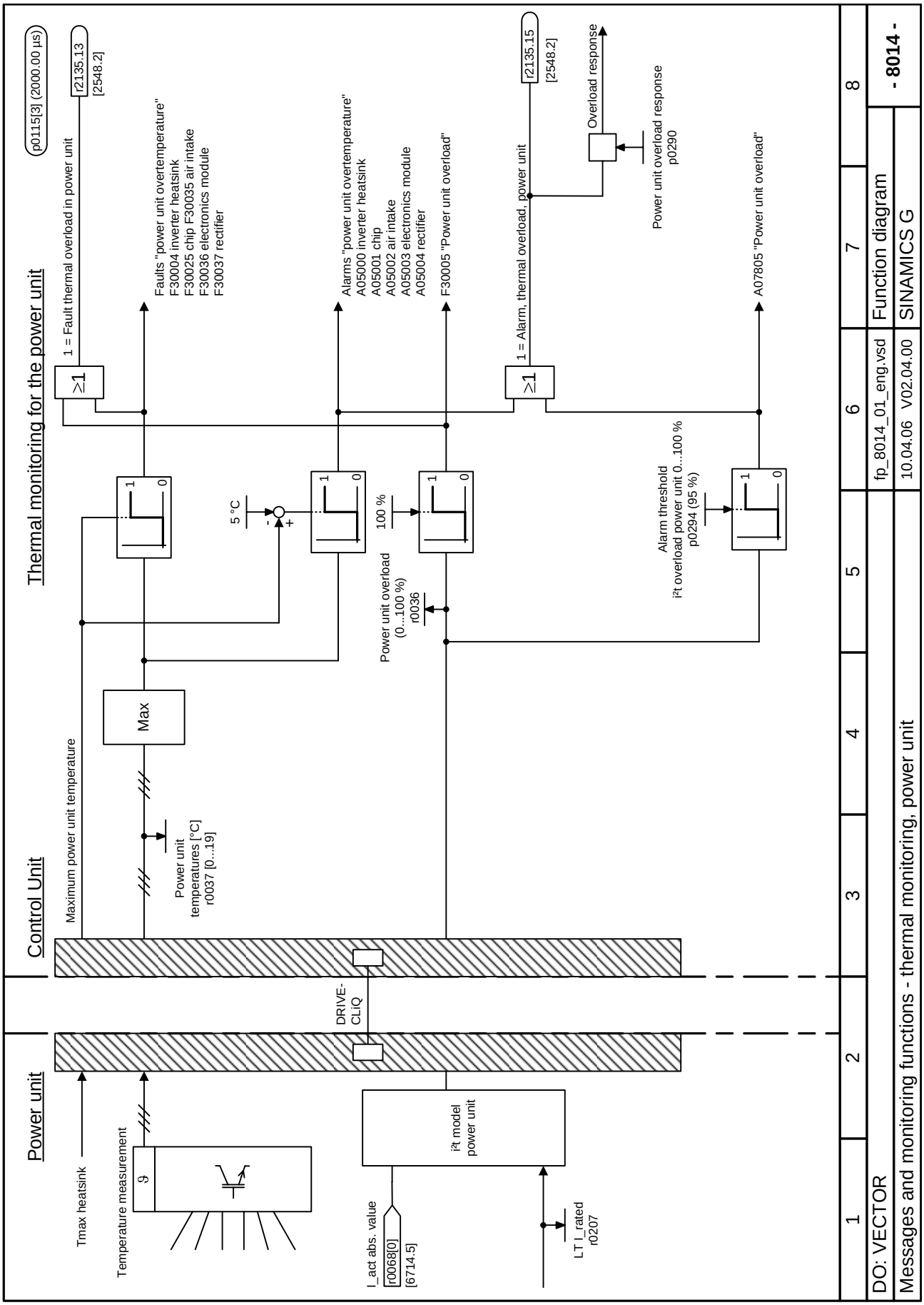

Figure 2-106 8014 – Thermal monitoring, power unit

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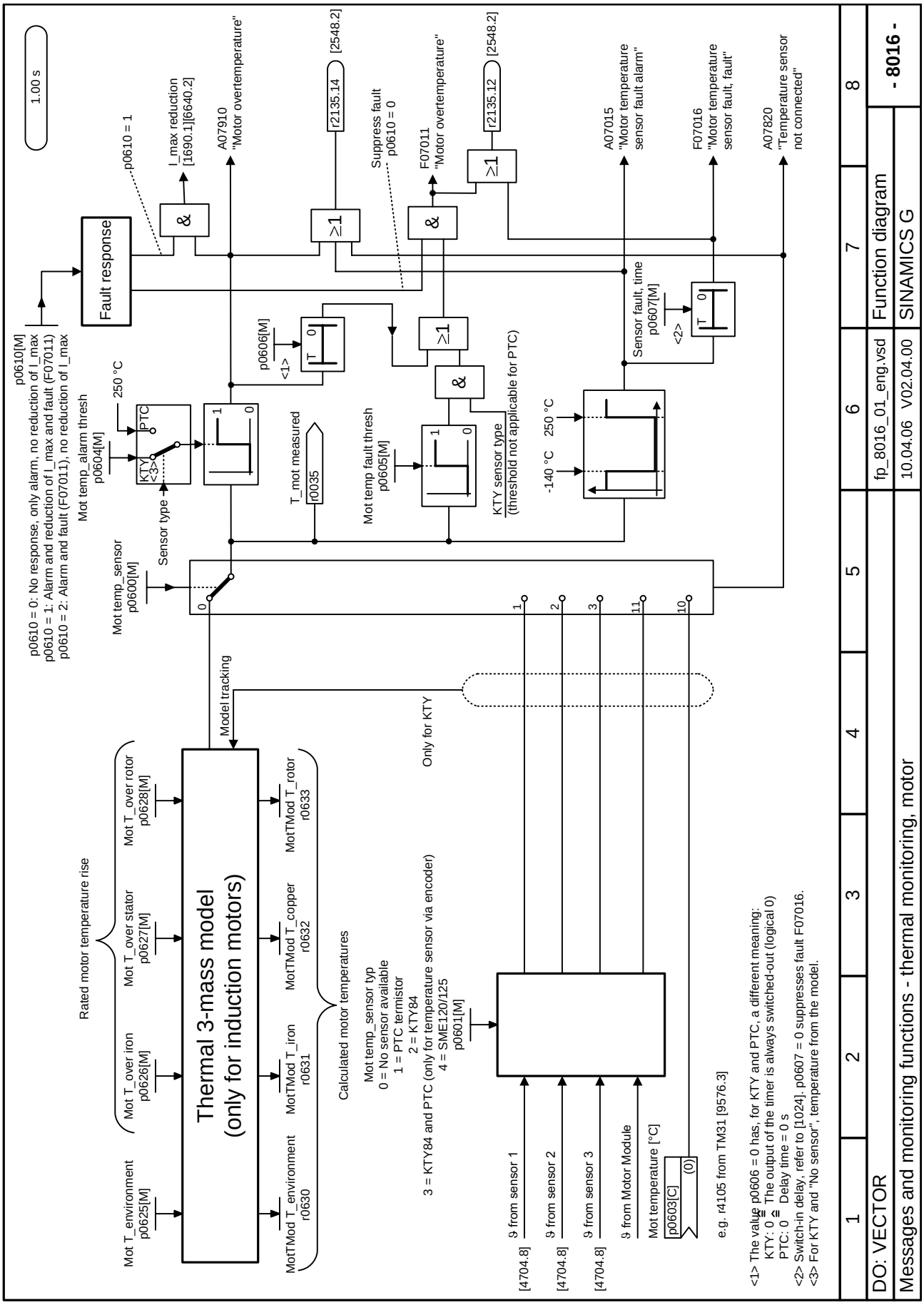

Figure 2-107 8016 – Thermal monitoring, motor

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2.16 Faults and alarms

Function diagrams

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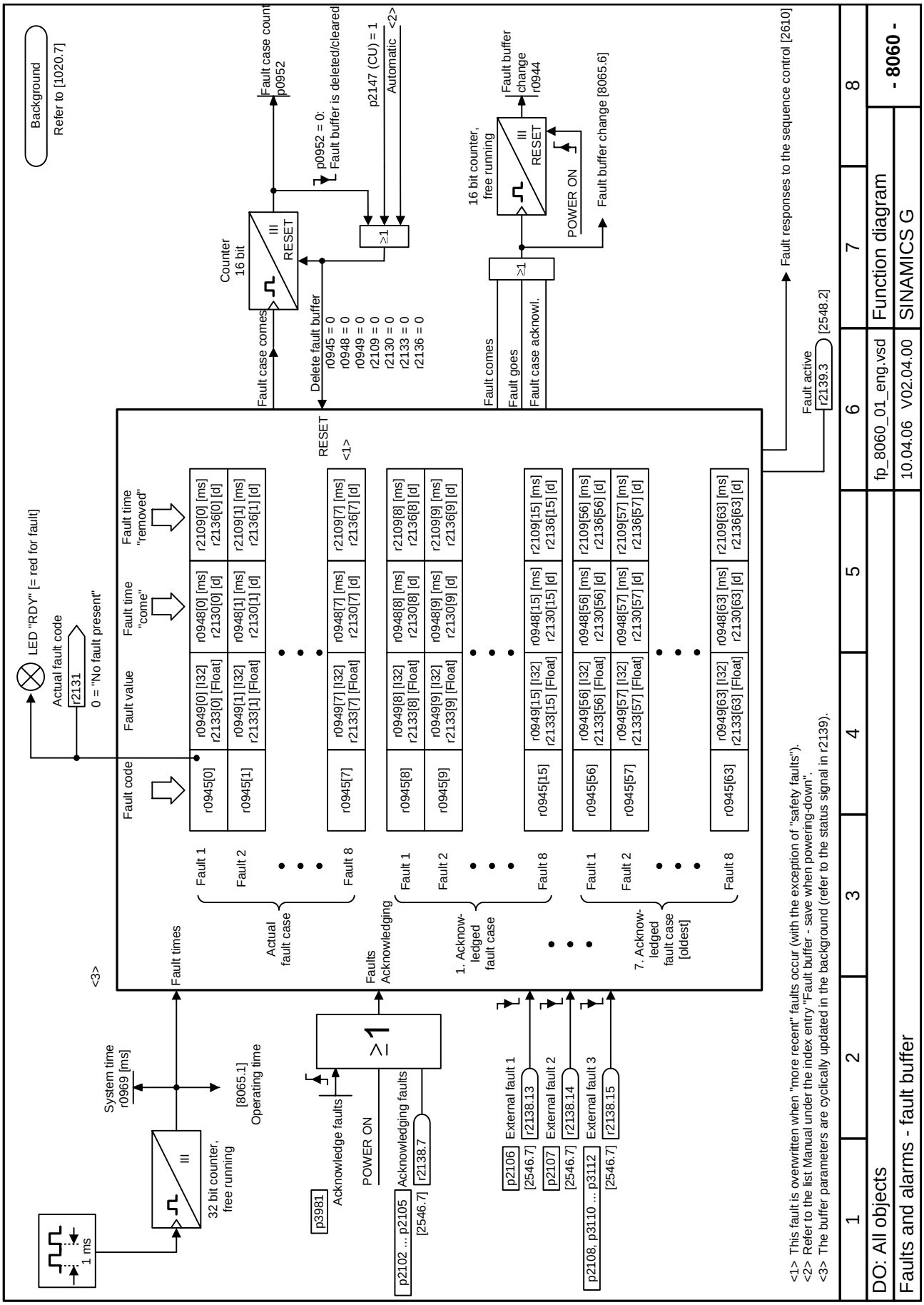

Figure 2-108 8060 – Fault buffer

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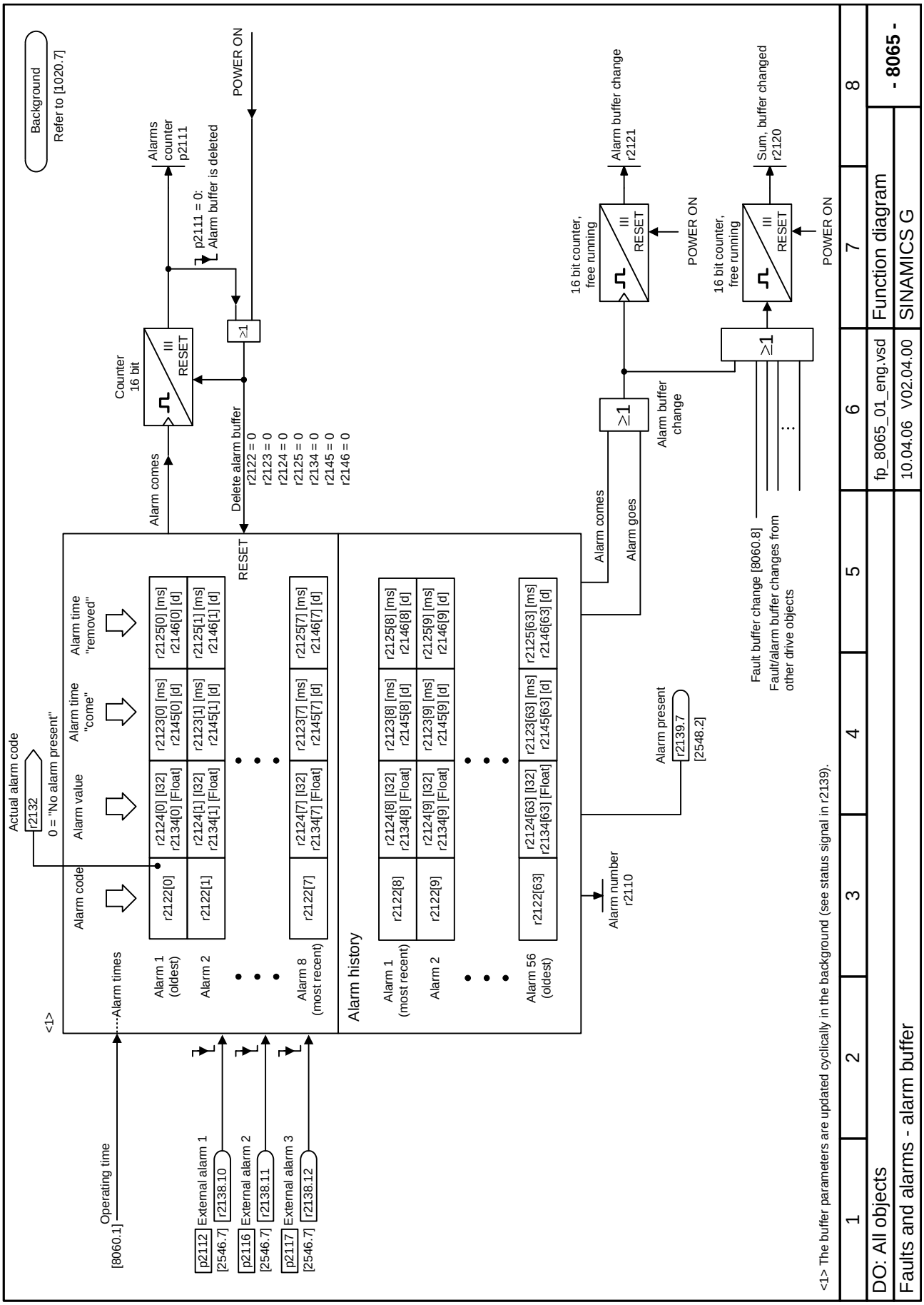

Figure 2-109 8065 – Alarm buffer

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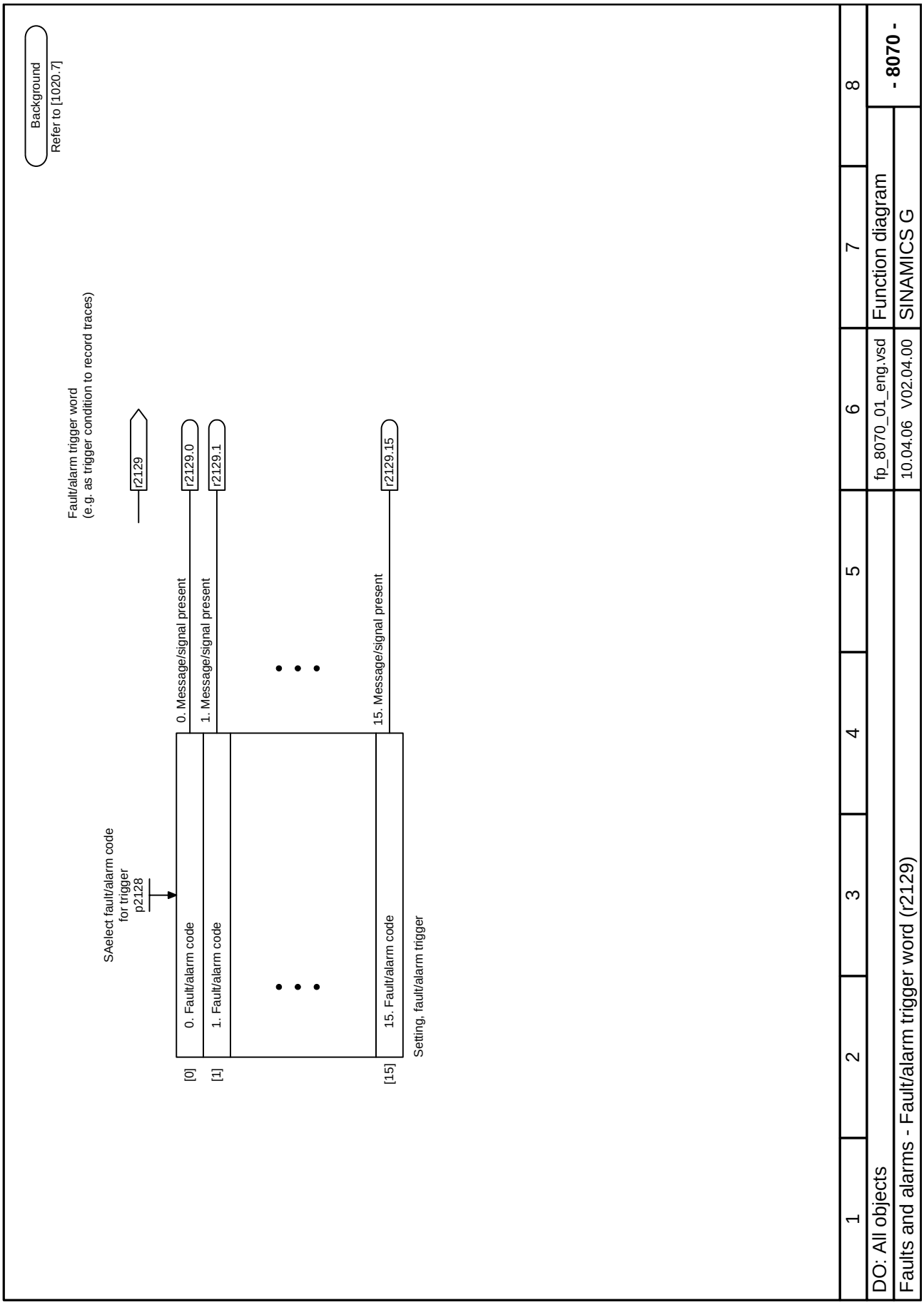

Figure 2-110 8070 – Fault/warning trigger word (r2129)

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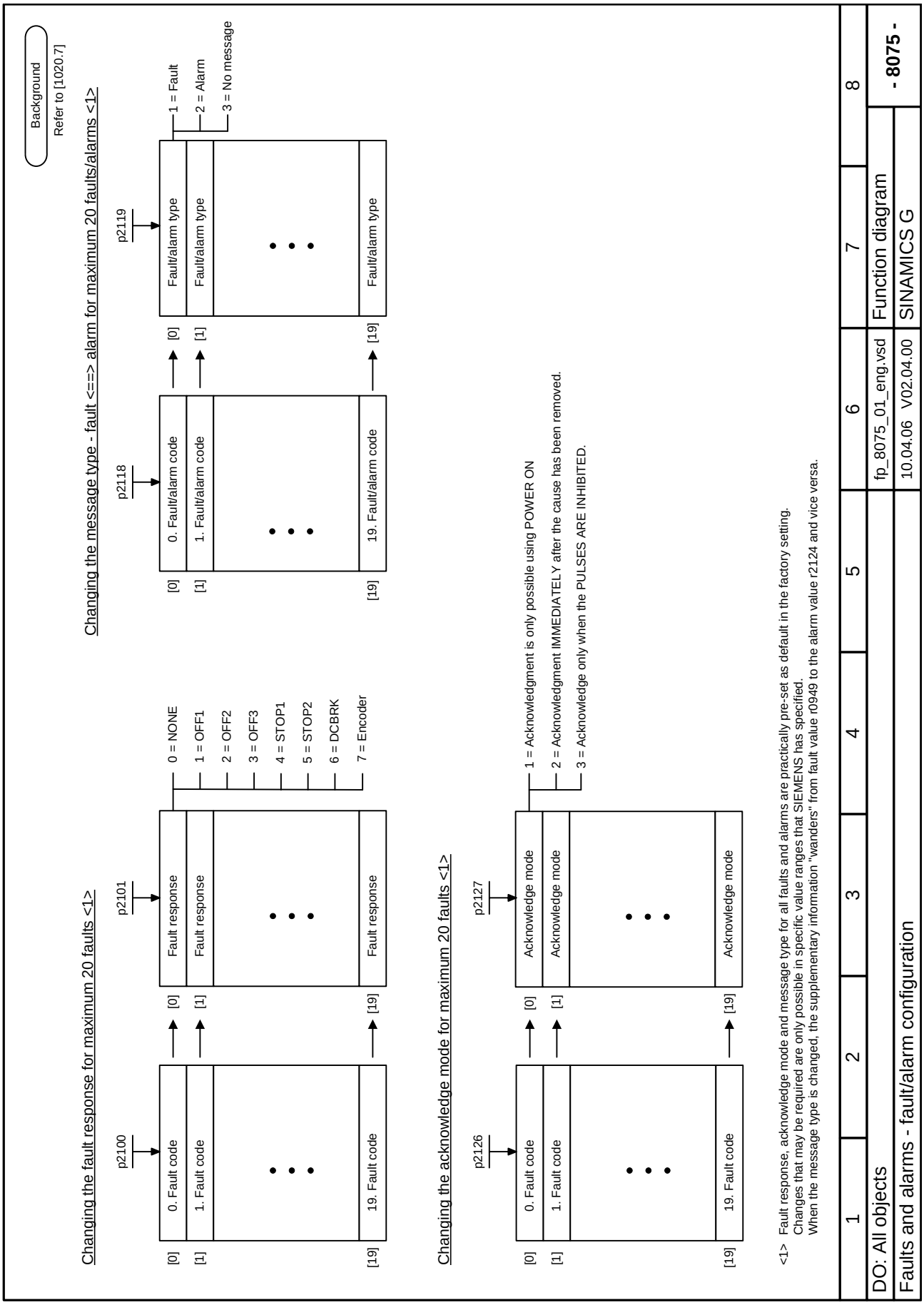

Figure 2-111 8075 – Fault/alarm configuration

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2.17 Test sockets

Function diagrams

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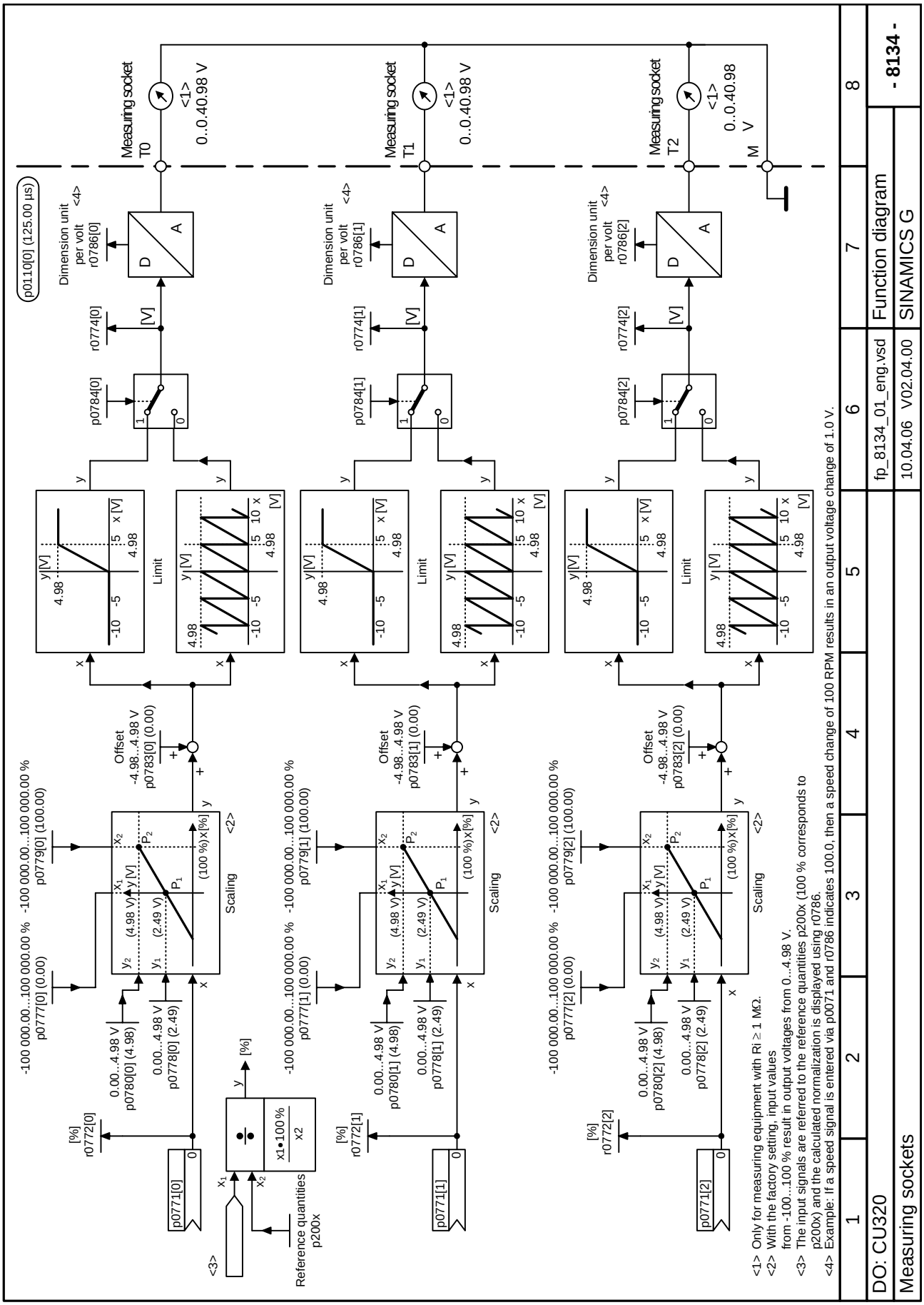

Figure 2-112 8134 – Measuring sockets

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2.18 Data sets

Function diagrams

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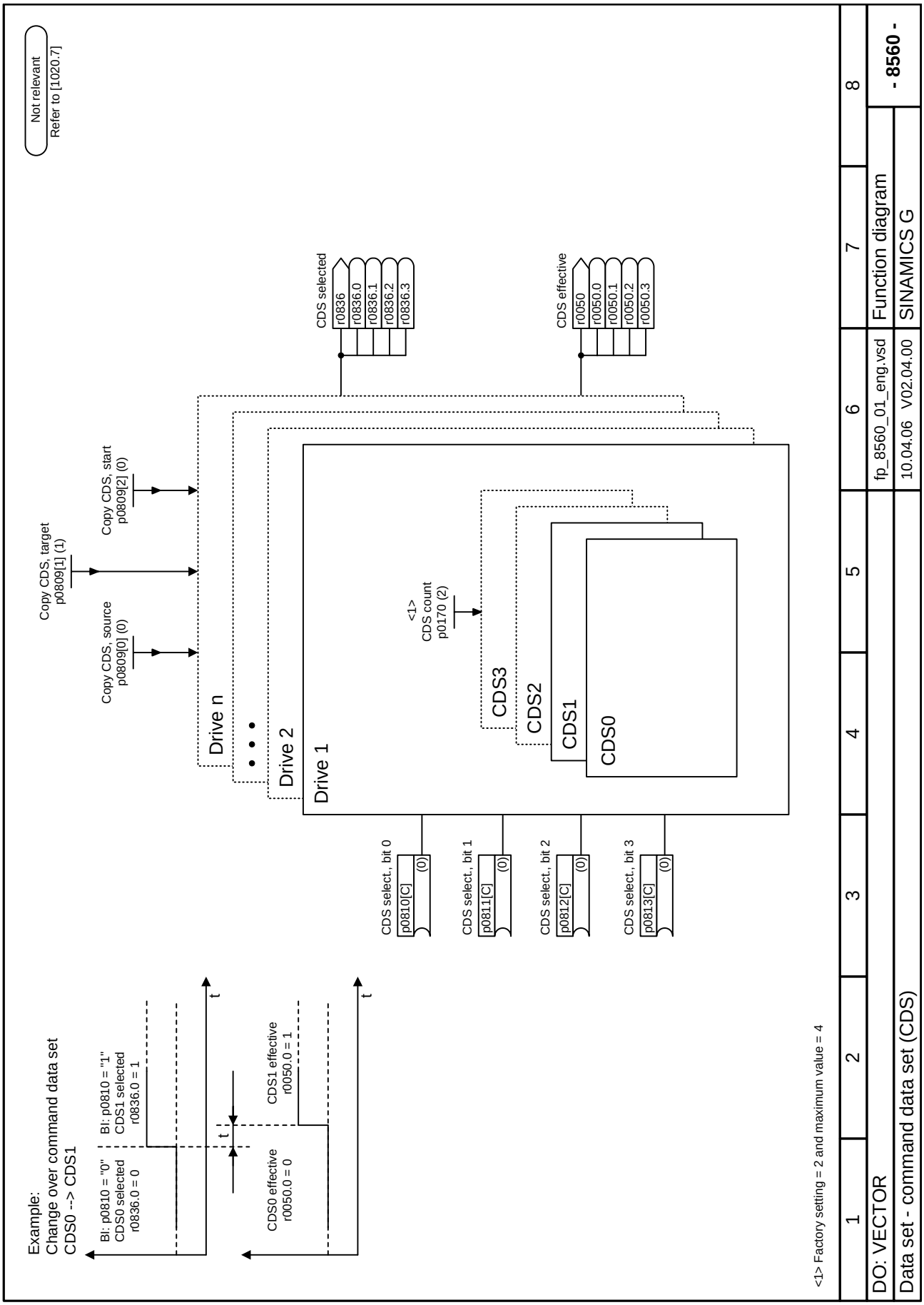

Figure 2-113 8560 – Command data set (CDS)

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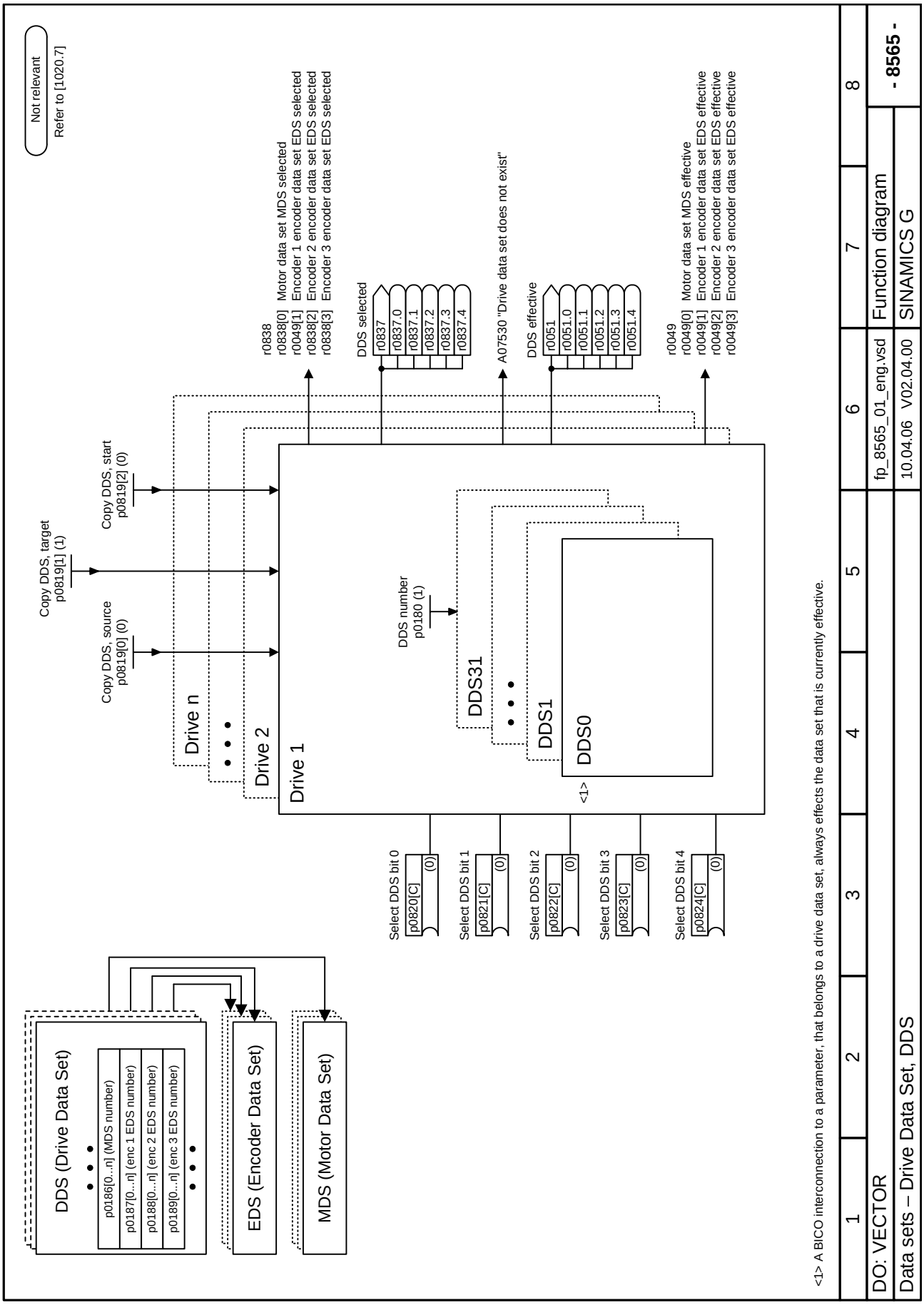

Figure 2-114 8565 – Drive data set (DDS)

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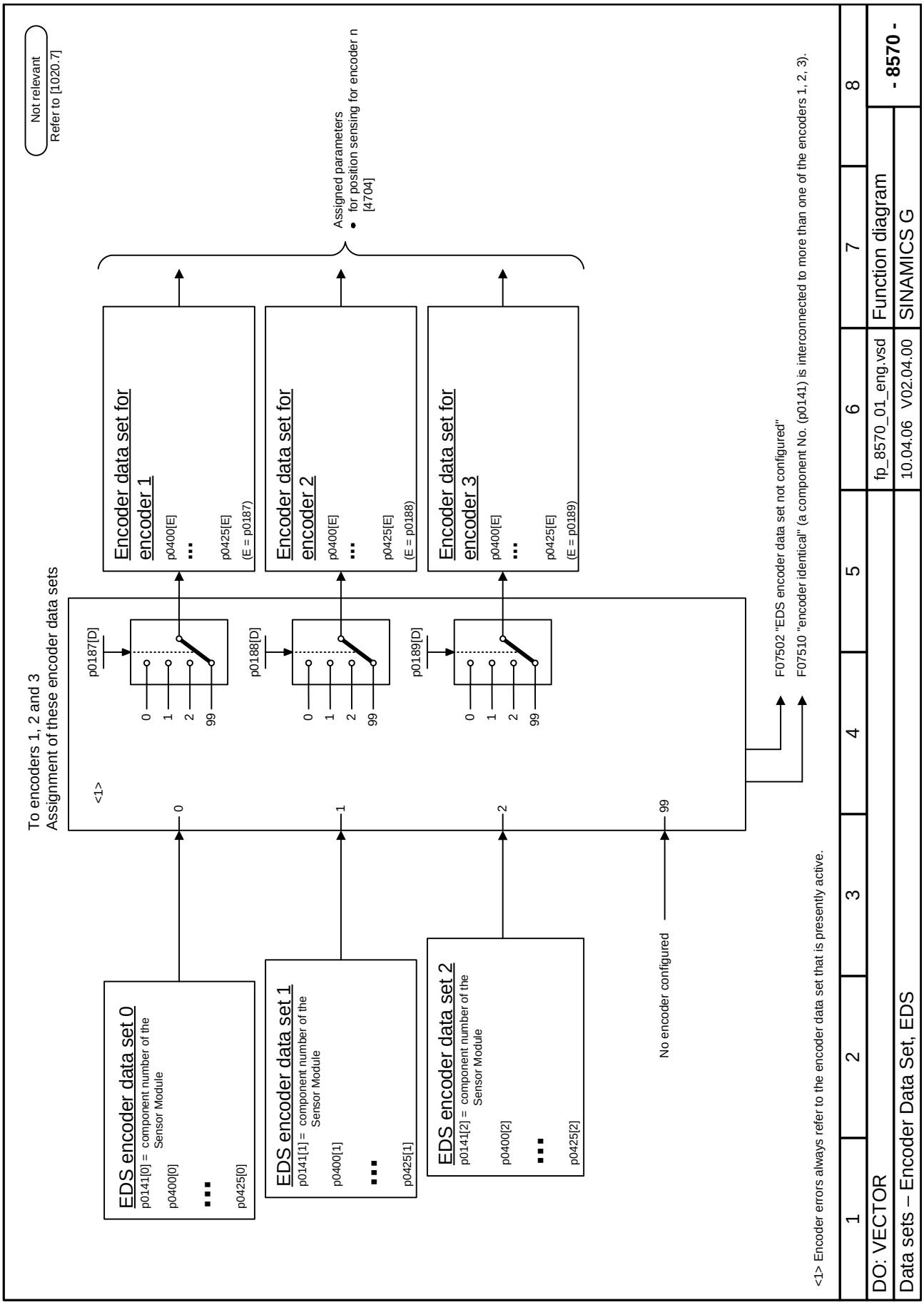

Figure 2-115 8570 – Encoder data set (EDS)

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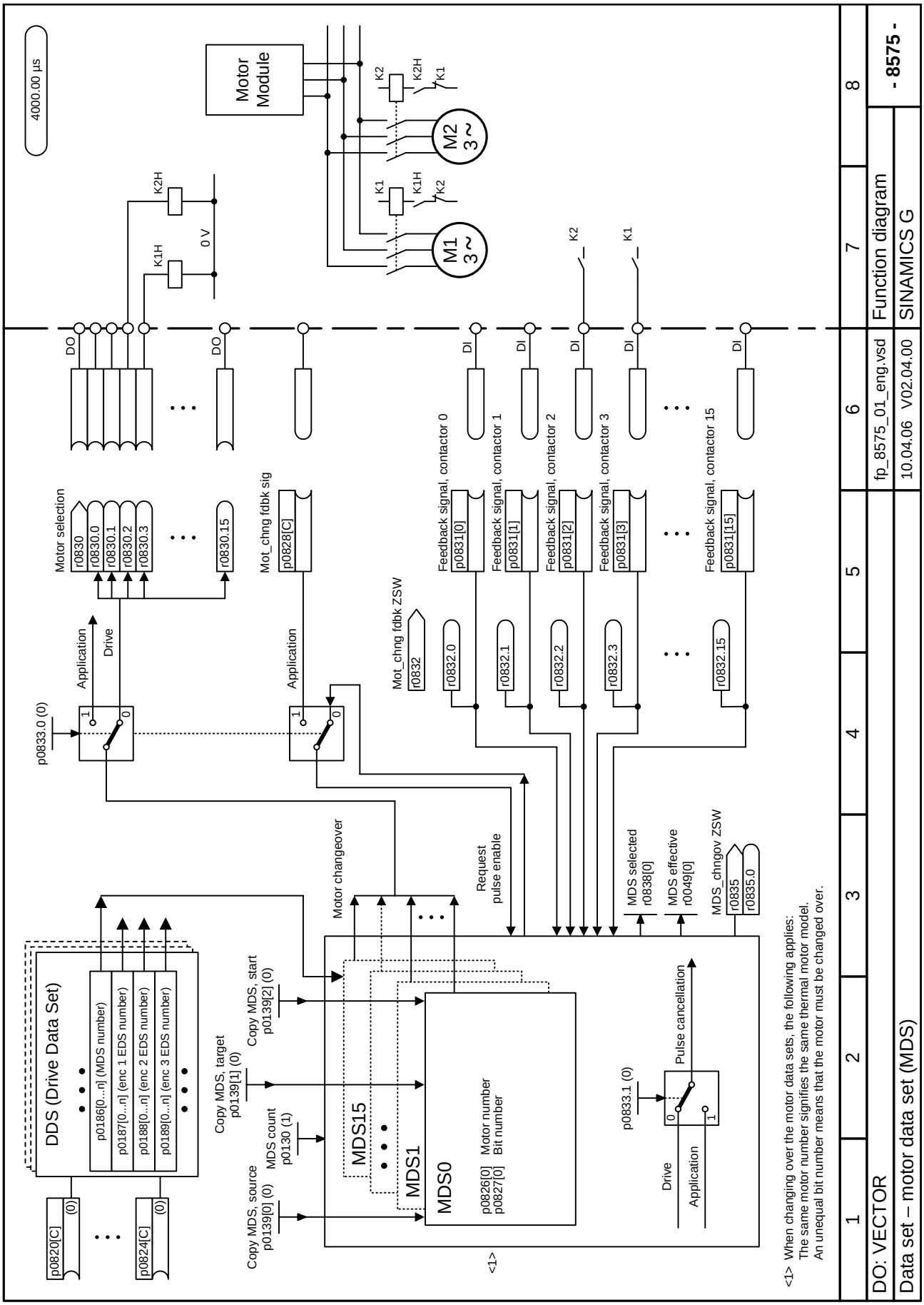

Figure 2-116 8575 – Motor data set (MDS)

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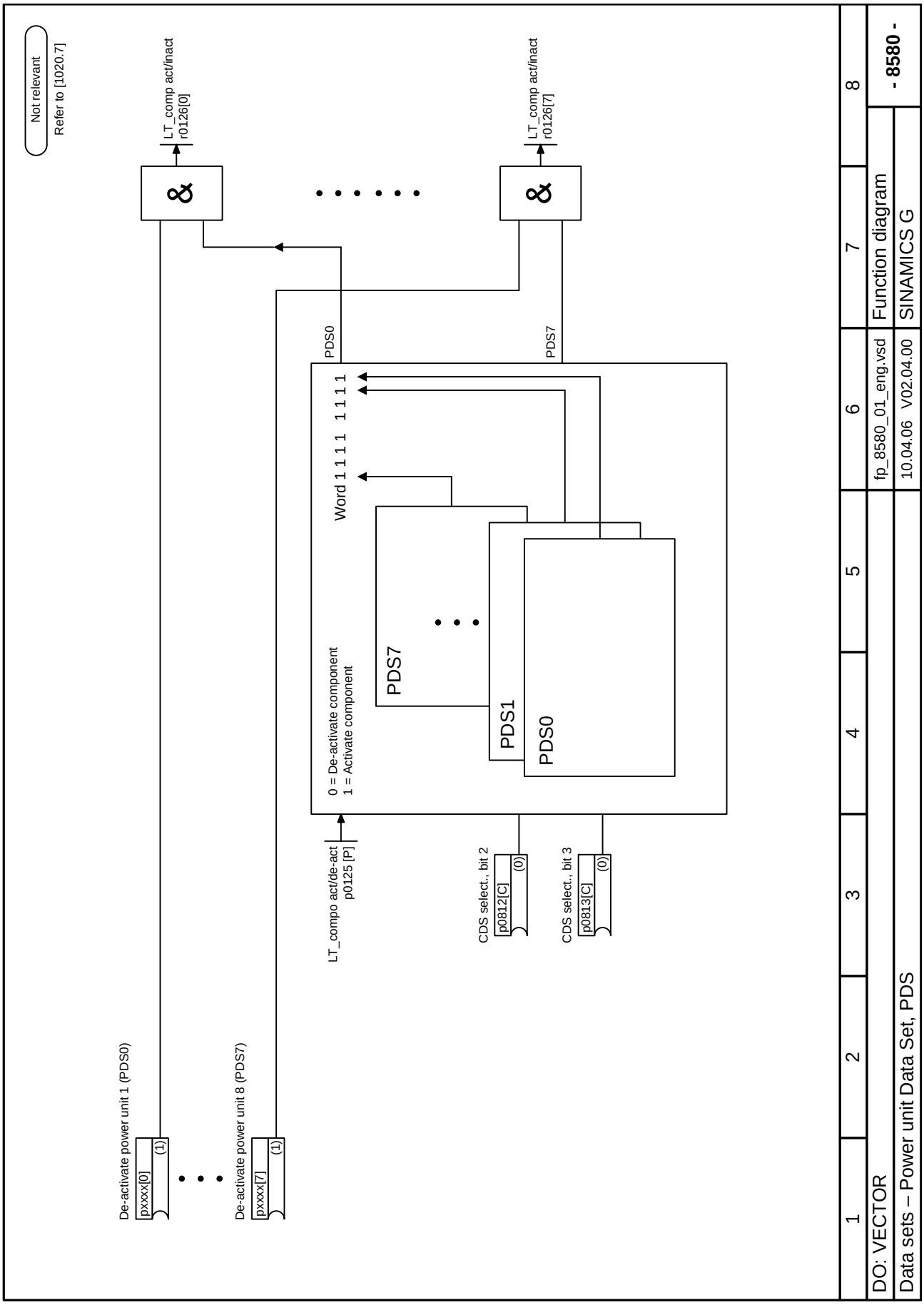

Figure 2-117 8580 – Power unit data set (PDS)

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2.19 Terminal Board 30 (TB30)

Function diagrams

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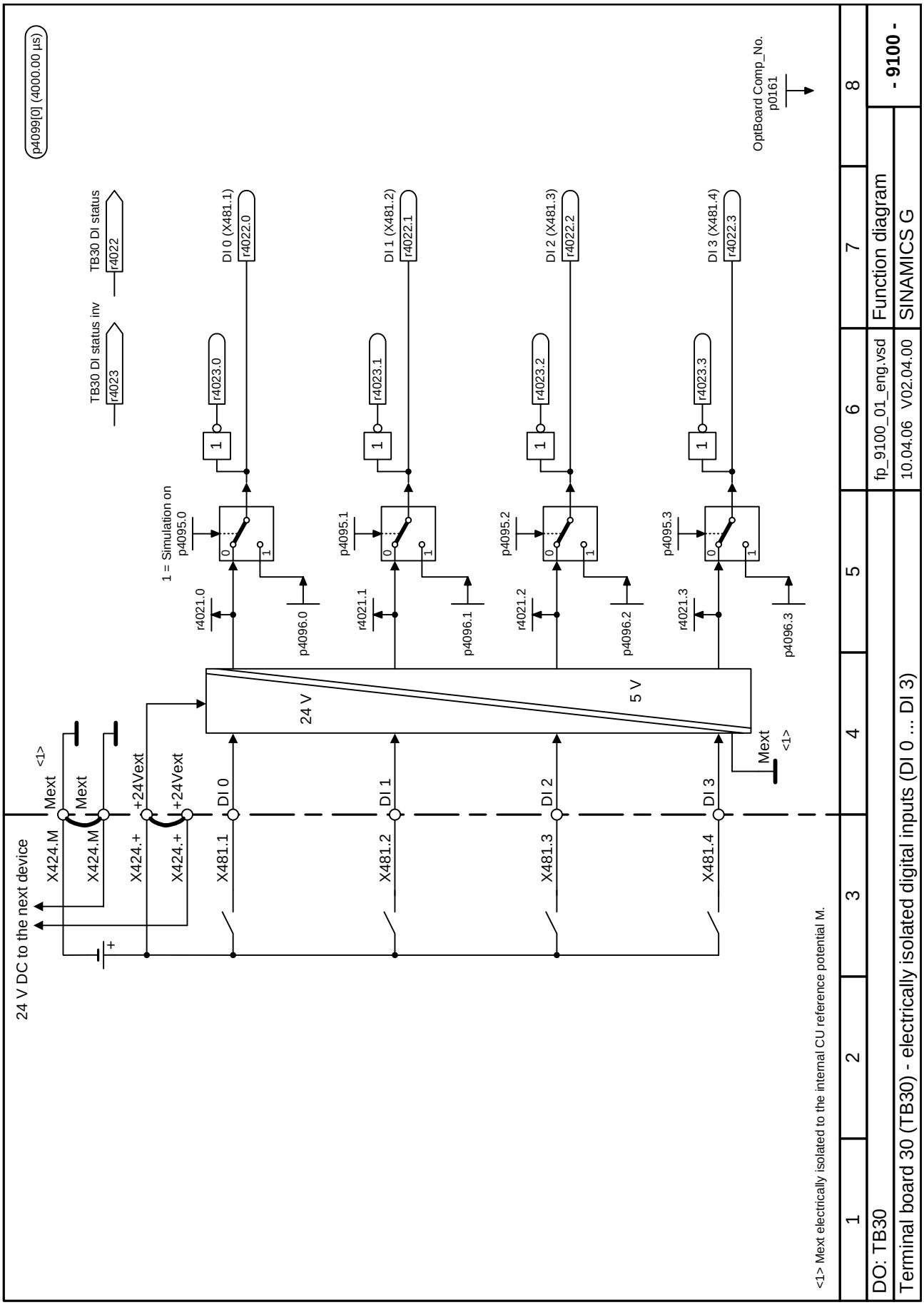

Figure 2-118 9100 – Digital inputs, electrically isolated (DI 0 ... DI 3)

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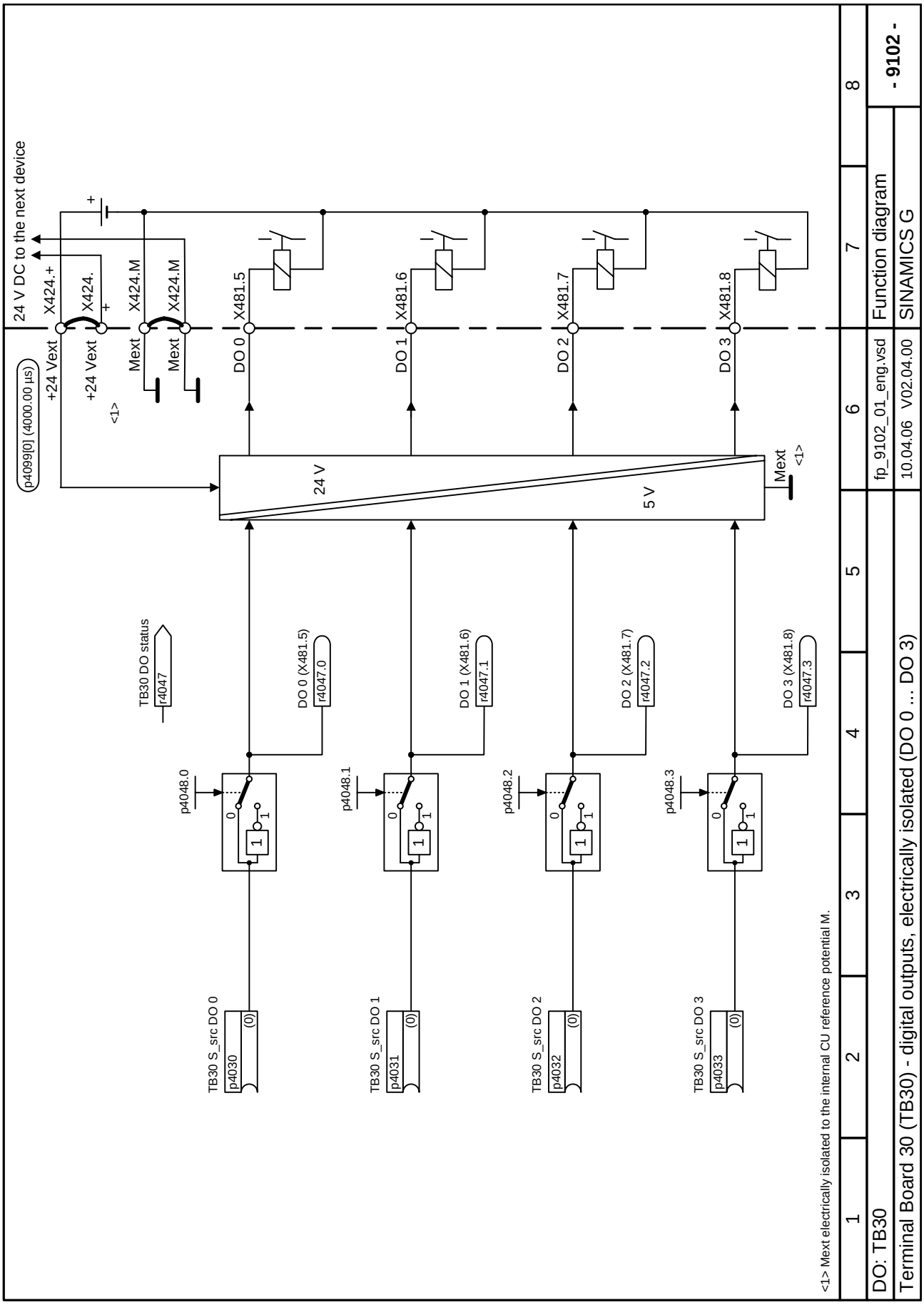

Figure 2-119 9102 – Digital outputs, electrically isolated (DO 0 ... DO 3)

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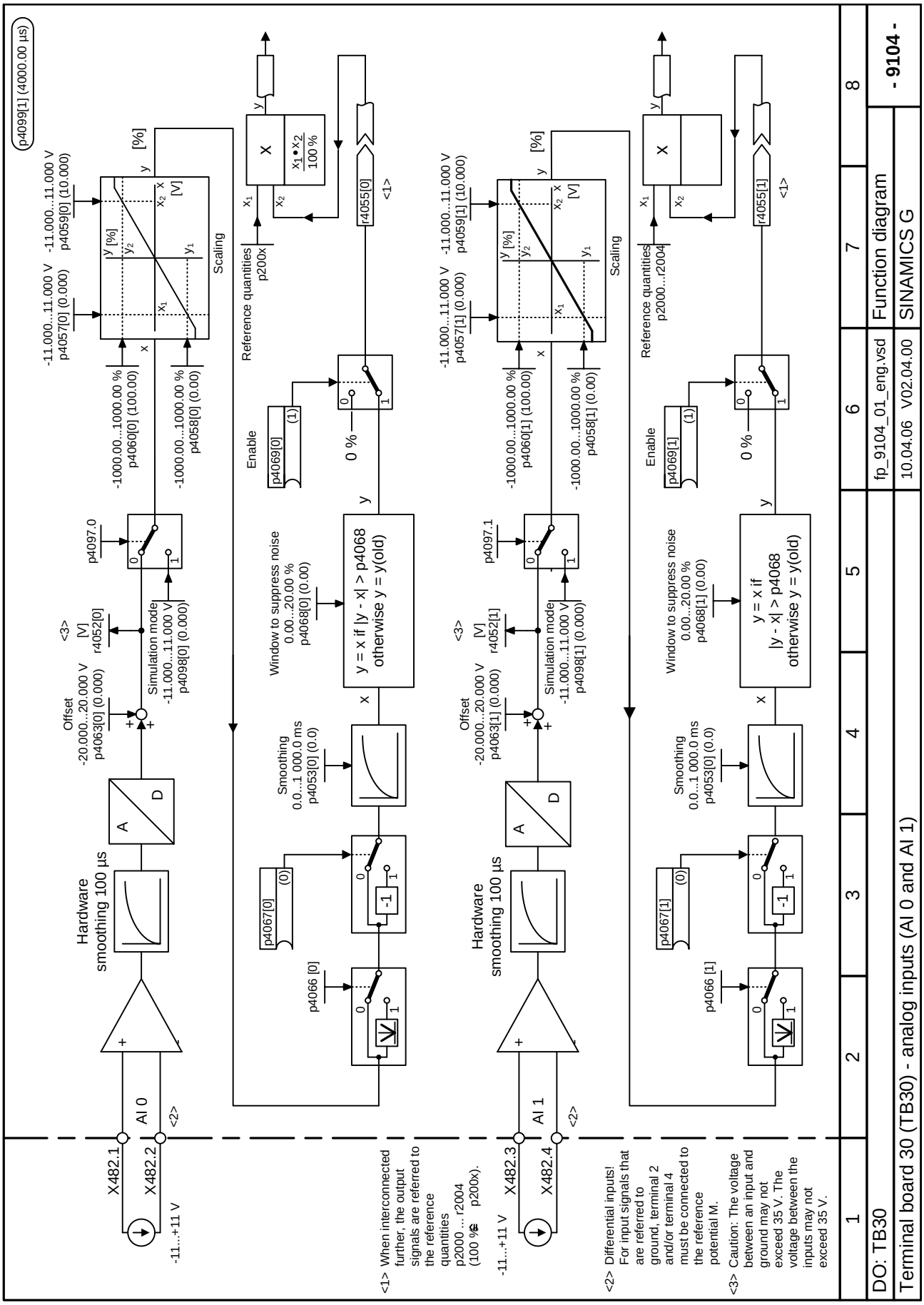

Figure 2-120 9104 – Analog inputs (AI 0 ... AI 1)

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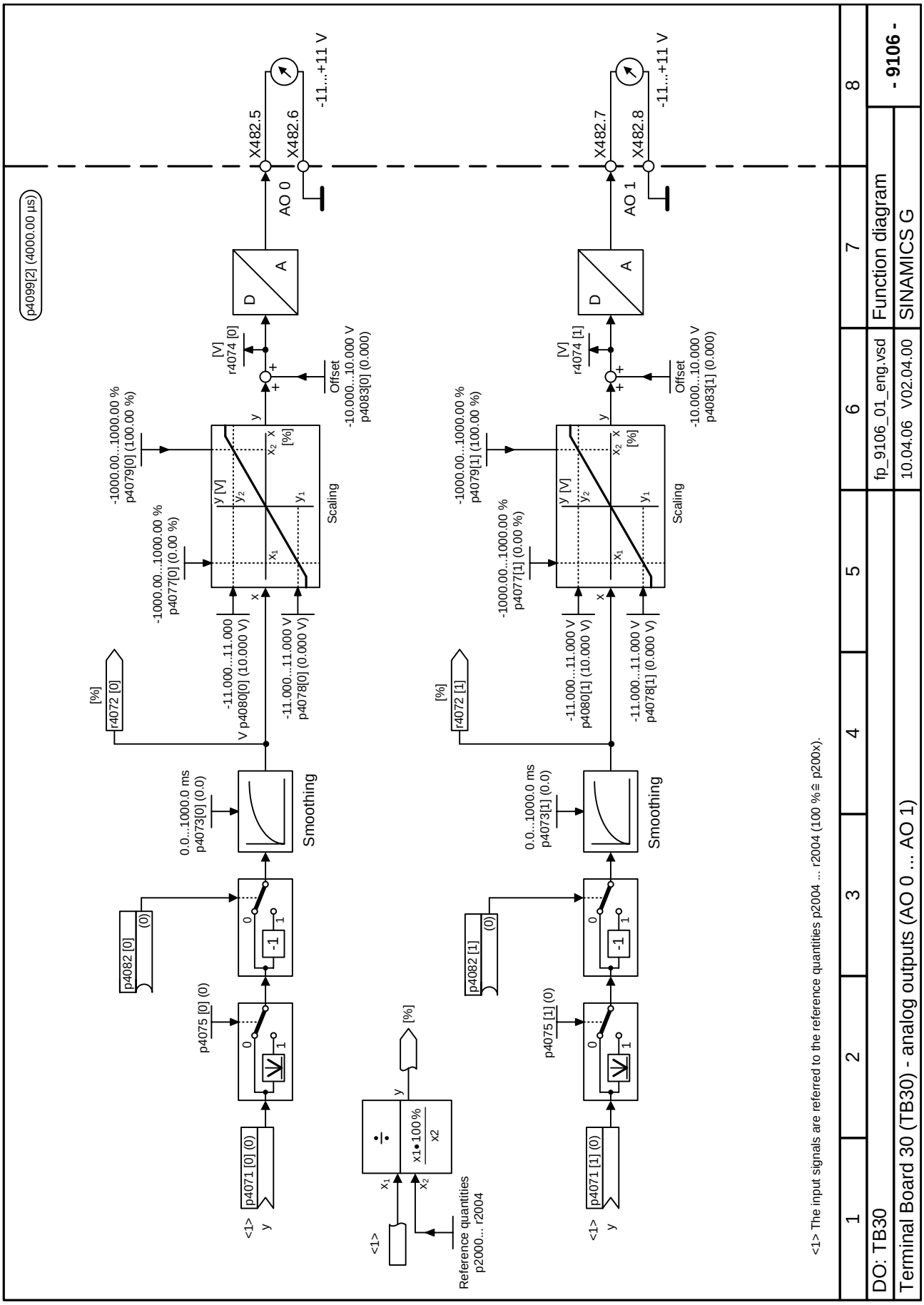

Figure 2-121 9106 – Analog outputs (AO 0 ... AO 1)

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2.20 Communication Board CAN 10 (CBC10)

Function diagrams

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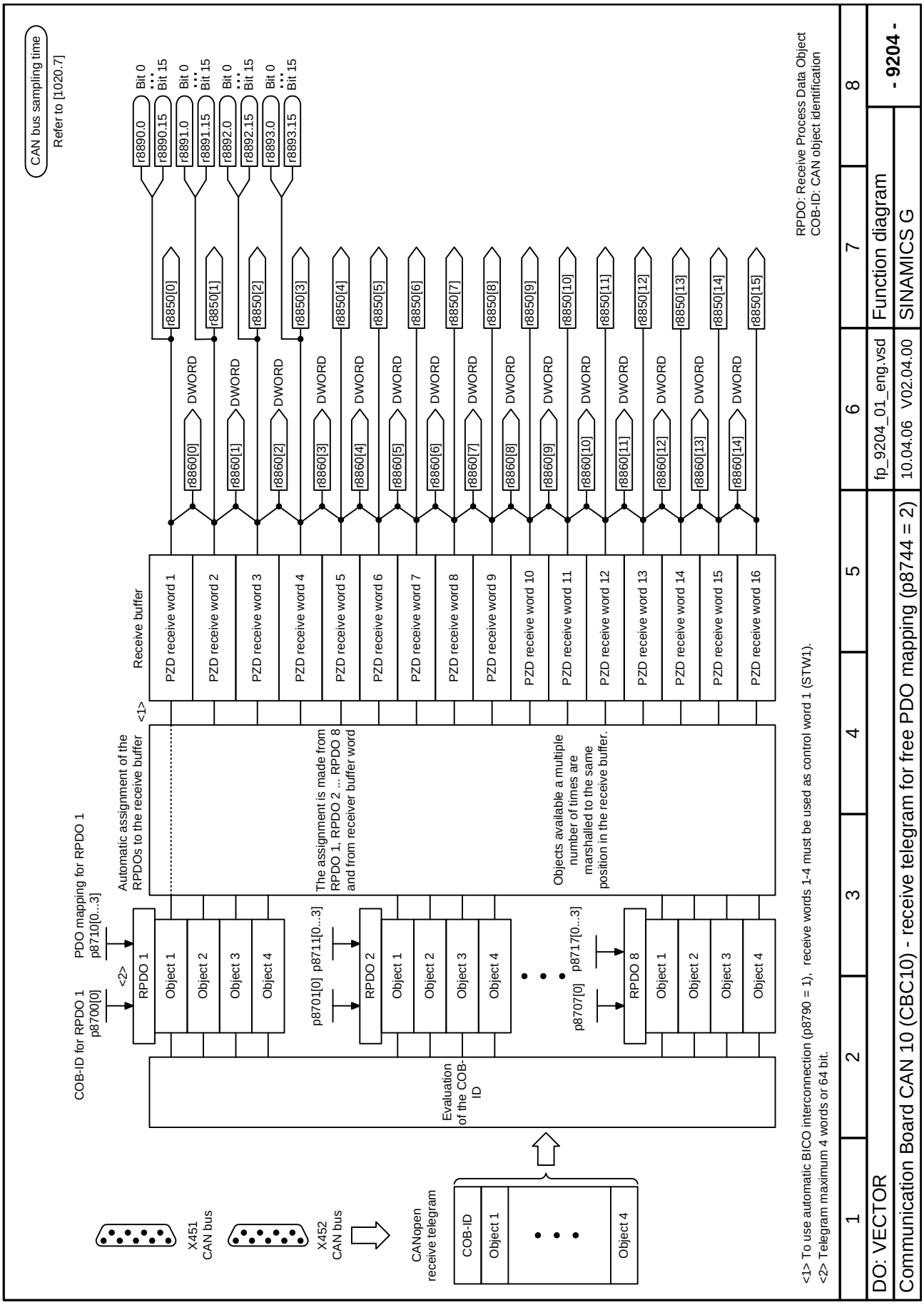

Figure 2-122 9204 – Receive telegram, free PDO mapping (p8744 = 2)

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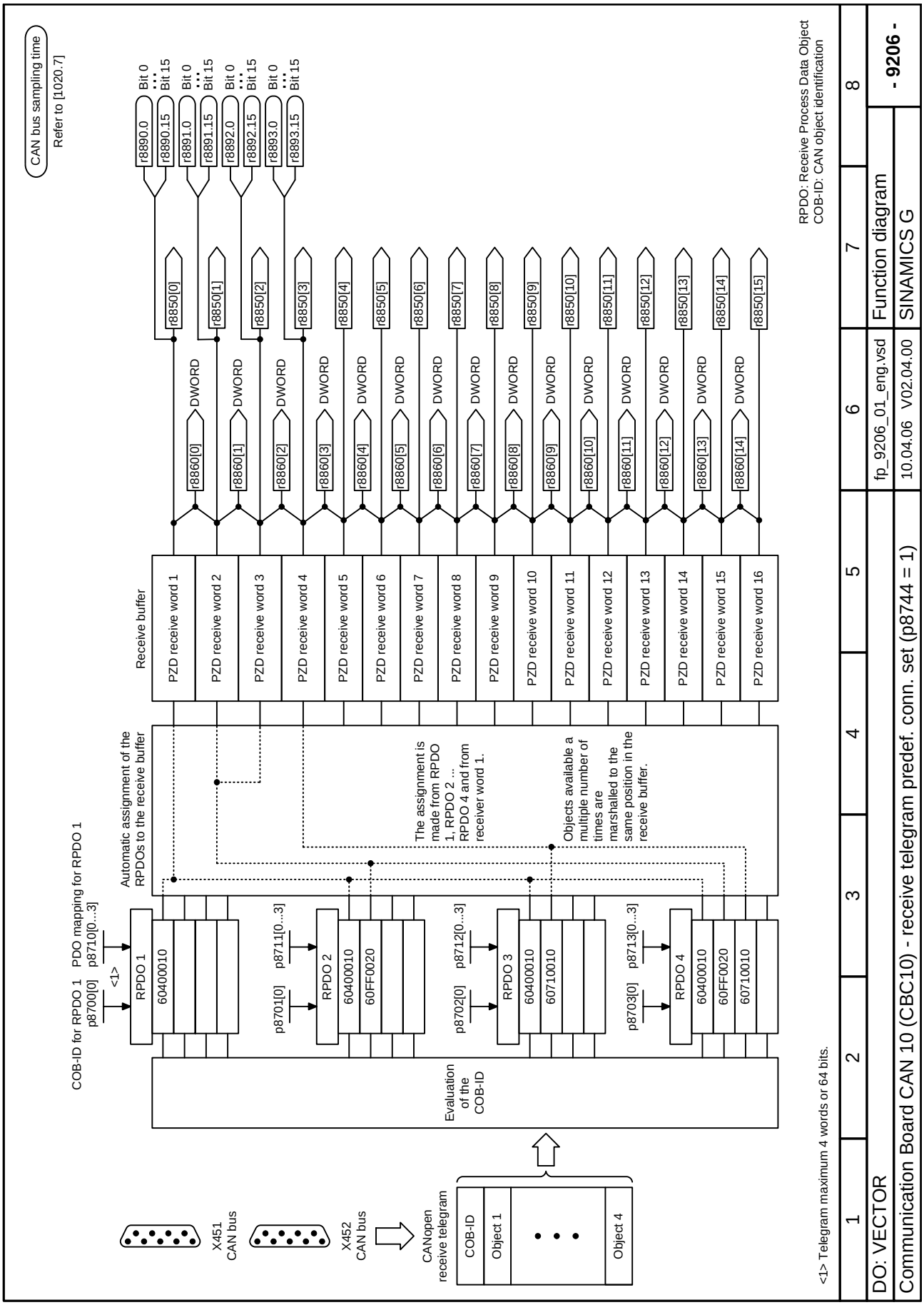

Figure 2-123 9206 – Receive telegram, predefined connection set (p8744 = 1)

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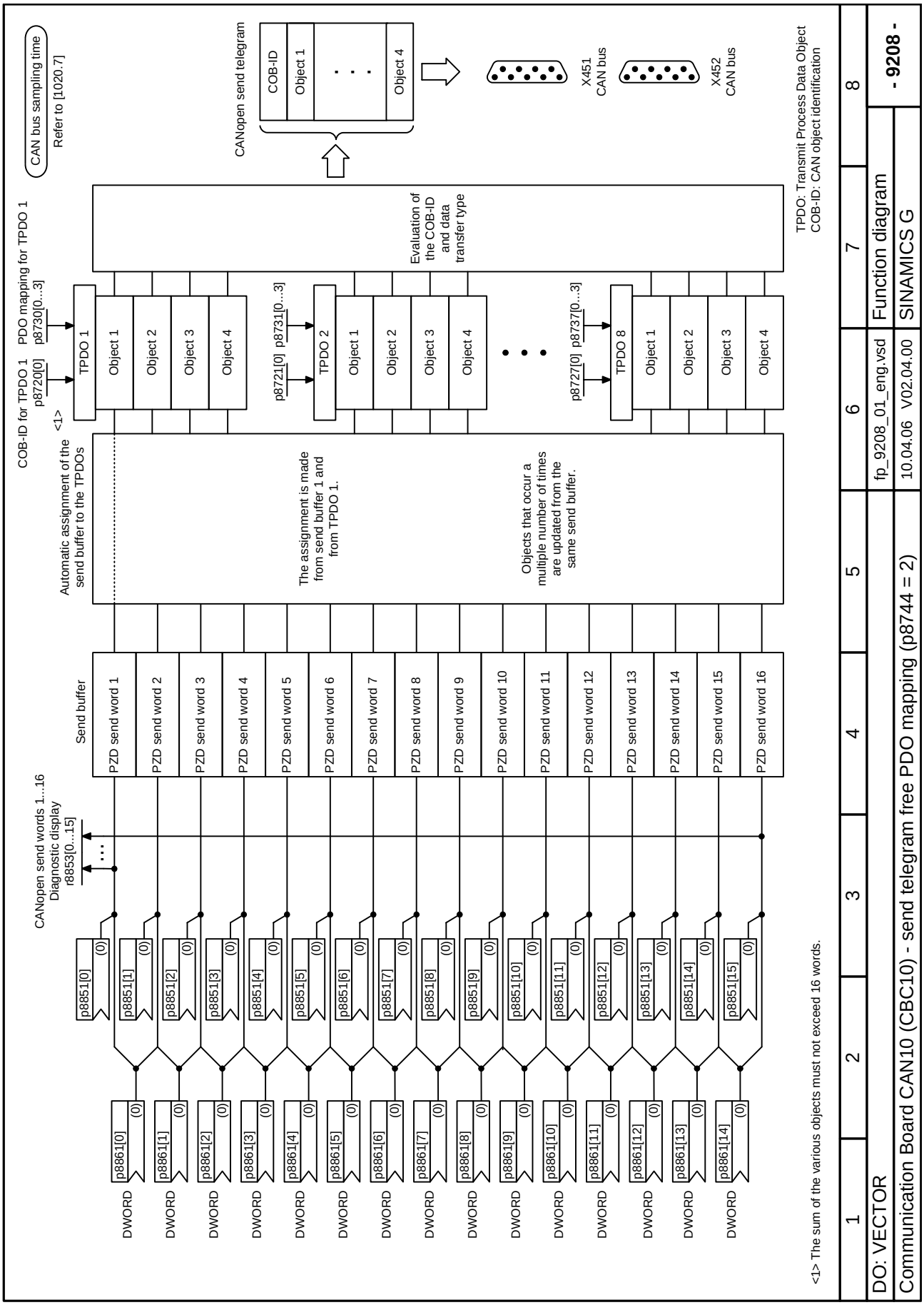

Figure 2-124 9208 – Send telegram, free PDO mapping (p8744 = 2)

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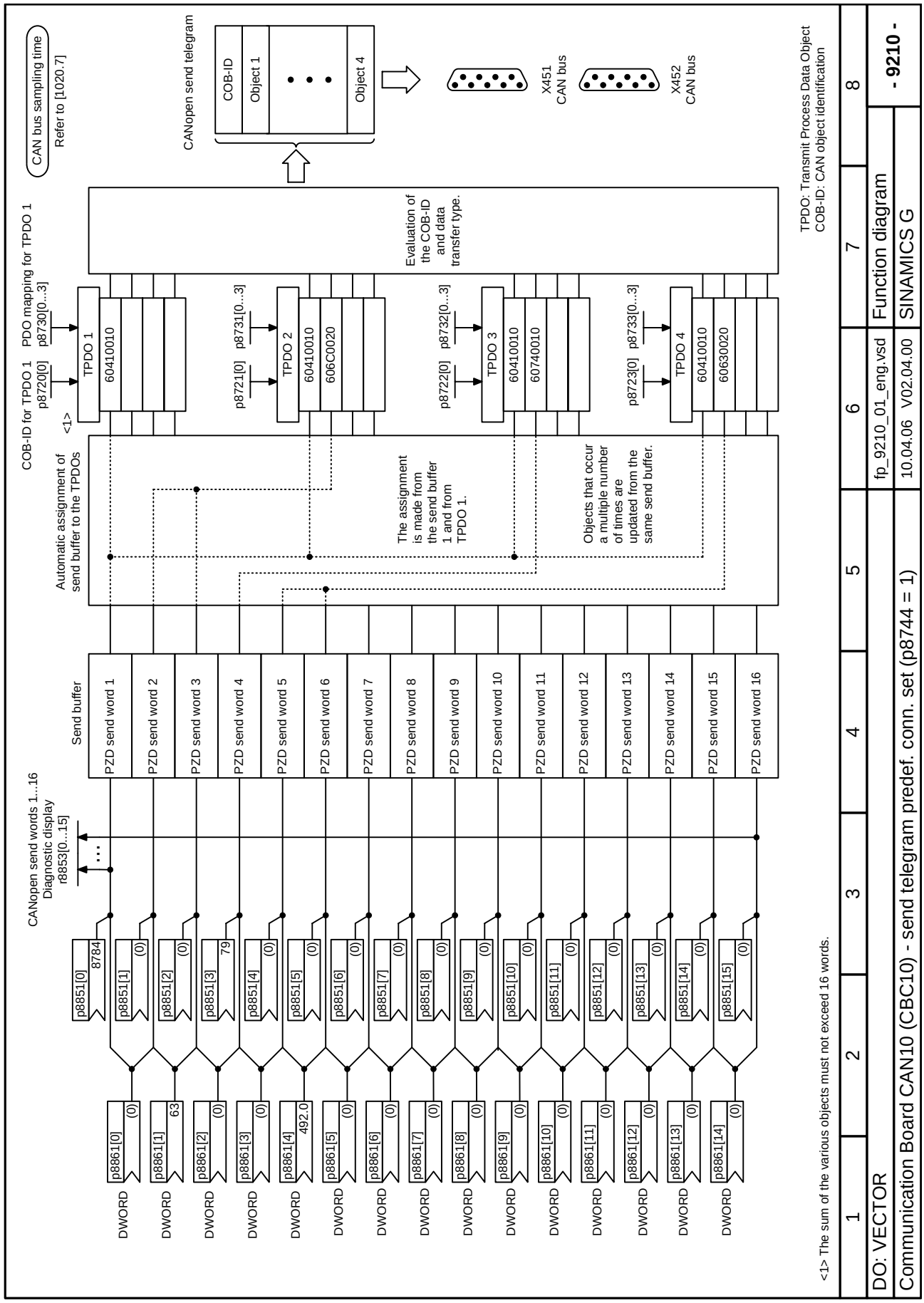

Figure 2-125 9210 – Send telegram, predefined connection set (p8744 = 1)

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CANopen sampling time
Refer to [1020.7]

Signal targets for control word CANopen

Signal	Meaning	Interconnection parameters <1>	[Function diagram] internal control word	[Function diagram] signal target	Inverted
STW1.0	= ON (pulses can be enabled) **0 = OFF1** (braking with ramp-function generator, then pulse cancellation and ready-to-power-up)	p0840[0] = r8890.0	[2501.3]	[2610]	-
STW1.1	**1 = No coast-down activated** (enable possible) 0 = Activate coast-down (immediate pulse cancellation and power-on inhibit)	p0844[0] = r8890.1	[2501.3]	[2610]	-
STW1.2	**1 = No fast stop activated** (enable possible) 0 = Activate fast stop (braking along an OFF3 ramp p1135, then pulse cancellation and power-on inhibit)	p0848[0] = r8890.2	[2501.3]	[2610]	-
STW1.3	**1 = Enable operation** (pulses can be enabled) 0 = Inhibit operation (cancel pulses)	p0852[0] = r8890.3	[2501.3]	[2610]	-
STW1.4	**Reserved**	-	-	-	-
STW1.5	**Reserved**	-	-	-	-
STW1.6	**Reserved**	-	-	-	-
STW1.7	**= Acknowledge fault**	p2103[0] = r8890.7	[2546.1]	[8060]	-
STW1.8	**Reserved**	-	-	-	-
STW1.9	**Reserved**	-	-	-	-
STW1.10	**Reserved**	-			-
STW1.11	**Can be freely connected**	pxxxx[y] = r8890.11			-
STW1.12	**Can be freely connected**	pxxxx[y] = r8890.12	-	-	-
STW1.13	**Can be freely connected**	pxxxx[y] = r8890.13	-	-	-
STW1.14	**Can be freely connected**	pxxxx[y] = r8890.14	-	-	-
STW1.15	**Can be freely connected**	pxxxx[y] = r8890.15	-	-	-

<1> Depending on the position of the CANopen control word in p8750, the number of the binector to be connected changes.

Figure 2-126 9220 – Control word CANopen

1	2	3	4	5	6	7	8
DO: VECTOR					fp_9220_01_eng.vsd	Function diagram	- 9220 -
Communication board CAN 10 (CBC10) - control word CANopen					10.04.06 V02.04.00	SINAMICS G	

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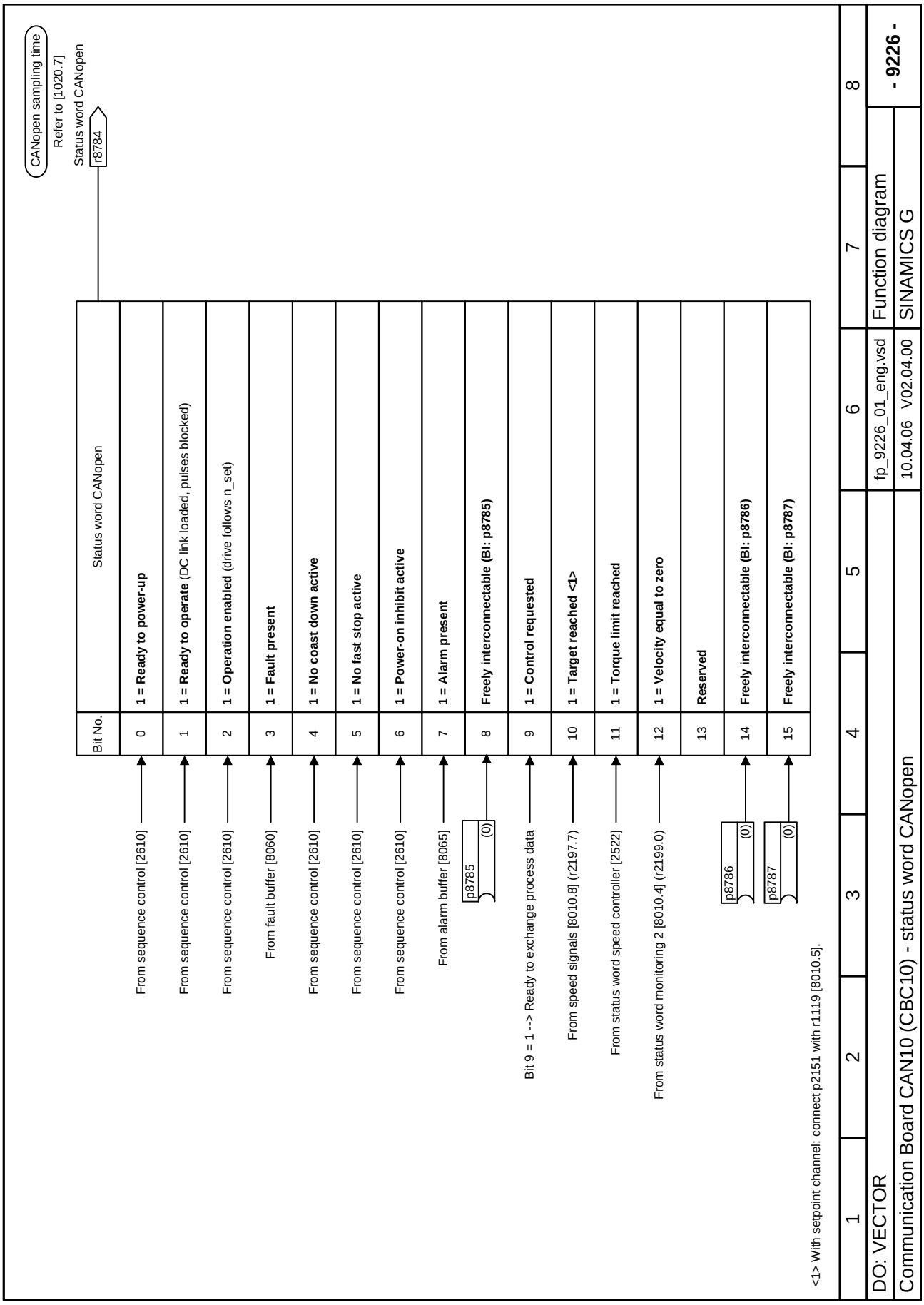

Figure 2-127 9226 – Status word CANopen

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2.21 Terminal Module 31 (TM31)

Function diagrams

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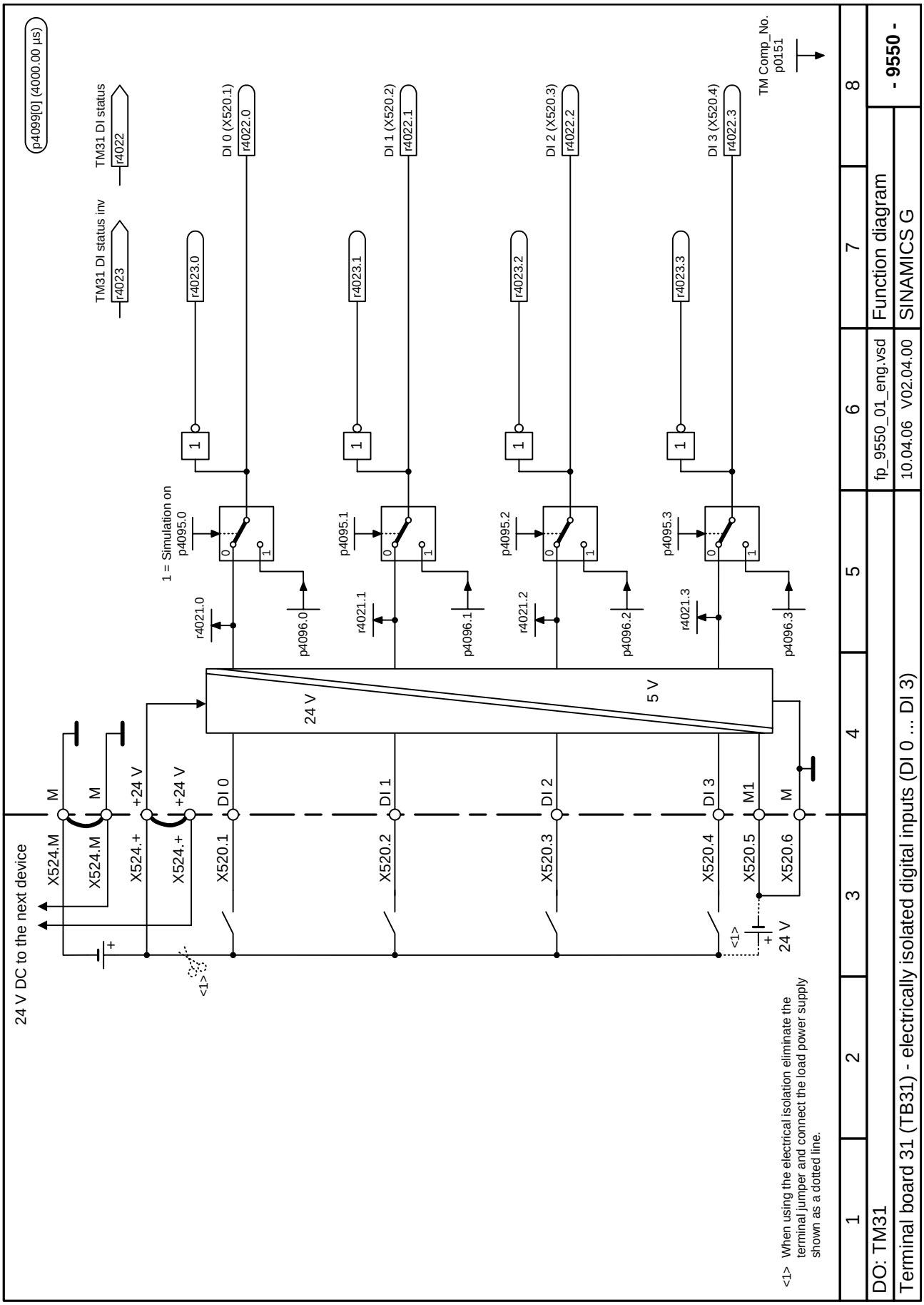

Figure 2-128 9550 – Digital inputs, electrically isolated (DI 0 ... DI 3)

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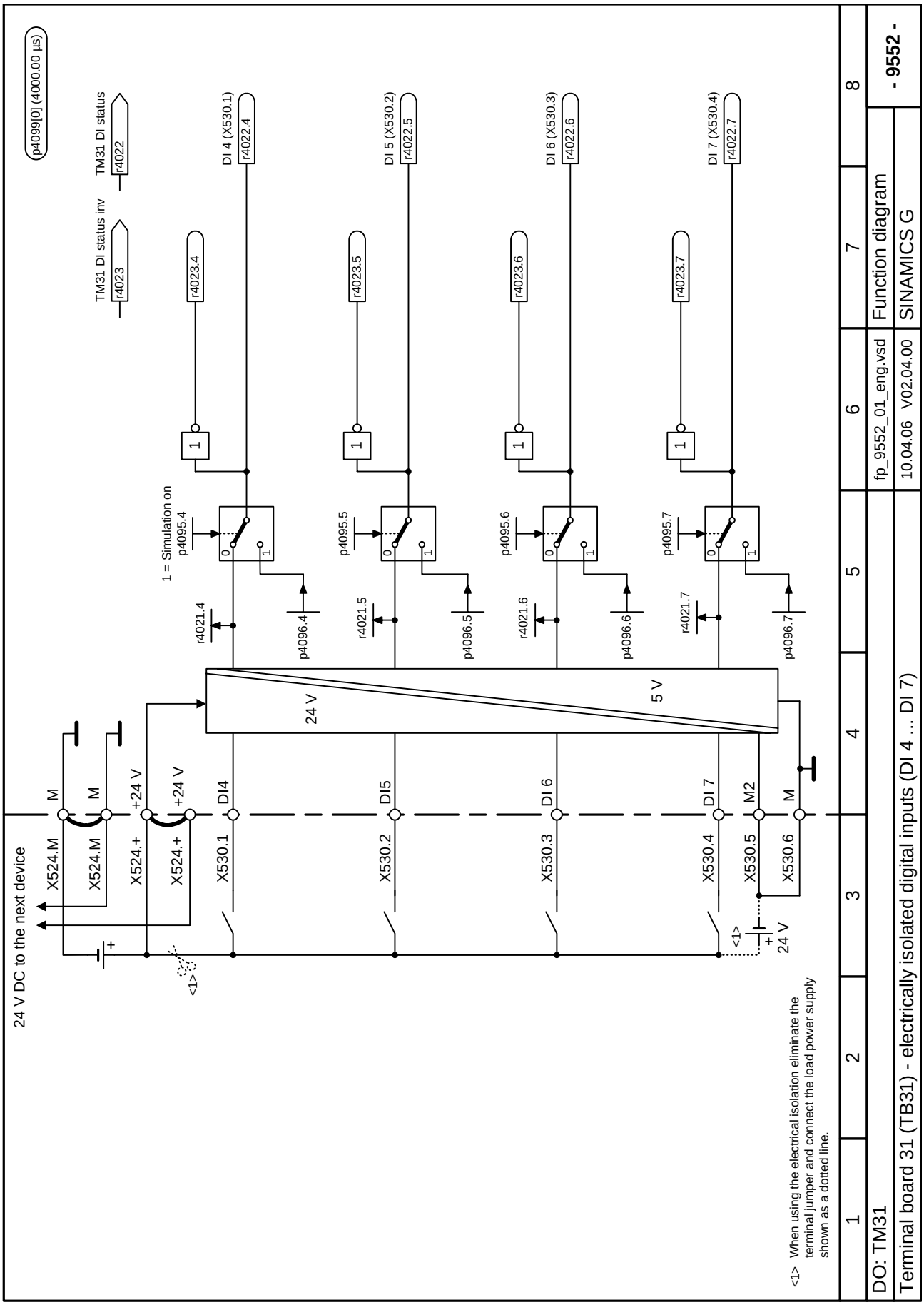

Figure 2-129 9552 – Digital inputs, electrically isolated (DI 4 ... DI 7)

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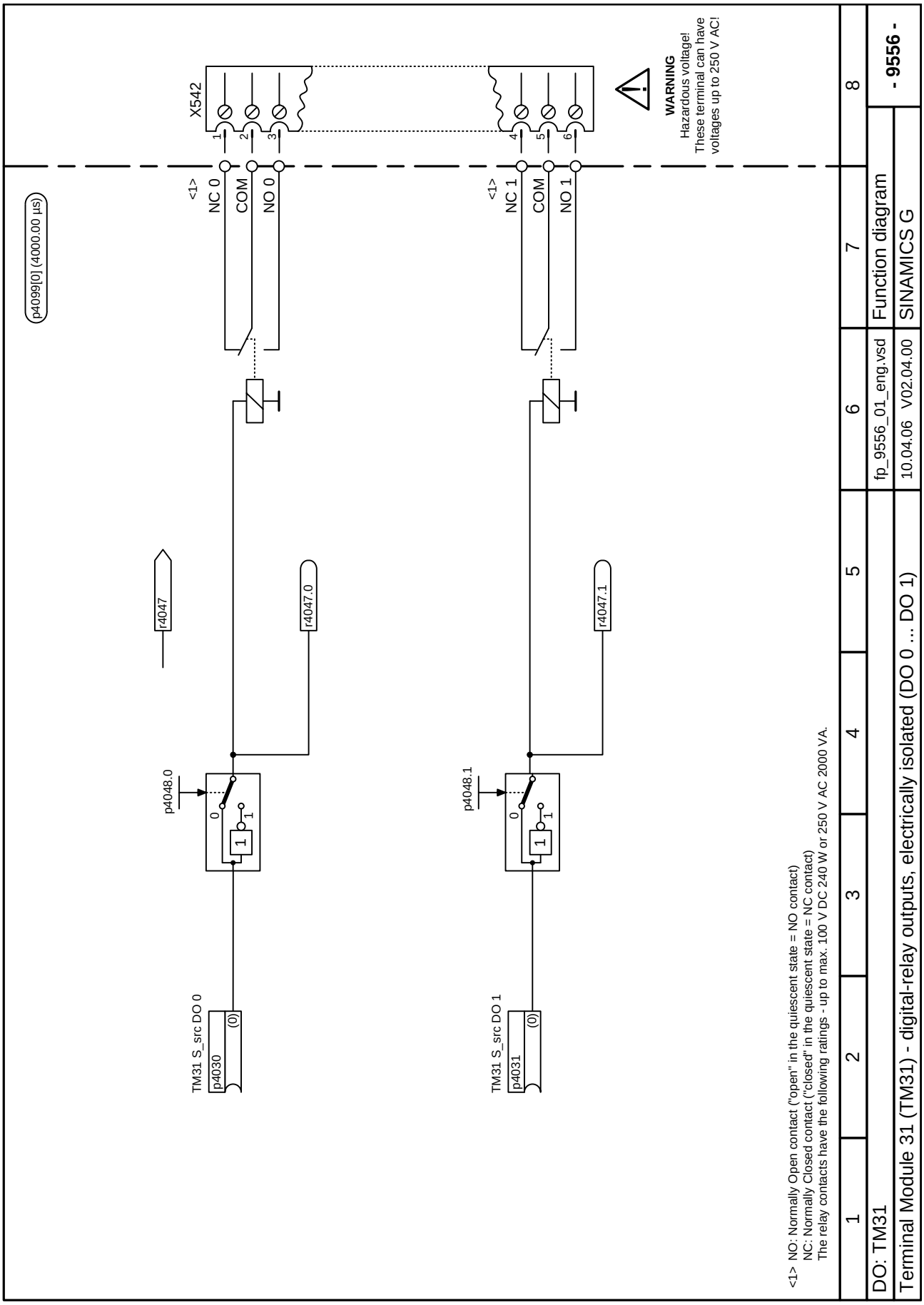

Figure 2-130 9556 – Digital relay outputs, electrically isolated (DO 0 ... DO 1)

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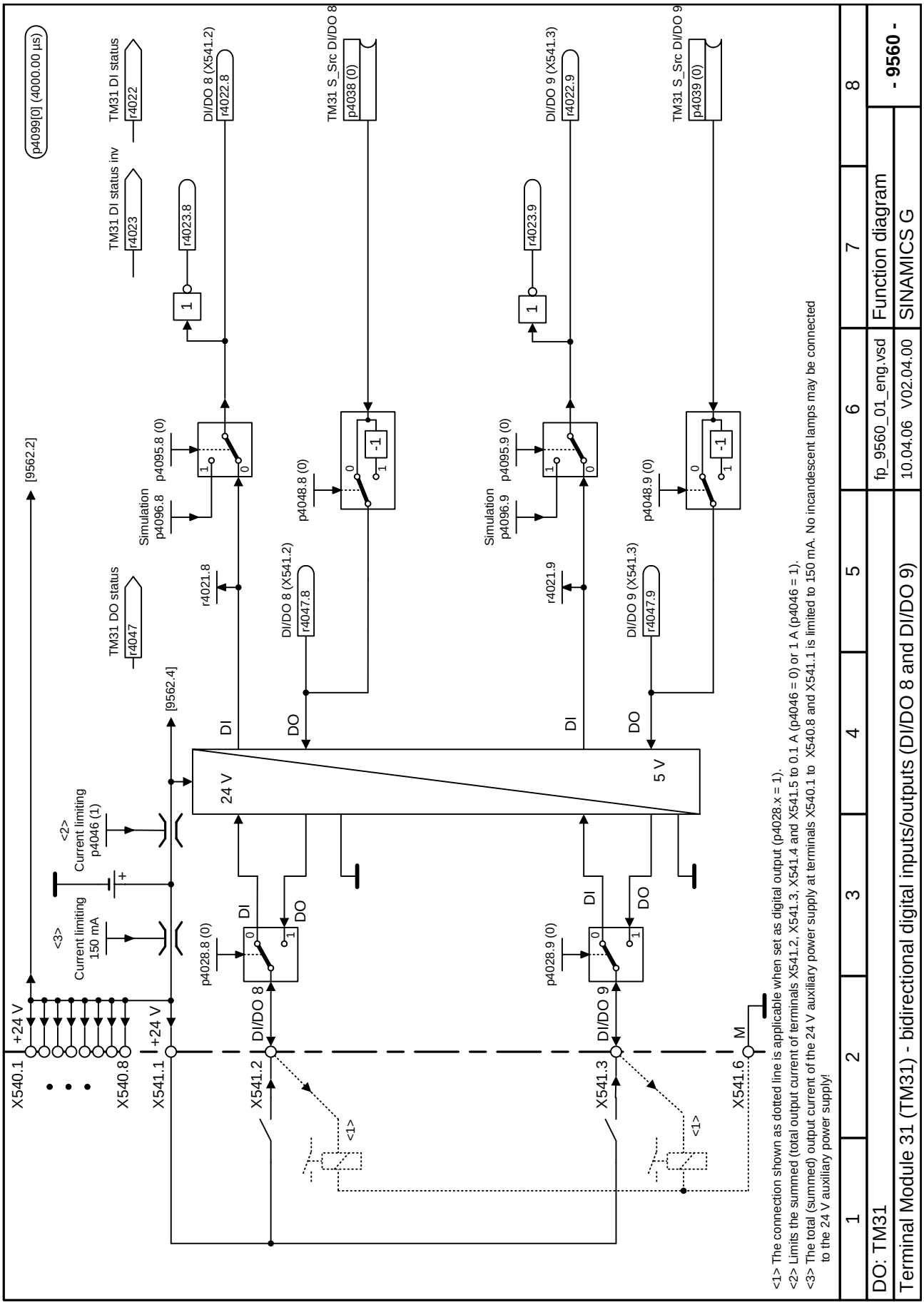

Figure 2-131 9560 – Digital inputs/outputs, bidirectional (DI/DO 8 ... DI/DO 9)

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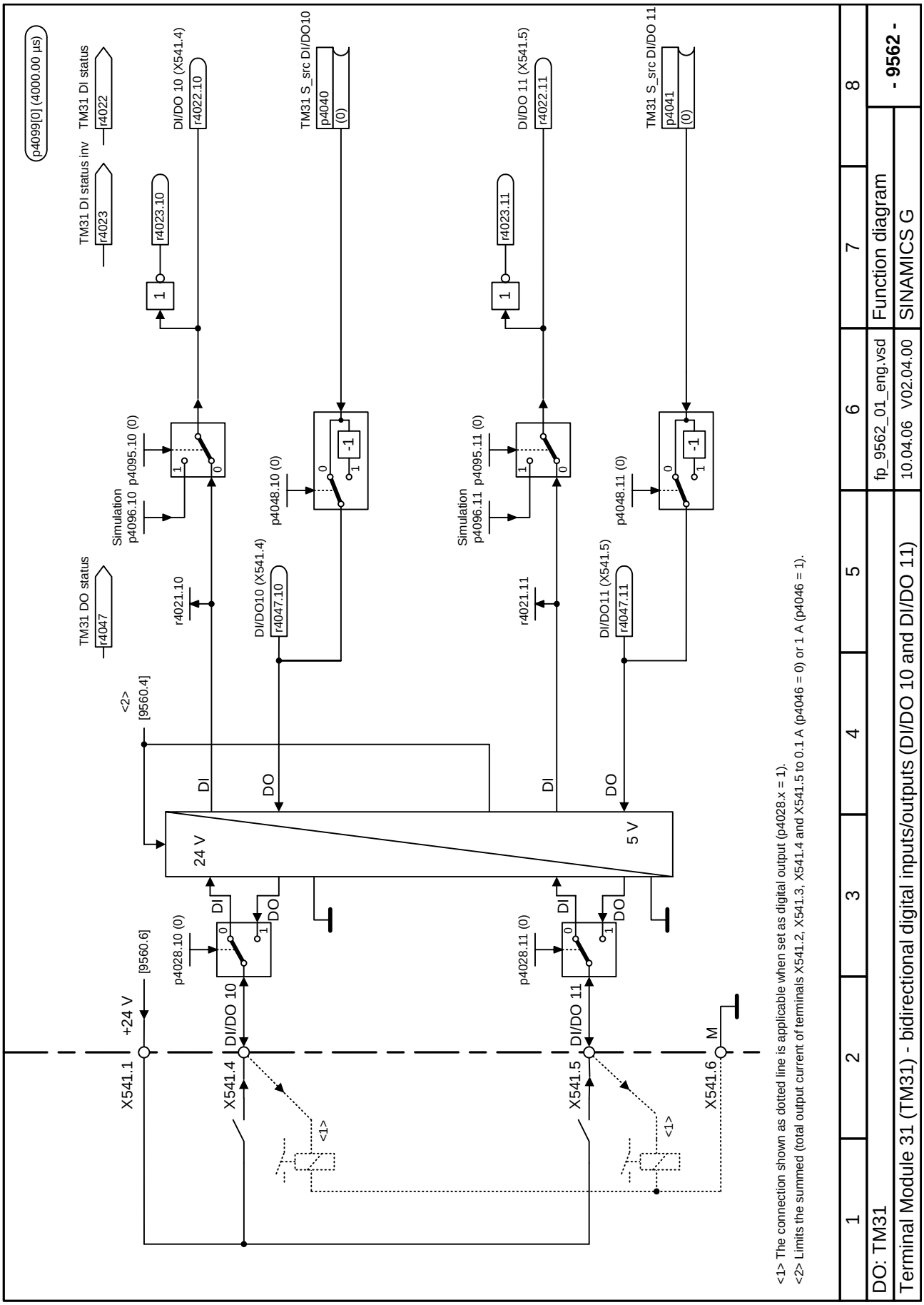

Figure 2-132 9562 – Digital inputs/outputs, bidirectional (DI/DO 10 ... DI/DO 11)

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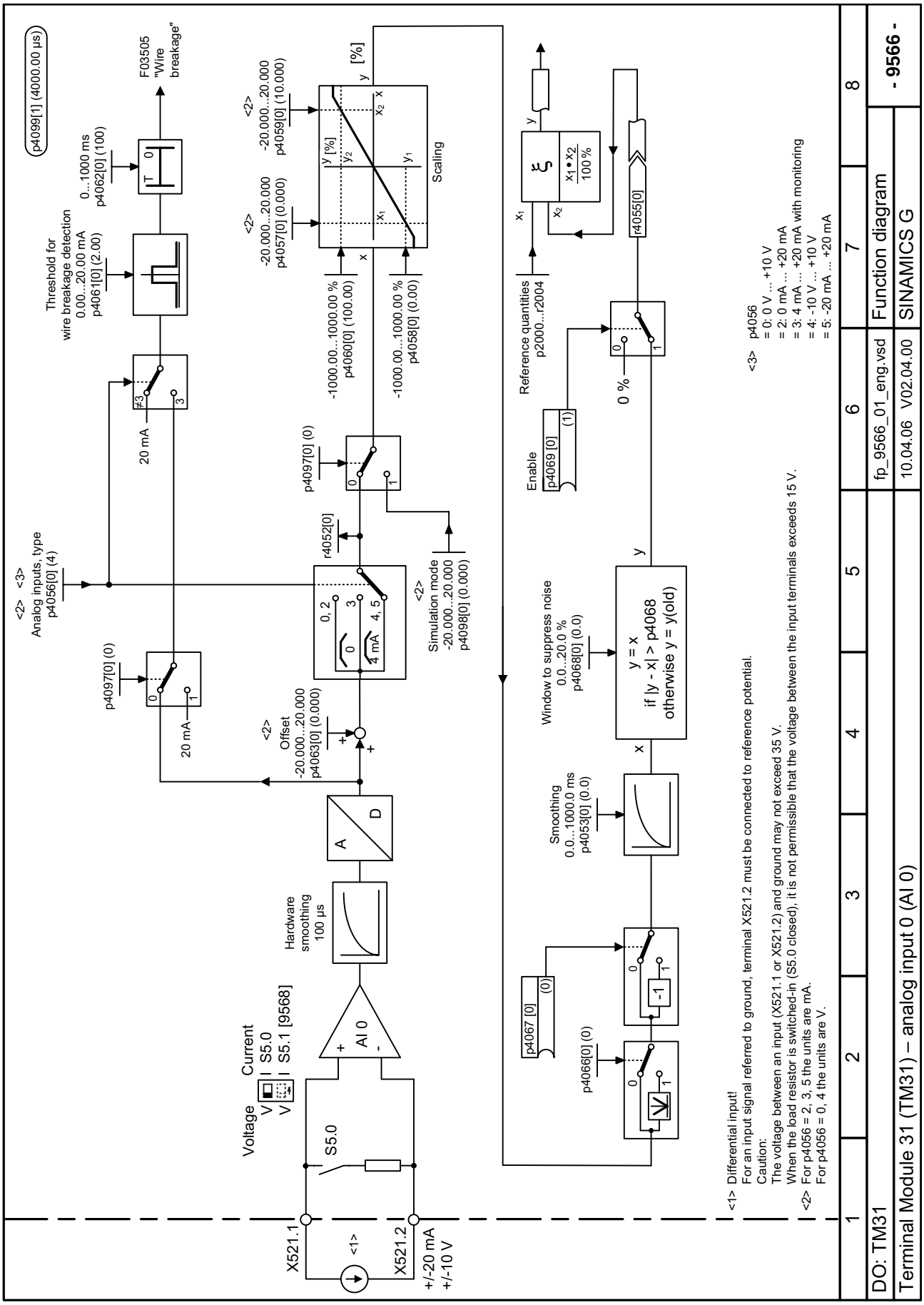

Figure 2-133 9566 – Analog input 0 (AI 0)

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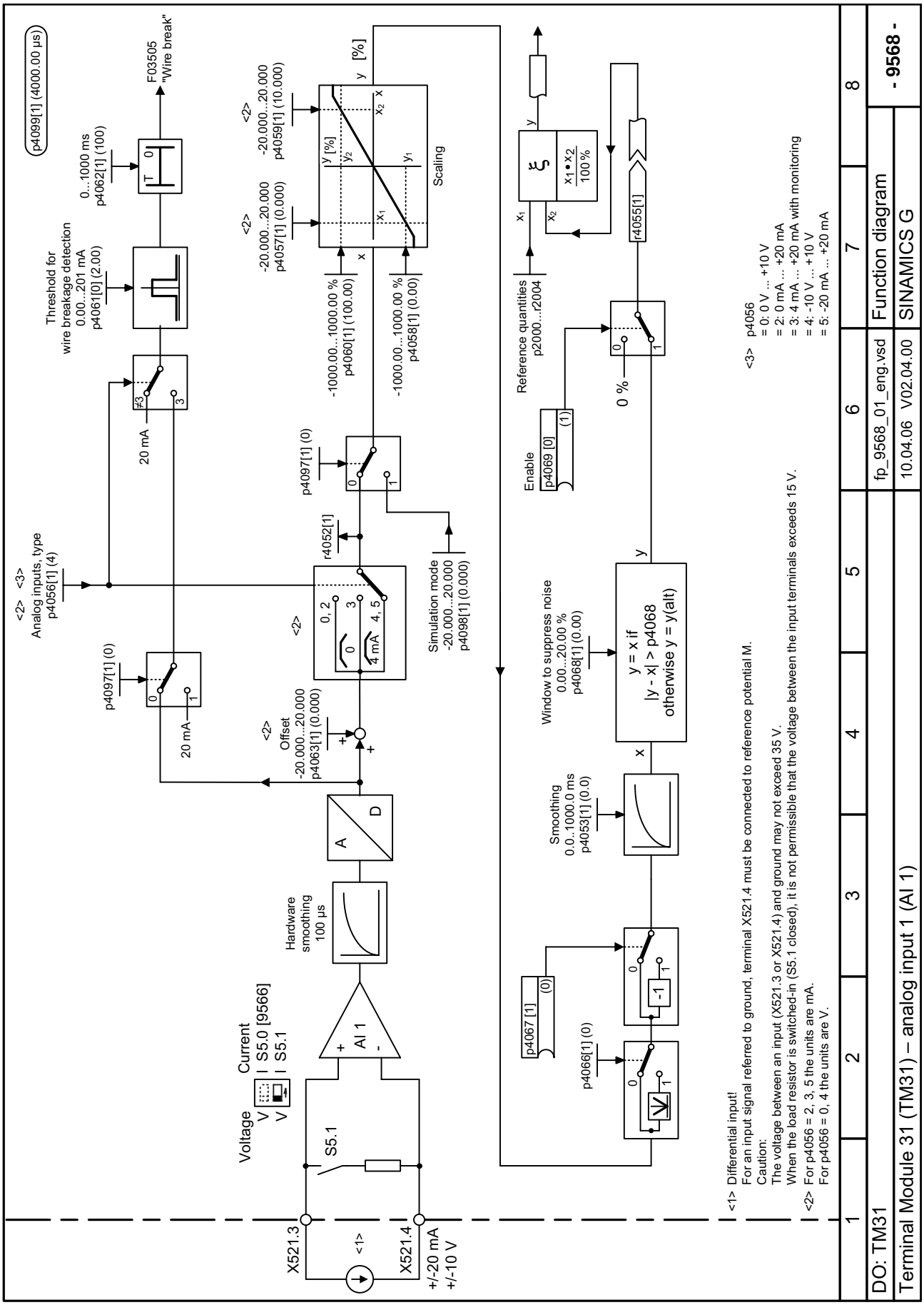

Figure 2-134 9568 – Analog input 1 (AI 1)

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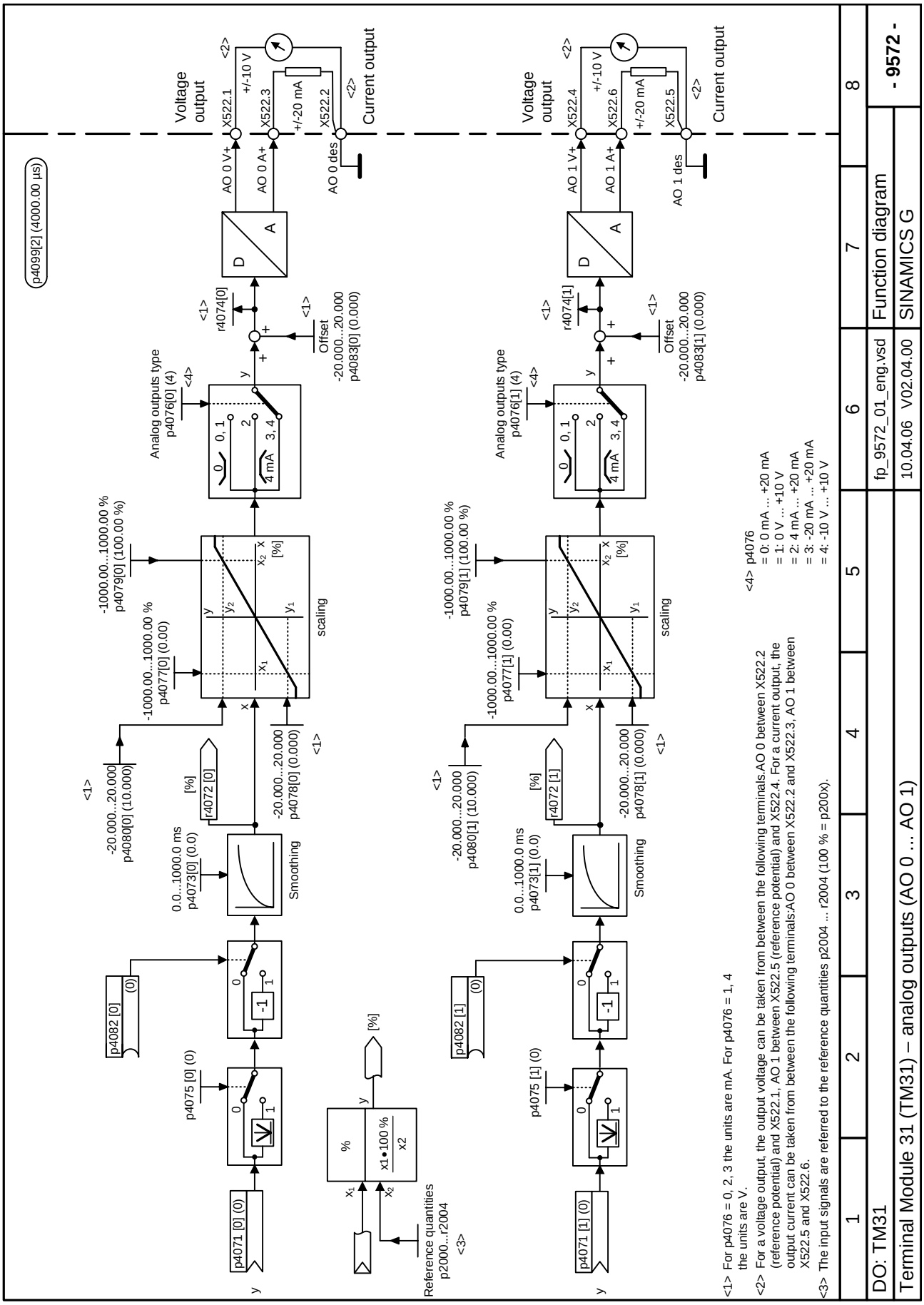

Figure 2-135 9572 – Analog outputs (AO 0 ... AO 1)

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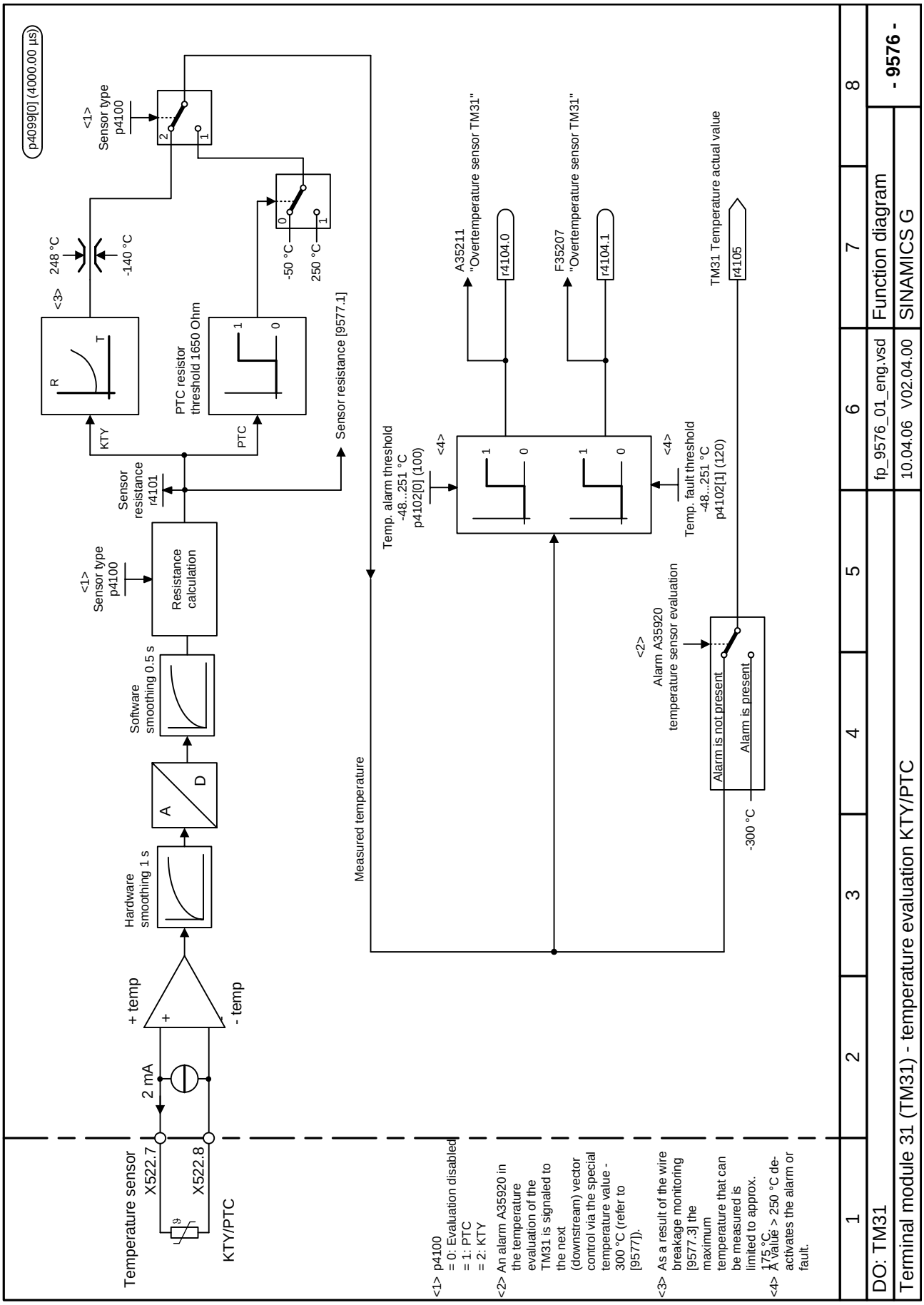

Figure 2-136 9576 – Temperature evaluation KTY/PTC

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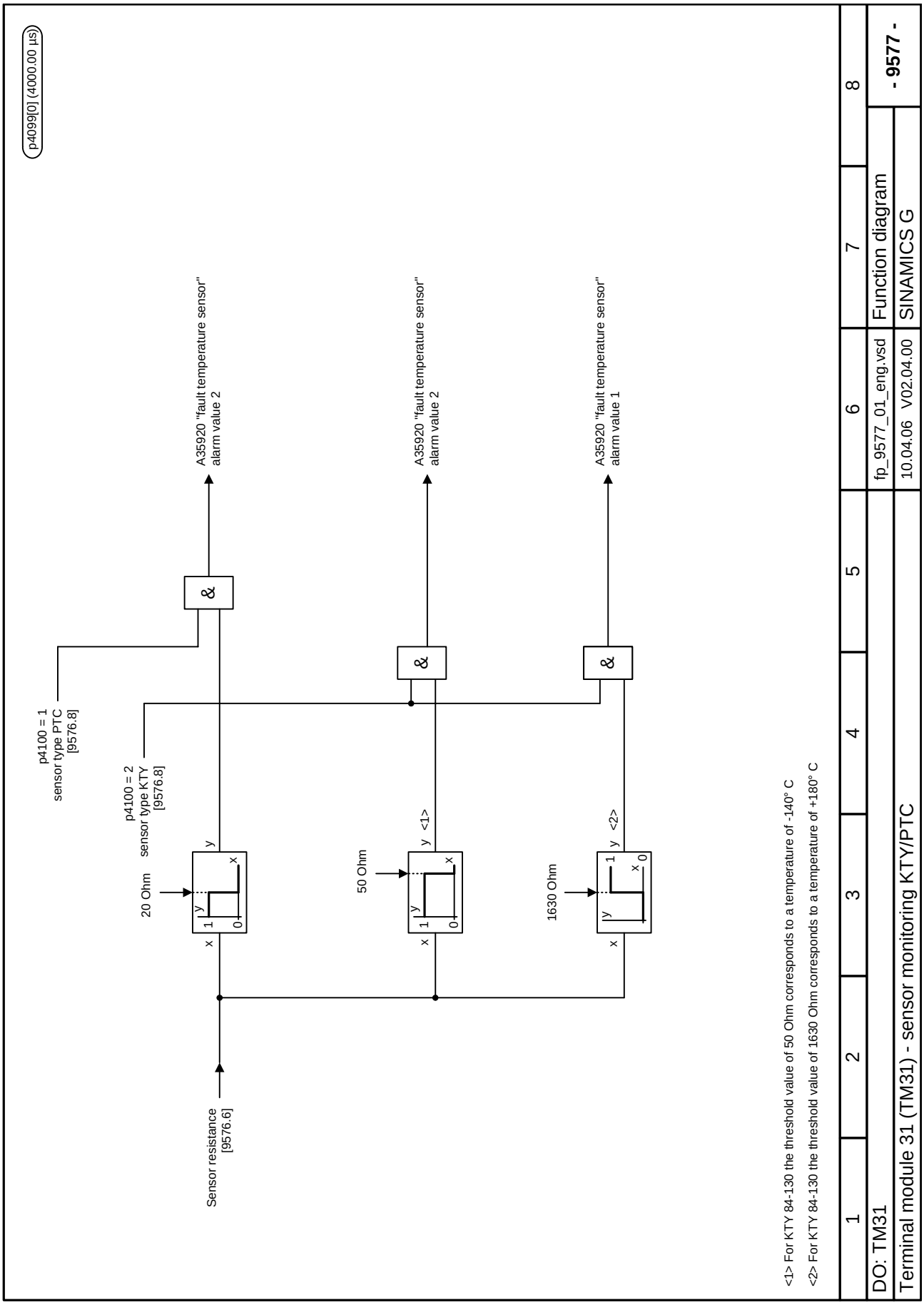

Figure 2-137 9577 – Sensor monitoring KTY/PTC

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2.22 Voltage Sensing Module (VSM)

Function diagrams

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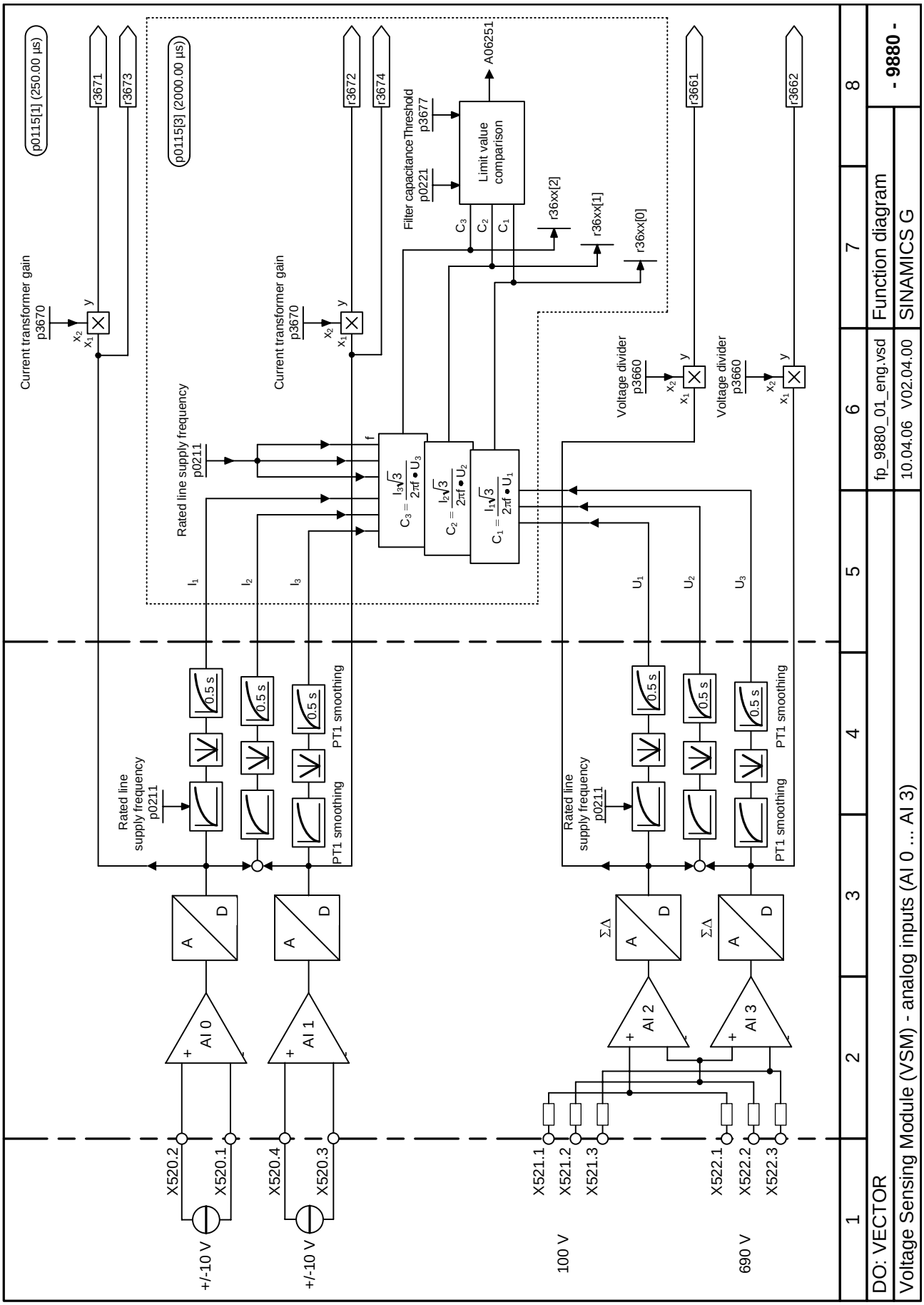

Figure 2-138 9880 – Analog inputs (AI 0 ... AI 3)

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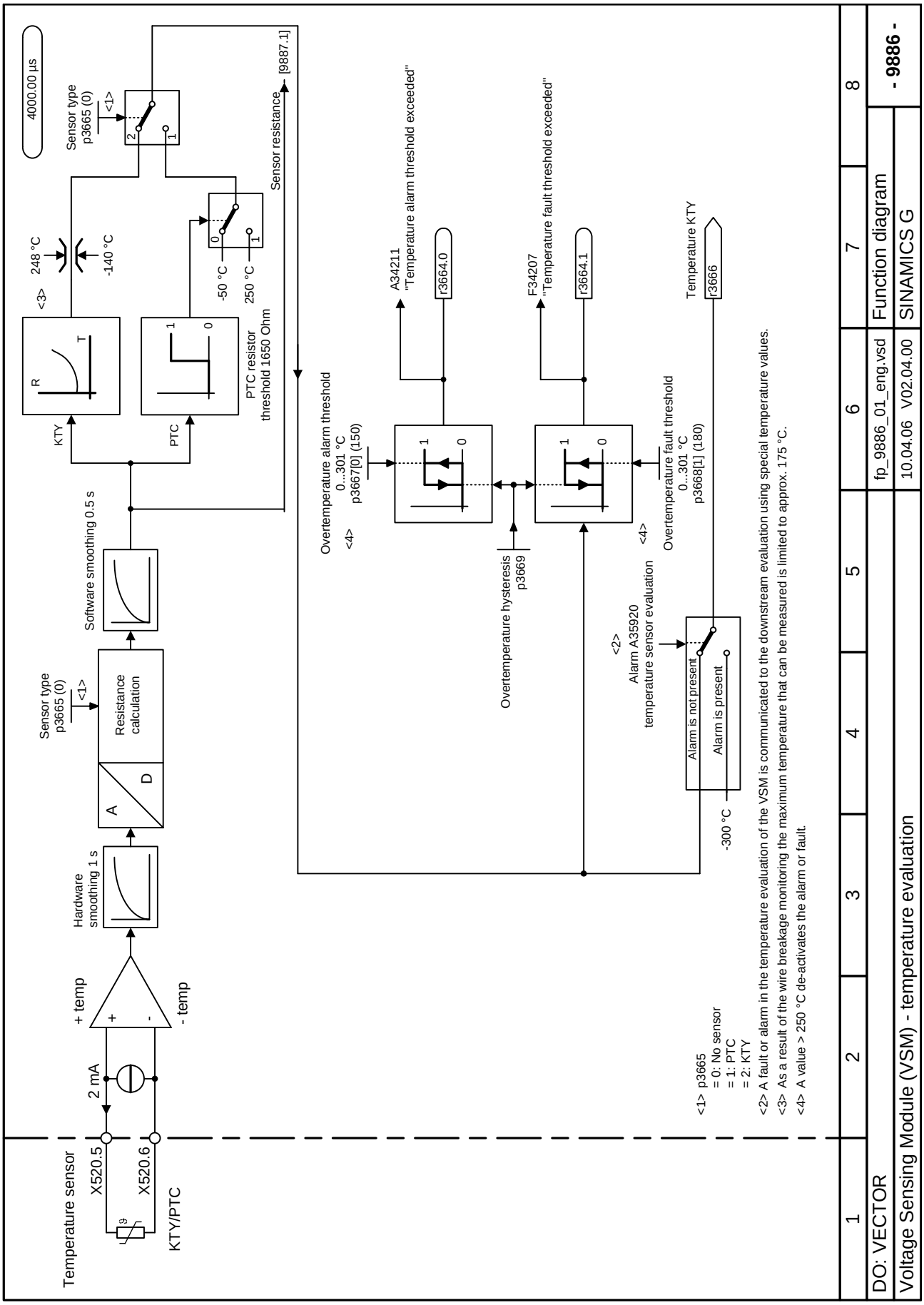

Figure 2-139 9886 – Temperature evaluation

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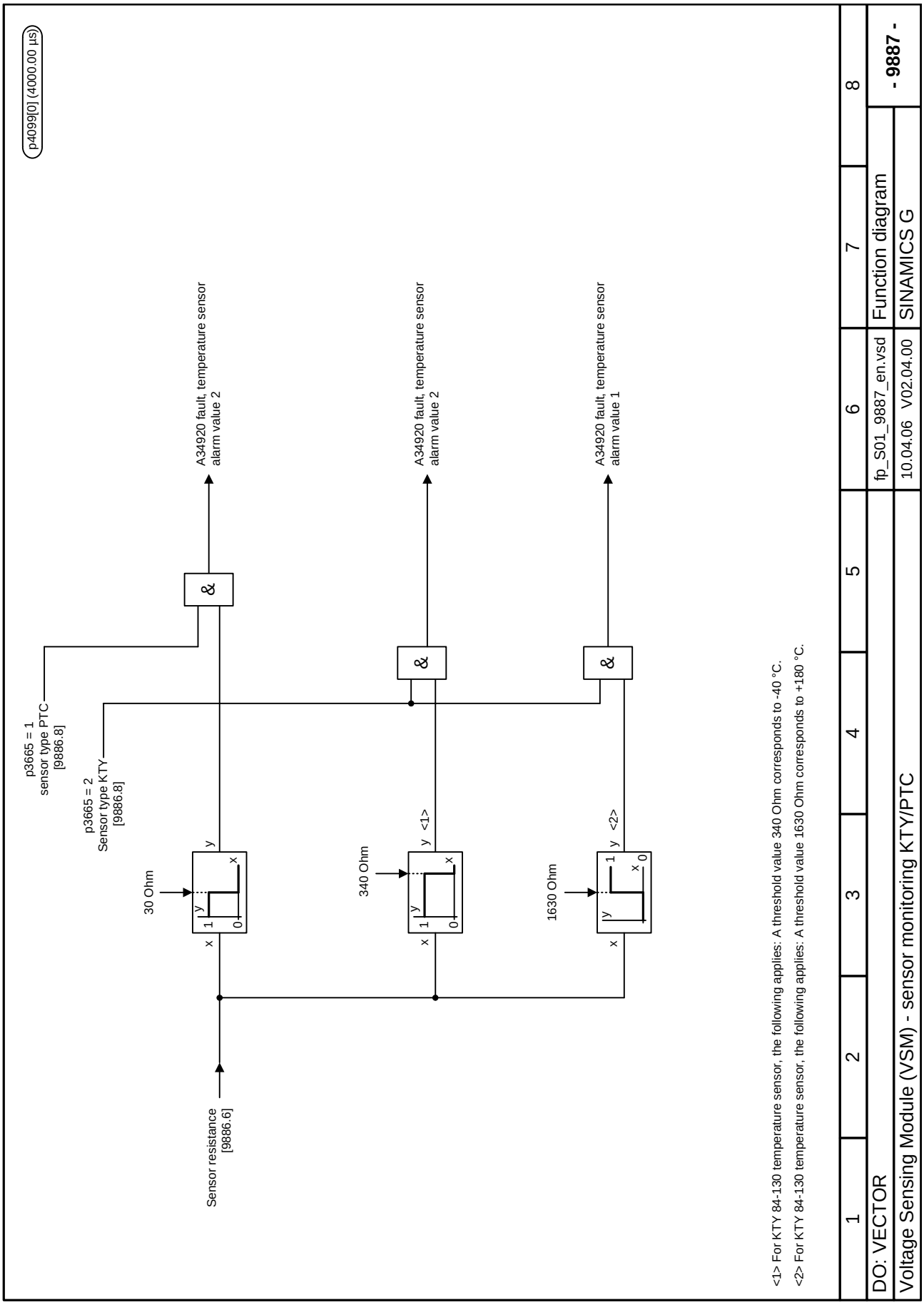

Figure 2-140 9887 – Sensor monitoring KTY/PTC

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2.23 Basic Operator Panel 20 (BOP20)

Function diagrams

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PROFIBUS sampling time
Refer to [1020.7]

Interconnection STW BOP (r0019)		<1>
Signal	Meaning	Interconnection parameters
STW BOP.0	**1 = On** **0 = OFF (OFF1)**	p0840[0] = r0019.0
STW BOP.1	**1 = No coast down** 0 = Coast down (OFF2)	p0844[0] = r0019.1
STW BOP.2	**1 = No fast stop** 0 = Fast stop (OFF3)	p0848[0] = r0019.2
STW BOP.3	**Reserved**	-
STW BOP.4	**Reserved**	-
STW BOP.5	**Reserved**	-
STW BOP.6	**Reserved**	-
STW BOP.7	**↑ = Acknowledge fault**	p2102[0] = r0019.7
STW BOP.8	**Reserved**	-
STW BOP.9	**Reserved**	-
STW BOP.10	**Reserved**	-
STW BOP.11	**Reserved**	-
STW BOP.12	**Reserved**	-
STW BOP.13	**1 = Motorized potentiometer, raise**	p1035[0] = r0019.13
STW BOP.14	**1 = Motorized potentiometer, lower**	p1036[0] = r0019.14
STW BOP.15	**Reserved**	-

<1> The BICO interconnection represents an example that can be be changed by customers.

Figure 2-141 9912 – Control word BOP20 interconnection

1	2	3	4	5	6	7	8
DO: CU_S					fp_9912_01_eng.vsd	Function diagram	- 9912 -
Basic Operator Panel 20 (BOP20) – control word BOP20 interconnection					10.04.06 V02.04.00	SINAMICS G	

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Faults and alarms

3

Contents

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3.1 Overview of faults and alarms

3.1.1 General information about faults and alarms

Displaying faults/alarms

If a fault occurs, the drive indicates the fault and/or alarm.

The following methods for displaying faults and alarms are available:

- Display via the fault and alarm buffer with PROFIBUS.
- Display online via the commissioning software.

Differences between faults and alarms

The differences between faults and alarms are as follows:

Table 3-1 Differences between faults and alarms

Type	Description
Faults	What happens when a fault occurs? • The appropriate fault reaction is triggered. • Status signal ZSW1.3 is set. • The fault is entered in the fault buffer. How are faults eliminated? • Remove the original cause of the fault. • Acknowledge the fault.
Alarms	What happens when an alarm occurs? • Status signal ZSW1.7 is set. • The alarm is entered in the alarm buffer. How are alarms eliminated? • Alarms acknowledge themselves. If the cause of the alarm is no longer present, then they automatically reset themselves.

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Fault responses

The following fault responses are defined:

Table 3-2 Fault responses

List	PROFI-drive	Reaction	Description
NONE	-	None	No response when a fault occurs.
OFF1	ON/ OFF	Brake along the ramp generator deceleration ramp followed by pulse disable	**Closed-loop speed control (p1300 = 20, 21)** • n_set = 0 is input immediately to brake the drive along the deceleration ramp (p1121). • When zero speed is detected, the motor holding brake (if parameterized) is closed (p1215). The pulses are suppressed when the brake application time (p1217) expires. Zero speed is detected if the actual speed drops below the threshold in p1226 or if the monitoring time (p1227) started when speed setpoint <= speed threshold (p1226) has expired. **Closed-loop torque control (p1300 = 23)** • The following applies to closed-loop torque control mode: Reaction as for OFF2. • When changing over to closed-loop control using p1501, the following applies: There is no dedicated braking response. If the actual speed drops below the speed threshold (p1226), or the timer stage (p1277) has expired, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the brake application time (p1217) expires.
OFF2	COAST STOP	Internal/external pulse disable	**Closed-loop speed and torque control** • Instantaneous pulse suppression, the drive "coasts" to a standstill. • The motor holding brake (if one is being used) is closed immediately. • Power-on disable is activated.

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Table 3-2 Fault responses, Fortsetzung

List	PROFI-drive	Reaction	Description
OFF3	QUICK STOP	Brake along the OFF3 deceleration ramp followed by pulse disable	**Closed-loop speed control (p1300 = 20, 21)** • n_set=0 is input immediately to brake the drive along the OFF3 deceleration ramp (p1135). • When zero speed is detected, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the brake application time (p1217) expires. Zero speed is detected if the actual speed drops below the threshold in p1226 or if the monitoring time (p1227) started when speed setpoint <= speed threshold (p1226) has expired. • Power-on disable is activated. **Closed-loop torque control (p1300 = 23)** • Switchover to speed-controlled operation and other reactions as described for speed-controlled operation.
STOP1	-	-	In preparation
STOP2	-	n_set = 0	• n_set=0 is input immediately to brake the drive along the OFF3 deceleration ramp (p1135). • The drive remains in closed-loop speed control mode.
DCBRAKE	-	-	In preparation
ENCODER	-	Internal/external pulse disable (p0491)	The fault reaction ENCODER is applied as a function of the setting in p0491. Factory setting: p0491 = 0 --> Encoder fault causes OFF2

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Acknowledgement of faults

The list of faults and alarms specifies how to acknowledge each fault after the cause has been remedied.

Table 3-3 Acknowledgement of faults

Acknowledgement	Description
POWER ON	The fault is acknowledged by a POWER ON process (switch drive unit off and on again). **Note:** If this action has not eliminated the fault cause, the fault is displayed again immediately after power up.
IMMEDIATELY	Faults can be acknowledged at an individual drive object (Points 1 to 3) or at all drive objects (point 4) as follows: 1 Acknowledge by setting parameter: p3981 = 0 --> 1 2 Acknowledge via binector inputs: p2103 BI: 1. Acknowledge faults p2104 BI: 2. Acknowledge faults p2105 BI: 3. Acknowledge faults 3 Acknowledge using PROFIBUS control signal: STW1.7 = 0 --> 1 (edge) 4 Acknowledging all faults p2102 BI: Acknowledging all faults All of the faults at all of the drive objects of the drive system can be acknowledged using this binector input. **Note:** • These faults can also be acknowledged by a POWER ON operation. • If this action has not eliminated the fault cause, the fault is displayed again immediately after power up. • Safety Integrated faults The "Safe Stop" (SH) function must be deselected before these faults are acknowledged.
PULSE INHIBIT	The fault can only be acknowledged when the pulses are inhibited (r0899.11 = 0). To acknowledge, the same possibilities exist as described under IMMEDIATE acknowledgement.

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Save fault buffer on POWER OFF

The contents of the fault buffer are saved to non-volatile storage when the Control Unit 320 (CU320) is powered down, i.e. the fault buffer history is still available when the unit is powered up again.

Note:

Prerequisites:

- Firmware with version V2.2 or later.
- Control Unit 320 (CU320) with hardware version C or higher.
  The hardware version is shown on the rating plate or can be displayed online with the commissioning software (in Project Navigator under "Drive Unit" --> Configuration --> Version Overview).

If these conditions are not fulfilled, the contents of the fault buffer are deleted on every POWER ON.

The fault buffer of a drive object comprises the following parameters:

- r0945[0...63], r0947[0...63], r0948[0...63], r0949[0...63]
- r2109[0...63], r2130[0...63], r2133[0...63], r2136[0...63]

The fault buffer contents can be deleted manually as follows:

- Delete fault buffer for all drive objects:
  p2147 = 1 --> p2147 = 0 is automatically set after execution.
- Delete fault buffer for a specific drive object:
  p0952 = 0 --> The parameter belongs to the specified drive object.

The fault buffer contents are automatically deleted in response to the following events:

- Restore factory setting (p0009 = 30 and p0976 = 1).
- Download with modified structure (e.g. number of drive objects changed).
- Power-up after other parameter values have been loaded (e.g. p0976 = 10).
- Firmware release upgrade.

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3.1.2 Explanation of the list of faults and alarms

The data in the following example has been chosen at random. A description can contain the information listed below. Some of the information is optional.

The list of faults and alarms (see Section 3.2) has the following layout:

- Start of example -

Axxxxx (F, N)	**Fault location (optional): Name**
Reaction:	NONE
Acknowledge-ment:	NONE
Cause:	Description of possible causes. Fault value (r0949, interpret format): or alarm value (r2124, interpret format): (optional) Information about fault or alarm values (optional).
Remedy:	Description of possible remedies.
Reaction to F:	A_INFEED: OFF2 (OFF1, NONE) SERVO: NONE (OFF1, OFF2, OFF3) VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowledge-ment for F:	IMMEDIATELY (POWER ON)
Reaction to N:	NONE
Acknowledge-ment for N:	NONE

Axxxxx	**Alarm xxxxx**
Axxxxx (F, N)	**Alarm xxxxx (message type can be changed to F or N)**
Fxxxxx	**Fault xxxxx**
Fxxxxx (A, N)	**Fault xxxxx (report type can be changed to A or N)**
Nxxxxx	**No message**
Nxxxxx (A)	**No message (message type can be changed to A)**
Cxxxxx	**Safety message (separate message buffer)**

A report comprises a letter followed by the relevant number.

The meaning of the letters is as follows:

- A means "Alarm"
- F means "Fault"
- N means "No Report" or "Internal Report"
- C means "Safety message"

The optional brackets indicate whether the type specified for this report can be changed and which report types can be adjusted via parameter (p2118, p2119).

Information about reaction and acknowledgement are specified independently for a report with adjustable report type (e.g. reaction to F, acknowledgement for F).

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Note:

You can change the default properties of a fault or alarm by setting parameters.

The list of faults and alarms (see Section 3.2) provide information referred to the properties of a message/report that have been set as standard. If the properties of a specific message/report are changed, then the appropriate information may have to be modified in this list.

Fault location (optional): Name

The fault location (optional), the name of the fault or alarm and the report number all serve to identify the report (e.g. with the commissioning software).

Reaction: Default fault reaction (adjustable fault reaction)

Specifies the default reaction in the event of a fault.

The optional brackets indicate whether the default fault reaction can be changed and which fault reactions can be adjusted via parameter (p2100, p2101).

Note:

See Subsection 3.1.1

Acknowledgement: Default acknowledgement (adjustable acknowledgement)

Specifies the default method of fault acknowledgement after the cause has been eliminated.

The optional brackets indicate whether the default acknowledgement can be changed and which acknowledgement can be adjusted via parameter (p2126, p2127).

Note:

See Subsection 3.1.1

Cause:

Description of the possible causes of the fault/alarm A fault or alarm value is also specified as an option.

Fault value (r0949, format):

The fault value is entered in the fault buffer in r0949[0...63] and specifies additional, precise information about a fault.

Alarm value (r2124, format):

The alarm value specifies additional, precise information about an alarm.

The alarm value is entered in the alarm buffer in r2124[0...7] and specifies additional, precise information about an alarm.

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Remedy:

Description of the potential methods for eliminating the cause of the active fault or alarm.

Warning

In individual cases, the servicing and maintenance personnel are responsible for choosing a suitable method for eliminating the cause of faults.

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3.1.3 Numerical ranges of faults and alarms

Faults and alarms are organized into the following numerical ranges:

Table 3-4 Numerical ranges of faults and alarms

from	to	Section
1000	2999	Control Unit
3000	4999	Reserved
5000	5999	Power unit
6000	6999	Infeed
7000	7999	Drives
8000	8999	Option Board
9000	29999	Reserved
30000	30999	DRIVE-CLiQ component power section
31000	31999	DRIVE-CLiQ component encoder 1
32000	32999	DRIVE-CLiQ component encoder 2
33000	33999	DRIVE-CLiQ component encoder 3
34000	34999	Reserved
35000	35999	Terminal Module 31 (TM31)
36000	49999	Reserved
50000	50399	Communication Board (COMM BOARD)
50400	65535	Reserved

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3.2 List of faults and alarms

Product: SINAMICS G, Version: 2402300, Language: eng

F01000 Internal software error

Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.

F01001 Internal software error

Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

F01002 Internal software error

Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

F01003 Acknowledgment delay when accessing the memory

Reaction: OFF2
Acknowledge: POWER ON
Cause: A memory area was accessed that does not return a "READY".
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry-out a POWER ON (power off/on) for all components.
- contact the Hotline.

F01005 Firmware download DRIVE-CLiQ component unsuccessful

Reaction: NONE
Acknowledge: IMMEDIATELY

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Cause: Firmware was not able to be downloaded into a DRIVE-CLiQ component.
Fault value (r0949):
xxyyyy hex: xx = component number, yyyy = cause of the fault.
Cause of the fault (decimal):
011: DRIVE-CLiQ component has detected a checksum error.
015: The selected DRIVE-CLiQ component did not accept the contents of the firmware file.
101: After several communication attempts, not response from the DRIVE-CLiQ component.
140: Firmware file for the DRIVE-CLiQ component not available on the CompactFlash card.
143: Component is not changed in the firmware download mode.
156: Component with the specified component number is not available (p7828).
Additional values:
Only for internal Siemens troubleshooting.

Remedy: - check the selected component number (p7828).
- check the DRIVE-CLiQ connection.
- save suitable firmware file for download in the directory /siemens/sinamics/code/sac/.
- after POWER ON has been carried-out again for the DRIVE-CLiQ component, download the firmware again.

A01006 Firmware update DRIVE-CLiQ component required

Reaction: NONE

Acknowledge: NONE

Cause: The firmware of a DRIVE CLiQ component must be updated as there is no suitable firmware or firmware version in the component for operation with the Control Unit.
Alarm value (r2124, decimal):
Component number of the DRIVE-CLiQ component.

Remedy: Firmware update using the commissioning software:
The firmware version of all of the components on the "version overview" page can be read in the Project Navigator under "Configuration" of the associated drive unit and an appropriate firmware update can be carried-out.
Firmware update via parameter:
- take the component number from the alarm value and enter into p7828.
- start the firmware download with p7829 = 1.

A01007 POWER ON DRIVE-CLiQ component required

Reaction: NONE

Acknowledge: NONE

Cause: A DRIVE-CLiQ component must be powered-up again (POWER ON) as, for example, the firmware was updated.
Alarm value (r2124, decimal):
Component number of the DRIVE-CLiQ component.

Remedy: Switch-out the power supply of the specified DRIVE-CLiQ component and switch-in again.

F01010 Drive type unknown

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: An unknown drive type was found.
Fault value (r0949, decimal):
Drive object type (refer to p0101, p0107).

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

F01015 Internal software error

Reaction: OFF2

Acknowledge: POWER ON

Cause: An internal software error has occurred.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

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A01016 (F) CompactFlash card changed

Reaction: NONE

Acknowledge: NONE

Cause: On the CompactFlash card, at least one file in the directory /SIEMENS/SINAMICS/ has been illegally changed with respect to that supplied from the factory. No changes are permitted in this directory.
Alarm value (r2124, decimal):
0: Checksum of one file is incorrect.
1: File missing.
2: Too many files.
3: Incorrect firmware version.
4: Incorrect checksum of the back-up file.
See also: r9925 (CompactFlash card file error)

Remedy: For the CompactFlash card, restore the status when originally supplied from the factory.
Note:
The file involved can be read-out using parameter r9925.
See also: r9926 (CompactFlash card check status)

Reaction upon F: OFF2

Acknowledge upon F: POWER ON

A01017 Component lists changed

Reaction: NONE

Acknowledge: NONE

Cause: On the CompactFlash card, one file in the directory /SIEMENS/SINAMICS/DATA or /ADDON/SINAMICS/DATA has been illegally changed with respect to that supplied from the factory. No changes are permitted in this directory.
Alarm value (r2124, decimal):
The problem is indicated in the first digit of the alarm value:
1: File does not exist.
2: Firmware version of the file does not match-up with the software version.
3: The file checksum is incorrect.
The second digit of the alarm value indicates in which directory the file is located:
0: Directory /SIEMENS/SINAMICS/DATA/
1: Directory /ADDON/SINAMICS/DATA/
The third digit of the alarm value indicates the file:
0: File MOTARM.ACX
1: File MOTSRM.ACX
2: File MOTSLM.ACX
3: File ENCDATA.ACX
4: File FILTDATA.ACX
5: File BRKDATA.ACX

Remedy: For the CompactFlash card file involved, restore the status when originally supplied from the factory.

F01030 Monitoring, master control: Sign of life failure PC

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: For active PC master control, no sign-of-life was received within the monitoring time.
The master control was returned to the active BICO interconnection.

Remedy: Set the monitoring time higher at the PC/AOP or disable completely.
Notice:
The monitoring time should be set as short as possible. A long monitoring time means a late response when the communications fail!
The monitoring time is set in milliseconds.
- in the AOP using the Main menu -> Settings -> Control settings -> Timeout monitoring
- In STARTER using <Drive> -> Commissioning -> Control panel -> Button "Fetch master control" -> a window is displayed in which the monitoring time can be set.

F01033 Units changeover: Reference parameter value invalid

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: When changing over the units into the referred representation type, it is not permissible that any of the reference parameters required are equal to 0.0
Fault value (r0949, parameter):
Reference parameter, whose value is 0.0.
See also: p0349 (Selects system of units, motor equivalent circuit diagram data), p0505 (Selecting the system of units), p0595 (Selecting technological units)

Remedy: Set the value of the reference parameter to a number different than 0.0.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference speed reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

F01034 Units changeover: Calculation parameter values after reference value change unsuccessful

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The change of a reference parameter meant that for a parameter involved, the selected value was not able to be recalculated in the per unit notation. The change was rejected, the original parameter values were restored.
Fault value (r0949, parameter):
Parameter, whose value was not able to be re-calculated.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference speed reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

Remedy: Select the value of the reference parameters so that the parameter involved can be calculated in the per unit notation.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference speed reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

A01035 (F) ACX: Boot from the back-up parameter back-up files

Reaction: NONE

Acknowledge: NONE

Cause: When the Control Unit booted, no complete data set was found from the parameter back-up files. The last time that the parameterization was saved, it was not completely carried-out. Instead, a back-up data set or a back-up parameter back-up file is downloaded.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: If you saved the project in the commissioning software, download your project again and save using the function "Copy RAM to ROM" or with p0977 = 1. This means that all of the parameter files are again completely written into the CompactFlash card.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

F01036 (A) ACX: Parameter back-up file missing

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When downloading the device parameterization, a parameter back-up file associated with a drive object cannot be found. Neither a PSxxxyyy.ACX, a PSxxxyyy.NEW nor a PSxxxyyy.BAK parameter back-up file exists on the CompactFlash card for this drive object.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.ACX
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2, 3, 4:
Only for internal Siemens troubleshooting.

Remedy: If you have saved your project data using the commissioning software, carry-out a new download for your project. Save using the function "Copy RAM to ROM" or with p0977 = 1 so that all of the parameter files are again completely written into the CompactFlash card.
If you have not saved the project data, then the system must be again commissioned for the first time.

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Reaction upon A: NONE
Acknowledge upon A: NONE

F01037 (A) ACX: Re-naming the parameter back-up file not successful

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The re-naming after saving a parameter back-up file on the CompactFlash card or in the volatile memory was unsuccessful.
One of the parameter back-up files to be re-named had the "read only" attribute. The parameter back-up files are saved on the CompactFlash card in the directory \USER\SINAMICS\DATA.
It is possible that the CompactFlash card is defective.
Fault value (r0949, interpret hexadecimal):
Byte1: yyy in file names PSxxxyyy.* or CAxxxyyy.* or CCxxxyyy.*
yyy = 000 --> consistency back-up file
yyy = 099 --> PROFIBUS parameter back-up file PSxxx099.*
Byte 2: xxx in the file name PSxxxyyy.*
xxx = 000 --> data save started with p0977 = 1
xxx = 010 --> data save started with p0977 = 10
xxx = 011 --> data save started with p0977 = 11
xxx = 012 --> data save started with p0977 = 12
Byte 4, 3:
Only for internal Siemens troubleshooting.

Remedy: - check whether one of the files to be overwritten has the attribute "read only" and change this file attribute into "writable". Check all of the files (PSxxxyyy.*, CCxxxyyy.*, CAxxxyyy.*) that belong to drive yyy designated in the fault value.
- replace the CompactFlash card.

Reaction upon A: NONE
Acknowledge upon A: NONE

F01038 (A) ACX: Loading the parameter back-up file not successful

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: An error occurred when loading PSxxxyyy.ACX or PTxxxyyy.ACX files from the CompactFlash card or from the volatile memory of the Control Unit.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.ACX
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 4, 3, 2:
Only for internal Siemens troubleshooting.

Remedy: - if you have saved your project data using the commissioning software, carry-out a new download for your project. Save using the function "Copy RAM to ROM" or with p0977 = 1 so that all of the parameter files are again completely written into the CompactFlash card.
- replace the CompactFlash card.

Reaction upon A: NONE
Acknowledge upon A: NONE

F01039 (A) ACX: Writing to the parameter back-up file was unsuccessful

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

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Cause: Writing to at least one parameter-back-up file PSxxxyyy.NEW on the CompactFlash card was unsuccessful.
- on the CompactFlash card in the directory /USER/SINAMICS/DATA/ at least one parameter back-up file has the "read only" file attribute and cannot be overwritten.
- there is not sufficient free memory space on the CompactFlash card.
- the CompactFlash card is defective and cannot be written to.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.NEW
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2: xxx in the file name PSxxxyyy.NEW
xxx = 000 --> data save started with p0977 = 1
xxx = 010 --> data save started with p0977 = 10
xxx = 011 --> data save started with p0977 = 11
xxx = 012 --> data save started with p0977 = 12
Byte 4, 3:
Only for internal Siemens troubleshooting.

Remedy: - check the file attribute of the files (PSxxxyyy.*, CAxxxyyy.*, CCxxxyyy.*) and, if required, change from "read only" to "writeable".
- check the free memory space on the CompactFlash card. Approx. 40 kbyte of free memory space is required for every drive object in the system.
- replace the CompactFlash card.

Reaction upon A: NONE

Acknowledge upon A: NONE

F01040 Save parameter settings and carry-out a POWER ON

Reaction: OFF2

Acknowledge: POWER ON

Cause: A parameter was changed in the drive system that means that it is necessary to save the parameters and re-boot (e.g. p0110).

Remedy: - save the parameters (p0971/p0977).
- carry-out a POWER ON (power off/on) for all components.

F01041 Parameter save necessary

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Defective or missing files were detected on the CompactFlash card when booting.
Fault value (r0949, decimal):
-1: Source file cannot be opened.
-2: Source file cannot be read.
-3: Target directory cannot be set-up.
-4: Target file cannot be set-up/opened.
-5: Target file cannot be written into.
Additional values:
Only for internal Siemens troubleshooting.

Remedy: - save the parameters (p0977).
- download the project again into the drive unit.

F01042 Parameter error during project download

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

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Cause: An error was detected when downloading a project using the commissioning (start-up) software (e.g. incorrect parameter value).
For the specified parameter, it was detected that dynamic limits were exceeded that could possibly depend on other parameters.
Fault value (r0949, decimal):
Low word: Parameter number (16 bits without sign)
Byte 3: Parameter index
Byte 4: Error ID
0: Parameter number illegal.
1: Parameter value cannot be changed.
2: Lower or upper value limit exceeded.
3: Sub-index incorrect.
4: No array, no sub-index.
5: Data type incorrect.
6: Setting not permitted (only resetting).
7: Descriptive element cannot be changed.
9: Descriptive data not available.
11: No master control.
15: No text array present.
17: Task cannot be executed due to operating status.
20: Illegal value.
21: Response too long.
22: Parameter address illegal.
23: Format illegal.
24: Number of values not consistent.
25: Drive object does not exist.
101: Presently de-activated.
104: Illegal value.
107: Write access not permitted when controller enabled.
108: Units unknown.
109: Write access only in the commissioning state, encoder (p0010 = 4).
110: Write access only in the commissioning state, motor (p0010 = 3).
111: Write access only in the commissioning state, power unit (p0010 = 2).
112: Write access only in the quick commissioning mode (p0010 = 1).
113: Write access only in the ready mode (p0010 = 0).
114: Write access only in the commissioning state, parameter reset (p0010 = 30).
115: Write access only in the Safety Integrated commissioning state (p0010 = 95).
116: Write access only in the commissioning state, technological application/units (p0010 = 5).
117: Write access only in the commissioning state (p0010 not equal to 0).
118: Write access only in the commissioning state, download (p0010 = 29).
119: Parameter may not be written into in download.
120: Write access only in the commissioning state – drive basis configuration (device: p0009 = 3).
121: Write access only in the commissioning state – define drive type (device: p0009 = 2).
122: Write access only in the commissioning state – data set basis configuration (device: p0009 = 4).
123: Write access only in the commissioning state – device configuration (device: p0009 = 1).
124: Write access only in the commissioning state – device download (device: p0009 = 29).
125: Write access only in the commissioning state – device parameter reset (device: p0009 = 30).
126: Write access only in the commissioning state – device ready (device: p0009 = 0).
127: Write access only in the commissioning state – device (device: p0009 not equal to 0).
129: Parameter may not be written into in download.
130: Transfer of the master control is inhibited via BI: p0806.
131: Required BICO interconnection not possible, because BICO output does not supply floating value
132: Free BICO interconnection inhibited via p0922.
133: Access method not defined.
200: Below the valid values.
201: Above the valid values.
202: Cannot be accessed from the Basic Operator Panel (BOP).
203: Cannot be read from the Basic Operator Panel (BOP).
204: Write access not permitted.

Remedy: - enter the correct value into the specified parameter.
- identify the parameter that narrows (restricts) the limits of the specified parameter.

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F01043 Fatal error when downloading a project

Reaction: OFF2 (OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: A fatal error was detected when downloading a project using the commissioning (start-up) software.
Fault value (r0949, decimal):
1: Device status cannot be changed to Device Download (drive object ON?).
2: Drive object ID incorrect
3: A drive object that has already been deleted is deleted again.
4: Deletes drive object that has already been registered for generation.
5: Deletes a drive object that no longer exists.
6: Generating an undeleted drive object that already existed.
7: Regeneration of a drive object already registered for generation.
8: Maximum number of drive objects that can be generated exceeded.
9: Error while generating a device drive object.
10: Error while generating target topology parameters (p9902 and p9903).
11: Error when generating a drive object (global component).
12: Error when generating a drive object (drive component).
13: Unknown drive object type.
14: Drive status cannot be changed to Ready (p0947 and p0949).
15: Drive status cannot be changed to Drive Download.
16: Device status cannot be changed to Ready.
17: It is not possible to download the topology. The component wiring should be checked, taking into account the various messages/signals.
18: A new download is only possible if the factory settings are re-established for the drive unit.
19: The slot for the option module has been configured several times (e.g. CAN and COMM BOARD)
20: The configuration is inconsistent (e.g. CAN for Control Unit, however no CAN configured for drive objects - Active Line Module, servo or vector).

Remedy: - use the actual version of the commissioning software.
- modify the offline project and carry-out a new download (e.g. compare the number of drive objects, motor, encoder, power unit in the offline project and at the drive).
- change the drive system (is a drive rotating or is there a message/signal?).
- carefully note any other messages/signals and remove their cause.

F01044 CU CompactFlash: Message incorrectly written

Reaction: OFF2

Acknowledge: POWER ON

Cause: An error was detected when loading the message descriptions (FDxxxyyy.ACX) saved on the CompactFlash card.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Replace the CompactFlash card.

A01045 CU CompactFlash: Configuring data invalid

Reaction: NONE

Acknowledge: NONE

Cause: An invalid data type was detected when evaluating parameter files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX or CCxxxyyy.ACX, saved on the CompactFlash card.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Operation without any restrictions is then possible.
After downloading the project, save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1. This means that the incorrect parameter files are overwritten on the CompactFlash card.

A01046 (F) CU CompactFlash: Configuring data invalid

Reaction: NONE

Acknowledge: NONE

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Cause: An invalid data type was detected when evaluating the parameter files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX or CCxxxyyy.ACX saved on the CompactFlash card.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Operation without any restrictions is then possible.
After downloading the project, save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1 so that the incorrect parameter files are overwritten on the CompactFlash card.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

A01047 (F) ACX: Write to parameter error

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the parameters files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX or CCxxxyyy.ACX, saved on the CompactFlash card, a parameter value was not able to be transferred into the Control Unit memory.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Operation without any restrictions is then possible.
After downloading the project, save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1. This means that the incorrect parameter files are overwritten on the CompactFlash card.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

A01049 CU CompactFlash: It is not possible write to file

Reaction: NONE

Acknowledge: NONE

Cause: It is not possible to write into a write-protective file (PSxxxxxx.acx). The write request was interrupted.
Alarm value (r2124, decimal):
Drive object number.

Remedy: Check whether the write-protected attribute has been set for the files on the CompactFlash card under .../USER/SINAMICS/DATA/... When required, remove write protection and save again (e.g. set p0971 to 1).

F01050 CompactFlash card and device not compatible

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: The CompactFlash card and the device type do not match (e.g. a CompactFlash card for SINAMICS S is inserted in SINAMICS G).

Remedy: - insert the matching CompactFlash card
- use the matching Control Unit or power unit.

F01051 Drive object type is not available

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The drive object type in conjunction with the selected application-specific perspective is not available. The required descriptive file (PDxxxyyy.ACX) does not exist on the CompactFlash card.
Fault value (r0949, decimal):
Index of p0103 and p0107.
See also: p0103 (Application-specific view), r0103 (Application-specific view), p0107 (Drive object type), r0107 (Drive object type)

Remedy: - for this drive object type (p0107), select a valid application-specific perspective (p0103).
- save the required descriptive file (PDxxxyyy.ACX) on the CompactFlash card.
See also: p0103 (Application-specific view), r0103 (Application-specific view), p0107 (Drive object type), r0107 (Drive object type)

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A01052 CU: System overload calculated for the complete target topology

Reaction: NONE

Acknowledge: NONE

Cause: A system overload was calculated based on a complete active target topology.
Alarm value (r2124, decimal):
2: Computation time load too high.
6: Cyclic computation time load too high.

Remedy:
- reduce the sampling time.
- only use one data set (CDS, DDS).
- de-activate the function module.
- de-activate the drive object.
- remove the drive object from the target topology.

Note:
After executing the appropriate counter-measure, a new calculation must be initiated with p9974 = 1.

A01053 CU: System overload measured

Reaction: NONE

Acknowledge: NONE

Cause: A system overload was determined based on measured values.
Alarm value (r2124, decimal):
2: Computation time load too high.
6: Cyclic computation time load too high.
See also: r9976 (System load)

Remedy:
- reduce the sampling time.
- only use one data set (CDS, DDS).
- de-activate the function module.
- de-activate the drive object.
- remove the drive object from the target topology.

A01054 Parameter save necessary

Reaction: NONE

Acknowledge: NONE

Cause:

Remedy:

A01064 Parameter save necessary

Reaction: NONE

Acknowledge: NONE

Cause:

Remedy:

A01065 Drive: Error, inactive encoder

Reaction: NONE

Acknowledge: NONE

Cause: On or several inactive encoders indicate an error.

Remedy: Remove the error for the inactive encoder.

A01099 Tolerance window of the timer synchronization exited

Reaction: NONE

Acknowledge: NONE

Cause: The clock (time) master exited the selected tolerance window for clock synchronization.
See also: p3109 (RTC real time synchronization, tolerance window)

Remedy: Select the re-synchronization interval so that the synchronization deviation between the clock master and drive system lies within the tolerance window.
See also: r3108 (RTC last synchronization deviation)

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A01100 CU: CompactFlash card withdrawn

Reaction: NONE

Acknowledge: NONE

Cause: The CompactFlash card (non-volatile memory) was withdrawn in operation.
Notice:
It is not permissible that the CompactFlash card is withdrawn or inserted under voltage.

Remedy: - power-down the drive system.
- re-insert the CompactFlash card that was withdrawn - this card must match the drive system.
- power-up the drive system again.

F01105 (A) CU: Insufficient memory

Reaction: OFF1

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Two many functions, data sets or drives configured on this Control Unit.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - change the configuration on this Control Unit.
- use an additional Control Unit.

Reaction upon A: NONE

Acknowledge upon A: NONE

F01107 CU: Save to CompactFlash card unsuccessful

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A data save on the CompactFlash card was not able to be successfully carried-out.
- CompactFlash card is defective.
- CompactFlash card does not have sufficient memory space.
Fault value (r0949, decimal):
-1: The file on the RAM was not able to be opened.
-2: The file on the RAM was not able to be read.
-3. A new directory was not able to be set-up on the CompactFlash card.
-4: A new file was not able to be set-up on the CompactFlash card.
-5: A new file was not able to be written onto the CompactFlash card.

Remedy: - try to save again.
- use another CompactFlash card.

F01110 CU: More than one SINAMICS G on one Control Unit

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: More than one SINAMICS G power unit type is being operated from the Control Unit.
Fault value (r0949, decimal):
Number of the second drive with a SINAMICS G power unit type.

Remedy: Only one SINAMICS G drive type is permitted.

F01111 CU: SINAMICS S and G together on one Control Unit

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: SINAMICS S and G drive units are being operated together on one Control Unit.
Fault value (r0949, decimal):
Number of the first drive object with a different power unit type.

Remedy: Only power units of one particular drive type may be operated with one CU.

F01112 CU: Power unit not permissible

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: The connected power unit cannot be used together with this Control Unit.
Fault value (r0949, decimal):
1: Power unit is not supported (e.g. PM240).
2: DC/AC power unit connected to CU310 not permissible.

Remedy: Replace the power unit that is not permissible by a component that is permissible.

F01120 (A) Terminal initialization has failed

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An internal software error has occurred when initializing the terminal functions on the CU3xx, the TB30 or the TM31.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy:
- carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.

Reaction upon A: NONE

Acknowledge upon A: NONE

F01122 (A) Frequency at the measuring probe input too high

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: The frequency of the pulses at the measuring probe input is too high.
Fault value (r0949, decimal):
1: DI/DO 9 (X122.8)
2: DI/DO 10 (X122.10)
4: DI/DO 11 (X122.11)
8: DI/DO 13 (X132.8)
16: DI/DO 14 (X132.10)
32: DI/DO 15 (X132.11)
1001: DI/DO 9 (X122.8) initialization error
1002: DI/DO 10 (X122.10) initialization error
1004: DI/DO 11 (X122.11) initialization error
1008: DI/DO 13 (X132.8) initialization error
1016: DI/DO 14 (X132.10) initialization error
1032: DI/DO 15 (X132.11) initialization error

Remedy: Reduce the frequency of the pulses at the measuring probe input.

Reaction upon A: NONE

Acknowledge upon A: NONE

F01150 CU: Number of instances of a drive object type exceeded

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The maximum permissible number of instances of a drive object type was exceeded.
Fault value (r0949, decimal):
Byte 1: Drive object type (p0107).
Byte 2: Max. permissible number of instances for this drive object type.
Byte 3: Actual number of instances for this drive object type.

Remedy:
- power-down the unit.
- suitably restrict the number of instances of a drive object type by reducing the number of inserted components.
- re-commission the unit.

F01205 CU: Time slice overflow

Reaction: OFF2

Acknowledge: POWER ON

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Cause: Insufficient processing time is available for the existing topology.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - reduce the number of drives.
- increase the sampling times.

F01210 CU: Basic clock cycle selection and DRIVE-CLiQ clock cycles do not match

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The parameter to select the basic clock cycle does not match the drive topology. Drives connected to the same DRIVE-CLiQ port of the Control Unit have been assigned different basic clock cycles.
Fault value (r0949, decimal):
The fault value specifies the parameter involved.
See also: r0111 (DRIVE-CLiQ basis sampling time selection)

Remedy: Only those drive objects may be connected to the same DRIVE-CLiQ socket of the Control Unit that should run with the same basic clock cycle. For example, Active Line Modules and Motor Modules should be inserted at different DRIVE-CLiQ ports as their basic clock cycles and current controller clock cycles are generally different.
See also: r0111 (DRIVE-CLiQ basis sampling time selection)

F01220 CU: Bas clk cyc too low

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The parameter for the basic clock cycle is set too short for the number of connected drives.
Fault value (r0949, decimal):
The fault value specifies the parameter involved.
See also: r0110 (DRIVE-CLiQ basis sampling times)

Remedy: - increase the basic clock cycle.
- reduce the number of connected drives and start to re-commission the unit.
See also: r0110 (DRIVE-CLiQ basis sampling times)

F01221 CU: Bas clk cyc too low

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The closed-loop control / monitoring cannot maintain the intended clock cycle.
The runtime of the closed-loop control/monitoring is too longer for the particular clock cycle or the computation time remaining in the system is not sufficient for the closed-loop control/monitoring.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Increase the basic clock cycle of DRIVE-CLiQ communications.
See also: p0112 (Sampling times pre-setting p0115)

A01223 CU: Sampling time inconsistent

Reaction: NONE

Acknowledge: NONE

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Cause: When changing a sampling time (p0115[0], p0799 or p4099), inconsistency between the clock cycles has been identified.
Alarm value (r2124, decimal):
1: Value, low minimal value.
2: Value, high maximum value.
3: Value not a multiple of 1.25 µs.
4: Value does not match clock cycle synchronous PROFIBUS operation.
5: Value not a multiple of 125 µs.
6: Value not a multiple of 250 µs.
7: Value not a multiple of 375 µs.
8: Value not a multiple of 400 µs.
10: Special restriction of the drive object violated.
20: For a SERVO with a 62.5 µs sampling time, more than a maximum of two SERVO-type drive objects were detected on the DRIVE-CLiQ line.
21: Value is not a multiple of the current controller sampling time of a servo or vector drive that is in the system.
30: Value less than 31.25 µs.
31: Value less than 62.5 µs.
32: Value less than 125 µs.
40: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125 µs. Further, none of the nodes (devices) has a sampling tine of less than 125 µs.
41: A chassis unit was identified on the DRIVE-CLiQ line. Further, the highest common denominator of the sampling times of the all of the nodes (devices) connected to the line is less than 250 µs.
42: An Active Line Module was identified on the DRIVE-CLiQ line as device. Further, the highest common denominator of the sampling times of the all of the nodes (devices) connected to the line is less than 125 µs.
43: A Voltage Sensing Module (VSM) was identified on the DRIVE-CLiQ line as device. Further, the highest common denominator of the sampling times of the all of the nodes (devices) connected to the line is not equal to the current controller sampling time of the drive object of the VSM.
52: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 31.25 µs.
54: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 62.5 µs.
56: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125 µs.
58: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 250 µs.
99: Inconsistency identified cross drive objects.
116: Recommended clock cycle in r0116[0...1].

Remedy: - check the DRIVE-CLiQ cables.
- set a valid sampling time.
See also: p0115 (Sampling time for supplementary functions), p0799 (CU inputs/outputs, sampling time), p4099 (TB30 inputs/outputs, sampling time)

A01224 CU: Pulse frequency inconsistent

Reaction: NONE

Acknowledge: NONE

Cause: When changing the minimum pulse frequency (p0113) inconsistency between the pulse frequencies was identified.
Alarm value (r2124, decimal):
1: Value, low minimal value.
2: Value, high maximum value.
3: Resulting sampling time is not a multiple of 1.25 µs.
4: Value does not match clock cycle synchronous PROFIBUS operation.
10: Special restriction of the drive object violated.
99: Inconsistency identified cross drive objects.
116: Recommended clock cycle in r0116[0...1].

Remedy: Set a valid pulse frequency.
See also: p0113 (Pulse frequency, minimum selection)

F01250 CU: CU-EEPROM incorrect read-only data

Reaction: NONE (OFF2)

Acknowledge: POWER ON

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Cause: Error when reading the read-only data of the EEPROM in the Control Unit.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON.
- replace the Control Unit

A01251 CU: CU-EEPROM incorrect read-write data

Reaction: NONE

Acknowledge: NONE

Cause: Error when reading the read-write data of the EEPROM in the Control Unit.
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.

Remedy: For alarm value r2124 < 256, the following applies:
- carry-out a POWER ON.
- replace the Control Unit.

For alarm value r2124 >= 256, the following applies:
- for the drive object with this alarm, clear the fault memory (p0952 = 0).
- as an alternative, clear the fault memory of all drive objects (p2147 = 1).
- replace the Control Unit.

F01255 CU: Opt.module EEPROM incorrect read-only data

Reaction: NONE (OFF2)

Acknowledge: POWER ON

Cause: Error when reading the read-only data of the EEPROM in the option module.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON.
- replace the Control Unit.

A01256 CU: Opt.module EEPROM incorrect read-write data

Reaction: NONE

Acknowledge: NONE

Cause: Error when reading the read-write data of the EEPROM in the option module.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON.
- replace the Control Unit.

F01303 DRIVE-CLiQ component does not support the required function

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A function requested by the Control Unit is not supported by a DRIVE-CLiQ component.
Fault value (r0949, decimal):
1: The component does not support the de-activation.
101: The Motor Module does not support an internal armature short-circuit.
102: The Motor Module does not support the de-activation.
201: The Encoder Module does not support actual value inversion (p0410.0 = 1) when using a Hall sensor (p0404.6 = 1) for the commutation.
202: The Encoder Module does not support parking/unparking.
203: The Encoder Module does not support the de-activation.
204: The firmware of this Terminal Module 15 (TM15) does not support the application TM15DI/DO.
205: The encoder module does not support the selected temperature evaluation (refer to r0458).
206: The firmware of this Terminal Module 41 refers to an old firmware version.
In order to ensure error-free operation is absolutely necessary that the firmware is upgraded.

Remedy: Upgrade the firmware of the DRIVE-CLiQ component involved.
Re 205:
Adapts parameter p0600 or p0601.

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F01305 Topology: Component number missing

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The component number from the topology was not parameterized (p0121 (for power unit, refer to p0107), p0131 (for servo/vector drives, refer to p0107), p0141, p0151, p0161).
Fault value (r0949, decimal):
The fault value includes the particular data set number.
The fault also occurs if speed encoders were configured (p0187 ... p0189), however, no component numbers exist for them.
In this case, the fault value includes the drive data set number plus 100 * encoder number (e.g. 3xx, if a component number was not entered into p0141 for the third encoder (p0189)).
See also: p0121 (Power unit component number), p0131 (Motor component number), p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0151 (Voltage Sensing Module component number), p0161 (Option board, component number), p0186 (Motor Data Sets (MDS) number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

Remedy: Enter the missing component number or remove the component and restart commissioning.
See also: p0121 (Power unit component number), p0131 (Motor component number), p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0151 (Voltage Sensing Module component number), p0161 (Option board, component number), p0186 (Motor Data Sets (MDS) number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

A01315 Drive object not ready for operation

Reaction: NONE

Acknowledge: NONE

Cause: For the active drive object involved, at least one activated component is missing.
Note:
All other active and operational drive objects can be in the "RUN" state.

Remedy: The alarm automatically disappears again with the following actions:
- de-activate the drive object involved (p0105 = 0).
- de-activate the components involved (p0125 = 0, p0145 = 0, p0155 = 0, p0165 = 0).
- re-insert the components involved.
See also: p0105 (Activate/de-activate drive object), p0125 (Activate/de-activate power unit components), p0145 (Activate/de-activate encoder interface), p0155 (Voltage Sensing Module, activate/de-activate)

A01316 Drive object inactive and again ready for operation

Reaction: NONE

Acknowledge: NONE

Cause: If, when inserting a component of the target topology, an inactive, non-operational drive object becomes operational again. The associated parameter of the component is, in this case, set to "activate" (p0125, p0145, p0155, p0165).
Note:
This is the only message, that is displayed for a de-activated drive object.

Remedy: The alarm automatically disappears again with the following actions:
- activate the drive object involved (p0105 = 1).
- again withdraw the components involved.
See also: p0105 (Activate/de-activate drive object)

A01317 De-activated component again present

Reaction: NONE

Acknowledge: NONE

Cause: If a component of the target topology for an active drive object is inserted and the associated parameter of the component is set to "de-activate" (p0125, p0145, p0155, p0165).
Note:
This is the only message, that is displayed for a de-activated component.

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Remedy: The alarm automatically disappears again with the following actions:
- activate the components involved (p0125 = 1, p0145 = 1, p0155 = 1, p0165 = 1).
- again withdraw the components involved.
See also: p0125 (Activate/de-activate power unit components), p0145 (Activate/de-activate encoder interface), p0155 (Voltage Sensing Module, activate/de-activate)

A01318 BICO: De-activated interconnections present

Reaction: NONE

Acknowledge: NONE

Cause: This alarm is output:
If an inactive/non-operational drive object is again active/ready for operation
and
r9498[] or r9499[] are not empty
and
the connections listed in r9498[] and r9499 have actually been changed

Remedy: Clear alarm:
Set p9496 to 1 or 2
or
de-activate DO

A01319 Inserted component not initialized

Reaction: NONE

Acknowledge: NONE

Cause: The inserted component has still not been initiated, as the pulses are enabled.

Remedy: Pulse inhibit

A01320 Topology: Drive object number does not exist in configuration

Reaction: NONE

Acknowledge: NONE

Cause: A drive object number is missing in p0978
Alarm value (r2124, decimal):
Index of p0101 under which the missing drive object number can be determined.

Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible that a drive object number is repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01321 Topology: Drive object number does not exist in configuration

Reaction: NONE

Acknowledge: NONE

Cause: p0978 contains a drive object number that does not exist.
Alarm value (r2124, decimal):
Index of p0978 under which the drive object number can be determined.

Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible that a drive object number is repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01322 Topology: Drive object number present twice in configuration

Reaction: NONE

Acknowledge: NONE

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Cause: A drive object number is present more than once in p0978.
Alarm value (r2124, decimal):
Index of p0978 under which the involved drive object number is located.

Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible that a drive object number is repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01323 Topology: More than two part lists set-up

Reaction: NONE

Acknowledge: NONE

Cause: Partial lists are available more than twice in p0978. After the second 0, all must be 0.
Alarm value (r2124, decimal):
Index of p0978, under which the illegal value is located.

Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible that a drive object number is repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01324 Topology: Dummy drive object number incorrectly set-up

Reaction: NONE

Acknowledge: NONE

Cause: In p0978, dummy drive object numbers (255) are only permitted in the first partial list.
Alarm value (r2124, decimal):
Index of p0978, under which the illegal value is located.

Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible that a drive object number is repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01330 Topology: Quick commissioning not possible

Reaction: NONE

Acknowledge: NONE

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Cause: Unable to carry-out a quick commissioning. The existing actual topology does not fulfill the requirements.
Alarm value (r2124, interpret hexadecimal):
The cause is in byte 1 supplementary information is included in byte 2 and the high word.
Byte 1 = 1:
For a component, illegal connections were detected.
- Byte 2 = 1: For a Motor Module, more than one motor with DRIVE-CLIQ was detected.
- Byte 2 = 2: For a motor with DRIVE-CLiQ, the DRIVE-CLiQ cable is not connected to a Motor Module.
- high word = preliminary component number of the component with illegal connection.

Byte 1 = 2:
The topology contains too many components of a particular type.
- Byte 2 = 1: There is more than one Master Control Unit.
- Byte 2 = 2: There is more than 1 infeed (8 for a parallel circuit configuration).
- Byte 2 = 3: There are more than 10 Motor Modules (8 for a parallel circuit configuration).
- Byte 2 = 4: There are more than 9 encoders.
- Byte 2 = 5: There are more than 8 Terminal Modules.
- Byte 2 = 7: Unknown component type.
- Byte 2 = 8: There are more than 6 drive slaves.
- Byte 2 = 9: Connection of a drive slave not permitted.
- Byte 2 = 10: There is no Drive Master.
- Byte 2 = 11: There is more than one motor with DRIVE-CLiQ for a parallel circuit.
- high word = not used.

Byte 1 = 3:
More than 16 components are connected at a DRIVE-CLiQ socket of the Control Unit.
- byte 2 = 0, 1, 2, 3 means e.g. detected at the DRIVE-CLiQ socket X100, X101, X102, X103.
- high word = not used.

Byte 1 = 4:
The number of components connected one after the other is greater than 125.
- byte 2 = not used.
- high word = preliminary component number of the first component and component that resulted in the fault.

Byte 1 = 5:
The component is not permissible for SERVO.
- Byte 2 = 1: SINAMICS G is being used.
- Byte 2 = 2: Chassis is being used.
- high word = preliminary component number of the first component and component that resulted in the fault.

Byte 1 = 6:
For a component, illegal EEPROM data was detected. These must be corrected before the system continues to boot.
- Byte 2 = 1: The Order No. [MLFB] of the power unit that was replaced includes a space retainer. The space retainer (*) must be replaced by a correct character.
- high word = preliminary component number of the component with illegal EEPROM data.

Byte 1 = 7:
The actual topology contains an illegal combination of components.
- Byte 2 = 1: Active Line Module (ALM) and Basic Line Module (BLM).
- Byte 2 = 2: Active Line Module (ALM) and Smart Line Module (SLM).
- Byte 2 = 3: SIMOTION control (e.g. SIMOTION D445) and SINUMERIK component (e.g. NX15).
- Byte 2 = 4: SINUMERIK control (e.g. SINUMERIK 730.net) and SIMOTION component (e.g. CX32).
- high word = not used.

Note:
Connection type and connection number are described in F01375.
See also: p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

Remedy: - adapt the output topology to the permissible requirements.
- carry-out commissioning using the commissioning software.
- for motors with DRIVE-CLiQ, connect the power and DRIVE-CLiQ cable to the same Motor Module (Single Motor Module: DRIVE-CLiQ at X202, Double Motor Module: DRIVE-CLiQ from motor 1 (X1) to X202, from motor 2 (X2) to X203).

Re byte 1 = 6 and byte 2 = 1:
Correct the order number when commissioning using the commissioning software.
See also: p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

A01331 Topology: At least one component not assigned to a drive object

Reaction: NONE

Acknowledge: NONE

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Cause: At least one component is not assigned to a drive object.
- when commissioning, a component was not able to be automatically assigned to a drive object.
- the parameters for the data sets are not correctly set.

Alarm value (r2124, decimal):
Component number of the unassigned component.

Remedy: This component is assigned to a drive object.
Check the parameters for the data sets.
Examples:
- power unit (p0121).
- motor (p0131, p0186).
- encoder interface (p0140, p0141, p0187 ... p0189).
- encoder (p0140, p0142, p0187 ... p0189).
- Terminal Module (p0151).
- option board (p0161).

F01340 Topology: Too many components on one line

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: For the selected communications clock cycle, too many DRIVE-CLiQ components are connected to one line of the Control Unit.
Fault value (r0949, interpret hexadecimal):
xyy hex: x = fault cause, yy = component number or connection number.
1yy:
The communications clock cycle of the DRIVE-CLiQ connection on the CU is not sufficient for all read transfers.
2yy:
The communications clock cycle of the DRIVE-CLiQ connection on the CU is not sufficient for all write transfers.
3yy:
Cyclic communications is fully utilized.
4yy:
The DRIVE-CLiQ cycle starts before the earliest end of the application. An additional deadtime must be added to the control. Sign-of-life errors can be expected.
5yy:
Internal buffer overflow for net data of a DRIVE-CLiQ connection.
6yy:
Internal buffer overflow for receive data of a DRIVE-CLiQ connection.
7yy:
Internal buffer overflow for send data of a DRIVE-CLiQ connection.

Remedy: Check the DRIVE-CLiQ connection:
Reduce the number of components on the DRIVE-CLiQ line involved and distribute these to other DRIVE-CLiQ connections of the Control Unit. This means that communication is uniformly distributed over several communication lines.
Re fault value = 1yy - 4yy in addition:
- increase the sampling times (p0112, p0115).

F01355 Topology: Actual topology changed

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The unit target topology p0099 does not correspond to the unit actual topology r0098.
The fault only occurs if the topology was commissioned using the automatic internal device mechanism and not using the commissioning software.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.
See also: r0098 (Actual device topology), p0099 (Device target topology)

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Remedy: One of the following counter-measures can be selected if no faults have occurred in the topology detection itself:
If commissioning was still not completed:
- carry-out a self-commissioning routine (starting from p0009 = 1).
General: Set p0099 to r0098, set p0009 to 0; for existing Motor Modules, this results in servo drives being automatically generated (refer to p0107).
or, to generate servo drives: Set p0097 to 1, set p0009 to 0;
or, to generate vector drives: Set p0097 to 2, set p0009 to 0.
or, to generate vector drives with parallel circuit: Set p0097 to 12, set p0009 to 0.
In order to set configurations in p0108, before setting p0009 to 0, it is possible to first set p0009 to 2 and p0108 modified (the index corresponds to the drive object,also refer to p0107).
If commissioning was already completed:
- re-establish the original connections and re-connect power to the Control Unit.
- restore the factory setting for the complete equipment (all of the drives) and allow automatic self-commissioning again.
- change the device parameterization to match the connections (this is only possible using the commissioning software).
Notice:
Topology changes, that result in this fault being generated, cannot be accepted by the automatic function in the device, but must be transferred using the commissioning software and parameter download. The automatic function in the device only allows constant topology to be used. Otherwise, when the topology is changed, all of the previous parameter settings are lost and replaced by the factory setting.
See also: r0098 (Actual device topology)

F01360 Topology: Actual topology is illegal

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The detected actual topology is not permissible.
Fault value (r0949, interpret hexadecimal):
Byte 1 (cause):
1: Too many components were detected at the Control Unit. The maximum permissible number of components is 199.
2: The component type of a component is not known. The preliminary component number is in the high word.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Re fault value = 1:
Change the configuration. Connect less than 199 components to the Control Unit.
Re fault value = 2:
Remove the component with unknown component type.

A01361 Topology: Actual topology contains SINUMERIK and SIMOTION components

Reaction: NONE

Acknowledge: NONE

Cause: The detected actual topology contains SINUMERIK and SIMOTION components.
Fault value (r0949, interpret hexadecimal):
Byte 1: Component number of the component.
Byte 2: Component class of the actual topology.
Byte 3 (cause):
1: An NX10 or NX15 was connected to a SIMOTION control.
2: A CX32 was connected to a SINUMERIK control.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Re fault value = 1:
Replace all NX10 or NX15 by a CX32.
Re fault value = 2:
Replace all CX32 by an NX10 or NX15.

F01375 Topology: Actual topology, duplicate connection between two components

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: When detecting the actual topology, a ring-type connection was detected.
Fault value (r0949, interpret hexadecimal):
Low word: Preliminary component number of a component included in the ring
Byte 3: Component class
Byte 4: Connection number
Example:
Fault value = 33751339 dec = 203012B hex
Byte 4 = 02 hex = 2 dec, byte 3 = 03 hex = 3 dec, low word = 012B hex = 299 dec
Component class:
1: Control unit
2: Motor Module
3: Line Module
4: Sensor Module (SM)
5: Voltage Sensing Module (VSM)
6: Terminal Module (TM)
7: DRIVE-CLiQ Module Cabinet (DMC)
8: Controller Extension 32 (CX32)
49: DRIVE-CLiQ components (non-listed components)
50: Option slot (e.g. Terminal Board 30)
60: Encoder (e.g. EnDat)
70: Motor with DRIVE-CLiQ
Component type:
Precise designation within a component class (e.g. "SMC20").
Connection number:
Consecutive numbers, starting from zero, of the appropriate connection or slot (e.g. DRIVE-CLiQ connection X100 on the Control Unit has the connection number 0).

Remedy: Output the fault value and remove the specified connection.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01380 Topology: Actual topology, defective EEPROM

Reaction: NONE

Acknowledge: POWER ON

Cause: When detecting the actual topology, a component with a defective EEPROM was detected.
Fault value (r0949, interpret hexadecimal):
Low word:
Preliminary component number of the defective components.

Remedy: Output the fault value and remove the defected component.

A01381 Topology: Comparison, power unit shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a power unit in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology.
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

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Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01382 Topology: Comparison, Sensor Module shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Sensor Module in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01383 Topology: Comparison, Terminal Module shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Terminal Module in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01384 Topology: Comparison, DMC shifted

Reaction: NONE

Acknowledge: NONE

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Cause: The topology comparison has detected a DRIVE-CLiQ Hub Module Cabinet (DMC) in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01385 Topology: Comparison, CX32 shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a controller extension 32 (CX32) in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01386 Topology: Comparison, DRIVE-CLiQ component shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ component in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

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Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01387 Topology: Comparison, option slot component shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a option slot component in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01388 Topology: Comparison, EnDat encoder shifted

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected an EnDat encoder in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01389 Topology: Comparison, motor with DRIVE-CLiQ shifted

Reaction: NONE

Acknowledge: NONE

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Cause: The topology comparison has detected a motor with DRIVE-CLiQ in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01416 Topology: Comparison, additional component in actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has found a component in the actual topology which is not specified in the target topology.
The alarm value includes the component number and connection number of the component with which the additional component is connected.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number
Byte 2: Component class of the additional component
Byte 3: Connection number
Note:
Component class and connection number are described in F01375.

Remedy: Adapting the topologies:
- remove the additional component in the actual topology.
- download the target topology that matches the actual topology (commissioning software).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01420 Topology: Comparison, a component is different

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
There are differences in the electronic rating plate.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component
Byte 2: Component class of the target topology
Byte 3: Component class of the actual topology
Byte 4 (cause):
1: Different component type
2: Different order number
3: Different manufacturer
4: Connection changed-over for a multi-component slave (e.g. double Motor Module) or defective EEPROM data in the electronic rating plate
5: A CX32 was replaced by an NX10 or NX15.
6: An NX10 or NX15 was replaced by a CX32.
Note:
Component class and component type are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

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Remedy: Adapting the topologies:
- check the component soft-wired connections against the hardware configuration of the drive unit in the commissioning software and correct differences.
- parameterize the topology comparison of all components (p9906).
- parameterize the topology comparison of one components (p9907, p9908).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01421 Topology: Comparison, different components

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
The component class, the component type or the number of connections differ.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component
Byte 2: Component class of the target topology
Byte 3: Component class of the actual topology
Byte 4 (cause):
1: Different component class
2: Different component type
3: Different order number
4: Different number of connections
Note:
Component class, component type and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Check the component soft-wired connections against the hardware configuration of the drive unit in the commissioning software and correct differences.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01425 Topology: Comparison, serial number of a component is different

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
The serial number is different.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component
Byte 2: Component class
Byte 3: Number of differences
Note:
The component class is described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
Re byte 3:
Byte 3 = 1 --> can be acknowledged using p9904 or p9905.
Byte 3 > 1 --> can be acknowledged using p9905 and can be de-activated using p9906 or p9907/p9908.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).
See also: p9904 (Topology comparison, acknowledge differences), p9905 (Device specialization), p9906 (Topology comparison, comparison stage of all components), p9907 (Topology comparison, comparison stage of the component number), p9908 (Topology comparison, comparison stage of a component)

A01428 Topo: Comparison, connection of a component is different

Reaction: NONE

Acknowledge: NONE

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Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
A component was connected to another connection.
The different connections of a component are described in the alarm value:
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number
Byte 2: Component class
Byte 3: Connection number of the actual topology
Byte 4: Connection number of the target topology
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).
See also: p9904 (Topology comparison, acknowledge differences)

A01429 Topology: Comparison, connection is different for more than component

Reaction: NONE

Acknowledge: NONE

Cause: A topology comparison has found differences between the actual and target topology for several components. A component was connected to another connection.
The different connections of a component are described in the alarm value:
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number
Byte 2: Component class
Byte 3: Connection number of the actual topology
Byte 4: Connection number of the target topology
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
Note:
In the software, a double Motor Module behaves just like two separate DRIVE-CLiQ nodes. If a double Motor Module is re-inserted, this can result in several differences in the actual topology.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01451 Topology: Target topology is invalid

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: An error has occurred when writing into the target topology.
The write operation was interrupted due to an invalid target topology.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Reload the target topology using the commissioning software.

F01470 Topology: Target topology ring-type connection

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: A ring-type connection was detected when writing into the target topology.
Fault value (r0949, interpret hexadecimal):
Byte 1: Component number of a component included in the ring
Byte 2: Component class
Byte 3: Connection number
Note:
Component class and connection number are described in F01375.

Remedy: Read-out the fault value and remove one of the specified connections.
Then, download the target topology again using the commissioning software.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01475 Topology: Target topology, duplicate connection between two components

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When writing the target topology, a duplicate connection between two components was detected.
Fault value (r0949, interpret hexadecimal):
Byte 1: Component number of one of the components connected twice
Byte 2: Component class
Byte 3: Connection number 1 of the duplicate connection
Byte 4: Connection number 2 of the duplicate connection
Note:
Component class and connection number are described in F01375.

Remedy: Read-out the fault value and remove one of the two specified connections.
Then, download the target topology again using the commissioning software.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01481 Topology: Comparison, power unit missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a power unit in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the drive belonging to the power unit in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01482 Topology: Comparison, Sensor Module missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Sensor Module in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

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Remedy: - re-configure the drive belonging to the Sensor Module in the commissioning software project (encoder configuration) and download the new configuration into the drive unit.
- delete the drive belonging to the Sensor Module in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01483 Topology: Comparison, Terminal Module missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Terminal Module in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the Terminal Module in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01484 Topology: Comparison, DMC missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ Hub Module Cabinet (DMC) in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the DRIVE-CLiQ Hub Module Cabinet (DMC) in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01485 Topology: Comparison, CX32 missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a controller extension 32 (CX32) in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the CX32 in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01486 Topology: Comparison, DRIVE-CLiQ components missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ component in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the drive belonging to this component in the commissioning software project and download the new configuration into the drive unit.
- re-configure the drive belonging to this component in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01487 Topology: Comparison, option slot components missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected an option slot module in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the option board in the commissioning software project and download the new configuration into the drive unit.
- re-configure the drive unit in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01488 Topology: Comparison, EnDat encoder missing in the actual topology

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected an EnDat encoder in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - re-configure the drive belonging to the encoder in the commissioning software project (encoder configuration) and download the new configuration into the drive unit.
- delete the drive belonging to the encoder in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01489 Topology: Comparison, motor with DRIVE-CLiQ missing in the actual topology

Reaction: NONE

Acknowledge: NONE

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Cause: The topology comparison has detected a motor with DRIVE-CLiQ in the target topology that is not available in the actual topology.
Alarm value (r2124, decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - re-configure the drive belonging to this motor in the commissioning software project and download the new configuration into the drive unit.
- delete the drive belonging to this motor in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01505 (A) BICO: Interconnection cannot be established

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A PROFIBUS telegram has been set (p0922).
An interconnection contained in the telegram, was not able to be established.
Fault value (r0949, decimal):
Parameter receiver that should be changed.

Remedy: Establish another interconnection.

Reaction upon A: NONE

Acknowledge upon A: NONE

F01506 (A) BICO: No standard telegram

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The standard telegram in p0922 is not maintained and therefore p0922 is set to 999.
Fault value (r0949, decimal):
BICO parameter for which the write attempt was unsuccessful.

Remedy: Again set the required standard telegram (p0922).

Reaction upon A: NONE

Acknowledge upon A: NONE

F01507 (N, A) BICO: Interconnections to inactive objects present

Reaction: OFF2 (DCBRAKE, ENCODER, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: There are BICO interconnections as signal drain from a drive object that is either inactive/not operational.
The BI/CI parameters involved are listed in r9498.
The associated BO/CO parameters are listed in r9499.
The list of the BICO interconnections to other drive objects is displayed in r9491 and r9492 of the de-activated drive object.
Note:
r9498 and r9499 are only written into, if p9495 is not set to 0.
Alarm value (r2124, decimal):
Number of BICO interconnections found to inactive drive objects.

Remedy: - set all open BICO interconnections centrally to the factory setting with p9495 = 2.
- make the non-operational drive object active/operational again (re-insert or activate components).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

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F01510 BICO: Signal source is not float type

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The selected connector output does not have the correct data type. This interconnection is not established.
Fault value (r0949, decimal):
Parameter number to which an interconnection should be made (connector output).

Remedy: Interconnect this connector input with a connector output having a float data type.

F01511 (A) BICO: Interconnection between various normalizations

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The requested interconnection was set up. However, a conversion is made between the BICO output and BICO input using the reference values.
- the BICO output has different normalized units than the BICO input.
- message only for interconnections within a drive object.
Message during commissioning and download inactive.
Example:
The BICO output has, as normalized unit, voltage and the BICO input has current.
This means that the factor p2002 (contains the reference value for current) / p2001 (contains the reference value for voltage) is calculated between the BICO output and BICO input.
Fault value (r0949, decimal):
Parameter number of the BICO input (signal receiver).

Remedy: No correction needed.

Reaction upon A: NONE

Acknowledge upon A: NONE

F01512 BICO: No normalization available

Reaction: OFF2

Acknowledge: POWER ON

Cause: An attempt was made to determine a conversion factor for a normalization that does not exist.
Fault value (r0949, decimal):
Unit (e.g. corresponding to SPEED) for which an attempt was made to determine a factor.

Remedy: Apply normalization or check the transfer value.

F01513 (A) BICO: Spanning DO between different normalizations

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The requested interconnection was set up. However, a conversion is made between the BICO output and BICO input using the reference values.
An interconnection is made between different drive objects and the BICO output has different normalized units than the BICO input or the normalized units are the same but the reference values are different.
Example:
The BICO output has, as standard unit, voltage and the BICO input has current; both lie in different drive objects.
This means that the factor p2002 (contains the reference value for current) / p2001 (contains the reference value for voltage) is calculated between the BICO output and BICO input.
Fault value (r0949, decimal):
Parameter number of the BICO input (signal receiver).

Remedy: No correction needed.

Reaction upon A: NONE

Acknowledge upon A: NONE

A01514 (F) BICO: Error when writing during a reconnect

Reaction: NONE

Acknowledge: NONE

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Cause: During a reconnect operation (e.g. while booting or downloading - but cannot occur in normal operation) a parameter was not able to be written into.
Example:
When writing to a double word BICO input in the second index, the memory areas overlap (e.g. p8861). The parameter is then reset to the factory setting.
Alarm value (r2124, decimal):
Parameter number of the BICO input (signal receiver).

Remedy: None necessary.

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY

F01515 (A) BICO: Writing to parameter not permitted as the master control is active

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: While changing the number of CDS or when copying from CDS, the master control was active.

Remedy: None necessary.

Reaction upon A: NONE

Acknowledge upon A: NONE

A01590 (F) Drive: Motor maintenance interval expired

Reaction: NONE

Acknowledge: NONE

Cause: The selected service/maintenance interval for this motor was reached.
Alarm value (r2124, decimal):
Motor data set number.
See also: p0650 (Actual motor operating hours), p0651 (Motor operating hours maintenance interval)

Remedy: Carry-out service/maintenance and reset the service/maintenance interval (p0651).

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY

F01600 SI CU: STOP A initiated

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected a fault and initiated a STOP A (pulse cancellation via the safety shutdown path of the Control Unit).
- forced checking procedure of the safety shutdown path of the Control Unit unsuccessful.
- subsequent response to fault F01611 (defect in a monitoring channel).
Fault value (r0949, decimal):
0: Stop request from the Motor Module.
1005: Pulses cancelled although SH not selected and there is not internal STOP A present.
1010:Pulses enabled although SH is selected or an internal STOP A is present.
1015: Feedback of the safe pulse cancellation for Motor Modules connected in parallel are different.
9999: Subsequent response to fault F01611.

Remedy: - select safe standstill and then de-select again.
- replace the Motor Module involved.
Re fault value = 9999:
- carry-out diagnostics for fault F01611.
Note:
CU: Control Unit
MM: Motor Module
SH: Safe standstill
SI: Safety Integrated

F01611 SI CU: Defect in a monitoring channel".

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected a fault in the crosswise data comparison between the CU and Motor Module (MM) and initiated a STOP F.
As a result of this fault, after the parameterized transition has expired (p9658), fault F01600 (SI CU: STOP A initiated) is output.
Fault value (r0949, decimal):
0: Stop request from the Motor Module.
1 to 999:
Number of the crosswise compared data that resulted in this fault.
1: SI monitoring clock cycle (r9780, r9880).
2: SI enable safety functions (p9601, p9801).
3: SI SGE changeover tolerance time (p9650, p9850).
4: SI transition period STOP F to STOP A (p9658, p9858).
5: SI enable Safe Brake Control (p9602, p9802).
6: SI motion enable, safety-relevant functions (p9501, internal value). This number is also displayed in r9795.
7: SI pulse cancellation delay time for Safe Stop 1 (p9652, p9852).
8: SI PROFIsafe address (p9610, p9810).
1000: Watchdog timer has expired. Within the time of approx. 5 * p9650 too many switching operations have occurred at terminal EP of the Motor Module.
1001: Initialization error, change timer / check timer.
2000: Status of the SH terminals on the Control Unit and Motor Module are different.
2001: Feedback signal for safe pulse cancellation on the Control Unit and Motor Module are different.
2002: Status of the delay timer SS1 on the Control Unit and Motor Module are different.
2004: Status of the SH selection for modules connected in parallel are different.
2005: Feedback signal of the safe pulse cancellation on the Control Unit and Motor Modules connected in parallel are different.

Remedy: Re fault value = 1 to 999:
- check the crosswise compared data that resulted in a STOP F.
- carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 1000:
- check the EP terminal at the Motor Module (contact problems).

Re fault value = 1001, 1002:
- carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 2000, 2001, 2002, 2004, 2005:
- check the tolerance time SGE changeover and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- replace the Motor Module involved.

Note:
CU: Control Unit
EP: Enable Pulses (pulse enable)
MM: Motor Module
SGE: Safety-relevant input
SH: Safe standstill
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

N01620 (F, A) SI CU: Safe standstill active

Reaction: NONE

Acknowledge: NONE

Cause: The "safe standstill" function has been selected on the Control Unit (CU) and is active.
Note:
This message does not result in a safety stop response.

Remedy: None necessary.
Note:
CU: Control Unit
SI: Safety Integrated

Reaction upon F: OFF2

Acknowledge upon F: IMMEDIATELY (POWER ON)

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Reaction upon A: NONE
Acknowledge upon A: NONE

N01621 (F, A) SI CU: Safe Stop 1 active

Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Stop 1" (SS1) function has been selected on the Control Unit (CU) and is active.
Note:
This message does not result in a safety stop response.
Remedy: None necessary.
Note:
CU: Control Unit
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
Reaction upon F: OFF3
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon A: NONE
Acknowledge upon A: NONE

F01625 SI CU: Sign-of-life error in safety data

Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected an error in the sign-of-life of the safety data between the CU and Motor Module (MM) and initiated a STOP A.
- there is either a DRIVE-CLIQ communications error or communications have failed.
- a time slice overflow of the safety software has occurred.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.
Remedy: - select safe standstill and then de-select again.
- carry-out a POWER ON (power off/on) for all components.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry-out a diagnostics routine for the faults identified.
- de-select all drive functions that are not absolutely necessary.
- reduce the number of drives.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01630 SI CU: Braking signal error

Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected a braking signal error and initiated a STOP A.
- no motor holding brake connected.
- the motor holding brake control on the Motor Module is faulty.
- a DRIVE-CLiQ communications error has occurred between the Control Unit and the Motor Module involved.
Fault value (r0949, decimal):
10: No brake connected or fault in the Motor Module brake control circuit ("open brake" operation).
11: Defect in the brake control circuit of the Motor Module ("brake open" operation).
20: Short-circuit in the brake winding or fault in the brake control circuit of the Motor Module ("brake open" state).
30: No brake connected, short-circuit in the brake winding or fault in the Motor Module brake control circuit ("close brake" operation).
31: Defect in the brake control circuit of the Motor Module ("close brake" operation).
40: Defect in the brake control circuit of the Motor Module ("brake closed" state).
50: Defect in the brake control circuit of the Motor Module or communications fault between the Control Unit and the Motor Module (braking signal diagnostics).

Remedy: - select safe standstill and then de-select again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry-out a diagnostics routine for the faults identified.
- check the electrical cabinet design and cable routing for EMC compliance
- replace the Motor Module involved.
Operation with Safe Brake Module:
- check the Safe Brake Modules connection.
- replace the Safe Brake Module.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01649 SI CU: Internal software error

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An internal error in the Safety Integrated software on the Control Unit has occurred.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- re-commission the "Safety Integrated" function and carry-out a POWER ON.
- upgrade the Control Unit software.
- contact the Hotline.
- replace the Control Unit.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01650 SI CU: Acceptance test required

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The drive-based "Safety Integrated" function in the Control Unit requires an acceptance test.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, decimal):
130: No safety parameters available for the Motor Module.
1000: Reference and actual checksum on the Control Unit are not identical (booting).
- at least one checksum-checked piece of data is defective.
2000: Reference and actual checksum on the Control Unit are not identical (commissioning mode).
- reference checksum incorrectly entered into the Control Unit (p9799 not equal to r9798).
2001: Reference and actual checksum on the Motor Module are not identical (commissioning mode).
- reference checksum incorrectly entered into the Motor Module (p9899 not equal to r9898).
2002: Enable of safety-related functions between the Control Unit and Motor Module differ (p9601 not equal to p9801).
2003: Acceptance test is required as a safety parameter has been changed.
2004: An acceptance test is required because a project with enabled safety-functions has been downloaded.
2010: Safe Brake Control is enabled differently between the Control Unit and Motor Module (p9602 not equal to p9802).
2020: Error when saving the safety parameters for the Motor Module.
9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.

Remedy: Re fault value = 130:
- carry-out safety commissioning routine.
Re fault value = 1000:
- again carry-out safety commissioning routine.
- replace the CompactFlash card.
Re fault value = 2000:
- check the safety parameters in the Control Unit and adapt the reference checksum (p9799).
Re fault value = 2001:
- check the safety parameters in the Motor Module and adapt the reference checksum (p9899).
Re fault value = 2002:
- enable the safety-related functions on the Control Unit and check on the Motor Module (p9601 = p9801).
Re fault value = 2003, 2004:
- Carry-out an acceptance test and generate an acceptance report. The procedure when carrying-out an acceptance test as well as an example of the acceptance report are provided in the documentation for SINAMICS Safety Integrated.
Re fault value = 2010:
- enable the Safe Brake Control in the Control Unit and check on the Motor Module (p9602 = p9802).
Re fault value = 2020:
- again carry-out safety commissioning routine.
- replace the CompactFlash card.
Re fault value = 9999:
- carry-out diagnostics for the other safety-related fault that is present.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
See also: p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

F01651 SI CU: Synchronization safety time slices unsuccessful

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The "Safety Integrated" function requires a synchronization of the safety time slices between the Control Unit (CU) and Motor Module (MM) and between the Control Unit and the higher-level control. This synchronization routine was not successful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

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Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- upgrade the software of the higher-level control.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01652 SI CU: Illegal monitoring clock cycle

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: One of the Safety Integrated monitoring clock cycles is not permissible:
- the drive-based monitoring clock cycle cannot be maintained due to the communication conditions required in the system.
- the monitoring clock cycle for safe motion monitoring functions with the higher-level control is not permissible (p9500).
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
- for enabled drive-based SI monitoring (p9601/p9801 > 0):
Minimum setting for the monitoring clock cycle (in µs).
- with the motion monitoring function enabled (p9501 > 0):
100: No matching monitoring clock cycle was able to be found.
101: The monitoring clock cycle is not an integer multiple of the position controller clock cycle.
102: An error has occurred when transferring the DP clock cycle to the Motor Module (MM).
103: An error has occurred when transferring the DP clock cycle to the Sensor Module.

Remedy: For enabled drive-based SI monitoring (p9601/p9801 > 0):
- upgrade the Control Unit software.
For enabled motion monitoring function (p9501 > 0):
- correct the monitoring clock cycle (p9500) and carry-out POWER ON.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01655 SI CU: Align monitoring functions

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An error has occurred when aligning the Safety Integrated monitoring functions on the Control Unit (CU) and Motor Module (MM). Control unit and Motor Module were not able to determine a common set of supported SI monitoring functions.
- there is either a DRIVE-CLIQ communications error or communications have failed.
- Safety Integrated software releases on the Control Unit and Motor Module are not compatible with one another.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01656 SI CU: Motor Module parameter error

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: When accessing the Safety Integrated parameters for the Motor Module (MM) on the CompactFlash card, an error has occurred.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, decimal):
129: Safety parameters for the Motor Module corrupted.
131: Internal Motor Module software error.
132: Communication errors when uploading or downloading the safety parameters for the Motor Module.
255: Internal software error on the Control Unit.

Remedy: - re-commission the safety functions.
- upgrade the Control Unit software.
- upgrade the Motor Module software.
- replace the CompactFlash card.
Re fault value = 132:
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01659 SI CU: Write request for parameter rejected

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The write request for one or several Safety Integrated parameters on the Control Unit (CU) was rejected.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, decimal):
1: The Safety Integrated password is not set.
2: It was selected that the drive parameters are reset. However, the Safety Integrated parameters cannot be reset, as Safety Integrated is presently enabled.
3: The interlocked SH input is in the simulation mode.
10: An attempt was made to enable the SH function although this cannot be supported.
11: An attempt was made to enable the SBC function although this cannot be supported.
12: An attempt was made to enable the SBC function although this cannot be supported for a parallel circuit configuration.
13: An attempt was made to enable the SS1 function although this cannot be supported.
14: An attempt was made to enable the PROFIsafe communications although this cannot be supported.
15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.
16: An attempt was made to enable the SH function although this cannot be supported when the internal voltage protection (p1231) is enabled.
See also: p0970 (Reset drive parameters), p3900 (Completion of quick commissioning), r9771 (SI common functions (Control Unit)), r9871 (SI common functions (Motor Module)

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Remedy: Re fault value = 1:
- set the Safety Integrated password (p9761).
Re fault value = 2:
- inhibit Safety Integrated and again reset the drive parameters.
Re fault value = 3:
- simulation mode for the digital input has ended (p0795).
Re fault value = 10, 11, 12, 13, 14, 15:
- check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved (F01655, F30655) and if required, carry-out diagnostics for the faults involved.
- use a Motor Module that supports the required function ("safe standstill", "Safe Brake Control", "PROFIsafe", "motion monitoring functions integrated in the drive").
- upgrade the Motor Module software.
- upgrade the Control Unit software.
Re fault value = 16:
- inhibit the internal voltage protection (p1231).
Note:
CU: Control Unit
SBC: Safe Brake Control
SH: Safe standstill
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
See also: p9501 (SI motion enable safety-relevant functions), p9601 (SI enable, functions integrated in the drive (Control Unit)), p9620 (SI signal source for SH/SBC/SS1 (Control Unit)), p9761 (SI password input), p9801 (SI enable, functions integrated in the drive (Motor Module))

F01660 SI CU: Safety-related functions not supported

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Motor Module (MM) does not support the safety-related functions (e.g. the Motor Module version is not the correct one). Safety Integrated cannot be commissioned.
Note:
This fault results in a STOP A that cannot be acknowledged.

Remedy: - use a Motor Module that supports the safety-related functions.
- upgrade the Motor Module software.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01670 SI Motion: Invalid parameterization, Sensor Module

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameterization of a Sensor Module used for Safety Integrated is not permissible.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
1: No encoder was parameterized for Safety Integrated.
2: An encoder was parameterized for Safety Integrated that does not have an A/B track (sinusoidal/cosinusoidal).
3: The encoder data set selected for Safety Integrated is still not valid.
4: A communications error to the encoder has occurred.
10: For an encoder used for Safety Integrated, not all of the Drive Data Sets (DDS) are assigned to the same Encoder Data Set (EDS) (p0187 ... p0189).

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Remedy: Re fault value = 1, 2:
- use and parameterize an encoder that Safety Integrated supports (encoder with track A/B sinusoidal, p0404.4 = 1).
Re fault value = 3:
- check whether the drive or drive commissioning function is active and if required, exit this (p0009 = p00010 = 0), save the parameters (p0971 = 1) and carry-out a POWER ON
Re fault value = 4:
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Sensor Module involved and if required, carry-out a diagnostics routine for the faults identified.
Re fault value = 10:
- align the EDS assignment of all of the encoders used for safety integrated (p0187 ... p0189).
Note:
SI: Safety Integrated

F01671 SI Motion: Parameterization error, encoder

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameterization of the encoder used by Safety Integrated is different than the parameterization of the standard encoder.
Fault value (r0949, decimal):
Parameter number of the non-corresponding safety parameter.

Remedy: Align the encoder parameterization between the safety encoder and the standard encoder.
Note:
SI: Safety Integrated

F01672 SI Motion: Motor Module software incompatible

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The existing Motor Module software does not support the safe motion monitoring function with the higher-level control.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved
(F01655, F30655) and if required, carry-out the appropriate diagnostics routine for the particular faults.
- use a Motor Module that supports safe motion monitoring
- upgrade the Motor Module software.
Note:
SI: Safety Integrated

F01673 SI Motion: Sensor Module software incompatible

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The existing Sensor Module software does not support the safe motion monitoring function with the higher-level control.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - use a Sensor Module that supports safe motion monitoring function.
- upgrade the Sensor Module software.
Note:
SI: Safety Integrated

F01680 SI Motion: Checksum error, safety monitoring functions

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The actual checksum calculated by the drive and entered in r9728 over the safety-relevant parameters does not match the target checksum saved in p9729 at the last machine acceptance.
Safety-relevant parameters have been changed or a fault is present.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
0: Checksum error for SI parameters for motion monitoring.
1: Checksum error for SI parameters for actual values.

Remedy: - Check the safety-relevant parameters and if required, correct.
- carry-out a POWER ON.
- carry-out an acceptance test.
Note:
SI: Safety Integrated

C01681 SI Motion: Incorrect parameter value

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameter value cannot be parameterized with this value.
Fault value (r0949, decimal):
Parameter number with the incorrect value

Remedy: Correct parameter value

F01682 SI Motion: Monitoring function not supported

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The monitoring function enabled in p9501, p9601 or p9801 is not supported in this firmware version.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
1: Monitoring function SE not supported (p9501.1).
2: Monitoring function SN not supported (p9501.7 and p9501.8 - 15 and p9503).
3: Monitoring function SG override not supported (p9501.5).
10: Monitoring functions only supported in the servo mode.
20: Drive-based motion monitoring functions are only supported in conjunction with PROFIsafe (p9501 and p9601.1 - 2 and p9801.1 - 2).
21: PROFIsafe only supported in conjunction with motion monitoring functions in the drive (p9501 and p9601.1 - 2 and p9801.1 - 2).

Remedy: De-select the monitoring function involved (p9501, p9503, p9601, p9801).
Note:
SE: Safe software limit switch
SG: Safely-reduced speed
SI: Safety Integrated
SN: Safe software cam
See also: p9501 (SI motion enable safety-relevant functions)

F01683 SI Motion: SBH/SG enable missing

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The safety-relevant basic function "SBH/SG" is not enabled in p9501 although other safety-relevant monitoring functions are enabled.
Note:
This fault results in a STOP A that cannot be acknowledged.

Remedy: Enable the function "SBH/SG" (p9501.0) and carry-out a POWER ON.
Note:
SBH: Safe operating stop
SG: Safely-reduced speed
SI: Safety Integrated
See also: p9501 (SI motion enable safety-relevant functions)

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F01684 SI Motion: Safe software limit switch limit values interchanged

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: For the function "safe software limit switch" (SE), a lower value is in p9534 as in p9535.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
1: Limit values SE1 interchanged.
2: Limit values SE2 interchanged.

Remedy: Correct the limit values in p9534 and p9535 and carry-out a POWER ON.
Note:
SE: Safe software limit switch
SI: Safety Integrated

F01685 SI Motion: Safe velocity limit value too high

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The limit value for the function "safely reduced speed" (SG) is greater than the speed that corresponds to an encoder limit frequency of 500 kHz.
Fault value (r0949, decimal):
Maximum permissible speed.

Remedy: Correct the limit values for SG and carry-out a POWER ON.
Note:
SG: Safely-reduced speed
SI: Safety Integrated
See also: p9531 (SI motion SG limit values)

F01686 SI Motion: Illegal parameterization, cam position

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: At least one enabled "safety software cam" (SN) is parameterized in p9536 or p9537 too close at the tolerance range around the modulo position.
Fault value (r0949, decimal):
Number of the "safe software cam" with an illegal position.
See also: p9501 (SI motion enable safety-relevant functions)

Remedy: Correct the cam position and carry-out a POWER ON.
Note:
SI: Safety Integrated
SN: Safe software cam
See also: p9536 (SI motion SN plus cam position), p9537 (SI motion SN minus cam position)

F01687 SI Motion: Illegal parameterization, modulo value SN

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameterized modulo value for the "safe software cam" (SN) function is not a multiple of 360 000 mDegrees.

Remedy: Correct the modulo value for SN and carry-out a POWER ON.
Note:
SI: Safety Integrated
SN: Safe software cam
See also: p9505 (SI motion SN modulo value)

F01688 SI Motion: Actual value synchronization not permissible

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: It is not permissible to simultaneously enable the actual value synchronization and a monitoring function with absolute reference (SE/SN).

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Remedy: Either carry-out the monitoring functions with absolute reference (SE/SN) or de-select the "actual value synchronization" function and carry-out a POWER ON.
Note:
SE: Safe software limit switch
SI: Safety Integrated
SN: Safe software cam
See also: p9501 (SI motion enable safety-relevant functions)

C01689 SI Motion: Axis re-configured

Reaction: OFF2

Acknowledge: POWER ON

Cause: The axis configuration was changed.
Parameter p0108.13 is internally set to the correct value.
Fault value (r0949, decimal):
Parameter number that initiated the change.
See also: p9502 (SI motion axis type)

Remedy: Initiate data back-up on the complete Control Unit and carry-out a POWER ON.

A01698 (F) SI CU: Commissioning mode active

Reaction: NONE

Acknowledge: NONE

Cause: The commissioning of the "Safety Integrated" function is selected.
This message is withdrawn after the safety functions have been commissioned.
Note:
This message does not result in a safety stop response.
See also: p0010 (Drive, commissioning parameter filter)

Remedy: None necessary.
Note:
CU: Control Unit
SI: Safety Integrated

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

A01699 (F) SI CU: Shutdown path must be tested

Reaction: NONE

Acknowledge: NONE

Cause: The time set in p9659 for the forced checking procedure of the safety shutdown paths has been exceeded. The safety shutdown paths must be re-tested.
After the next time that the "safe standstill" function (SH) is de-selected, the message is withdrawn and the monitoring time is reset.
Note:
This message does not result in a safety stop response.
See also: p9659 (SI forced checking procedure timer)

Remedy: Select safe standstill and then deselect again.
Note:
CU: Control Unit
SH: Safe standstill
SI: Safety Integrated

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

C01700 SI Motion: STOP A initiated

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The drive is stopped via a STOP A (pulses are cancelled via the safety shutdown path of the Control Unit).
Possible causes:
- stop request from the higher-level control.
- pulses not cancelled after a parameterized time (p9557) after test stop selection.
- subsequent response to the message C01706 "SI Motion: Safe braking ramp exceeded".
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01701 "SI Motion: STOP B initiated".

Remedy:
- remove the fault cause in the control and carry-out a POWER ON.
- check the value in p9557, if necessary, increase the value, and carry-out POWER ON.
- check the shutdown path of Control Unit (check DRIVE-CLiQ communications).
- carry-out a diagnostics routine for message C01706.
- carry-out a diagnostics routine for message C01714.
- carry-out a diagnostics routine for message C01701.
- replace Motor Module.
- replace Control Unit.

Note:
SI: Safety Integrated

C01701 SI Motion: STOP B initiated

Reaction: OFF3

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP B (braked along the current limit).
As a result of this fault, after the time, parameterized in p9556 has expired, or the speed threshold, parameterized in p9560 has been fallen below, message C01700 "STOP A initiated" is output.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01711 "SI Motion: Defect in a monitoring channel".

Remedy:
- remove the fault cause in the control and carry-out a POWER ON.
- carry-out a diagnostics routine for message C01714.
- carry-out a diagnostics routine for message C01711.

Note:
SI: Safety Integrated

C01706 SI Motion: Safe braking ramp exceeded

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: After initiating STOP B or STOP C, the velocity has exceeded the selected tolerance.
The drive is shut down by the message C01700 "SI Motion: STOP A initiated".

Remedy: Check the braking behavior, if required, adapt the tolerance for "safe braking ramp" (SBR).

Note:
SBR: Safe braking ramp
SI: Safety Integrated
See also: p9548 (SI motion SBR actual speed tolerance)

C01707 SI Motion: Tolerance for safe operating stop exceeded

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual position has distanced itself further from the target position than the standstill tolerance.
The drive is shut down by the message C01701 "SI Motion: STOP B initiated".

Remedy:
- check whether safety faults are present and if required carry-out the appropriate diagnostic routines for the particular faults.
- check whether the standstill tolerance matches the accuracy and control dynamic performance of the axis.
- carry-out a POWER ON.

Note:
SBH: Safe operating stop
SI: Safety Integrated
See also: p9530 (SI motion standstill tolerance)

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C01708 SI Motion: STOP C initiated

Reaction: STOP2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP C (braked along the current limit).
"Safe operating stop" (SBH) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01715 "SI Motion: Safe end stop exceeded".
See also: p9552 (SI motion transition time STOP C to SBH)

Remedy: - remove the fault cause in the control and carry-out a POWER ON.
- carry-out a diagnostics routine for message C01714.
Note:
SBH: Safe operating stop
SI: Safety Integrated

C01709 SI Motion: STOP D initiated

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP D (braking along the path).
"Safe operating stop" (SBH) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01715 "SI Motion: Safe end stop exceeded".
See also: p9553 (SI motion transition time STOP D to SBH)

Remedy: - remove the fault cause in the control and carry-out a POWER ON.
- carry-out a diagnostics routine for message C01714.
Note:
SBH: Safe operating stop
SI: Safety Integrated

C01710 SI Motion: STOP E initiated

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP E (retraction motion).
"Safe operating stop" (SBH) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01715 "SI Motion: Safe end stop exceeded".
See also: p9554 (SI motion transition time STOP E to SBH)

Remedy: - remove the fault cause in the control and carry-out a POWER ON.
- carry-out a diagnostics routine for message C01714.
Note:
SBH: Safe operating stop
SI: Safety Integrated

C01711 SI Motion: Defect in a monitoring channel"

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: When cross-checking and comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring function functions no longer reliably functions - i.e. safe operation is no longer possible.
If at least one monitoring function is active, then after the parameterized timer stage has expired, the message C01701 "SI Motion: STOP B initiated" is output.
The message value that resulted in a STOP F is displayed in r9725.
Message value (r9749, decimal):
Value, that resulted in a STOP F.
See also: p9555 (SI motion transition time STOP F to STOP B), r9725 (SI motion, diagnostics STOP F)

Remedy: The message value contained in r9725 is described in message 27001 of the higher-level control.
Note:
SI: Safety Integrated

C01714 SI Motion: Safely reduced speed exceeded

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive had moved faster than that specified by the velocity limit value (p9531). The drive is stopped as a result of the configured stop response (p9563).
Message value (r9749, decimal):
100: SG1 exceeded.
200: SG2 exceeded..
300: SG3 exceeded.
400: SG4 exceeded.
1000: Encoder limit frequency exceeded.

Remedy: - check the traversing/motion program in the control.
- check the limits for "safely reduced speed (SG) and if required, adapt (p9531).
Note:
SG: Safely-reduced speed
SI: Safety Integrated
See also: p9531 (SI motion SG limit values), p9563 (SI motion SG-specific stop response)

A01796 (F, N) SI Motion: Wait for communications to the control

Reaction: NONE

Acknowledge: NONE

Cause: The drive waits for communications to be established with the higher-level control to execute the safety-relevant motion monitoring functions.
Note:
In this state, the pulses are safely deleted.

Remedy: If, after a longer period of time, the message is not automatically withdrawn, then the following checks are made:
- correct assignment of the axes on the higher-level control to the drives in the drive unit.
- enable signal of the safety-relevant motion monitoring functions for the corresponding axis on the higher-level control.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

C01798 SI Motion: Test stop running

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The test stop is active.

Remedy: None necessary.
The message is withdrawn when the test stop is ended.
Note:
SI: Safety Integrated

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C01799 SI Motion: Acceptance test mode active

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The acceptance test mode is active. The POWER ON signals of the safety-relevant motion monitoring functions can be acknowledged during the acceptance test using the RESET button of the higher-level control.

Remedy: None necessary.
The message is withdrawn when exiting the acceptance test mode.
Note:
SI: Safety Integrated

F01800 DRIVE-CLiQ: Hardware/configuration error

Reaction: NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A DRIVE-CLiQ connection fault has occurred.
Fault value (r0949, decimal):
0 ... 7:
Communications via DRIVE-CLiQ socket 0 ... 7 has not been switched to cyclic operation. The cause can be an incorrect structure or a configuration that results in an impossible bus timing.
10:
Loss of the DRIVE-CLiQ connection. The cause can be, for example, that the DRIVE-CLiQ cable was withdrawn from the Control Unit or as a result of a short-circuit for motors with DRIVE-CLiQ. This fault can only be acknowledged in cyclic communication.
11:
Repeated fault when detecting the connection. This fault can only be acknowledged in cyclic communication.
12:
A connection was detected but the node ID exchange mechanism does not function. The reason is probably that the component is defective. This fault can only be acknowledged in cyclic communication.

Remedy: Re fault value = 0 ... 7:
- ensure that the DRIVE-CLiQ components have the same firmware releases.
- avoid longer topologies for short current controller clock cycles.

Re fault value = 10:
- check the DRIVE-CLiQ cables at the Control Unit.
- remove any short-circuit for motors with DRIVE-CLiQ.
- carry-out a POWER ON.

Re fault value = 11:
- check the electrical cabinet design and cable routing for EMC compliance

Re fault value = 12:
- replace the component involved.

F01802 (A) CU DRIVE-CLiQ: POWER ON due to basis sampling times

Reaction: OFF2 (DCBRAKE, OFF1)

Acknowledge: POWER ON

Cause: It is not possible to change the DRIVE-CLiQ basic sampling times p0110 in operation. POWER ON is required.
Fault value (r0949, decimal):
Index of p0110.

Remedy: - save (p0971 = 1).
- carry-out a POWER ON.

Reaction upon A: NONE

Acknowledge upon A: NONE

A01900 (F) PROFIBUS: Configuration telegram error

Reaction: NONE

Acknowledge: NONE

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Cause: A PROFIBUS master attempts to establish a connection using an incorrect configuring telegram.
Alarm value (r2124, decimal):
50: Syntax error.
51: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence was defined using p0978.
52: Too many data words for input or output to a drive object. A max. of 16 words is permitted for SERVO and VECTOR; max. 5 words, for A_INFEED, TB30, TM31 and CU320.
53: Uneven number of bytes for input or output.

Remedy: Check the bus configuring on the master and slave sides.
Re alarm value = 51:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.

Reaction upon F: NONE (OFF1)

Acknowledge upon F: IMMEDIATELY

A01901 (F) PROFIBUS: Parameterizing telegram error

Reaction: NONE

Acknowledge: NONE

Cause: A PROFIBUS master attempts to establish a connection using an incorrect parameterizing telegram.
Alarm value (r2124, decimal):
1: Incorrect parameterizing bits
10: Illegal length of an optional parameterizing block
11: Illegal ID of an optional parameterizing block
20: Double parameterizing block for clock synchronization
21: Incorrect parameterizing block for clock synchronization
22: Incorrect parameterizing bits for clock synchronization

Remedy: Check the bus configuration:
- bus addresses
- slave configuring

Reaction upon F: NONE (OFF1)

Acknowledge upon F: IMMEDIATELY

A01902 PROFIBUS: Illegal parameterizing telegram

Reaction: NONE

Acknowledge: NONE

Cause: Alarm value (r2124, decimal):
0: Bus cycle time Tdp < 0.5 ms.
1: Bus cycle time Tdp > 32 ms.
2: Bus cycle time Tdp is not a integer multiple of the current controller clock cycle.
3: Instant of the actual value sensing Ti > Bus cycle time Tdp.
4: Instant of the actual value sensing Ti is not an integer multiple of the current controller clock cycle.
5: Instant of the setpoint transfer To >= Bus cycle time Tdp.
6: Instant of the setpoint transfer To is not an integer multiple of the current controller clock cycle.
7: Master application cycle time Tmapc is not an integer multiple of the speed controller clock cycle.
8: Bus reserve bus cycle time Tdp - data exchange time Tdx less than two current controller clock cycles.
9: Bus cycle time Tdp has been modified with respect to the first time that the connection was established.
10: Instant of the setpoint transfer not To <= data exchange time Tdx + To_min.
11: Master application cycle time Tmapc > 14.
12: PLL tolerance window Tpll_w > Tpll_w_max.
13: Bus cycle time Tdp is not a multiple of all basic clock cycles p0110[x].
14: For COMM BOARD with the setting To - 1 = Tdp - Ti, the instant of the setpoint transfer is not To <= Data Exchange time Tdx + 2 * To_min.
15: This configuration is not permitted for Tdp < 1 ms.
16: Instant of the actual value sensing Ti is less than the permitted value (COMM BOARD: Ti >= 2).
17: The setting (To + Ti = Tdp + 2) is not permitted for COMM BOARD.

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Remedy: - adapt the parameterizing telegram.
- adapt the current and speed controller clock cycle.
Re alarm value = 9:
- carry-out a POWER ON.
Re alarm value = 15:
- check the number of specific drive object types in the configuration.

A01903 (F) COMM INT: Receive configuration data invalid

Reaction: NONE

Acknowledge: NONE

Cause: The drive unit did not accept the receive-configuration data.
Alarm value (r2124, decimal):
Return value of the receive-configuration data check.
0: Configuration accepted.
1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence was defined using p0978.
2: Too many data words for input or output to a drive object. A max. of 16 words is permitted for SERVO and VECTOR; max. 5 words, for A_INFEED, TB30, TM31 and CU320.
3: Uneven number of bytes for input or output.
4: Setting data for synchronization not accepted.
5: Drive still not in cyclic operation.
6: Buffer system not accepted.
7: Cyclic channel length too short for this setting.
8: Cyclic channel address not initialized.
9: 3-buffer system not permitted.
10: DRIVE-CLiQ fault.
11: CU link fault.
12: CX32 not in cyclic operation.

Remedy: Check the receive configuration data.
Re alarm value = 1:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

F01910 (N, A) PROFIBUS: Setpoint timeout

Reaction: OFF3 (DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The receipt of setpoints from the PROFIBUS interface is interrupted because the bus connection is interrupted or the PROFIBUS master is switched off or was set into the STOP state.

Remedy: Restore the bus connection and set the PROFIBUS master to RUN.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F01911 PROFIBUS: Clock synchronous operation, clock cycle failure

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: The global control telegram to synchronize the clock cycles has failed - in cyclic operation - for several DP clock cycles or has violated the time grid specified in the parameterizing telegram over several consecutive DP clock cycles (refer to the bus cycle time, Tdp and Tdpllw).

Remedy: - check the PROFIBUS cables and connectors.
- check whether communications were briefly or permanently interrupted.
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).

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F01912 PROFIBUS: Clock synchronous operation sign-of-life missing

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: The maximum permissible number of errors in the master sign-of-life (clock synchronous PROFIBUS) has been exceeded in cyclic operation.

Remedy:
- check the physical bus configuration (terminating resistor, shielding, etc.).
- check the interconnection of the master sign-of-life (p2045).
- check whether the master correctly sends the sign-of-life (e.g. set-up a trace with STW2.12 ... STW2.15 and trigger signal ZSW1.3).
- check the permissible telegram failure rate (p0925).
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).

F01913 (N, A) COMM INT: Monitoring time, sign-of-life expired

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the sign-of-life counter has expired.

Remedy:
- acknowledge faults that are present.
- carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F01914 (N, A) COMM INT: Monitoring time, configuration expired

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the configuration has expired.
Fault value (r0949, decimal):
0: The transfer of the send-configuration data has been exceeded (time).
1: The transfer of the receive-configuration data has been exceeded (time).

Remedy:
- acknowledge faults that are present.
- carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A01920 (F) PROFIBUS: Interruption, cyclic connection

Reaction: NONE

Acknowledge: NONE

Cause: The cyclic connection to the PROFIBUS master is interrupted.

Remedy: Set up the PROFIBUS connection and activate the PROFIBUS master in the cyclic mode.

Reaction upon F: NONE (OFF1)

Acknowledge upon F: IMMEDIATELY

A01921 (F) PROFIBUS: Clock cycle synchronization

Reaction: NONE

Acknowledge: NONE

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Cause: Output data of PROFIBUS master (setpoints) received at the incorrect instant in time within the PROFIBUS clock cycle.

Remedy: Check the bus configuration:
- parameter for clock cycle synchronization: Ensure the instant in time for setpoint acceptance To > data exchange time Tdx

Reaction upon F: NONE (OFF1)

Acknowledge upon F: IMMEDIATELY

A01930 PROFIBUS: Current controller clock cycle for clock synchronous operation not the same

Reaction: NONE

Acknowledge: NONE

Cause: The current controller clock cycle of all drives must be set the same for the clock synchronous PROFIBUS.
Alarm value (r2124, decimal):
Number of the drive object with the different current controller clock cycle.

Remedy: - set current controller clock cycles to identical values (p0115[0]).
See also: p0115 (Sampling time for supplementary functions)

A01931 PROFIBUS: Speed controller clock cycle for clock synchronous operation not the same

Reaction: NONE

Acknowledge: NONE

Cause: The speed controller clock cycle of all drives must be set the same for the clock synchronous PROFIBUS.
Alarm value (r2124, decimal):
Number of the drive object with the different speed controller clock cycle.

Remedy: - set the speed controller clock cycles the same (p0115[1]).
See also: p0115 (Sampling time for supplementary functions)

A01940 PROFIBUS: Clock cycle synchronism not reached

Reaction: NONE

Acknowledge: NONE

Cause: PROFIBUS is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. It was not possible to synchronize to the clock cycle specified by the master.
- the master doesn't send a clock synchronous global control telegram although the clock synchronous operation was selected when configuring the bus.
- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.
- at least one drive object (that is not controlled from PROFIBUS) has a pulse enable.

Remedy: - check the master application and bus configuration.
- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.
- ensure that the pulses of drive objects, not controlled from PROFIBUS, are not enabled. Only enable the pulses after synchronizing the PROFIBUS drives.

A01941 PROFIBUS: Clock cycle signal missing when the bus is being established

Reaction: NONE

Acknowledge: NONE

Cause: PROFIBUS is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is not being received.

Remedy: Check the master application and bus configuration.

A01943 PROFIBUS: Clock cycle signal error when the bus is being established

Reaction: NONE

Acknowledge: NONE

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Cause: PROFIBUS is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is being irregularly received.
-.the master is sending an irregular global control telegram.
- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.

Remedy: - check the master application and bus configuration.
- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.

A01944 PROFIBUS: Sign-of-life synchronism not reached

Reaction: NONE

Acknowledge: NONE

Cause: PROFIBUS is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. Synchronization with the master sign-of-life (STW2.12 ... STW2.15) could not be completed because the sign-of-life is changing differently than configured in the Tmapc time grid.

Remedy: - ensure that the master correctly increments the sign-of-life in the master application clock cycle.
- check the interconnection of the master sign-of-life (p2045).

A01945 PROFIBUS: Connection to the Publisher faulted

Reaction: NONE

Acknowledge: NONE

Cause: For PROFIBUS peer-to-peer data transfer, the connection to at least one Publisher is faulted.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection faulted.
...
Bit 15 = 1: Publisher with address in r2077[15], connection faulted.

Remedy: - check the PROFIBUS cables.
- carry-out a first commissioning of the Publisher that has the faulted connection.
See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

F01946 (A) PROFIBUS: Connection to the Publisher interrupted

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: At this drive object, the connection to at least one Publisher for PROFIBUS peer-to-peer data transfer in cyclic operation was interrupted.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection interrupted.
...
Bit 15 = 1: Publisher with address in r2077[15], connection interrupted.

Remedy: - check the PROFIBUS cables.
- check the state of the Publisher that has the interrupted connection.
See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

Reaction upon A: NONE

Acknowledge upon A: NONE

F01950 (N, A) PROFIBUS: Clock synchronous operation, synchronization unsuccessful

Reaction: OFF1 (NONE)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Synchronization of the internal clock cycle to the global control telegram has failed. The internal clock cycle exhibits an unexpected shift.

Remedy: Siemens-internal

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

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F01951 CU DRIVE-CLiQ: Synchronization application clock cycle missing

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: If DRIVE-CLiQ components with different application clock cycle are operated at a DRIVE-CLiQ port, then this requires synchronization with the Control Unit.
This synchronization routine was not successful.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

F01952 CU DRIVE-CLiQ: Synchronization of component not supported

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The existing system configuration requires at the connected DRIVE-CLiQ components support the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and the application clock cycle.
However, not all DRIVE-CLiQ components have this functionality.
Fault value (r0949, decimal):
Component number of the first faulted DRIVE-CLiQ component.

Remedy: Upgrade the firmware of the component specified in the fault value.
Note:
If required, also upgrade additional components in the DRIVE-CLiQ line.

A01953 CU DRIVE-CLiQ: Synchronization not completed

Reaction: NONE

Acknowledge: NONE

Cause: After the drive system is powered-up, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started but was not completed within the selected time (tolerance).
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.

Remedy: Carry-out a POWER ON (power off/on) for all components.

F01954 CU DRIVE-CLiQ: Synchronization unsuccessful

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: After the drive system is powered-up, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started and was not able to be successfully completed.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: 1. Ensure perfect functioning of the DRIVE-CLiQ.
2. Initiate a new synchronization, e.g. by:
- remove the PROFIBUS master and re-insert again.
- restart the PROFIBUS master.
- power-down the Control Unit and power-up again.
- press the Control Unit reset button.
- reset the parameter and download the saved parameters (p0009 = 30, p0976 = 2).

A01955 CU DRIVE-CLiQ: Synchronization DO not completed

Reaction: NONE

Acknowledge: NONE

Cause: After the drive system is powered-up, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started but was not completed within the selected time (tolerance).
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.

Remedy: Carry-out a POWER ON (power off/on) for all components of the DO.

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A02000 Function generator: Start not possible

Reaction: NONE
Acknowledge: NONE
Cause: The function generator has already been started.
Remedy: Stop the function generator and restart again if necessary.
See also: p4800 (Function generator control)

A02005 Function generator: Drive does not exist

Reaction: NONE
Acknowledge: NONE
Cause: The drive object specified for connection does not exist.
See also: p4815 (Function generator drive number)
Remedy: Use the existing drive object with the corresponding number.
See also: p4815 (Function generator drive number)

A02006 Function generator: No drive specified for connection

Reaction: NONE
Acknowledge: NONE
Cause: No drive specified for connection in p4815.
See also: p4815 (Function generator drive number)
Remedy: At least one drive to be connected must be specified in p4815.
See also: p4815 (Function generator drive number)

A02007 Function generator: Drive not SERVO

Reaction: NONE
Acknowledge: NONE
Cause: The drive object specified for connection is not a SERVO.
See also: p4815 (Function generator drive number)
Remedy: Use a SERVO drive object with the corresponding number.

A02008 Function generator: Drive specified a multiple number of times

Reaction: NONE
Acknowledge: NONE
Cause: The drive object specified for connection is already specified.
Alarm value (r2124, decimal):
Drive object number of the drive object that is specified a multiple number of times.
Remedy: Specify a different drive object.

A02010 Function generator: Speed setpoint from the drive is not zero

Reaction: NONE
Acknowledge: NONE
Cause: The speed setpoint of a drive - selected to be connected to - is greater than the value for the standstill detection set using p1226.
Alarm value (r2124, decimal):
Number of the drive object involved.
Remedy: For all of the drives specified for connection, set the speed setpoints to 0.

A02011 Function generator: The actual drive speed is not zero

Reaction: NONE
Acknowledge: NONE
Cause: The speed actual value of a drive - selected to be connected to - is greater than the value for the standstill detection set using p1226.
Alarm value (r2124, decimal):
Number of the drive object involved.
Remedy: Set the relevant drives to zero speed before starting the function generator.

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A02015 Function generator: Drive enable signals missing

Reaction: NONE

Acknowledge: NONE

Cause: The master control and/or enable signals are missing to connect to the specified drive.
Alarm value (r2124, decimal):
Number of the drive object involved.
See also: p4815 (Function generator drive number)

Remedy: Fetch the master control to the specified drive object and set all enable signals.

A02020 Function generator: Parameter cannot be changed

Reaction: NONE

Acknowledge: NONE

Cause: This parameter setting cannot be changed when the function generator is active (p4800 = 1).
See also: p4810 (Function generator mode), p4812 (Function generator physical address), p4813 (Function generator physical address reference value), p4815 (Function generator drive number), p4820 (Function generator signal shape), p4821 (Function generator period), p4822 (Function generator pulse width), p4823 (Function generator bandwidth), p4824 (Function generator amplitude), p4825 (Function generator 2nd amplitude), p4826 (Function generator offset), p4827 (Function generator ramp-up time to offset), p4828 (Function generator lower limit), p4829 (Function generator upper limit)

Remedy: - stop before parameterizing the function generator (p4800 = 0).
- if required, start the function generator (p4800 = 1).
See also: p4800 (Function generator control)

A02025 Function generator: Period too short

Reaction: NONE

Acknowledge: NONE

Cause: The value for the period is too short.
See also: p4821 (Function generator period)

Remedy: Check and adapt the value for the period.
See also: p4821 (Function generator period)

A02026 Function generator: Pulse width too wide

Reaction: NONE

Acknowledge: NONE

Cause: The selected pulse width is too high.
The pulse width must be less than the period duration.
See also: p4822 (Function generator pulse width)

Remedy: Reduce pulse width.
See also: p4821 (Function generator period), p4822 (Function generator pulse width)

A02030 Function generator: Physical address equals zero

Reaction: NONE

Acknowledge: NONE

Cause: The specified physical address is zero.
See also: p4812 (Function generator physical address)

Remedy: Set a physical address with a value other than zero.
See also: p4812 (Function generator physical address)

A02040 Function generator: Impermissible value for offset

Reaction: NONE

Acknowledge: NONE

Cause: The value for the offset is higher than the value for the upper limit or lower than the value for the lower limit.
See also: p4826 (Function generator offset)

Remedy: Adjust the offset value accordingly.
See also: p4826 (Function generator offset), p4828 (Function generator lower limit), p4829 (Function generator upper limit)

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A02041 Function generator: Impermissible value for bandwidth

Reaction: NONE

Acknowledge: NONE

Cause: The bandwidth, referred to the time slice clock cycle of the function generator has either been set too low or too high.
Depending on the time slice clock cycle, the bandwidth is defined as follows:
Bandwidth_max = 1 / (2 * time slice clock cycle)
Bandwidth_min = Bandwidth_max / 100000
Example:
Assumption: p4830 = 125 µs
--> Bandwidth_max = 1 / (2 * 125 µs) = 4000 Hz
--> Bandwidth_min = 4000 Hz / 100000 = 0.04 Hz
Note:
p4823: Function generator bandwidth
p4830: Function generator time slice clock cycle
See also: p4823 (Function generator bandwidth), p4830 (Function generator time slice cycle)

Remedy: Check the value for the bandwidth and appropriately adapt.

A02047 Function generator: Time slice clock cycle invalid

Reaction: NONE

Acknowledge: NONE

Cause: The time slice cycle selected does not match any of the existing time slices.
See also: p4830 (Function generator time slice cycle)

Remedy: Input an existing time slice cycle. The existing time slices can be read out via p7901.
See also: r7901 (Time slice cycle times)

A02050 Trace: Start not possible

Reaction: NONE

Acknowledge: NONE

Cause: The trace has already been started.
See also: p4700 (Trace control)

Remedy: Stop the trace and, if necessary, start again.

A02055 Trace: Recording time too short

Reaction: NONE

Acknowledge: NONE

Cause: The trace duration is too short.
The minimum is twice the value of the trace clock cycle.
See also: p4721 (Trace recording time)

Remedy: Check the selected recording time and, if necessary, adjust.

A02056 Trace: Recording cycle too short

Reaction: NONE

Acknowledge: NONE

Cause: The selected recording cycle is shorter than the selected basis clock cycle 0 (p0110[0]).
See also: p4720 (Trace recording cycle)

Remedy: Increase the value for the trace cycle.

A02057 Trace: Time slice clock cycle invalid

Reaction: NONE

Acknowledge: NONE

Cause: The time slice cycle selected does not match any of the existing time slices.
See also: p4723 (Time slice cycle for trace)

Remedy: Input an existing time slice cycle. The existing time slices can be read out via p7901.
See also: r7901 (Time slice cycle times)

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A02060 Trace: Signal to be traced missing

Reaction: NONE

Acknowledge: NONE

Cause: - a signal to be traced was not specified.
- the specified signals are not valid.
See also: p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)

Remedy: - specify the signal to be traced.
- check whether the relevant signal can be traced.

A02061 Trace: Invalid signal

Reaction: NONE

Acknowledge: NONE

Cause: - the specified signal does not exist.
- the specified signal can no longer be traced (recorded).
See also: p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)

Remedy: - specify the signal to be traced.
- check whether the relevant signal can be traced.

A02062 Trace: Invalid trigger signal

Reaction: NONE

Acknowledge: NONE

Cause: - a trigger signal was not specified.
- the specified signal does not exist.
- the specified signal is not a fixed-point signal.
- the specified signal cannot be used as trigger signal for the trace.
See also: p4711 (Trace trigger signal)

Remedy: Specify a valid trigger signal.

A02063 Trace: Invalid data type

Reaction: NONE

Acknowledge: NONE

Cause: The specified data type to select a signal using a physical address is invalid.
See also: p4711 (Trace trigger signal), p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)

Remedy: Use a valid data type.

A02070 Trace: Parameter cannot be changed

Reaction: NONE

Acknowledge: NONE

Cause: The trace parameter settings cannot be changed when the trace is active.
See also: p4700 (Trace control), p4710 (Trace trigger condition), p4711 (Trace trigger signal), p4712 (Trace trigger threshold), p4713 (Trace tolerance band trigger threshold), p4714 (Trace tolerance band trigger threshold), p4715 (Trace bit mask trigger, bit mask), p4716 (Trace, bit mask trigger, trigger condition), p4720 (Trace recording cycle), p4721 (Trace recording time), p4722 (Trace trigger delay), p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3), p4780 (Trace physical address signal 0), p4781 (Trace physical address signal 1), p4782 (Trace physical address signal 2), p4783 (Trace physical address signal 3), p4789 (Trace physical address trigger signal), p4795 (Trace memory bank changeover)

Remedy: - stop the trace before parameterization.
- if required, start the trace.

A02075 Trace: Pretrigger time too long

Reaction: NONE

Acknowledge: NONE

Cause: The selected pretrigger time must be shorter than the recording time.
See also: p4721 (Trace recording time), p4722 (Trace trigger delay)

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Remedy: Check the pretrigger time setting and change if necessary.

A02099 Trace: Insufficient Control Unit memory

Reaction: NONE

Acknowledge: NONE

Cause: The memory space still available on the Control Unit is no longer sufficient for the trace function.

Remedy: Reduce the memory required, e.g. as follows:
- reduce the trace (record) time.
- increase the trace clock cycle.
- reduce the number of signals to be traced (recorded).
See also: r4708 (Trace memory space required), r4799 (Trace memory location free)

A02100 CU: Computation deadtime current controller too short

Reaction: NONE

Acknowledge: NONE

Cause: The value in p0118 produces a dead time of one clock cycle because it lies before the setpoint becomes available. A possible cause could be, for example, that the system characteristics no longer match those parameterized after a component has been replaced.
Alarm value (r2134, floating point):
The minimum value for p0118 where a deadtime no longer occurs.

Remedy: - set p0118 to a value greater than or equal to the alarm value.
- set p0117 to an automatic setting.
- check the firmware releases of the components involved.
See also: p0117 (Current controller computation deadtime mode), p0118 (Current controller computation deadtime)

A02150 OA application cannot be loaded

Reaction: NONE

Acknowledge: NONE

Cause: The system was not able to load an OA application.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
See also: r4950 (OA application count), r4955 (OA application identifier), p4956 (OA application activation), r4957 (OA application version)

F02151 (A) OA application, internal software error

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An internal software error has occurred within an OA application.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.
See also: r4950 (OA application count), r4955 (OA application identifier), p4956 (OA application activation), r4957 (OA application version)

Reaction upon A: NONE

Acknowledge upon A: NONE

F02152 (A) OA application, insufficient memory

Reaction: OFF1

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: Two many functions, data sets or drives configured on this Control Unit.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - change the configuration on this Control Unit.
- use an additional Control Unit.
See also: r4950 (OA application count), r4955 (OA application identifier), p4956 (OA application activation), r4957 (OA application version)

Reaction upon A: NONE

Acknowledge upon A: NONE

F03500 (A) TM: Initialization

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: When initializing the Terminal Modules, the terminals of the Control Unit or the Terminal Board 30, an internal software error has occurred.
Fault value (r0949, decimal):
The thousands location = 1 ... 3:
The component number (p0151) of the module involved is specified at the ones, tens and hundreds position.

Remedy: - power-down the power supply for the Control Unit and power-up again.
- check the DRIVE-CLiQ connection.
- if required, replace the Terminal Module.
The Terminal Module should be directly connected to a DRIVE-CLiQ socket of the Control Unit.
If the fault occurs again, replace the Terminal Module.

Reaction upon A: NONE

Acknowledge upon A: NONE

A03501 TM: Sampling time change

Reaction: NONE

Acknowledge: NONE

Cause: The sampling times of the inputs/outputs were changed.
This change only becomes valid after the next boot.

Remedy: Carry-out a POWER ON.

F03505 (N, A) TM: Analog input, wire breakage

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The input current of the TM analog input has exceeded the threshold value parameterized in p4061[x].
This fault can only occur, if p4056[x] = 3 (4 ... 20 mA with monitoring) is set.
Index x = 0: Analog input 0 (X522.1 to .3)
Index x = 1: Analog input 1 (X522.4 to .5)
Fault value (r0949, decimal):
The component number (p0151) of the module involved is specified at the ones, tens and hundreds position.
The thousands position specifies the analog input involved: 0: Analog input 0 (AI 0), 1: Analog input 1 (AI 1)

Remedy: Check the connection to the signal source for interruptions.
Check the magnitude of the impressed current - it is possible that the impressed signal is too low.
Please note that the input has a load resistor of 250 Ohm.
The input current measured by the TM can be read-out of r4052[x].

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

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A03550	**TM: Speed setpoint filter natural frequency > Shannon frequency**
Reaction:	NONE
Acknowledge:	NONE
Cause:	The natural filter frequency of the speed setpoint filter (p1417) is greater than the Shannon frequency. The Shannon frequency is calculated according to the following formula: 0.5 / p0115[0]
Remedy:	Reduce the natural frequency of the speed setpoint filter (PT2 low pass) (p1417).

F03590 (N, A)	**TM: Module not ready**
Reaction:	OFF2 (DCBRAKE, ENCODER, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	The Terminal Module involved does not send a ready signal and no valid cyclic data. Fault value (r0949, decimal): Drive object number.
Remedy:	- check the 24 V power supply. - check the DRIVE-CLiQ connection.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

A05000 (N)	**Power unit: Heatsink overtemperature**
Reaction:	NONE
Acknowledge:	NONE
Cause:	The alarm threshold for overtemperature at the inverter heatsink has been reached. The response is set using p0290. If the temperature of the heatsink increases by an additional 5 K, then fault F30004 is initiated.
Remedy:	Check the following: - is the ambient temperature within the defined limit values? - have the load conditions and the load duty cycle been appropriately dimensioned? - has the cooling failed?
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A05001 (N)	**Power unit: Chip overtemperature**
Reaction:	NONE
Acknowledge:	NONE
Cause:	Alarm threshold for overtemperature of the power semiconductor in the AC converter has been reached. The response is set using p0290. If the chip temperature increases by an additional 15 K, then fault F30025 is initiated.
Remedy:	Check the following: - is the ambient temperature within the defined limit values? - have the load conditions and the load duty cycle been appropriately dimensioned? - has the cooling failed? - pulse frequency too high? See also: r0037 (Power unit temperatures), p0290 (Power unit overload response)
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A05002 (N)	**Power unit: Air intake overtemperature**
Reaction:	NONE
Acknowledge:	NONE

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Cause: The alarm threshold for the air intake overtemperature has been reached. For air-cooled power units, the threshold is 42 degrees Celcius (hysteresis 2 K). The response is set using p0290.
If the air intake temperature increases by an additional 13 K, then fault F30035 is output.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- has the fan failed? Check the direction of rotation.

Reaction upon N: NONE

Acknowledge upon N: NONE

A05003 (N) Power unit: Electronics board overtemperature

Reaction: NONE

Acknowledge: NONE

Cause: The alarm threshold for the overtemperature of the electronics module has been reached. The response is set using p0290.
If the temperature of the electronics module increases by an additional 5 K, then fault F30036 is initiated.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- has the fan failed? Check the direction of rotation.

Reaction upon N: NONE

Acknowledge upon N: NONE

A05004 (N) Power unit: Rectifier overtemperature

Reaction: NONE

Acknowledge: NONE

Cause: The alarm threshold for the overtemperature of the rectifier has been reached. The response is set using p0290.
If the temperature of the rectifier increases by an additional 5 K, then fault F30037 is initiated.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the fan failed? Check the direction of rotation.
- has a phase of the line supply failed?
- is an arm of the supply (incoming) rectifier defective?

Reaction upon N: NONE

Acknowledge upon N: NONE

A05005 Cooling system: Cooling medium flow rate too low

Reaction: NONE

Acknowledge: NONE

Cause: Cooling system: Alarm - flow rate has fallen below the alarm value

Remedy:

F05050 Parallel circuit: Pulse enable in spite of pulse inhibit

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: A power unit signals that the pulses are enabled although the pulses are inhibited.
Fault value (r0949, decimal):
Number of the power unit involved.

Remedy: The power unit is defective and must be replaced.

F05051 Parallel circuit: Power unit pulse enable missing

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

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Cause: For one or several power units, the pulses were not able to be enabled.
Fault value (r0949, decimal):
Number of the power unit involved.

Remedy: - acknowledge power unit faults that are still present.
- inhibit the pulses of the power unit involved (p7001).

A05052 (F) Parallel circuit: Impermissible current dissymmetry

Reaction: NONE

Acknowledge: NONE

Cause: The deviation of the individual currents of the power units exceeds the alarm threshold specified in p7010.
Alarm value (r2124, decimal):
1: Phase U.
2: Phase V.
3: Phase W.

Remedy: - inhibit the pulses of the faulted power unit (p7001).
- check the connecting cables. Loose contacts can cause current spikes.
- the motor reactors are non-symmetrical or faulty and must be replaced.
- the CTs must be calibrated or replaced.

Reaction upon F: NONE (OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

A05053 (F) Parallel circuit: Inadmissible DC link voltage dissymmetry

Reaction: NONE

Acknowledge: NONE

Cause: The deviation of the DC link voltage measured values exceeds the alarm threshold specified in p7011.

Remedy: - inhibit the pulses of the faulted power unit (p7001).
- check the DC link connecting cables.
- the DC link voltage measurement is incorrect and must be calibrated or renewed.

Reaction upon F: NONE (OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

A05054 Parallel circuit: Power unit de-activated

Reaction: NONE

Acknowledge: NONE

Cause: For the drive object involved, fewer power unit components connected in parallel are active than exist in the target topology. Operation is only possible at reduced power (power de-rating).

Remedy: Re-activate the de-activated power unit components.
See also: p0125 (Activate/de-activate power unit components), p0895 (Activate/de-activate power unit components), p0897 (Parking axis selection)

F05055 Power circuit: Power units with different code numbers

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The code numbers of the power units do not match.
Fault value (r0949, decimal):
Parameter in which the first different power unit code number was detected.

Remedy: For parallel circuit configurations, only power units with identical power unit data may be used.

F05056 Parallel circuit: Power unit EPROM versions differ

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The EEPROM versions of the power units do not match.
Fault value (r0949, decimal):
Parameter in which the first different version number was detected.

Remedy: For parallel circuit configurations, only power units with identical EEPROM versions may be used.

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F05057 **Parallel circuit: Power unit firmware versions differ**

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The firmware versions of the power units connected in parallel do not match.
Fault value (r0949, decimal):
Parameter in which the first different version number was detected.

Remedy: For parallel circuit configurations, only power units with identical firmware versions may be used.

F05058 **Parallel circuit: VSM EEPROM versions differ**

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The EEPROM versions of the Voltage Sensing Modules (VSM) do not match.
Fault value (r0949, decimal):
Parameter in which the first different version number was detected.

Remedy: For parallel circuit configurations, only Voltage Sensing Modules (VSM) with identical EEPROM versions may be used.

F05059 **Parallel circuit: VSM firmware versions differ**

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The firmware versions of the Voltage Sensing Modules (VSM) do not match.
Fault value (r0949, decimal):
Parameter in which the first different version number was detected.

Remedy: For parallel circuit configurations, only Voltage Sensing Modules (VSM) with identical firmware versions may be used.

F05060 **Parallel circuit: Power unit firmware version does not match**

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Firmware from version V02.30.01.00 is required when connecting the power units in parallel.

Remedy: Update the firmware of the power units (at least V02.30.01.00).

F05061 **Infeed, number of VSM**

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The number of active Voltage Sensing Modules (VSM) for the drive object infeed with chassis power units is not correct.
For A_Infeed, each active power unit must be assigned an active VSM also for a parallel circuit configuration.
For S_Infeed, the active drive object, must be assigned at least one active VSM.
Fault value (r0949, decimal):
Number of VSMs that are currently assigned to the drive object.

Remedy: Adapts the number of active Voltage Sensing Modules (VSM).

F07011 **Drive: Motor overtemperature**

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

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Cause: KTY:
The motor temperature has exceeded the fault threshold (p0605) or the timer stage (p0606) after the alarm threshold was exceeded (p0604) has expired.
VECTOR: The response parameterized in p0610 becomes active.
PTC:
The response threshold of 1650 Ohm was exceeded and the timer stage (p0606) has expired.
VECTOR: The response parameterized in p0610 becomes active.
Possible causes:
- motor is overloaded.
- motor ambient temperature too high.
- wire breakage or sensor not connected
Fault value (r0949, decimal), if SME is selected in p0601 (p0601=10):
The number specifies the sensor channel that resulted in the alarm being output.
See also: p0604 (Motor overtemperature alarm threshold), p0605 (Motor overtemperature fault threshold), p0606 (Motor overtemperature timer), p0610 (Response to motor overtemperature condition)

Remedy: - reduce the motor load.
- check the ambient temperature.
- check the wiring and sensor connector.
See also: p0604 (Motor overtemperature alarm threshold), p0605 (Motor overtemperature fault threshold), p0606 (Motor overtemperature timer)

A07015 Drive: Motor temperature sensor alarm

Reaction: NONE

Acknowledge: NONE

Cause: An error was detected when evaluating the temperature sensor set in p0600 and p0601.
With the fault, the time in p0607 is started. If the fault is still present after this time has expired, then fault F07016 is output; however, at the earliest, 1 s after alarm A07015.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 1630 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Alarm value (r2124, decimal), if SME is selected in p0601 (p0601=10):
The number specifies the sensor channel that resulted in the alarm being output.

Remedy: - check that the sensor is connected correctly.
- check the parameterization (p0600, p0601).
See also: r0035 (Motor temperature), p0600 (Motor temperature sensor for monitoring), p0601 (Motor temperature sensor type), p0607 (Temperature sensor fault timer)

F07016 Drive: Motor temperature sensor fault

Reaction: OFF1 (NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: An error was detected when evaluating the temperature sensor set in p0600 and p0601.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 1630 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Note:
If alarm A07015 is present, the time in p0607 is started. If the fault is still present after this time has expired, then fault F07016 is output; however, at the earliest, 1 s after alarm A07015.
Fault value (r0949, decimal), if SME is selected in p0601 (p0601=10):
The number specifies the sensor channel that resulted in the alarm being output.
See also: p0607 (Temperature sensor fault timer)

Remedy: - check that the sensor is connected correctly.
- check the parameterization (p0600, p0601).
- induction motors: De-activate temperature sensor fault (p0607 = 0).
See also: r0035 (Motor temperature), p0600 (Motor temperature sensor for monitoring), p0601 (Motor temperature sensor type), p0607 (Temperature sensor fault timer)

F07080 Drive: Incorrect control parameter

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The closed-loop control parameters have been parameterized incorrectly (e.g. p0356 = L_spread = 0).
Fault value (r0949, decimal):
The fault value includes the parameter number involved.
The following parameter numbers only occur as fault values for vector drives:
p0310, for synchronous motors: p0341, p0344, p0350, p0357
The following parameter numbers do not occur as fault values for synchronous motors:
p0354, p0358, p0360
See also: p0310 (Rated motor frequency), p0311 (Rated motor speed), p0341 (Motor moment of inertia), p0344 (Motor weight), p0350 (Motor stator resistance, cold), p0354 (Motor rotor resistance cold / damping resistance d axis), p0356 (Motor stator leakage inductance), p0357 (Motor stator inductance, d axis), p0358 (Motor rotor leakage inductance / damping inductance, d axis), p0360 (Motor magnetizing inductance/magn. inductance, d axis saturated), p0400 (Enc type selection), p0640 (Current limit), p1082 (Maximum speed), p1300 (Open-loop/closed-loop control operating mode)

Remedy: Modify the parameter indicated in the fault value (r0949) (e.g. p0640 = current limit > 0).
See also: p0311 (Rated motor speed), p0341 (Motor moment of inertia), p0344 (Motor weight), p0350 (Motor stator resistance, cold), p0354 (Motor rotor resistance cold / damping resistance d axis), p0356 (Motor stator leakage inductance), p0358 (Motor rotor leakage inductance / damping inductance, d axis), p0360 (Motor magnetizing inductance/magn. inductance, d axis saturated), p0400 (Enc type selection), p0640 (Current limit), p1082 (Maximum speed)

F07082 Macro: Execution not possible

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The macro cannot be executed.
Fault value (r0949, interpret hexadecimal):
The fault code is in byte 1, possibly supplementary information is in byte 2 and the high word contains the parameter number involved if this is available.
Fault codes:
Fault for the trigger parameter itself:
-20: Called file is not valid for parameter 15.
-21: Called file is not valid for parameter 700.
-22: Called file is not valid for parameter 1000.
-23: Called file is not valid for parameter 1500.
-24: Data type of a TAG is incorrect (e.g.: Index, number or bit is not U16).
Faults for the parameters to be set:
-25: Error level has an undefined value.
-26: Mode has an undefined value.
-27: A value was entered as string in the tag value that is not "DEFAULT".
-31: Entered drive object type unknown.
-32: A device was not able to be found for the determined drive object number.
-34: A trigger parameter was recursively called.
-35: It is not permissible to write to the parameter via macro.
-36: Check, writing to a parameter unsuccessful, parameter can only be read, not available, incorrect data type, value range or assignment incorrect.
-37: Source parameter for a BICO interconnection was not able to be determined.
-38: An index was set for a non-indexed parameter.
-39: No index was set for an indexed parameter.
-41: A bit operation is only permissible for parameters with the parameter format DISPLAY_BIN.
-42: A value not equal to 0 or 1 was set for a BitOperation.
-43: Reading the parameter to be changed by the BitOperation was unsuccessful.
-51: Factory setting for DEVICE may only be executed on the DEVICE.
-61: The setting of a value was unsuccessful.

Remedy: - check the parameter involved.
- check the macro file and BICO interconnection.
See also: p0015 (Macro drive unit), p0700 (Macro Binector Input (BI)), p1000 (Macro Connector Inputs (CI) for speed setpoints), p1500 (Macro Connector Inputs (CI) for torque setpoints)

F07083 Macro: ACX file not found

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: The ACX file (macro) to be executed was not able to be found in the appropriate directory.
Fault value (r0949, decimal):
Parameter number with which the execution was started.
See also: p0015 (Macro drive unit), p0700 (Macro Binector Input (BI)), p1000 (Macro Connector Inputs (CI) for speed setpoints), p1500 (Macro Connector Inputs (CI) for torque setpoints)

Remedy: - check whether the file is saved in the appropriate directory on the CompactFlash card.
Example:
If p0015 is set to 1501, then the selected ACX file must be located in the following directory:
... /PMACROS/DEVICE/P15/PM001501.ACX

F07084 Macro: Condition for WaitUntil not fulfilled

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The wait condition set in the macro was not fulfilled in a certain number of attempts.
Fault value (r0949, decimal):
Parameter number for which the condition was set.

Remedy: Check and correct the conditions for the WaitUntil loop.

F07085 Drive: Open-loop/closed-loop control parameters changed

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Parameters of the open-loop/closed-loop control had to be changed as they exceeded dynamic limits as a result of other parameters.
Fault value (r0949, decimal):
The fault value includes the modified parameter number.
See also: p0640 (Current limit), p1082 (Maximum speed), p1300 (Open-loop/closed-loop control operating mode), p1800 (Pulse frequency)

Remedy: It is not necessary to change the parameters as they have already been correctly limited.

F07086 Units changeover: Calculating parameter values after an int. system ref. value change unsuccessful

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A reference parameter was changed in the system. This resulted in the fact that for the parameter involved, the selected value was not able to be written in the per unit notation (cause, e.g. the minimum or maximum limit was violated). The value of this parameter was set to default.
Fault value (r0949, parameter):
Parameter involved that was not able to be recalculated.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference speed reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

Remedy: Check, and if required, correct the adapted parameter value.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference speed reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

F07100 Drive: Sampling times cannot be reset

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When resetting drive parameter (p0976) sampling times cannot be reset using p0111, p0112, p0115.
Fault value (r0949, decimal):
Parameter whose setting prevents the sampling times being reset.
See also: r0110 (DRIVE-CLiQ basis sampling times)

Remedy: - continue to work with the set sampling times.
- before resetting the drive parameters, set the basic clock cycle p0110[0] to the original value.
See also: r0110 (DRIVE-CLiQ basis sampling times)

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F07110	**Drive: Sampling times and basic clock cycle do not match**
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	The parameterized sampling times do not match the basic clock cycle. Fault value (r0949, decimal): The fault value specifies the parameter involved. See also: r0110 (DRIVE-CLiQ basis sampling times), r0111 (DRIVE-CLiQ basis sampling time selection), p0115 (Sampling time for supplementary functions)
Remedy:	Enter the current controller sampling times so that they are identical to the basic clock cycle, e.g. by selecting p0112. Note which basic clock cycle is selected in p0111. The sampling times in p0115 can only be changed manually in the sampling times preset "Expert" (p0112). See also: r0110 (DRIVE-CLiQ basis sampling times), r0111 (DRIVE-CLiQ basis sampling time selection), p0112 (Sampling times pre-setting p0115), p0115 (Sampling time for supplementary functions)

A07200	**Drive: Master control ON/OFF1 command present**
Reaction:	NONE
Acknowledge:	NONE
Cause:	The ON/OFF1 command is not 0, either via binector input p0840 (current CDS) or in control word p3982 bit 0.
Remedy:	The signal at binector input p0840 (actual CDS) as well as p3982 bit 0 must be 0.

F07210	**Master control PC/AOP inhibited**
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	The transfer of master control is disabled via binector input p3985.
Remedy:	Change the signal via binector input p3985.

F07220 (N, A)	**Drive: Control by PLC missing**
Reaction:	OFF1 (NONE, OFF2, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY
Cause:	The "control by PLC" signal was missing in operation. - interconnection of the binector input for "control by PLC" is incorrect (p0854). - the higher-level control has withdrawn the "control by PLC" signal. - data transfer via the fieldbus (master - drive) was interrupted.
Remedy:	- check the interconnection of the binector input for "control by PLC" (p0854). - check the "control by PLC" signal and, if required, switch-in. - check the data transfer via the fieldbus (master - drive). Note: If the drive should continue to operate after withdrawing "control by PLC" then fault response must be parameterized to NONE or the message type should be parameterized as alarm.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F07300 (A)	**Drive: Line contactor feedback signal missing**
Reaction:	OFF2 (NONE)
Acknowledge:	IMMEDIATELY
Cause:	- the line contactor was not able to be closed within the time in p0861. - the line contactor was not able to be opened within the time in p0861. - the line contactor has dropped-out in operation. - the line contactor has closed although the drive converter is powered-down.
Remedy:	- check the setting of p0860. - check the feedback circuit from the line contactor. - increase the monitoring time in p0861. See also: p0860 (Line cont. fdbk sig), p0861 (Line contactor monitoring time)

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Reaction upon A: NONE
Acknowledge upon A: NONE

F07311 Bypass motor switch

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Fault value: Bit field BYPASS_CONTACTOR_ERROR_STATE
Bit 1
BYPASS_CONTACTOR_ERR_FBK_ON_MISSING
Switch "closed" feedback signal missing
Bit 2
BYPASS_CONTACTOR_ERR_FBK_OFF_MISSING
Switch "opened" feedback signal missing
Bit 3
BYPASS_CONTACTOR_ERR_TOO_SLOW
Switch feedback signal too slow:
After switching, the system waits for the positive feedback signal. If the feedback signal is received later than the specified time, then a fault trip (shutdown) is issued.
Bit 6
BYPASS_CONTACTOR_ERR_BYPASS_INCONSISTENCY
Drive switch feedback signal is not consistent with the bypass state:
When powering-up or for STAGING, the drive switch is closed.
See also: p1260 (Bypass configuration), r1261 (Bypass control/status word), p1266 (Bypass, control command), p1267 (Bypass changeover source configuration), p1269 (Bypass switch feedback signal), p1274 (Bypass switch monitoring time)
Remedy: - check the transfer of the feedback signal.
- check the switch

F07312 Bypass line supply switch

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Fault value: Bit field BYPASS_CONTACTOR_ERROR_STATE
Bit 1
BYPASS_CONTACTOR_ERR_FBK_ON_MISSING
Switch "closed" feedback signal missing
Bit 2
BYPASS_CONTACTOR_ERR_FBK_OFF_MISSING
Switch "opened" feedback signal missing
Bit 3
BYPASS_CONTACTOR_ERR_TOO_SLOW
Switch feedback signal too slow:
After switching, the system waits for the positive feedback signal. If the feedback signal is received later than the specified time, then a fault trip (shutdown) is issued.
Bit 6
BYPASS_CONTACTOR_ERR_BYPASS_INCONSISTENCY
Line switch feedback signal is not consistent with the bypass state:
When powering-up or for STAGING, the line switch is closed without this having been requested from the bypass.
See also: p1260 (Bypass configuration), r1261 (Bypass control/status word), p1266 (Bypass, control command), p1267 (Bypass changeover source configuration), p1269 (Bypass switch feedback signal), p1274 (Bypass switch monitoring time)
Remedy: - check the transfer of the feedback signal.
- check the switch

F07320 Drive: Automatic restart interrupted

Reaction: OFF2
Acknowledge: IMMEDIATELY

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Cause: - The specified number of restart attempts (p1211) has been completely used up because within the monitoring time p1213 the alarms were not able to be acknowledged. The number of restart attempts (p1211) is decremented at each new start attempt.
- there is no active ON command.
- the monitoring time for the power unit (p0857) has expired.
- when exiting commissioning or at the end of the motor identification routine or the speed controller optimization, the drive unit is not automatically powered-up again.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - increase the number of restart attempts (p1211). The actual number of starting attempts is displayed in r1214.
- increase the delay time in p1212 and/or the monitoring time in p1213.
- issue an ON command (p0840).
- either increase or disable the monitoring time of the power unit (p0857).

A07321 Drive: Automatic restart active

Reaction: NONE

Acknowledge: NONE

Cause: The automatic restart (AR) is active. When the line supply returns and/or the causes of the existing faults are removed the drive is automatically restarted. The pulses are enabled and the motor starts to rotate.

Remedy: - the automatic restart (AR) should, if required, be inhibited (p1210 = 0).
- an automatic restart can be directly interrupted by withdrawing the power-on command (BI: p0840).

F07330 Flying restart: Measured search current too low

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: During a flying restart, it was identified that the search current reached is too low.
It is possible that the motor is not connected.

Remedy: Check the motor feeder cables.

F07331 FlyRestart: Not supported

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: It is not possible to power-up with the motor rotating (no flying restart). In the following cases, the "flying restart" function is not supported:
Permanent-magnet and separately-excited synchronous motors (PEM, FEM): Operation with U/f characteristic.
Permanent-magnet synchronous motor (PEM): Sensorless operation without a Voltage Sensing Module (VSM) being connected.

Remedy: - de-activate the "flying restart" function (p1200 = 0).
- change the open-loop/closed-loop control mode (p1300).
- connect a Voltage Sensing Module (VSM) (voltage measurement).

A07350 (F) Drive: Measuring probe parameterized to a digital output

Reaction: NONE

Acknowledge: NONE

Cause: The measuring probe is connected to a bi-directional digital input/output and the terminal is set as output.
Alarm value (r2124, decimal):
9: DI/DO 9 (X122.8)
10: DI/DO 10 (X122.10)
11: DI/DO 11 (X122.11)
13: DI/DO 13 (X132.8)
14: DI/DO 14 (X132.10)
15: DI/DO 15 (X132.11)

Remedy: - set the terminal as input (p0728).
- de-select the measuring probe (p0488, p0489, p0580).

Reaction upon F: OFF1

Acknowledge upon F: IMMEDIATELY

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A07400 (N) Drive: DC link voltage maximum controller active

Reaction: NONE

Acknowledge: NONE

Cause: The DC link voltage controller has been activated because the upper switch-in threshold has been exceeded (r1242). The ramp-down times are automatically increased in order to maintain the DC link voltage (r0026) within the permissible limits. There is a system deviation between the setpoint and actual speeds.
When the DC link voltage controller is switched-out (disabled), this is the reason that the ramp-function generator output is set to the speed actual value.
See also: p1240 (Vdc controller configuration)

Remedy: If the controller is not to intervene:
- increase the ramp-down times.
- disable the Vdc max controller
If the ramp-down times are not to be changed:
- use a chopper or regenerative feedback unit

Reaction upon N: NONE

Acknowledge upon N: NONE

A07401 (N) Drive: DC link voltage maximum controller de-activated

Reaction: NONE

Acknowledge: NONE

Cause: The Vdc_max controller can no longer maintain the DC link voltage (r0026) below the limit value (r1242) and was therefore switched-out (disabled).
- the line supply voltage is permanently higher than specified for the power unit.
- the motor is permanently in the regenerative mode as a result of a load that is driving the motor.

Remedy: - check whether the input voltage is within the permissible range.
- check whether the load duty cycle and load limits are within the permissible limits.

Reaction upon N: NONE

Acknowledge upon N: NONE

A07402 (N) Drive: DC link voltage minimum controller active

Reaction: NONE

Acknowledge: NONE

Cause: The DC link voltage controller has been activated as the lower switch-in threshold has been fallen below (r1246). The kinetic energy of the motor is used in order to buffer the DC link. This brakes the drive.
See also: p1240 (Vdc controller configuration)

Remedy: The alarm disappears when power supply returns.

Reaction upon N: NONE

Acknowledge upon N: NONE

F07405 (N, A) Drive: Kinetic buffering minimum speed not reached

Reaction: OFF2 (DCBRAKE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: During kinetic buffering the speed fell below minimum speed (p1257) and the line supply did not return.

Remedy: Check the speed threshold for the Vdc_min controller (kinetic buffering) (p1257).
See also: p1257 (Vdc_min controller speed threshold)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

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F07406 (N, A) Drive: Kinetic buffering maximum time exceeded

Reaction: OFF3 (DCBRAKE, OFF1, OFF2, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The maximum buffer time (p1255) has been exceeded but the line supply has not returned.

Remedy: Check the time threshold for Vdc-min controller (kinetic buffering) (p1255).
See also: p1255 (Vdc_min controller time threshold)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A07409 Drive: U/f control, current limiting controller active

Reaction: NONE

Acknowledge: NONE

Cause: The current limiting controller of the U/f control was activated because the current limit was exceeded.

Remedy: The alarm is automatically withdrawn when increasing the current limit (p0640), reducing the load or using a slower up ramp for the setpoint (reference) speed.

F07410 Drive: Current controller output limited

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: The condition "I_act = 0 and Uq_set_1 longer than 16 ms at its limit" is present and can be caused by the following:
- motor not connected or motor contactor open.
- no DC link voltage present.
- Motor Module defective.
- the "flying restart" function is not activated.

Remedy:
- connect the motor or check the motor contactor.
- check the DC link voltage (r0070).
- check the Motor Module.
- activate the "flying restart" function (p1200).

F07412 Drive: Commutation angle incorrect (motor model)

Reaction: ENCODER (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: An incorrect commutation angle was detected, that can result in a positive coupling in the speed controller.
Servo:
Supplementary value 0: The comparison of the pole position angle from the encoder and the motor model resulted in an excessively high value (> 80 ° electrical).
Supplementary value 1: -
Vector:
Supplementary value 0: The comparison of the pole position angle from the encoder and the motor model resulted in an excessively high value (> 45 ° electrical).
Supplementary value 1: The change in the speed signal from the motor encoder has changed by > P0492 within a current controller clock cycle.
Possible causes:
- the motor encoder is incorrectly adjusted with respect to the magnet position.
- the motor encoder is damaged.
- the angular commutation offset is incorrectly set (p0431).
- data to calculate the motor model has been incorrectly set (p0356 (motor-stator leakage inductance) and/or p0350 (motor-stator resistance) and/or p0352 (cable resistance).
- the changeover speed for the motor model is too low (p1752). The monitoring function only becomes effective above the changeover speed.
- the motor encoder speed signal is faulted.
- the control loop is instable due to incorrect parameterization.

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Remedy: - if the encoder mounting was changed - re-adjust the encoder.
- replace the defective motor encoder.
- correctly set the angular commutation offset (p0431).
- correctly set the motor stator leakage inductance, motor-stator resistance and cable resistance (p0356, p0350, p0352).
- increase the changeover speed for the motor model (p1752).

F07413 Drive: Commutation angle incorrect (pole position identification)

Reaction: ENCODER (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: An incorrect commutation angle was detected, that can result in a positive coupling in the speed controller.
- within the pole position identification routine (p1982 = 2):
A difference of > 45° electrical to the encoder angle was determined.
- for VECTOR, within the encoder adjustment (p1990 = 2):
A difference of > 6 ° electrical to the encoder angle was determined.

Remedy: - correctly set the angular commutation offset (p0431).
- re-adjust the motor encoder after the encoder has been replaced.
- replace the defective motor encoder.
- check the pole position identification routine. If the pole position identification routine is not suitable for this motor type, then disable the plausibility check (p1982 = 0).

F07422 Drive: Reference model natural frequency > Shannon frequency

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The natural filter frequency of the PT2 element for the reference model (p1433) is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[1]

Remedy: - reduce the natural frequency of PT2 element for reference model (p1433).
- reduce the speed controller sampling time (p0115[1]).

F07434 Drive: It is not possible to change the direction using p1821 with the pulses enabled

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A drive data set was selected - with the pulses enabled - that has a different parameterized direction (p1821). It is only possible to change the motor direction using p1821 when the pulses are inhibited.

Remedy: - change over the drive data set with the pulses inhibited.
- ensure that the changeover to a drive data set does not result in the motor direction of rotation being reversed (i.e. for these drive data sets, the same value must be in p1821).
See also: p1821 (Direction reversal)

F07435 (N) Drive: Setting the ramp-function generator for sensorless vector control

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: Only for vector drives (refer to r0107):
During operation with sensorless vector control (r1407 bit1), the ramp-function generator was held (p1141) or bypassed (p1122) so that an internal setting command of the ramp-function generator output caused the speed setpoint to be frozen or was not able to be implemented.

Remedy: - de-activate the holding command for the ramp-function generator (p1141).
- do not bypass the ramp-function generator (p1122).
- suppress the fault message (p2101, p2119). This is necessary if the ramp-function generator is held using jogging and the speed setpoint is simultaneously inhibited (0898 bit 6).
Note:
For sensorless vector control it is not practical to read-in the main setpoint of the speed control via p1155 or p1160 (also refer to p0922). In this case, the main setpoint should be injected before the ramp-function generator (refer to p1070). The reason for this is that the ramp-function generator output is automatically set when transitioning from closed-loop speed controlled into open-loop speed controlled operation.

Reaction upon N: NONE

Acknowledge upon N: NONE

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F07450 LR: Standstill monitoring has responded

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: After the standstill monitoring time (p2543) expired, the drive left the standstill window (p2542).
- position actual value inversion incorrectly set (p0410).
- standstill window set too small (p2542).
- standstill monitoring time set too low (p2543).
- position loop gain too low (p2538).
- position loop gain too high (instability/oscillation, p2538).
- mechanical overload.
- check the connecting cable, motor/drive converter (phase missing, interchange).
- when selecting motor identification, select tracking operation (BI: p2655[0] = 1 signal).
- when selecting function generator, select tracking operation (BI: p2655[0] = 1 signal) and de-activate position control (BI:p2550 = 0 signal).

Remedy: Check the causes and resolve.

F07451 LR: Position monitoring has responded

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When the position monitoring time (p2545) expired, the drive had still not reached the positioning window (p2544).
- positioning window parameterized too small (p2544).
- position monitoring time parameterized too short (p2545).
- position loop gain too low (p2538).
- position loop gain too high (instability/oscillation, p2538).
- drive mechanically locked.

Remedy: Check the causes and resolve.

F07452 (A) LR: Following error too high

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The difference between the position setpoint position actual value (following error dynamic model, r2563) is greater than the tolerance (p2546).
- the drive torque or accelerating capacity exceeded.
- position measuring system fault.
- position control sense incorrect.
- mechanical system locked.
- excessively high traversing velocity or excessively high position reference value (setpoint) differences

Remedy: Check the causes and resolve.

Reaction upon A: NONE

Acknowledge upon A: NONE

F07453 LR: Position actual value conditioning error

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: An error has occurred during the position actual value conditioning.

Remedy: Check the encoder for the position actual value conditioning.
See also: p2502 (LR encoder assignment)

A07454 EPOS: Position actual value conditioning does not have a valid encoder

Reaction: NONE

Acknowledge: NONE

Cause: One of the following problems has occurred with the position actual value conditioning:
- an encoder is not assigned for the position actual value conditioning (p2502 = 0).
- an encoder is assigned, but no encoder data set (p0187 = 99 or p0188 = 99 or p0189 = 99).
- an encoder an an encoder data set have been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

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Remedy: Check the drive data sets, encoder data sets and encoder assignment.
See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number), p0400 (Enc type selection), p2502 (LR encoder assignment)

A07455 EPOS: Maximum velocity limited

Reaction: NONE

Acknowledge: NONE

Cause: The maximum velocity (p2571) is too high to correctly calculate the modulo correction.
Within the sampling time for positioning (p0115[5]), with the maximum velocity, a maximum of the half modulo length must be moved through. p2571 was limited to this value.

Remedy: - reduce the maximum velocity (p2571).
- increase the sampling time for positioning (p0115[5]).

A07456 EPOS: Setpoint velocity limited

Reaction: NONE

Acknowledge: NONE

Cause: The actual setpoint velocity is greater than the parameterized maximum velocity (p2571) and is therefore limited.

Remedy: - check the entered setpoint velocity.
- reduce the velocity override (CI: p2646).
- increase the maximum velocity (p2571).

A07457 EPOS: Combination of input signals illegal

Reaction: NONE

Acknowledge: NONE

Cause: An illegal combination of input signals that are simultaneously set was identified.
Alarm value (r2124, decimal):
0: Jogging 1 and jogging 2 (p2589, p2590).
1: Jogging 1 or jogging 2 and direct setpoint input/MDI (p2589, p2590, p2647).
2: Jogging 1 or jogging 2 and start referencing (p2589, p2590, p2595).
3: Jogging 1 or jogging 2 and activate traversing task (p2589, p2590, p2631).
4: Direct setpoint input/MDI and starting referencing (p2647, p2595).
5: Direct setpoint input/MDI and activate traversing task (p2647, p2631).
6: Start referencing and activate traversing task (p2595, p2631).

Remedy: Check the appropriate input signals and correct.

F07458 EPOS: Reference cam not found

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: After starting the search for reference, the axis moved through the maximum permissible distance to search for the reference cam without actually finding the reference cam.

Remedy: - check the "reference cam" binector input (BI: p2612).
- check the maximum permissible distance to the reference cam (p2606).
- if axis does not have any reference cam, then set p2607 to 0.
See also: p2606 (EPOS search for reference, reference cam, maximum distance), p2607 (EPOS search for reference, reference cam present), p2612 (EPOS search for reference, reference cam)

F07459 EPOS: No zero mark

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: After leaving the reference cam, the axis has traversed the maximum permissible distance between the reference cam and zero mark without finding the zero mark.

Remedy: - check the encoder regarding the zero mark
- check the maximum permissible distance between the reference cam and zero mark (p2609).
- use an external encoder zero mark (equivalent zero mark) (p0495).
See also: p0495 (Equivalent zero mark, input terminal), p2609 (EPOS search for reference, max. distance ref. cam and zero mark)

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F07460 **EPOS: End of reference cam not found**

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: During the search for reference, when the axis reached the zero mark it also reached the end of the traversing range without detecting an edge at the binector input "reference cam" (BI: p2612).
Maximum traversing range: -2147483648 [LU] ... -2147483647 [LU]

Remedy: - check the "reference cam" binector input (BI: p2612).
- repeat the search for reference.
See also: p2612 (EPOS search for reference, reference cam)

A07461 **EPOS: Reference point not set**

Reaction: NONE

Acknowledge: NONE

Cause: When starting a traversing block, a reference point is not set (r2684.11 = 0).

Remedy: Reference the system (search for reference, flying referencing, set reference point).

A07462 **EPOS: Selected traversing block number does not exist**

Reaction: NONE

Acknowledge: NONE

Cause: A traversing block was selected using an edge of the binector input "activate traversing block (0 -> 1)" (BI: p2631) and is not available.
Alarm value (r2124, decimal):
Number of the selected traversing block that is also not available.

Remedy: - correct the traversing program.
- select an available traversing block number.

F07464 **EPOS: Traversing block is inconsistent**

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The traversing block does not contain valid information.
Alarm value (r2124, decimal):
Number of the traversing block with invalid information.

Remedy: Check the traversing block and where relevant, take into consideration alarms that are present.

A07465 **EPOS: Traversing block does not have a subsequent block**

Reaction: NONE

Acknowledge: NONE

Cause: There is no subsequent block in the traversing block.
Alarm value (r2124, decimal):
Number of the traversing block with the missing subsequent block.

Remedy: - parameterize this traversing block with the block change enable END.
- parameterize additional traversing blocks with a higher block number and for the last block, using the block change enable END.

A07466 **EPOS: Traversing block number assigned a multiple number of times**

Reaction: NONE

Acknowledge: NONE

Cause: The same traversing block number was assigned a multiple number of times.
Alarm value (r2124, decimal):
Number of the traversing block that was assigned a multiple number of times.

Remedy: Correct the traversing blocks.

A07467 **EPOS: Traversing block has illegal task parameters**

Reaction: NONE

Acknowledge: NONE

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Cause: The task parameter in the traversing block contains an illegal value.
Alarm value (r2124, decimal):
Number of the traversing block with an illegal task parameter.

Remedy: Correct the task parameter in the traversing block.

A07468 EPOS: Traversing block jump destination does not exist

Reaction: NONE

Acknowledge: NONE

Cause: In a traversing block, a jump was programmed to a non-existent block.
Alarm value (r2124, decimal):
Number of the traversing block with a jump destination that does not exist.

Remedy: - correct the traversing block.
- add the missing traversing block.

A07469 EPOS: Traversing block < target position < software limit switch minus

Reaction: NONE

Acknowledge: NONE

Cause: In the traversing block the specified absolute target position lies outside the range limited by the software limit switch minus.
Alarm value (r2124, decimal):
Number of the traversing block with illegal target position.

Remedy: - correct the traversing block.
- change software limit switch minus (CI: p2578, p2580).

A07470 EPOS: Traversing block> target position > software limit switch plus

Reaction: NONE

Acknowledge: NONE

Cause: In the traversing block the specified absolute target position lies outside the range limited by the software limit switch plus.
Alarm value (r2124, decimal):
Number of the traversing block with illegal target position.

Remedy: - correct the traversing block.
- change software limit switch plus (CI: p2579, p2581).

A07471 EPOS: Traversing block target position outside the modulo range

Reaction: NONE

Acknowledge: NONE

Cause: In the traversing block the target position lies outside the modulo range.
Alarm value (r2124, decimal):
Number of the traversing block with illegal target position.

Remedy: - in the traversing block, correct the target position.
- change the modulo range (p2576).

A07472 EPOS: Traversing block ABS_POS/ABS_NEG not possible

Reaction: NONE

Acknowledge: NONE

Cause: In the traversing block the positioning mode ABS_POS or ABS_NEG were parameterized with the modulo correction not activated.
Alarm value (r2124, decimal):
Number of the traversing block with the illegal positioning mode.

Remedy: Correct the traversing block.

A07473 (F) EPOS: Beginning of traversing range reached

Reaction: NONE

Acknowledge: NONE

Cause: When traversing, the axis has moved to the traversing range limit.

Remedy: Move away in the positive direction.

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Reaction upon F: OFF1 (OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY

A07474 (F) EPOS: End of traversing range reached

Reaction: NONE
Acknowledge: NONE
Cause: When traversing, the axis has moved to the traversing range limit.
Remedy: Move away in the negative direction.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY

F07475 (A) EPOS: Target position < start of traversing range

Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The target position for relative traversing lies outside the traversing range.
Remedy: Correct the target position.
Reaction upon A: NONE
Acknowledge upon A: NONE

F07476 (A) EPOS: Target position > end of the traversing range

Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The target position for relative traversing lies outside the traversing range.
Remedy: Correct the target position.
Reaction upon A: NONE
Acknowledge upon A: NONE

A07477 (F) EPOS: Target position < software limit switch minus

Reaction: NONE
Acknowledge: NONE
Cause: In the actual traversing operation, the target position is less than the software limit switch minus.
Remedy: - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also: p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY

A07478 (F) EPOS: Target position > software limit switch plus

Reaction: NONE
Acknowledge: NONE
Cause: In the actual traversing operation, the target position is greater than the software limit switch plus.
Remedy: - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also: p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY

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A07479 EPOS: Software limit switch minus reached

Reaction: NONE

Acknowledge: NONE

Cause: The axis is at the position of the software limit switch minus. An active traversing block was interrupted.

Remedy: - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also: p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

A07480 EPOS: Software limit switch plus reached

Reaction: NONE

Acknowledge: NONE

Cause: The axis is at the position of the software limit switch plus. An active traversing block was interrupted.

Remedy: - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also: p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

F07481 (A) EPOS: Axis position < software limit switch minus

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The actual position of the axis is less than the position of the software limit switch minus.

Remedy: - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also: p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

Reaction upon A: NONE

Acknowledge upon A: NONE

F07482 (A) EPOS: Axis position > software limit switch plus

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The actual position of the axis is greater than the position of the software limit switch plus.

Remedy: - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also: p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

Reaction upon A: NONE

Acknowledge upon A: NONE

A07486 EPOS: Intermediate stop missing

Reaction: NONE

Acknowledge: NONE

Cause: In the modes "traversing blocks" or "direct setpoint input/MDI" at the start of motion, the binector input "no intermediate stop/intermediate stop" (BI: p2640) did not have a 1 signal.

Remedy: Connect a 1 signal to the binector input "no intermediate stop/intermediate stop" (BI: p2640) and re-start motion.

A07487 EPOS: Reject traversing task missing

Reaction: NONE

Acknowledge: NONE

Cause: In the modes "traversing blocks" or "direct setpoint input/MDI" at the start of motion, the binector input "do not reject traversing task/reject traversing task" (BI: p2641) does not have a 1 signal.

Remedy: Connect a 1 signal to the binector input "do not reject traversing task/reject traversing task" (BI: p2641) and re-start motion.

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F07488	**EPOS: Relative positioning not possible**
Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	In the mode "direct setpoint input/MDI", for continuous transfer (p2649 = 1) relative positioning was selected (BI: p2648 = 0 signal).
Remedy:	Check the control.

A07489	**EPOS: Reference point correction (offset) outside the window**
Reaction:	NONE
Acknowledge:	NONE
Cause:	For the function "flying referencing" the difference between the measured position at the measuring probe and the reference point coordinate lies outside the parameterized window.
Remedy:	- check the mechanical system. - check the parameterization of the window (p2602).

F07490	**EPOS: Enable signal withdrawn while traversing**
Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	- for a standard assignment, another fault may have occurred as a result of withdrawing the enable signals. - the drive is in the "power-on inhibit" state (for a standard assignment).
Remedy:	- set the enable signals or check the cause of the fault that first occurred and then result (for a standard assignment). - check the assignment to enable the basic positioning function.

F07491 (A)	**EPOS: STOP cam minus reached**
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	A zero signal was detected at binector input BI: p2569, i.e. the STOP cam minus was reached.
Remedy:	Leave the STOP cam minus in the positive traversing direction and return the axis to the valid traversing range.
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F07492 (A)	**EPOS: STOP cam plus reached**
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	A zero signal was detected at binector input BI: p2570, i.e. the STOP cam plus was reached.
Remedy:	Leave the STOP cam plus in the negative traversing direction and return the axis to the valid traversing range.
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F07493	**LR: Overflow of the value range for the position actual value**
Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded. When the overflow occurs, the status "referenced" or the status "adjustment absolute measuring system" is reset. Fault value (r0949, decimal): 1: r2521 has exceeded the value range for the position actual value display. 2: r483 has exceeded the value range for the position actual value display.
Remedy:	If required, reduce the traversing range or position resolution.

F07494	**LR: DDS changeover in operation**
Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	A drive data set changeover (DDS) with a change of the mechanical relationships and the encoder assignment (p2502) was requested in operation.

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Remedy: To changeover the drive data set, initially, exit the "operation" mode.

A07495 (F) LR: Reference function interrupted

Reaction: NONE

Acknowledge: NONE

Cause: An activated reference function (reference mark search or measuring probe evaluation) was interrupted.
- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was de-activated (BI: p2508 and BI: p2509 = 0 signal).

Remedy:
- check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.

Reaction upon F: OFF1 (OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

A07496 EPOS: Enable not possible

Reaction: NONE

Acknowledge: NONE

Cause: It is not possible to enable the basic positioner for the following reasons.
Alarm value (r2124, decimal):
1: EPOS enable missing (BI: p2656).
2: Position actual value, valid feedback signal missing (BI: p2658).
See also: p2656 (EPOS enable basic positioner), p2658 (EPOS pos. actual value valid, feedback signal)

Remedy: Check the appropriate binector inputs and signals.

A07497 LR: Position setting value activated

Reaction: NONE

Acknowledge: NONE

Cause: The position actual value is set to the value received via CI: p2515while BI: p2514 = 1 signal. A possible system deviation cannot be corrected.

Remedy: None necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

F07500 Drive: Power unit data set PDS not configured

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Only for controlled line supply infeed/regenerative feedback units:
The power unit data set was not configured - this means that a data set number was not entered into the drive data set.
Fault value (r0949, decimal):
Drive data set number of p0185.

Remedy: The index of the power unit data set associated with the drive data set should be entered into p0185.

F07501 Drive: Motor Data Set MDS not configured

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Only for power units:
The motor data set was not configured - this means that a data set number was not entered into the associated drive data set.
Fault value (r0949, decimal):
The fault value includes the drive data set number of p0186.

Remedy: The index of the motor data set associated with the drive data set should be entered into p0186.
See also: p0186 (Motor Data Sets (MDS) number)

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F07502 Drive: Encoder Data Set EDS not configured

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Only for power units:
The encoder data set was not configured - this means that a data set number was not entered into the associated drive data set.
Fault value (r0949, decimal):
The fault value includes the drive data set number of p0187, p0188 and p0189.
The fault value is increased by 100 * encoder number (e.g. for p0189: Fault value 3xx with xx = data set number).

Remedy: The index of the encoder data set associated with the drive data set should be entered into p0187 (1st encoder), p0188 (2nd encoder) and p0189 (3rd encoder).

A07504 Drive: Motor data set is not assigned to a drive data set

Reaction: NONE

Acknowledge: NONE

Cause: A motor data set is not assigned to a drive object.
All of the existing motor data sets in the drive data sets must be assigned using the MDS number (p0186[0...n]).
Alarm value (r2124, decimal):
Number of the motor data set that has not been assigned.

Remedy: In the drive data sets, assign the non-assigned motor data set using the MDS number (p0186[0...n]).
See also: p0186 (Motor Data Sets (MDS) number)

F07510 Drive: Identical encoder in the drive data set

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: More than one encoder with identical component number is assigned to a single drive data set. In one drive data set, it is not permissible that identical encoders are operated together.
Fault value (r0949, decimal):
1000 * first identical encoder + 100 * second identical encoder + drive data set.
Example:
Fault value = 1203 means:
In drive data set 3, the first (p0187[3]) and second encoder (p0188[3]) are identical.

Remedy: Assign the drive data set to different encoders.
See also: p0141 (Encoder interface (Sensor Module) component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

F07511 Drive: Encoder used a multiple number of times

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Each encoder may only be assigned to one drive and within a drive must - in each drive data set - either always be encoder 1, always encoder 2 or always encoder 3. This unique assignment has been violated.
Fault value (r0949, decimal):
The two parameters in coded form, that refer to the same component number.
First parameter:
Index: First and second decimal place (99 for EDS, not assigned DDS)
Parameter number: Third decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS not assigned DDS)
Drive number: Fourth and fifth decimal place
Second parameter:
Index: Sixth and seventh decimal place (99 for EDS, not assigned DDS)
Parameter number: Eighth decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS, not assigned DDS)
Drive number: Ninth and tenth decimal place
See also: p0141 (Encoder interface (Sensor Module) component number)

Remedy: Correct the double use of a component number using the two parameters coded in the fault value.

A07512 Drive: Encoder data set changeover cannot be parameterized

Reaction: NONE

Acknowledge: NONE

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Cause: Using p0141, a changeover of the encoder data set is prepared that is illegal. In this firmware release, an encoder data set changeover is only permitted for the components in the actual topology. Commissioning can only be exited with the correct parameterization.
Alarm value (r2124, decimal):
Incorrect EDS data set number.
See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

Remedy: Every encoder data set must be assigned its own dedicated DRIVE-CLiQ socket. The component numbers of the encoder interfaces (p0141) must have different values within a drive object.
The following must apply:
p0141[0] not equal to p0141[1] not equal to ... not equal to p0141[n]

A07514 Drive: Data structure does not correspond to the interface module

Reaction: NONE

Acknowledge: NONE

Cause: The interface mode "SIMODRIVE 611 universal" was set (p2038 = 1) and the data structure does not correspond to this mode.
For the data structure, the following rule must be complied with.
Within the group of 8 drive data sets, the assignment to the motor data set must be set the same:
p0186[0] = p0186[1] = ... = p0186[7]
p0186[8] = p0186[9] = ... = p0186[15]
p0186[16] = p0186[17] = ... = p0186[23]
p0186[24] = p0186[25] = ... = p0186[31]
See also: p0180 (Number of Drive Data Sets (DDS)), p0186 (Motor Data Sets (MDS) number), p2038 (PROFIBUS STW/ZSW interface mode)

Remedy: - structure the data according to the rules of the "SIMODRIVE 611 universal" interface mode.
- check the interface mode (p2038).

A07515 Drive: Power unit and motor incorrectly connected

Reaction: NONE

Acknowledge: NONE

Cause: A power unit (via PDS) was assigned to a motor (via MDS) in a drive data set that is not connected in the target topology.
Alarm value (r2124, decimal):
Number of the incorrectly parameterized drive data set.

Remedy: - assign the drive data set to a combination of motor and power unit permitted by the target topology.
- adapt the target topology.
See also: p0121 (Power unit component number), p0131 (Motor component number), p0186 (Motor Data Sets (MDS) number)

F07516 Drive: Re-commission the data set

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The assignment between the drive data set and motor data set (p0186) or between the drive data set and the encoder data set was modified (p0187). This is the reason that the drive data set must re-commissioned.
Fault value (r0949, decimal):
Drive data set to be re-commissioned.

Remedy: Commission the drive data set specified in the fault value (r0949).

A07517 Drive: Encoder data set changeover incorrectly parameterized

Reaction: NONE

Acknowledge: NONE

Cause: An MDS cannot have different motor encoders in two different DDS. The following parameterization therefore results results in an error:
p0186[0] = 0 p0187[0] = 0
p0186[0] = 0 p0187[0] = 1
Alarm value (r2124, decimal):
The lower 16 bits indicate the first DDS and the upper 16 bits indicate the second DDS.

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Remedy: If you wish to operate a motor once with one motor encoder and then another time with the other motor encoder, then you must set-up two different MDSs, in which the motor data are the same.
Example:
p0186[0] = 0 p0187[0] = 0
p0186[0] = 1 p0187[0] = 1

F07518 Drive: Motor data set changeover incorrectly parameterized

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The system has identified that two motor data sets were incorrectly parameterized.
Parameter r0313 (calculated from p0314, p0310, p0311), r0315 and p1982 may only have different values if the motor data sets are assigned different motors. p0827 is used to assign the motors and/contactors.
It is not possible to toggle between motor data sets.
Alarm value (r2124, interpret hexadecimal):
xxxxyyyy:
xxxx: First DDS with assigned MDS, yyyy: Second DDS with assigned MDS

Remedy: Correct the parameterization of the motor data sets.

A07519 Drive: Motor cannot be changed over

Reaction: NONE

Acknowledge: NONE

Cause: With the setting p0833.1, a motor changeover via the application is selected. This is the reason that p0827 must have different values in the appropriate motor data set.
Alarm value (r2124, interpret hexadecimal):
xxxxyyyy:
xxxx: First MDS, yyyy: Second MDS

Remedy: - parameterize the appropriate motor data sets differently (p0827).
- select the setting p0833.0 = 0 (motor changeover via the drive).

A07530 Drive: Drive Data Set DDS not present

Reaction: NONE

Acknowledge: NONE

Cause: The selected drive data set is not available (p0837 > p0180). The drive data set was not changed-over.
See also: p0180 (Number of Drive Data Sets (DDS)), p0820 (Drive data set selection DDS bit 0), p0821 (Drive data set selection DDS bit 1), p0822 (Drive data set selection DDS bit 2), p0823 (Drive data set selection DDS bit 3), p0824 (Drive data set selection DDS bit 4), r0837 (Drive Data Set DDS selected)

Remedy: - select the existing drive data set.
- set-up additional drive data sets.

A07541 Drive: Data set changeover not possible

Reaction: NONE

Acknowledge: NONE

Cause: The selected drive data set changeover and the assigned motor changeover are not possible and are not carried-out.
For synchronous motors, the motor contactor may only be switched for actual speeds less than the speed at the start of field weakening (r0063 < p0348).
See also: r0063 (Actual speed value)

Remedy: Reduce the speed below the speed at the start of field weakening.

A07550 (F, N) Drive: Not possible to reset encoder parameters

Reaction: NONE

Acknowledge: NONE

Cause: When carrying-out a factory setting (e.g. using p0970 = 1), it was not possible to reset the encoder parameters. The encoder parameters are directly read out of the encoder via DRIVE-CLiQ.
Alarm value (r2124, decimal):
Component number of the encoder involved.

Remedy: - repeat the operation.
- check the DRIVE-CLiQ connection.

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Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F07551 Drive encoder: No commutation angle information

Reaction: OFF2 (DCBRAKE)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The angular commutation information is missing. This means that synchronous motors cannot be controlled (closed-loop control)
Fault value (r0949, decimal):
Low word: Drive data set number
High word: Cause:
1: The motor encoder used does not supply an absolute commutation angle.
2: The selected ratio of the measuring gearbox does not match the motor pole pair number
Remedy: Re cause 1:
- check the encoder parameterization (p0404).
- use an encoder with track C/D, EnDat interface of Hall sensors.
- use an encoder with sinusoidal A/B track for which the motor pole pair number (p0313) is an integer multiple of the encoder pulse number (p0408).
- activate the pole position identification routine (p1982 = 1).
Re cause 2:
- the quotient of the pole pair number deviced by the measuring gearbox ratio must be an integer number: (p0314*p0433) / p0432.
See also: p0402 (Gearbox type selection), p0404 (Encoder configuration effective), p0432 (Gearbox factor, encoder revolutions), p0433 (Gearbox factor, motor/load revolutions)

F07552 (A) Drive encoder: Encoder configuration not supported

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The requested encoder configuration is not supported. Only bits may be requested in p0404 that are signaled as being supported by the encoder evaluation in r0456.
Fault value (r0949, decimal):
Low word low byte: Encoder data set number
Low word high byte: Component number
High word:
The encoder evaluation does not support a function selected in p0404.
1: sin/cos encoder with absolute track (this is supported by SME25).
3: Squarewave encoder (this is supported by SMC30).
4: sin/cos encoder (this is supported by SMC20, SMI20, SME20, SME25).
12: sin/cos encoder with reference mark (this is supported by SME20).
15: Commutation with zero mark for separately-excited synchronous motors with VECTORMV.
23: Resolver (this is supported by SMC10, SMI10).
65535: Other function (compare r0456 and p0404).
See also: p0404 (Encoder configuration effective), r0456 (Encoder configuration supported)
Remedy: - check the encoder parameterization (p0400, p0404).
- use the matching encoder evaluation (r0456).
Reaction upon A: NONE
Acknowledge upon A: NONE

F07553 (A) Drive encoder: Sensor Module configuration not supported

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The Sensor Module does not support the requested configuration.
Possible causes:
- bits are set in p0430 (requested functions) that are not set in r0458 (supported functions). This does not apply for bit 19 (safety position actual value sensing), bit 29 (phase correction), bit 30 (amplitude correction) and bit 31 (offset correction).
- p1982 > 0 (pole position identification requested), but r0458 bit 16 = 0 (pole position identification not supported).
Fault value (r0949, decimal):
Encoder data set number.

Remedy:
- check the encoder parameterization (p0430).
- check the pole position identification routine (p1982).
- use the matching encoder evaluation (r0458).

Reaction upon A: NONE

Acknowledge upon A: NONE

F07555 (A) Drive encoder: Configuration position tracking

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The configuration of the position tracking is not supported.
Position tracking can only be activated for absolute encoders.
Fault value (r0949, decimal):
Low word low byte: Encoder data set number
Low word high byte: Component number
See also: p0404 (Encoder configuration effective), p0411 (Measuring gearbox, configuration)

Remedy:
- use an absolute encoder.
- de-select position tracking (p0411).

Reaction upon A: NONE

Acknowledge upon A: NONE

F07560 Drive encoder: Number of pulses is not to the power of two

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: For rotary absolute encoders, the pulse number in p0408 must be to the power of two.
Fault value (r0949, decimal):
The fault value includes the encoder data set number involved.

Remedy:
- check the parameterization (p0408, p0404.1, r0458.5).
- if required, upgrade the Sensor Module firmware.

F07561 Drive encoder: Number of multiturn pulses is not to the power of two

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The multi-turn resolution in p0421 must be to the power of two.
Fault value (r0949, decimal):
The fault value includes the encoder data set number involved.

Remedy:
- check the parameterization (p0421, p0404.1, r0458.5).
- if required, upgrade the Sensor Module firmware.

A07565 (F, N) Drive: Encoder error in PROFIdrive encoder interface 1

Reaction: NONE

Acknowledge: NONE

Cause: An encoder error was signaled for encoder 1 via the PROFIdrive encoder interface (G1_ZSW.15).
Alarm value (r2124, decimal):
Error code from G1_XIST2, refer to the description regarding r0483.

Remedy: Acknowledge the encoder error using the encoder control word (G1_STW.15 = 1).

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

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Reaction upon N: NONE
Acknowledge upon N: NONE

A07566 (F, N) Drive: Encoder error in PROFIdrive encoder interface 2

Reaction: NONE
Acknowledge: NONE
Cause: An encoder error was signaled for encoder 2 via the PROFIdrive encoder interface (G2_ZSW.15).
Alarm value (r2124, decimal):
Error code from G2_XIST2, refer to the description regarding r0483.
Remedy: Acknowledge the encoder error using the encoder control word (G2_STW.15 = 1).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A07567 (F, N) Drive: Encoder error in PROFIdrive encoder interface 32

Reaction: NONE
Acknowledge: NONE
Cause: An encoder error was signaled for encoder 3 via the PROFIdrive encoder interface (G3_ZSW.15).
Alarm value (r2124, decimal):
Error code from G3_XIST2, refer to the description regarding r0483.
Remedy: Acknowledge the encoder error using the encoder control word (G3_STW.15 = 1).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

F07575 Drive: Motor encoder not ready

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The motor encoder signals that it is not ready.
- initialization of encoder 1 (motor encoder) was unsuccessful.
- the function "parking encoder" is active (selected using the encoder control word G1_STW.14 = 1).
- the Sensor Module is defective.

Remedy: Evaluate other queued faults via encoder 1.

A07580 (F, N) Drive: No Sensor Module with matching component number

Reaction: NONE
Acknowledge: NONE
Cause: A Sensor Module with the component number specified in p0141 was not found.
Alarm value (r2124, decimal):
Encoder data set involved (index of p0141).
Remedy: Correct p0141.
Reaction upon F: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

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F07800 Drive: No power unit present

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The power unit parameters cannot be read or no parameters are stored in the power unit.
This fault also occurs if an incorrect topology was selected in the commissioning software and this parameterization is then downloaded into the CU.
See also: r0200 (Power unit, actual code number)

Remedy: Connect the data line to power unit and restart the Control Unit (POWER ON).
Drive:

F07801 Drive: Motor overcurrent

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: The permissible motor limit current was exceeded.
- effective current limit set too low.
- current controller not correctly set.
- motor was braked with an excessively high stall torque correction factor.
- U/f operation: Up ramp was set too short or the load is too high.
- U/f operation: Short-circuit in the motor cable or ground fault.
- U/f operation: Motor current does not match the current of Motor Module.

Note:
Limit current = 2 * Minimum(p0640, 4 * p0305) >= 2 * p0305

Remedy:
- check the current limits (p0640).
- vector control: Check the current controller (p1715, p1717).
- U/f control: Check the current limiting controller (p1340 ... p1346).
- increase the up ramp (p1120) or reduce the load.
- check the motor and motor cables for short-circuit and ground fault.
- check the Motor Module and motor combination.

F07802 Drive: Infeed or power unit not ready

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY

Cause: After an internal power-on command, the infeed or drive does not signal ready.
- monitoring time is too short.
- DC link voltage is not present.
- associated infeed or drive of the signaling component is defective.
- supply voltage incorrectly set.

Remedy:
- increase the monitoring time (p0857).
- ensure that there is a DC link voltage. Check the DC-link busbar. Enable the infeed.
- replace the associated infeed or drive of the signaling component.
- check the line supply voltage setting (p0210).

See also: p0857 (Power unit monitoring time)

A07805 (N) Drive: Power unit I2T overload

Reaction: NONE

Acknowledge: NONE

Cause: Alarm threshold for I2t overload (p0294) of the power unit exceeded.
The response parameterized in p0290 becomes active.
See also: p0290 (Power unit overload response)

Remedy:
- reduce the continuous load.
- adapt the load duty cycle.
- check the assignment of the rated currents of the motor and Motor Module.

Reaction upon N: NONE

Acknowledge upon N: NONE

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F07810 Drive: Power unit EEPROM without rated data

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: No rated data are stored in the power unit EEPROM.
See also: p0205 (Power unit application), r0206 (Rated power unit power), r0207 (Rated power unit current), r0208 (Rated power unit line supply voltage), r0209 (Power unit, maximum current)
Remedy: Replace the power unit or inform Siemens Customer Service.

F07815 Drive: Power unit has been changed

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The code number of the actual power unit does not match the saved number.
Fault value (r0949, decimal):
Number of the incorrect parameter.
See also: r0200 (Power unit, actual code number), p0201 (Power unit code number)
Remedy: Connect the original power unit and power-up the Control Unit again (POWER ON) or set p0201 to r0200 and exit commissioning with p0010 = 0.
For infeeds, the following applies: Commutating reactors or line filters must be used that are clearly specified for the new power unit. A line supply and DC link identification routine (p3410 = 5) must then be carried-out. It is not possible to change the power unit without re-commissioning the system if the type of infeed (A_Infeed, B_Infeed, S_Infeed), the type of construction/design (Booksize, Chassis) or the voltage class differ between the old and new power units.
For inverters, the following applies: If the new power unit is accepted, then if required, the current limit p0640 can be reduced by a lower maximum current of the power unit (r0209) (torque limits stay the same).
If not only the power unit is changed, but also the motor, then the motor must be re-commissioning (e.g. using p0010 = 1). This is also necessary if motor data is still to be downloaded via DRIVE-CLiQ.
See also: r0200 (Power unit, actual code number)

A07820 Drive: Temperature sensor not connected

Reaction: NONE
Acknowledge: NONE
Cause: The temperature sensor for motor temperature monitoring, specified in p0600, is not available.
- parameter download with "incorrect" setting.
- module with sensor evaluation has been, in the meantime, been removed.

Remedy: - connect the module with temperature sensor.
- set the available temperature sensor (p0600, p0601).
See also: p0600 (Motor temperature sensor for monitoring), p0601 (Motor temperature sensor type)

A07825 (N) Drive: Simulation operation activated

Reaction: NONE
Acknowledge: NONE
Cause: The simulation mode is activated.
The drive can only be powered-up if the DC link voltage is less than 40 V.
Remedy: The alarm automatically disappears if simulation operation is de-activated with p1272 = 0.
Reaction upon N: NONE
Acknowledge upon N: NONE

F07826 Drive: Simulation operation with DC link voltage too high

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The simulation mode is activated and the DC link voltage is greater than the permissible value of 40 V.
Remedy: - switch-out (disable) simulation operation (p1272 = 0) and acknowledge the fault.
- reduce the input voltage in order to reach a DC link voltage below 40 V.

F07840 Drive: Infeed operation missing

Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY

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Cause: The signal "infeed operation" is not present although the enable signals for the drive have been present for longer than the parameterized monitoring time (p0857).
- infeed not operational.
- interconnection of the binector input for the ready signal is either incorrect or missing (p0864).
- infeed is presently carrying-out a line supply identification routine.

Remedy:
- bring the infeed into an operational state.
- check the interconnection of the binector input for the signal "infeed operation" (p0864).
- increase the monitoring time (p0857).
- wait until the infeed has completed the line supply identification routine.

See also: p0857 (Power unit monitoring time), p0864 (Infeed operation)

F07841 Drive: Infeed operation withdrawn

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: The signal "infeed operation" was withdrawn in operation.
- interconnection of the binector input for the signal "infeed operation" is either incorrect or missing (p0864).
- the enable signals of the infeed were disabled.
- due to a fault, the infeed withdraws the signal "infeed operation".

Remedy:
- check the interconnection of the binector input for the signal "infeed operation" (p0864).
- check the enable signals of the infeed and if required, enable.
- remove and acknowledge an infeed fault.

Note:
If this drive is intended to back-up the DC link regeneratively, then the fault response must be parameterized for NONE so that the drive can continue to operate even after the infeed fails.

A07850 (F) External alarm 1

Reaction: NONE

Acknowledge: NONE

Cause: The BICO signal for "external alarm 1" was triggered.
The condition for this external alarm is fulfilled.
See also: p2112 (External alarm 1)

Remedy: Eliminate the causes of this alarm.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY (POWER ON)

A07851 (F) External alarm 2

Reaction: NONE

Acknowledge: NONE

Cause: The BICO signal for "external alarm 2" was triggered.
The condition for this external alarm is fulfilled.
See also: p2116 (External alarm 2)

Remedy: Eliminate the causes of this alarm.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY (POWER ON)

A07852 (F) External alarm 3

Reaction: NONE

Acknowledge: NONE

Cause: The BICO signal for "external alarm 3" was triggered.
The condition for this external alarm is fulfilled.
See also: p2117 (External alarm 3)

Remedy: Eliminate the causes of this alarm.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY (POWER ON)

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F07860 (A) External fault 1

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The BICO signal "external fault 1" was triggered.
See also: p2106 (External fault 1)

Remedy: Eliminate the causes of this fault.

Reaction upon A: NONE

Acknowledge upon A: NONE

F07861 (A) External fault 2

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The BICO signal "external fault 2" was triggered.
See also: p2107 (External fault 2)

Remedy: Eliminate the causes of this fault.

Reaction upon A: NONE

Acknowledge upon A: NONE

F07862 (A) External fault 3

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The BICO signal "external fault 3" was triggered.
See also: p2108 (External fault 3), p3111 (External fault 3, enable), p3112 (External fault 3 enable negated)

Remedy: Eliminate the causes of this fault.

Reaction upon A: NONE

Acknowledge upon A: NONE

F07900 (N, A) Drive: Motor locked/speed controller at its limit

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: Motor has been operating at the torque limit longer than the time specified in p2177 and below the speed threshold set in p2175.
This signal can also be initiated if the speed actual value is oscillating and the speed controller output repeatedly goes to its limit.
If the simulation mode is enabled (p1272 = 1) and the closed-loop control with speed encoder activated (p1300 = 21), then the inhibit signal is generated if the encoder signal is not received from a motor that is driven with the torque setpoint of the closed-loop control.
See also: p2175 (Motor locked speed threshold), p2177 (Motor locked delay time)

Remedy:
- check that the motor can freely rotate.
- check the torque limit: For a positive direction of rotation r1538, for a negative direction of rotation r1539.
- check the parameter, message "Motor locked" and if required, correct (p2175, p2177).
- check the inversion of the actual value (p0410).
- check the motor encoder connection.
- check the encoder pulse number (p0408).
- for SERVO with sensorless operation and motors with low power ratings (< 300 W), increase the pulse frequency (p1800).
- in the simulation mode and operation with speed encoder, the power unit to which the motor is connected must be powered-up and must be supplied with the torque setpoint of the simulated closed-loop control. Otherwise, change over to sensorless control (refer to p1300).

Reaction upon N: NONE

Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F07901 Drive: Motor overspeed

Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: The maximum permissible speed was either positively or negatively exceeded.
The maximum permissible positive speed is formed as follows: Minimum(p1082, CI: p1085) + p2162. The maximum permissible negative speed is formed as follows: Maximum(-p1082, CI: 1088) - p2162.
Remedy: For a positive direction of rotation:
- check r1084 and if required, correct p1082, CI:p1085 and p2162.
For a negative direction of rotation:
- check r1087 and if required, correct p1082, CI:p1088 and p2162.

F07902 (N, A) Drive: Motor stalled

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: For a vector drive the system has identified that the motor has stall for a time longer than is set in p2178.
Fault value (r0949, decimal):
1: Stall detection using r1408.11 (p1744).
2: Stall detection using r1408.12 (p1745).
3: Stall detection using r0056.11 (only for separately excited synchronous motors).
See also: p1744 (Motor model speed threshold stall detection), p2178 (Motor stalled delay time)
Remedy: For closed-loop speed and torque control with speed encoder, the following applies:
- check the speed signal (interrupted cable, polarity, pulse number).
If there is no fault, then the fault tolerance can be increased (p1744).
For closed-loop speed and torque control without speed encoder, the following applies:
- check whether the drive stalls due to the load if the speed setpoint is still zero. If yes, then increase the current setpoint using p1610.
- if the motor excitation (magnetizing) time (r0346) was significantly reduced, then it should be increased again.
- check the current limits (p0640, r0067). If these are too low, then the drive cannot be magnetized.
- check the current controller (p1715, p1717) and the speed adaptation controller (p1764, p1767). If the dynamic response was significantly reduced, then this should be increased again.
If there is no fault, then the fault tolerance (p1745) or the delay time (p2178) can be increased.
For separately-excited synchronous motors (closed-loop control with speed encoder), the following applies:
- check the speed signal (interrupted cable, polarity, pulse number).
- ensure the correct motor parameterization (rating plate and equivalent circuit diagram parameters).
- check the excitation equipment and the interface to the closed-loop control.
- encoder the highest possible dynamic response of the closed-loop excitation current control.
- check the speed control for any tendency to oscillate and if resonance effects occur, use a bandstop filter.
- do not exceed the maximum speed (p2162).
If there is no fault, then the delay time can be increased (p2178).
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

A07903 Drive: Motor speed deviation

Reaction: NONE
Acknowledge: NONE

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Cause: The absolute value of the speed difference from the two setpoints (p2151, p2154) and the speed actual value (r2169) exceeds the tolerance threshold (p2163) longer than tolerated (p2164, p2166).
The alarm is only enabled for p2149.0 = 1.
Possible causes could be:
- the load torque is greater than the torque setpoint.
- when accelerating, the torque/current/power limit is reached. If the limits are not sufficient, then it is possible that the drive has been dimensioned too small.
- the speed controller is inhibited (refer to p0856; refer to Kp/Tn adaptation of the speed controller).
- for closed-loop torque control, the speed setpoint does not track the speed actual value.
- for active Vdc controller.
- the encoder pulse number was incorrectly parameterized (p0408).
The signal is not generated if the ramp-function generator tracking prevents the setpoint and actual speed from drifting (moving) apart.
Only for vector drives:
For U/f control, the overload condition is detected as the Imax controller is active.
See also: p2149 (Monitoring, configuration)

Remedy:
- increase p2163 and/or p2166.
- increase the torque/current/power limits.
- enable the speed controller.
- for closed-loop torque control: The speed setpoint should track the speed actual value.
- correct the encoder pulse number in p0408 or mount the correct tachometer.

A07904 (N) External armature short-circuit: Contactor feedback signal "closed" missing

Reaction: NONE

Acknowledge: NONE

Cause: When closing, the contactor feedback signal (p1235) did not issue the signal "closed" (r1239.1 = 1) within the monitoring time (p1236).

Remedy:
- check that the contactor feedback signal is correctly connected (p1235).
- check the logic of the contactor feedback signal (r1239.1 = 1: "closed", r1239.1 = 0: "open").
- increase the monitoring time (p1236).
- if required, set the external armature short-circuit without contactor feedback signal (p1231=2).

Reaction upon N: NONE

Acknowledge upon N: NONE

F07905 (N, A) External armature short-circuit: Contactor feedback signal "open" missing

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY

Cause: When opening, the contactor feedback signal (p1235) did not issue the signal "open" (r1239.1 = 0) within the monitoring time (p1236).

Remedy:
- check that the contactor feedback signal is correctly connected (p1235).
- check the logic of the contactor feedback signal (r1239.1 = 1: "closed", r1239.1 = 0: "open").
- increase the monitoring time (p1236).
- if required, set the external armature short-circuit without contactor feedback signal (p1231=2).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F07906 Armature short-circuit: Parameterization error

Reaction: OFF2

Acknowledge: IMMEDIATELY

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Cause: The armature short-circuit is incorrectly parameterized.
Fault value (r0949, decimal):
Low word: Motor data set number
High word: Cause:
1: A permanent-magnet synchronous motor has not been selected.
101: External armature short-circuit: Output (r1239.0) not connected-up.
102: External armature short-circuit with contactor feedback signal: no feedback signal connected (BI:p1235)
103: External armature short-circuit without contactor feedback signal: Delay time when opening (p1237) is 0.
201: Internal voltage protection: The maximum output current of the motor module (r0289) is less than 1.8* of the motor short-circuit current (r0331).
202: Internal voltage protection: A booksize motor module is not being used.
203: Internal voltage protection: The motor short-circuit current (p0320) is greater than the maximum motor current (p0323).

Remedy: Re cause 1:
- an armature short-circuit is only permissible for permanent-magnetic synchronous motors. The highest position of the motor type in p0300 must either be 2 or 4.
Re cause 101:
- the contactor for the external armature short-circuit configuration should be controlled using output signal r1239.0. The signal can, e.g. be connected to an output terminal BI: p0738. Before this fault can be acknowledged, parameter p1231 must be set again.
Re cause 102:
- if the external armature short-circuit with contactor feedback signal (p1231=1) is selected, this feedback signal must be connected to an input terminal (e.g. r722.x) and then connected to BI:p1235.
- alternatively, the external armature short-circuit without contactor feedback signal (p1231=2) can be selected.
Re cause 103:
- if the external armature short-circuit without contactor feedback signal (p1231=2) is selected, then a delay time must be parameterized in p1237. This time must always be greater than the actual contactor opening time, as otherwise the motor module would be short-circuited!
Re cause 201:
- a Motor Module with a higher maximum current or a motor with a lower short-circuit current must be used. The maximum Motor Module current must be 1.8 * higher than the short-circuit current of the motor.
Re cause 202:
- a Booksize Motor Module must be used for the internal voltage protection.
Re cause 203:
- for internal voltage protection, only short-circuit proof motors may be used.

F07907 Internal voltage protection: Motor terminals are not at zero potential after pulse cancellation

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: - when the internal voltage protection is active (p1231 = 3), after pulse cancellation, all of the motor terminals are at half of the DC link voltage (without an internal voltage protection, the motor terminals are at zero potential)!
- in order to ensure safe function of IVP when the power fails, an external 24 V power supply (UPS) must be used for all of the components.

Remedy: None necessary.
This a note for the user.

A07910 (N) Drive: Motor overtemperature

Reaction: NONE

Acknowledge: NONE

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Cause: KTY:
The motor temperature has exceeded the alarm threshold (p0604).
VECTOR: The response parameterized in p0610 becomes active.
PTC:
The response threshold of 1650 Ohm was exceeded.
Alarm value (r2124, decimal):
SME not selected in p0601:
1: No output current reduction.
1: Output current reduction active.
SME selected in p0601 (p0601=10)
The number specifies the sensor channel that resulted in the alarm being output.
See also: p0604 (Motor overtemperature alarm threshold), p0610 (Response to motor overtemperature condition)

Remedy: - check the motor load.
- check the motor ambient temperature.

Reaction upon N: NONE

Acknowledge upon N: NONE

F07913 Excitation current outside the tolerance range

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The difference between the excitation current actual value and setpoint has exceeded the tolerance:
abs(r1641 - r1626) > p3201 + p3202
The cause of this fault is again reset for abs(r1641 - r1626) < p3201.

Remedy: - check the parameterization (p1640, p3201, p3202).
- check the interfaces to the excitation equipment (r1626, p1640).
- check the excitation equipment.

F07914 Flux out of tolerance

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The difference between the flux actual value and setpoint has exceeded the tolerance:
abs(r0084 - r1598) > p3204 + p3205
The cause of this fault is again reset for abs(r0084 - r1598) < p3204.

Remedy: - check the parameterization (p3204, p3205).
- check the interfaces to the excitation equipment (r1626, p1640).
- check the excitation equipment.
- check the flux control (p1592, p1592, p1597).
- check the control for oscillation and take the appropriate counter measures (e.g. optimize the speed control loop, parameterize a bandstop filter).

A07918 (N) Three-phase setpoint generator operation selected/active

Reaction: NONE

Acknowledge: NONE

Cause: Only for separately excited synchronous motors (p0300 = 5):
The actual open-loop/closed-loop control mode is I/f control (open-loop) with a fixed current (p1300 = 18).
The speed is entered via the setpoint channel and the current setpoint is given by the minimum current (p1620).
It must be ensured that in this mode, the control dynamic performance is very limited. This is the reason that longer ramp-up times should be set for the setpoint speed than for normal operation.
See also: p1620 (Stator current, minimum)

Remedy: Select another open-loop/closed-loop control mode
See also: p1300 (Open-loop/closed-loop control operating mode)

Reaction upon N: NONE

Acknowledge upon N: NONE

A07920 Drive: Torque too low

Reaction: NONE

Acknowledge: NONE

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Cause: The torque deviates from the torque/speed envelope characteristic in the negative direction (too low).
See also: p2181 (Load monitoring, response)
Remedy: Adapt the load.

A07921 Drive: Torque too high

Reaction: NONE
Acknowledge: NONE
Cause: The torque deviates from the torque/speed envelope characteristic in the positive direction (too high).
Remedy: Adapt the load.

A07922 Drive: Torque outside the tolerance

Reaction: NONE
Acknowledge: NONE
Cause: The torque deviates from the torque/speed envelope characteristic.
Remedy: Adapt the load.

F07923 Drive: Torque too low

Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The torque deviates from the torque/speed envelope characteristic in the negative direction (too low).
Remedy: Adapt the load.

F07924 Drive: Torque too high

Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The torque deviates from the torque/speed envelope characteristic in the positive direction (too high).
Remedy: Adapt the load.

F07925 Drive: Torque outside the tolerance

Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The torque deviates from the torque/speed envelope characteristic.
Remedy: Adapt the load.

A07926 Drive: Envelope curve, parameter invalid

Reaction: NONE
Acknowledge: NONE
Cause: Invalid parameter values were entered for the envelope characteristic of the load monitoring.
The following rules apply for the speed thresholds:
p2182 < p2183 < p2184
The following rules apply for the torque thresholds:
p2185 > p2186
p2187 > p2188
p2189 > p2190
Alarm value (r2124, decimal):
Number of the parameter with the invalid value.
Remedy: Set the parameters for the load monitoring according to the applicable rules.

F07930 Drive: Braking signal error

Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY

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Cause: The Control Unit has detected a braking signal error.
- no motor holding brake connected.
- motor holding brake type incorrectly parameterized.
- the motor holding brake control on the Motor Module is faulty.
- a DRIVE-CLiQ communications error has occurred between the Control Unit and the Motor Module involved.
Fault value (r0949, decimal):
10: No brake connected or fault in the Motor Module brake control circuit ("open brake" operation).
11: Defect in the brake control circuit of the Motor Module ("brake open" operation).
20: Short-circuit in the brake winding or fault in the brake control circuit of the Motor Module ("brake open" state).
30: No brake connected, short-circuit in the brake winding or fault in the Motor Module brake control circuit ("close brake" operation).
31: Defect in the brake control circuit of the Motor Module ("close brake" operation).
40: Defect in the brake control circuit of the Motor Module ("brake closed" state).
50: Defect in the brake control circuit of the Motor Module or communications fault between the Control Unit and the Motor Module (braking signal diagnostics).
See also: p1278 (Motor holding brake type)

Remedy:
- check the motor holding brake connection.
- check the motor holding brake type.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry-out a diagnostics routine for the faults identified.
- check the electrical cabinet design and cable routing for EMC compliance
- replace the Motor Module involved.
- if a motor holding brake has still not been connected, then the brake control can be disabled with p1215 = 0 in order to suppress the fault (e.g. for a rotating measurement (p1960)).
Operation with Safe Brake Module:
- check the Safe Brake Modules connection.
- replace the Safe Brake Module.

A07931 Brake does not open

Reaction: NONE

Acknowledge: NONE

Cause: This alarm is output for r1229.4 = 1.
See also: p1216 (Motor holding brake, opening time), r1229 (Motor holding brake status word)

Remedy:
- check the functionality of the motor holding brake.
- check the feedback signal (p1223).

A07932 Brake does not close

Reaction: NONE

Acknowledge: NONE

Cause: This alarm is output for r1229.5 = 1.
See also: p1217 (Motor holding brake closing time), r1229 (Motor holding brake status word)

Remedy:
- check the functionality of the motor holding brake.
- check the feedback signal (p1222).

F07935 (N) Drv: Motor holding brake detected

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A motor with integrated motor holding brake was detected where the braking signal has not been configured (p1215 = 0). The braking signal configuration was then set to "motor holding brake the same as sequence control" (p1215 = 1).

Remedy: None necessary.
See also: p1215 (Motor holding brake configuration)

Reaction upon N: NONE

Acknowledge upon N: NONE

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F07940 Sync-line supply - drive: Synchronization error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: After synchronization has been completed, the phase difference (r3808) is greater than the threshold value, phase synchronism (p3813).
OFF1 or OFF3 response, while the closed-loop phase control is active (r3819.6 = 1) or synchronism reached (r3819.2 = 1).
Enable signal withdrawn (p3802 = 0), while the closed-loop phase control was active (r3819.6 = 1).

Remedy: If required increase the threshold value phase synchronism (p3813) for synchronizing the line supply to the drive.
Before OFF1 or OFF3, complete synchronizing (r03819.0 = 0).
Before withdrawing the enable signal (p3802 = 0), reach synchronism (r3819.2 = 1).
See also: p3813 (Sync line-drive phase synchronism threshold value)

A07941 Sync-line supply - drive: Target frequency not permissible

Reaction: NONE

Acknowledge: NONE

Cause: The target frequency is outside the permissible value range.
Alarm value (r2124, decimal):
1084: Target frequency greater than the positive speed limit, f_sync > f_max (r1084).
1087: Target frequency less than the negative speed limit, f_sync < f_min (r1087).

Remedy: Fulfill the target frequency conditions for the synchronization line supply - drive.
See also: r1084 (Speed limit positive effective), r1087 (Speed limit negative effective)

A07942 Sync-line supply - drive: Setpoint frequency is completely different than the target frequency

Reaction: NONE

Acknowledge: NONE

Cause: There is a considerable difference between the setpoint frequency and the target frequency (f_set <> f_target). The deviation that can be tolerated is set in p3806.

Remedy: The alarm automatically disappears after the difference that can be tolerated (p3806) between the setpoint and target frequencies is reached.
See also: p3806 (Sync line-drive frequency difference threshold value)

A07943 Sync-line supply - drive: Synchronization not permitted

Reaction: NONE

Acknowledge: NONE

Cause: Synchronization not permitted.
Alarm value (r2124, decimal):
1300: The control mode (p1300) has not been set to sensorless closed-loop speed control or U/f characteristic.
1910: Motor data identification activated.
1960: Speed controller optimization activated.
1990: Encoder adjustment activated.
3801: Voltage Sensing Module (VSM) not found.
3845: Friction characteristic plot activated.

Remedy: Fulfill the conditions for the synchronization line supply - drive.
Re alarm value = 1300:
Set the control mode (p1300) to sensorless closed-loop speed control (p1300 = 20) or U/f characteristic (p1300 = 0 ... 19).
Re alarm value = 1910:
Exit the motor data identification routine (p1910).
Re alarm value = 1960:
Exist the speed controller optimization routine (p1960).
Re alarm value = 1990:
Exit the encoder adjustment (p1990).
Re alarm value = 3801:
Connect-up a Voltage Sensing Module (VSM) and when connecting to an adjacent drive object ensure that the drive objects have the same basis clock cycle.
Re alarm value = 3845:
Exit the friction characteristic plot (p3845).

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F07950 (A) Drive: Incorrect motor parameter

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The motor parameters were incorrectly entered while commissioning (e.g. p0300 = 0, no motor selected)
Fault value (r0949, decimal):
The fault value includes the parameter number involved.
The following parameter numbers only occur as fault values for induction motors:
p0304, p0310, p0320
The following parameter numbers only occur as fault values for synchronous motors:
p0314; only for vector drives: p0305, p0307; only for servo drives: p0316, p0322, p0323; only for linear drives: p0315
See also: p0300 (Mot type selection), p0301 (Motor code number selection), p0304 (Rated motor voltage), p0305 (Rated motor current), p0307 (Rated motor power), p0310 (Rated motor frequency), p0311 (Rated motor speed), p0314 (Motor pole pair number), p0316 (Motor torque constant), p0320 (Motor rated magnetization current/short-circuit current), p0322 (Maximum motor speed), p0323 (Maximum motor current)

Remedy: Compare the motor data with the rating plate data and if required, correct.
See also: p0300 (Mot type selection), p0301 (Motor code number selection), p0304 (Rated motor voltage), p0305 (Rated motor current), p0307 (Rated motor power), p0310 (Rated motor frequency), p0311 (Rated motor speed), p0314 (Motor pole pair number), p0316 (Motor torque constant), p0320 (Motor rated magnetization current/short-circuit current), p0322 (Maximum motor speed), p0323 (Maximum motor current)

Reaction upon A: NONE

Acknowledge upon A: NONE

F07955 Drive: Motor has been changed

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The code number of the actual motor with DRIVE-CLiQ does not match the saved number.
Fault value (r0949, decimal):
Number of the incorrect parameter.
See also: p0301 (Motor code number selection), r0302 (Motor code number of motor with DRIVE-CLiQ)

Remedy: Connect the original motor, power-up the Control Unit again (POWER ON) and exit the quick commissioning by setting p0010 to 0.
Or set p0300 = 10000 (load the motor parameter with DRIVE-CLiQ) and re-commission.
Quick commissioning (p0010 = 1) is automatically exited with p3900 > 0.
If quick commissioning was exited by setting p0010 to 0, then an automatic controller calculation (p0340 = 1) is not carried-out.

F07956 Drive: Motor code does not match the list (catalog) motor

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The motor code of the actual motor with DRIVE-CLiQ does not match the possible list motor types (refer to the selection, p0300).
Fault value (r0949, decimal):
Motor code of the motor with DRIVE-CLiQ

Remedy: Use a motor with DRIVE-CLiQ and the matching motor code.
The first three digits of the motor code generally correspond to the matching list motor type.

A07960 Drive: Incorrect friction characteristic

Reaction: NONE

Acknowledge: NONE

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Cause: The friction characteristic is incorrect.
Alarm value (r2124, decimal):
1538:
The friction torque is greater than the maximum from the upper effective torque limit (p1538) and zero. This is the reason that the output of the friction characteristic (r3841) is limited to this value.
1539:
The friction torque is less than the minimum from the lower effective torque limit (p1539) and zero. This is the reason that the output of the friction characteristic (r3841) is limited to this value.
3820 ... 3829:
Incorrect parameter number. The speeds entered in the parameters for the friction characteristic do not correspond to the following condition:
0.0 < p3820 < p3821 < ... < p3829 <= p0322 or p1082, if p0322 = 0
Therefore the output of the friction characteristic (r3841) is set to zero.
3830 ... 3839:
Incorrect parameter number. The torques entered in the parameters for the friction characteristic do not correspond to the following condition:
0 <= p3830, p3831 ... p3839 <= p0333
Therefore the output of the friction characteristic (r3841) is set to zero.
See also: r3840 (Friction characteristic, status word)

Remedy: Fulfill the conditions for the friction characteristic.
Re alarm value = 1538:
Check the upper effective torque limit (e.g. in the field weakening range).
Re alarm value = 1539:
Check the lower effective torque limit (e.g. in the field weakening range).
Re alarm value = 3820 ... 3839:
Fulfill the conditions to set the parameters of the friction characteristic.
If the motor data (e.g. the maximum speed p0322) are changed during commissioning (p0010 = 1, 3), then the technological limits and threshold values, dependent on this, must be re-calculated by selecting p0340= 5).

A07961 Drive: Friction characteristic plot activated

Reaction: NONE

Acknowledge: NONE

Cause: The automatic friction characteristic plot is activated.
The friction characteristic is plotted at the next power-on command.

Remedy: None necessary.
The alarm disappears automatically after the friction characteristic plot has been successfully completed or the plot is de-activated (p3845 = 0).

F07963 Drive: Friction characteristic plot interrupted

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: The condition to plot the friction characteristic are not fulfilled.
Fault value (r0949, decimal):
0046: Missing enable signals (r0046).
0840: OFF1 (p0840) is selected before the friction characteristic has been completely plotted.
1082: The highest speed value to be approached (p3829) is greater than the maximum speed (p1082).
1110: Friction characteristic plot, negative direction of rotation has be selected (p3845) and the negative direction of rotation is inhibited (p1110).
1111: Friction characteristic plot, positive direction of rotation has be selected (p3845) and the positive direction of rotation is inhibited (p1111).
1198: Friction characteristic plot selected (p3845 > 0) and the negative direction of rotation (p1110) and positive (p1111) are inhibited (r1198).
1300: The control mode (p1300) has not been set to closed-loop speed control.
1755: For sensorless closed-loop control (p1300 = 20), the lowest speed value to be approached (p3820) is less than or equal to the changeover speed, open-loop controlled operation (p1755).
1910: Motor data identification activated.
1960: Speed controller optimization activated.
3820 - 3829: Speed (p382x) cannot be approached.
3840: Friction characteristic incorrect.
3845: Friction characteristic plot de-selected.

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Remedy: Fulfill the conditions to plot the friction characteristic.
Re fault value = 0046:
Establish missing enable signals.
Re fault value = 0840:
Select OFF1 (p0840) only after the friction characteristic plot has been completed.
Re fault value = 1082:
Select the highest speed value to be approached (p3829) less than or equal to the maximum speed (p1082).
Re fault value = 1110:
Select the frequency characteristic plot, positive direction of rotation (p3845).
Re fault value = 1111:
Select the frequency characteristic plot, negative direction of rotation (p3845).
Re fault value = 1198:
Enable the permitted direction of rotation (p1110, p1111, r1198).
Re fault value = 1300:
Set the control mode (p1300) on the closed-loop speed control (p1300 = 20, 21).
Re fault value = 1755:
For sensorless closed-loop speed control (p1300 = 20) select the lowest speed value to be approached (p3820) greater than the changeover speed of open-loop controlled operation (p1755).
Re fault value = 1910:
Exit the motor data identification routine (p1910).
Re fault value = 1960:
Exist the speed controller optimization routine (p1960).
Re fault value 3820 - 3829:
- check the load at speed p382x.
- check the speed signal (r0063) for oscillation at speed p382x. If required, check the speed controller settings.
Re fault value = 3840:
Make the friction characteristic error-free (p3820 - p3829, p3830 - p3839, p3840).
Re fault value = 3845:
Activate the friction characteristic plot (p3845).

F07967 Drive: Automatic encoder adjustment incorrect

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the automatic encoder adjustment or the pole position identification.
Only for internal Siemens troubleshooting.

Remedy: Carry-out a POWER ON.

F07968 Drive: Lq-Ld measurement incorrect

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the Lq-Ld measurement.
Fault value (r0949, decimal):
10: Stage 1: The ratio between the measured current and zero current is too low.
12: Stage 1: The maximum current was exceeded.
15: Second harmonic too low.
16: Drive converter too small for the measuring technique.
17: Abort due to pulse inhibit.

Remedy: Re fault value = 10:
Check whether the motor is correctly connected.
Replace the Motor Module involved.
De-activate traversing (p1909).
Re fault value = 12:
Check whether motor data have been correctly entered.
De-activate traversing (p1909).
Re fault value = 16:
De-activate traversing (p1909).
Re fault value = 17:
Repeat traversing.

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F07969 Drive: Incorrect pole position identification

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the pole position identification routine.
Fault value (r0949, decimal):
1: Current controller limited
2: Motor shaft locked.
4: Encoder speed signal not plausible.
10: Stage 1: The ratio between the measured current and zero current is too low.
11: Stage 2: The ratio between the measured current and zero current is too low.
12: Stage 1: The maximum current was exceeded.
13: Stage 2: The maximum current was exceeded.
14: Current difference to determine the +d axis too low.
15: Second harmonic too low.
16: Drive converter too small for the measuring technique.
17: Abort due to pulse inhibit.
18: First harmonic too low.
20: Pole position identification requested with the motor shaft rotating and activated flying restart function.

Remedy: Re fault value = 1:
Check whether the motor is correctly connected.
Check whether motor data have been correctly entered.
Replace the Motor Module involved.
Re fault value = 2:
Open the motor holding brake (p1215) and bring the motor into a no-load condition.
Re fault value = 4:
Check whether the encoder pulse number (p0408) and gearbox factor (p0432, p0433) are correct.
Check whether the motor pole pair number is correct (p0314).
Re fault value = 10:
When selecting p1980 = 4: Increase the value for p0325.
When selecting p1980 = 1: Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re fault value = 11:
Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re fault value = 12:
When selecting p1980 = 4: Reduce the value for p0325.
When selecting p1980 = 1: Reduce the value for p0329.
Check whether motor data have been correctly entered.
Re fault value = 13:
Reduce the value for p0329.
Check whether motor data have been correctly entered.
Re fault value = 14:
Increase the value for p0329.
Re fault value = 15:
Increase the value for p0325.
Motor not sufficiently anisotropic, change the technique (p1980==1 or 10).
Re fault value = 16:
De-activate traversing/moving (p1982).
Re fault value = 17:
Repeat traversing.
Re fault value 18:
Increase the value for p0329.
Saturation not sufficient, change the technique (p1980==10).
Re fault value = 20:
Before carrying-out a pole position identification routine ensure that the motor shaft is absolutely stationary (zero speed).

F07970 Drive: Automatic encoder adjustment incorrect

Reaction: OFF2

Acknowledge: IMMEDIATELY

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Cause: A fault has occurred during the automatic encoder adjustment.
Fault value (r0949, decimal):
1: Current controller limited
2: Motor shaft locked.
4: Encoder speed signal not plausible.
10: Stage 1: The ratio between the measured current and zero current is too low.
11: Stage 2: The ratio between the measured current and zero current is too low.
12: Stage 1: The maximum current was exceeded.
13: Stage 2: The maximum current was exceeded.
14: Current difference to determine the +d axis too low.
15: Second harmonic too low.
16: Drive converter too small for the measuring technique.
17: Abort due to pulse inhibit.

Remedy: Re fault value = 1:
Check whether the motor is correctly connected.
Check whether motor data have been correctly entered.
Replace the Motor Module involved.
Re fault value = 2:
Open the motor holding brake (p1215) and bring the motor into a no-load condition.
Re fault value = 4:
Check whether the speed actual value inversion is correct (p0410.0).
Check whether the motor is correctly connected.
Check whether the encoder pulse number (p0408) and gearbox factor (p0432, p0433) are correct.
Check whether the motor pole pair number is correct (p0314).
Re fault value = 10:
Increase the value for p0325.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re fault value = 11:
Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re fault value = 12:
Reduce the value for p0325.
Check whether motor data have been correctly entered.
Re fault value = 13:
Reduce the value for p0329.
Check whether motor data have been correctly entered.
Re fault value = 14:
Increase the value for p0329.
Re fault value = 15:
Increase the value for p0325.
Re fault value = 16:
De-activate traversing/moving (p1982).
Re fault value = 17:
Repeat traversing.

A07971 (N) Drive: Automatic encoder adjustment activated

Reaction: NONE

Acknowledge: NONE

Cause: The automatic encoder adjustment is activated (p1990 = 1).
The automatic encoder adjustment is carried-out with the next power-on command.
SERVO:
If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, p1990 is automatically activated if fault F07414 is output.
See also: p1990 (Encoder adjustment selection)

Remedy: None necessary.
The alarm automatically disappears after the encoder has been successfully adjusted or for the setting p1990 = 0.

Reaction upon N: NONE

Acknowledge upon N: NONE

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A07980 Drive: Rotating measurement activated

Reaction: NONE

Acknowledge: NONE

Cause: The rotating measurement (automatic speed controller optimization) is activated.
The rotating measurement is carried-out at the next power-on command.
See also: p1960 (Rotating measurement selection)

Remedy: None necessary.
The alarm disappears automatically after the speed controller optimization has been successfully completed or for the setting p1900 = 0.

A07981 Drive: Enable signals for the rotating measurement missing

Reaction: NONE

Acknowledge: NONE

Cause: The rotating measurement cannot be started due to missing enable signals.

Remedy: - acknowledge faults that are present.
- establish missing enable signals.
See also: r0002 (Control Unit operating display), r0046 (Missing drive enable signals)

F07982 Drive: Rotating measurement encoder test

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the encoder test.
Fault value (r0949, decimal):
1: The speed did not reach a steady-state condition.
2: The speed setpoint was not able to be approached as the minimum limiting is active.
3: The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.
4: The speed setpoint was not able to be approached as the maximum limiting is active.
5: The encoder does not supply a signal.
6: Incorrect polarity.
7: Incorrect pulse number.
8: Encoder signal faults.
9: Voltage Sensing Module (VSM) incorrectly connected.

Remedy: Re fault value = 1:
- check the motor parameters.
- carry-out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).
Re fault value = 2:
Adapt the speed setpoint (p1965) or minimum limiting (p1080).
Re fault value = 3:
Adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).
Re fault value = 4:
Adapt the speed setpoint (p1965) or maximum limiting (p1082, p1083 and p1086).
Re fault value = 5:
Check the encoder connection. If required, replace the encoder.
Re fault value = 6:
Check the connection assignment of the encoder cable. Adapt the polarity (p0410).
Re fault value = 7:
Adapt the pulse number (p0408).
Re fault value = 8:
Check the encoder connection and encoder cable. It is possible that there is a problem associated with the ground connection.
Re fault value = 9:
Check the connections of the Voltage Sensing Module (VSM).
Note:
The encoder test can be switched-out (disabled) using p1959.0.
See also: p1959 (Rotating measurement configuration)

F07983 Drive: Rotating measurement saturation characteristic

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

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Cause: A fault has occurred while determining the saturation characteristic.
Fault value (r0949, decimal):
1: The speed did not reach a steady-state condition.
2: The rotor flux did not reach a steady-state condition.
3: The adaptation circuit did not reach a steady-state condition.
4: The adaptation circuit was not enabled.
5: Field weakening active.
6: The speed setpoint was not able to be approached as the minimum limiting is active.
7: The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.
8: The speed setpoint was not able to be approached as the maximum limiting is active.
9: Several values of the determined saturation characteristic are not plausible.
10: Saturation characteristic could not be sensibly determined because load torque too large.

Remedy: Re fault value = 1:
- the total drive moment of inertia is far higher than that of the motor (refer to p0341, p0342).
De-select rotating measurement (p1960), enter the moment of inertia p342, re-calculate the speed controller p0340 = 4 and repeat the measurement.
Re fault value = 1 ... 4:
- check the motor parameters (rating plate data).
- carry-out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).
Re fault value = 5:
The speed setpoint (p1961) is too high. Reduce the speed.
Re fault value = 6:
Adapt the speed setpoint (p1961) or minimum limiting (p1080).
Re fault value = 7:
Adapt the speed setpoint (p1961) or suppression (skip) bandwidths (p1091 ... p1094, p1101).
Re fault value = 8:
Adapt the speed setpoint (p1961) or maximum limiting (p1082, p1083 and p1086).
Re fault value = 9, 10:
The measurement was carried-out at an operating point where the load torque is too high. Select a more suitable operating point, either by changing the speed setpoint (p1961) or by reducing the load torque. The load torque may not be varied while making measurements.
Note:
The saturation characteristic identification routine can be disabled using p1959.1.
See also: p1959 (Rotating measurement configuration)

F07984 Drive: Speed controller optimization, moment of inertia

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred while identifying the moment of inertia.
Fault value (r0949, decimal):
1: The speed did not reach a steady-state condition.
2: The speed setpoint was not able to be approached as the minimum limiting is active.
3. The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.
4. The speed setpoint was not able to be approached as the maximum limiting is active.
5: It is not possible to increase the speed by 10% as the minimum limiting is active.
6: It is not possible to increase the speed by 10% as the suppression (skip) bandwidth is active.
7: It is not possible to increase the speed by 10% as the maximum limiting is active.
8: The torque difference after the speed setpoint step is too low in order to be able to still reliably identify the moment of inertia.
9: Too few data to be able to reliably identify the moment of inertia.
10: After the setpoint step, the speed either changed too little or in the incorrect direction.
11: The identified moment of inertia is not plausible.

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Remedy: Re fault value = 1:
- check the motor parameters (rating plate data).
- carry-out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

Re fault value = 2, 5:
Adapt the speed setpoint (p1965) or minimum limiting (p1080).
Re fault value = 3, 6:
Adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).
Re fault value = 4, 7:
Adapt the speed setpoint (p1965) or maximum limiting (p1082, p1083 and p1086).
Re fault value = 8:
Adapt the moment of inertia (p0341, p0342).
Note:
The moment of inertia identification routine can be disabled using p1959.2.
See also: p1959 (Rotating measurement configuration)

F07985 Drive: Speed controller optimization (oscillation test)

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the vibration test.
Fault value (r0949, decimal):
1: The speed did not reach a steady-state condition.
2: The speed setpoint was not able to be approached as the minimum limiting is active.
3. The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.
4. The speed setpoint was not able to be approached as the maximum limiting is active.
5: Torque limits too low for a torque step.
6: No suitable speed controller setting was found.

Remedy: Re fault value = 1:
- check the motor parameters.
- carry-out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

Re fault value = 2:
Adapt the speed setpoint (p1965) or minimum limiting (p1080).
Re fault value = 3:
Adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).
Re fault value = 4:
Adapt the speed setpoint (p1965) or maximum limiting (p1082, p1083 and p1086).
Re fault value = 5:
Increase the torque limits (e.g. p1520, p1521).
Re fault value = 6:
Reduce the dynamic factor (p1967).
Note:
The speed controller vibration test can be disabled using p1959.4.
See also: p1959 (Rotating measurement configuration)

F07986 Drive: Rotating measurement ramp-function generator

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: During the rotating measurements, problems with the ramp-function generator occurred.
Fault value (r0949, decimal):
1: The positive and negative direction of rotation is inhibited.

Remedy: Re fault value = 1:
Enable the direction of rotation (p1110 or p1111).

A07987 Drive: Rotating measurement, no encoder available

Reaction: NONE

Acknowledge: NONE

Cause: No encoder available. The rotating measurement was carried-out without encoder (sensorless).
Alarm value (r2124, decimal):
1: An encoder is not connected.
2: It involves a SINAMICS G drive unit that only supports sensorless closed-loop control.

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Remedy: Re alarm value = 1:
Connect-up the encoder.
Re alarm value = 2:
None necessary.

F07988 Drive: Rotating measurement, no configuration selected

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: When configuring the rotating measurement (p1959), no function was selected.

Remedy: Select at least one function for automatic optimization of the speed controller (p1959).
See also: p1959 (Rotating measurement configuration)

F07990 Drive: Incorrect motor data identification

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the identification routine.
Fault value (r0949, decimal):
1: Current limit value reached.
2: Identified stator resistance lies outside the expected range 0.1 ... 100 % of Zn.
3: Identified rotor resistance lies outside the expected range 0.1 ... 100 % of Zn.
4: Identified stator reactance lies outside the expected range 50 ... 500 % of Zn.
5: Identified magnetizing reactance lies outside the expected range 50 ... 500 % of Zn.
6: Identified rotor time constant lies outside the expected range 10 ms ... 5 s.
7: Identified total leakage reactance lies outside the expected range 4 ... 50 % of Zn.
8: Identified stator leakage reactance lies outside the expected range 2 ... 50 % of Zn.
9: Identified rotor leakage reactance lies outside the expected range 2 ... 50 % of Zn.
10: Motor has been incorrectly connected.
11: Motor shaft rotates.
20: Identified threshold voltage of the semiconductor devices lies outside the expected range 0 ... 10 V.
30: Current controller in voltage limiting.
40: At least one identification contains errors. The identified parameters are not saved to prevent inconsistencies.
50: With the selected current controller sampling rate, the pulse frequency cannot be implemented.
Note:
Percentage values are referred to the rated motor impedance:
Zn = Vmot.nom / sqrt(3) / Imot,nom
101: Voltage amplitude even at 30% maximum current amplitude is too low to measure the inductance.
102, 104: Voltage limiting while measuring the inductance.
103: Maximum frequency exceeded during the rotating inductance measurement.
110: Motor not finely synchronized before the rotating measurement.
120: Error when evaluating the magnetizing inductance.
125: Cable resistance greater than the total resistance.
126: Series inductance greater than the total leakage inductance.
127: Identified leakage inductance negative.
128: Identified stator resistance negative.
129: Identified rotor resistance negative.
130: Drive data set changeover during the motor data identification routine.
140: The setpoint channel inhibits both directions of rotation.
160: Accelerating time when determining the moment of inertia or reluctance torque too short.
173: Internal problem.
180: Identification speed (maximum speed, rated speed, 0.9 * p0348) less than p1755.
190: Speed setpoint not equal to zero.
191: An actual speed of zero is not reached.
192: Speed setpoint not reached.
200, 201: Not possible to identify the voltage emulation error characteristic of the drive converter (p1952, p1953).

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Remedy:

Re fault value = 0:
Check whether the motor is correctly connected. Observe the configuration (star-delta).
Re fault value = 1 ... 40:
- check whether the motor data have been correctly entered into p0300, p0304 - p0311.
- is there an appropriate relationship between the motor power rating and that of the Motor Module? The ratio of the Motor Module to the rated motor current should not be less than 0.5 and should not be greater than 4.
- check the motor configuration (star-delta).
Re fault value = 4, 7:
Check whether inductances are correctly entered in p0233 and p0353.
Re fault value = 50:
Reduce the current controller sampling rate.
Re fault value = 101:
Increase current limit (p0640).
Check the current controller gain (p1715).
Reduce the current controller sampling time (p0115).
It may be impossible to completely identify the L characteristic, as the required current amplitude is too high.
Suppress measurement (p1909, p1959).
Re fault value = 102, 104:
Reduce the current limit (p0640).
Check the current controller P gain.
Suppress measurement (p1909, p1959).
Re fault value = 103:
Increase the external moment of inertia (if possible).
Reduce the current controller sampling time (p0115).
Suppress measurement (p1909, p1959).
Re fault value 110:
Before the rotating measurement, traverse the motor over the zero mark.
Re fault value 120:
Check the current controller P gain (p1715) and if required, reduce.
Increase the pulse frequency (p1800).
Re fault 125:
Reduce the cable resistance (p0352).
Re fault 126:
Reduce the series inductance (p0353).
Re fault 127, 128, 129:
It is possible that the current controller is oscillating. Reduce p1715 before the next measurement.
Re fault 130:
Do not initiate a drive data set changeover during the motor identification routine.
Re fault value 140:
Before the measurement, enable at least one direction of rotation (value of p1110 = 0 or value of p1111 = 0 or p1959.14 = 1 or p1959.15 = 1).
Re fault value = 160:
Extend the accelerating time when determining the moment of inertia and reluctance torque, e.g. by increasing the maximum speed (p1082), increasing the moment of inertia or reducing the maximum current (p0640).
Increase the speed controller P-gain (p1460).
Suppress measurement (p1959).
Re fault value 173:
-
Re fault value 180:
Increase the maximum speed (p1082).
Reduce p1755.
Suppress measurement (p1909, p1959).
Re fault value 190:
Set the speed setpoint to zero.
Re fault value 191:
Do not start the motor data identification routine while the motor is still rotating.
Re fault value = 192:
Check the closed-loop speed control (the motor rotor may be locked or the closed-loop speed control is not functioning).
Ensure that the enable signals are present during the measurement.
Remove any pulling loads from the motor.
Increase the maximum current (p0640).
Reduce the maximum speed (p1082).
Suppress measurement (p1959).

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Re fault value = 200, 201:
- set the pulse frequency to 0.5 * current controller frequency (e.g. 4 kHz for a current controller clock cycle of 125 us).
- reduce the cable length between the Motor Module and the motor.
- read-out measured values (r1950, r1951) and therefore determine suitable values for p1952, p1953 according to your own estimation.

A07991 (N) Drive: Motor data identification activated

Reaction: NONE

Acknowledge: NONE

Cause: The motor data identification routine is activated.
The motor data identification routine is carried-out at the next power-on command.
See also: p1910 (Motor data identification selection)

Remedy: None necessary.
The alarm automatically disappears after the motor data identification routine has been successfully completed or for the setting p1900 = 0.

Reaction upon N: NONE

Acknowledge upon N: NONE

F08000 (N, A) TB: +/-15 V power supply faulted

Reaction: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Terminal Board 30 detects an incorrect internal power supply voltage.
Fault value (r0949, decimal):
0: Error when testing the monitoring circuit.
1: Fault in normal operation.

Remedy: - replace Terminal Board 30.
- replace Control Unit.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F08010 (N, A) TB: Analog-digital converter

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The analog/digital converter on Terminal Board 30 has not supplied any converted data.

Remedy: - check the power supply.
- replace Terminal Board 30.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F08500 (A) COMM BOARD: Monitoring time, configuration expired

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the configuration has expired.
Fault value (r0949, decimal):
0: The transfer of the send-configuration data has been exceeded (time).
1: The transfer of the receive-configuration data has been exceeded (time).

Remedy: Check communication line.

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Reaction upon A: NONE
Acknowledge upon A: NONE

F08501 (A) COMM BOARD: Monitoring time, process data expired

Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The set monitoring time expired while transferring process data via COMM BOARD.
Remedy: - check communications link.
- check the set monitoring time if the error persists.

Reaction upon A: NONE
Acknowledge upon A: NONE

F08502 (A) COMM BOARD: Monitoring time, sign-of-life expired

Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The monitoring time for the sign-of-life counter has expired.
Remedy: Check communication line.
Reaction upon A: NONE
Acknowledge upon A: NONE

A08504 (F) COMM BOARD: Internal cyclic data transfer error

Reaction: NONE
Acknowledge: NONE
Cause: The cyclic actual and/or setpoint values were not transferred within the specified times.
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.
Remedy: Check the parameterizing telegram (Ti, To, Tdp, etc.).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY

F08510 (A) COMM BOARD: Send configuration data invalid

Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: COMM BOARD did not accept the send-configuration data.
Fault value (r0949, decimal):
Return value of the send-configuration data check.
Remedy: Check the send configuration data.
Reaction upon A: NONE
Acknowledge upon A: NONE

A08511 (F) COMM BOARD: Receive configuration data invalid

Reaction: NONE
Acknowledge: NONE

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Cause: The drive unit did not accept the receive-configuration data.
Alarm value (r2124, decimal):
Return value of the receive-configuration data check.
0: Configuration accepted.
1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence was defined using p0978.
2: Too many data words for input or output to a drive object. A max. of 16 words is permitted for SERVO and VECTOR; max. 5 words, for A_INFEED, TB30, TM31 and CU320.
3: Uneven number of bytes for input or output.
4: Setting data for synchronization not accepted.
5: Drive still not in cyclic operation.
6: Buffer system not accepted.
7: Cyclic channel length too short for this setting.
8: Cyclic channel address not initialized.
9: 3-buffer system not permitted.
10: DRIVE-CLiQ fault.
11: CU link fault.
12: CX32 not in cyclic operation.

Remedy: Check the receive configuration data.
Re alarm value = 1:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

A08520 (F) COMM BOARD: Non-cyclic channel error

Reaction: NONE

Acknowledge: NONE

Cause: The memory or the buffer status of the non-cyclic channel has an error.
Alarm value (r2124, decimal):
0: Error in the buffer status.
1: Error in the memory.

Remedy: Check communication line.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

A08530 (F) COMM BOARD: Message channel error

Reaction: NONE

Acknowledge: NONE

Cause: The memory or the buffer status of the message channel has an error.
Alarm value (r2124, decimal):
0: Error in the buffer status.
1: Error in the memory.

Remedy: Check communication line.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY

F08700 (A) CBC: Communications error

Reaction: OFF3 (NONE, OFF1, OFF2)

Acknowledge: IMMEDIATELY

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Cause: A CAN communications error has occurred.
Fault value (r0949, decimal):
1: The error counter for the send telegrams has exceeded the BUS OFF value 255. The bus disables the CAN controller.
- bus cable interrupted.
- bus cable not connected.
- incorrect baud rate.
- incorrect bit timing.

2: The master no longer interrogated the CAN node status longer than for its "life time". The "life time" is obtained from the "guard time" (p8604[0]) multiplied by the "life time factor" (p8604[1]).
- bus cable interrupted.
- bus cable not connected.
- incorrect baud rate.
- incorrect bit timing.
- master fault.

Note:
The fault response can be set as required using p8641.
See also: p8604 (CBC node guarding), p8641 (CBC abort connection option code)

Remedy:
- check the bus cable
- check the baud rate (p8622).
- check the bit timing (p8623).
- check the master.

See also: p8622 (CBC baud rate), p8623 (CBC bit timing selection)

Reaction upon A: NONE

Acknowledge upon A: NONE

F08701 CBC: NMT state change

Reaction: OFF3

Acknowledge: IMMEDIATELY

Cause: A CANopen NMT state transition from "operational" to "pre-operational" or after "stopped".
Fault value (r0949, decimal):
1: CANopen NMT state transition from "operational" to "pre-operational".
2: CANopen NMT state transition from "operational" to "stopped".
Note:
In the NMT state "pre-operational", process data cannot be transferred and in the NMT state "stopped", no process data and no service data can be transferred.

Remedy: None necessary.
Acknowledge the fault and continue operation.

A08751 CBC: Telegram loss

Reaction: NONE

Acknowledge: NONE

Cause: The CAN controller has lost a receive message (telegram).

Remedy: Reduce the cycle times of the receive messages.

A08752 CBC: Error counter for error passive exceeded

Reaction: NONE

Acknowledge: NONE

Cause: The error counter for the send or receive telegrams has exceeded the value 127.

Remedy:
- check the bus cable
- set a higher baud rate (p8622).
- check the bit timing and if required optimize (p8623).

See also: p8622 (CBC baud rate), p8623 (CBC bit timing selection)

A08753 CBC: Message buffer overflow

Reaction: NONE

Acknowledge: NONE

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Cause: A message buffer overflow.
Alarm value (r2124, decimal):
1: Non-cyclic send buffer (SDO response buffer) overflow.
2: Non-cyclic receive buffer (SDO receive buffer) overflow.
3: Cyclic send buffer (PDO send buffer) overflow.

Remedy: Check the bus cable.
Set a higher baud rate (p8622).
Check the bit timing and if required optimize (p8623).
Re alarm value = 2:
- reduce the cycle times of the SDO receive messages.
See also: p8622 (CBC baud rate), p8623 (CBC bit timing selection)

A08754 CBC: Incorrect communications mode

Reaction: NONE

Acknowledge: NONE

Cause: In the "operational" mode, an attempt was made to change parameters p8700 ... p8737.

Remedy: Change into the "pre-operational" or "stopped" mode.

A08755 CBC: Obj cannot be mapped

Reaction: NONE

Acknowledge: NONE

Cause: The CANopen object is not provided for the Process Data Object (PDO) Mapping.

Remedy: Use a CANopen object intended for the PDO mapping or enter 0.
The following objects can be mapped in the Receive Process Data Object (RPDO) or Transmit Process Data Object (TPDO):
- RPDO: 6040 hex, 6060 hex, 60FF hex, 6071 hex.
- TPDO: 6041 hex, 6061 hex, 6063 hex, 6069 hex, 606B hex, 606C hex, 6074 hex.
Note:
As long as A08755 is present, the COB-ID cannot be set to valid.

A08756 CBC: Number of mapped bytes exceeded

Reaction: NONE

Acknowledge: NONE

Cause: The number of bytes of the mapped objects exceeds the telegram size for net data. A maximum of 8 bytes is permissible.

Remedy: Map fewer objects or objects with a smaller data type.
See also: p8710 (CBC receive mapping for RPDO 1), p8711 (CBC receive mapping for RPDO 2), p8712 (CBC receive mapping for RPDO 3), p8713 (CBC receive mapping for RPDO 4), p8714 (CBC receive mapping for RPDO 5), p8715 (CBC receive mapping for RPDO 6), p8716 (CBC receive mapping for RPDO 7), p8717 (CBC receive mapping for RPDO 8), p8730 (CBC send mapping for TPDO 1), p8731 (CBC send mapping for TPDO 2), p8732 (CBC send mapping for TPDO 3), p8733 (CBC send mapping for TPDO 4), p8734 (CBC send mapping for TPDO 5), p8735 (CBC send mapping for TPDO 6), p8736 (CBC send mapping for TPDO 7), p8737 (CBC send mapping for TPDO 8)

A08757 CBC: Set COB-ID invalid

Reaction: NONE

Acknowledge: NONE

Cause: For online operation, the appropriate COB-ID must be set invalid before mapping.
Example:
Mapping for RPDO 1 should be changed (p8710[0]).
--> set p8700[0] = C00006E0 hex (invalid COB-ID)
--> set p8710[0] as required.
--> p8700[0] enter a valid COB-ID

Remedy: Set the COB-ID to invalid.

A08758 CBC: Number of PDO channels too low

Reaction: NONE

Acknowledge: NONE

Cause: The number of PDO channels in p8740 has either been set to 0 or too low.
See also: p8740 (CBC channel assignment)

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Remedy: The number of channels set in p8740 must be greater than or equal to the number of PDOs.
There are 2 possibilities:
Increase the number of channels in p8740 and confirm the selection using p8741.
Reduce the number of PDOs by setting the COB-ID to invalid.
See also: p8740 (CBC channel assignment), p8741 (CBC PDO configuration acknowledgement)

A08759 CBC: PDO COB-ID already available

Reaction: NONE

Acknowledge: NONE

Cause: An existing PDO COB-ID was allocated.

Remedy: Select another PDO COB-ID.

A13000 License not adequate

Reaction: NONE

Acknowledge: NONE

Cause: - for the drive unit, the options that require a license are being used but the licenses are not sufficient.
- an error occurred when checking the existing licenses.
Alarm value (r2124, decimal):
0:
The existing license is not sufficient.
1:
An adequate license was not able to be determined as the CompactFlash card with the required licensing data was withdrawn in operation.
2:
An adequate license was not able to be determined, as an error occurred when reading-out the required licensing data from the CompactFlash card.
3:
An adequate license was not able to be determined as there is a checksum error in the license key.
4:
An internal error occurred when checking the license.

Remedy: Alarm value 0:
Additional licenses are required and these must be activated (p9920, p9921).
Alarm value 1:
With the system powered-down, re-insert the CompactFlash card that matches the system.
Alarm value 2:
Enter and activate the license key (p9920, p9921).
Alarm value 3:
Compare the license key (p9920) entered with the license key on the certificate of license.
Re-enter the license key and activate (p9920, p9921).
Alarm value 4:
- carry-out a POWER ON.
- upgrade the firmware release.
- contact the Hotline.

A13001 Error in license checksum

Reaction: NONE

Acknowledge: NONE

Cause: When checking the checksum of the license key, an error was detected.

Remedy: Compare the license key (p9920) entered with the license key on the certificate of license.
Re-enter the license key and activate (p9920, p9921).

F30001 Power unit: Overcurrent

Reaction: OFF2

Acknowledge: IMMEDIATELY

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Cause: The power unit has detected an overcurrent condition.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: Rated motor current is significantly greater than that of the Motor Module.
- infeed: High discharge and post-charging current for line supply voltage interruptions.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at power-on due to the missing commutating reactor.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Fault value (r0949):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.

Remedy:
- check the motor data - if required, carry-out commissioning.
- check the motor circuit configuration (star-delta).
- U/f operation: Increase up ramp.
- U/f operation: Check the assignment of the rated currents of the motor and Motor Module.
- infeed: Check the line supply quality.
- infeed: Reduce the load when motoring.
- infeed: Correct connection of the line commutating reactor.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

F30002 Power unit: DC link overvoltage

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The power unit has detected an overvoltage condition in the DC link.
- motor regenerates too much energy.
- line supply voltage too high.
- when operating with a VSM, the phase assignment L1, L2, L3 at the VSM differs from the phase assignment at the power unit.

Fault value (r0949, decimal):
DC link voltage [1 bit = 100 mV].
For SINAMICS GM/SM, the following applies:
Fault value (r0949, decimal):
32: Overvoltage in the negative partial DC link (VdcP)
64: Overvoltage in the positive partial DC link (VdcN)
96: Overvoltage in both partial -DC links

Remedy:
- increase the ramp-down time.
- activate the DC link voltage controller.
- use a brake resistor or Active Line Module.
- increase the current limit of the infeed or use a larger module (for the Active Line Module).
- check the line supply voltage.
- check and correct the phase assignment at the VSM and at the power unit.

See also: p0210 (Drive unit line supply voltage), p1240 (Vdc controller configuration)

F30003 Power unit: DC link undervoltage

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The power unit has detected an undervoltage condition in the DC link.
- line supply failure
- line supply voltage below the permissible value.
- line supply infeed failed or faulted.

Note:
The monitoring threshold for the DC link undervoltage is the minimum of the following values:
- 85% of the unit supply voltage (p0210).
- lowest permissible lower DC link voltage of the power units (descriptive data).

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Remedy: - check the line supply voltage
- check the line supply infeed and if necessary observe the fault messages of the line supply infeed.
Note:
The ready signal of the infeed r0863 must be connected to the associated inputs p0864 of the drives.
See also: p0210 (Drive unit line supply voltage)

F30004 Power unit: Overtemperature heatsink AC inverter

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The temperature of the power unit heatsink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.
- pulse frequency too high.
Fault value (r0949):
Temperature [1 bit = 0.01 °C].

Remedy: - check whether the fan is running.
- check the fan elements
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.
Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05000 has been fallen below.
See also: p1800 (Pulse frequency)

F30005 Power unit: I2T overload

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The power unit was overloaded (r0036 = 100 %).
- the permissible rated power unit current was exceeded for an inadmissibly long time.
- the permissible load duty cycle was not maintained.
Fault value (r0949, decimal):
I2t [100 % = 16384].

Remedy: - reduce the continuous load.
- adapt the load duty cycle.
- check the motor and power unit rated currents.
See also: r0036 (Power unit overload I2t), r0206 (Rated power unit power), p0307 (Rated motor power)

F30006 Power unit: Thyristor Control Board

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The thyristor control board of the Basic Line Module signals a fault.
- there is not line supply voltage.
- the line contactor is not closed.
- the line supply voltage is too low.
- line supply frequency outside the permissible range (45 ... 66 Hz).
- there is a DC link short-circuit.
- there is a DC link short-circuit (during the pre-charging phase).
- power supply thyristor control board outside the nominal range (5 ... 18 V) and supply voltage >30 V.
- there is an internal fault in the thyristor control board.

Remedy: The faults are saved in the TCB and are acknowledged by switching-out the TCB supply voltage for at least 10 s!
- check the line supply voltage
- check or energize the line contactor.
- check the monitoring time and, if required, increase (p0857).
- if required, observe additional power unit messages/signals.
- check the DC link regarding short-circuit or ground fault.
- observe the LED fault display of the thyristor control board.

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F30008	**Power unit: Sign-of-life error, cyclic data**
Reaction:	NONE (OFF1, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The cyclic setpoint telegrams of the Control Unit were not received on time by the power unit for at least two clock cycles within a time interval of 20 ms.
Remedy:	- check the electrical cabinet design and cable routing for EMC compliance.

A30010 (F)	**Power unit: Sign-of-life error, cyclic data**
Reaction:	NONE
Acknowledge:	NONE
Cause:	A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The cyclic setpoint telegrams of the Control Unit were not received on time by the power unit for at least one clock cycle.
Remedy:	- check the electrical cabinet design and cable routing for EMC compliance.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowledge upon F:	IMMEDIATELY (POWER ON)

F30011	**Power unit: Line phase failure in main circuit**
Reaction:	OFF2 (OFF1)
Acknowledge:	IMMEDIATELY
Cause:	A line phase failure was detected at the power unit. - the fuse of a phase of a main circuit has ruptured. - the DC link voltage ripple has exceeded the permissible limit value.
Remedy:	Check the fuses in the main circuit.

F30012	**Power unit: Temperature sensor heatsink wire breakage**
Reaction:	OFF1 (OFF2)
Acknowledge:	IMMEDIATELY
Cause:	The connection to one of the heatsink temperature sensors in the power unit is interrupted. Fault value (r0949, interpret hexadecimal): Bit 0: Module slot (electronics slot) Bit 1: Air intake Bit 2: Inverter 1 Bit 3: Inverter 2 Bit 4: Inverter 3 Bit 5: Inverter 4 Bit 6: Inverter 5 Bit 7: Inverter 6 Bit 8: Rectifier 1 Bit 9: Rectifier 2 See also: r0949 (Fault value)
Remedy:	Contact the manufacturer.

F30013	**Power unit: Temperature sensor heatsink short-circuit**
Reaction:	OFF1 (OFF2)
Acknowledge:	IMMEDIATELY

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Cause: The heatsink temperature sensor in the Motor Module is short-circuited.
Fault value (r0949, interpret hexadecimal):
Bit 0: Module slot (electronics slot)
Bit 1: Air intake
Bit 2: Inverter 1
Bit 3: Inverter 2
Bit 4: Inverter 3
Bit 5: Inverter 4
Bit 6: Inverter 5
Bit 7: Inverter 6
Bit 8: Rectifier 1
Bit 9: Rectifier 2

Remedy: Contact the manufacturer.

A30016 Power unit: Load supply switched-out

Reaction: NONE

Acknowledge: NONE

Cause: The following applies for CU31x and CUA31:
The DC link voltage is too low.
Fault value (r0949, decimal):
DC link voltage in [V].

Remedy: The following applies for CU31x and CUA31:
Under certain circumstances, the AC line supply is not switched-in.

F30017 Power unit: Hardware current limit has responded too often

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The hardware current limitation in the relevant phase (see A30031, A30032, A30033) has responded too often. The number of times the limit has been exceeded depends on the design and type of power unit.
For infeed units, the following applies:
- closed-loop control is incorrectly parameterized.
- load on the infeed is too high.
- Voltage Sensing Module incorrectly connected.
- commutating reactor missing or the incorrect type.
- power unit defective.

The following applies to Motor Modules:
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Fault value (r0949, interpret binary):
Bit 0: Phase U
Bit 1: Phase V
Bit 2: Phase W

Remedy: For infeed units, the following applies:
- check the controller settings, if required, reset and identify the controller (p0340 = 2, p3410 = 5).
- reduce the load, if required, increase the DC link capacitance or use a higher-rating infeed.
- check the connection of the optional Voltage Sensing Module.
- check the connection and technical data of the commutating reactor.
- check the power cables for short-circuit or ground fault.
- replace power unit.

The following applies to Motor Modules:
- check the motor data.
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

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F30021 Power unit: Ground fault

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Power unit has detected a ground fault.
- ground fault in the power cables
- winding fault or ground fault at the motor.
- CT defective.

Additional cause for CU310/CUA31:
- when the brake is applied, this causes the hardware DC current monitoring to respond.

Fault value (r0949, decimal):
Absolute value, summed current [32767 = 271 % rated current].

Remedy:
- check the power cable connections.
- check the motor.
- check the CT.

The following applies additionally for CU31x and CUA31:
- check the cables and contacts of the brake connection (a wire is possibly broken).

See also: p0287 (Ground fault monitoring thresholds)

F30022 Power unit: Monitoring U_ce

Reaction: OFF2

Acknowledge: POWER ON

Cause: In the power unit, the monitoring of the collector-emitter voltage (U_ce) of the semiconductor has responded.
Possible causes:
- short-circuit at the Motor Module output.
- defective semiconductor in the power unit.

Fault value (r0949, interpret binary):
Bit 0: Short-circuit in phase U
Bit 1: Short circuit in phase V
Bit 2: Short-circuit in phase W
Bit 3: Light transmitter enable defective
Bit 4: U_ce group fault signal interrupted
See also: r0949 (Fault value)

Remedy:
- check the power cable connections.
- select the defective semiconductor and replace.

F30025 Power unit: Chip overtemperature

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Chip temperature of the semiconductor has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.
- pulse frequency too high.

Fault value (r0949):
Temperature difference between the heatsink and chip [1 Bit = 0.01 °C].

Remedy:
- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05001 has been fallen below.
See also: r0037 (Power unit temperatures)

F30027 Power unit: Precharging DC link time monitoring

Reaction: OFF2

Acknowledge: IMMEDIATELY

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Cause: The power unit DC link was not able to be pre-charged within the expected time.
- line supply voltage too low.
- line supply phase fault.
- short-circuit or ground fault in the DC link.
- pre-charging circuit defective.

Fault value (r0949):
Missing internal enable signals, power unit (lower 16 bit):
(Inverted bit-coded notation FFFF hex -> all internal enable signals available)
Bit 0: Power supply of the IGBT gating shut down
Bit 1: Reserved
Bit 2: Reserved
Bit 3: Ground fault detected
Bit 4: Peak current intervention
Bit 5: I2t exceeded
Bit 6. Thermal model overtemperature calculated
Bit 7: (heatsink, gating module, power unit) overtemperature measured
Bit 8: Reserved
Bit 9: Overvoltage detected
Bit 10: Power unit has completed pre-charging, ready for pulse enable
Bit 11: SH terminal missing
Bit 12: Overcurrent detected
Bit 13: Armature short-circuit active
Bit 14: DRIVE-CLiQ fault active
Bit 15: Uce fault detected, transistor de-saturated due to overcurrent/circuit-circuit
Status, power unit (upper 16 bit, hexadecimal number):
0: Fault status (wait for OFF and fault acknowledgment)
1: Restart inhibit (wait for OFF)
2: Overvoltage condition detected -> change into the fault state
3: Undervoltage condition detected -> change into the fault state
4: Wait for bypass contactor to open -> change into the fault state
5: Wait for bypass contactor to open -> change into restart inhibit
6: Commissioning
7: Ready for pre-charging
8: Pre-charging started, DC link voltage lower than the minimum switch-on voltage
9: Pre-charging, DC link voltage end of pre-charging still not detected
10: Wait for the end of the de-bounce time of the main contactor after pre-charging has been completed
11: Pre-charging completed, ready for pulse enable
12: It was detected that the SH terminal was energized at the power unit
See also: p0210 (Drive unit line supply voltage)

Remedy: - check the line supply voltage
- check the line supply.

Power unit:
See also: p0210 (Drive unit line supply voltage)

A30031 Power unit: Hardware current limiting, phase U

Reaction: NONE

Acknowledge: NONE

Cause: Hardware current limit for phase U responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Remedy: - check the motor data.
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

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A30032 Power unit: Hardware current limiting, phase V

Reaction: NONE

Acknowledge: NONE

Cause: Hardware current limit for phase V responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Remedy:
- check the motor data.
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

A30033 Power unit: Hardware current limiting, phase W

Reaction: NONE

Acknowledge: NONE

Cause: Hardware current limit for phase W responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Remedy:
- check the motor data.
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

F30035 Power unit: Air intake overtemperature

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: Power unit air intake temperature has exceeded the permissible limit value. For air-cooled power units, the limit is at 55 degrees Celsius.
- ambient temperature too high.
- insufficient cooling, fan failure

Fault value (r0949):
Temperature [1 bit = 0.01 °C].

Remedy:
- check whether the fan is running.
- check the fan elements
- check whether the ambient temperature is in the permissible range.

Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05002 has been fallen below.

F30036 Power unit: Electronics board overtemperature

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: Power unit temperature in the module slot of the drive converter has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.

Fault value (r0949):
Temperature [1 bit = 0.01 °C].

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Remedy: - check whether the fan is running.
- check the fan elements
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05003 has been fallen below.

F30037 Power unit: Rectifier overtemperature

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Power unit rectifier temperature has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.
- line supply phase failure.
Fault value (r0949):
Temperature [1 bit = 0.01 °C].

Remedy: - check whether the fan is running.
- check the fan elements
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- check the line supply phases.
Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05004 has been fallen below.

F30040 Power unit: Undervolt 24 V

Reaction: OFF2

Acknowledge: POWER ON

Cause: Failure of the 24 V power supply for the power unit.
- the 16 V threshold was fallen below for longer than 3 ms.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].

Remedy: Check the 24 V DC voltage supply to power unit.

A30041 (F) Power unit: Undervoltage 24 V alarm

Reaction: NONE

Acknowledge: NONE

Cause: 24 V power supply fault for the power unit.
- the 16 V threshold was fallen below.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].

Remedy: Check the 24 V DC voltage supply to power unit.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

A30042 Power unit: Fan operating time reached or exceeded

Reaction: NONE

Acknowledge: NONE

Cause: The maximum operating time of the fan in the power unit is set in p0252.
This message indicates the following:
Fault value (r0949, decimal):
0: The maximum fan operating time is 500 hours.
1: The maximum fan operating time has been exceeded.

Remedy: Replace the fan in the power unit and reset the operating hours counter to 0 (p0251 = 0).
See also: p0251 (Operating hours counter, power unit fan), p0252 (Maximum operating time, power unit fan)

F30043 Power unit: Overvolt 24 V

Reaction: OFF2

Acknowledge: POWER ON

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Cause: The following applies for CU31x:
Overvoltage of the 24 V power supply for the power unit.
- the 31.5 V threshold was exceeded for more than 3 ms.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].

Remedy: Check the 24 V DC voltage supply to power unit.

A30044 (F) Power unit: Overvoltage 24 V alarm

Reaction: NONE

Acknowledge: NONE

Cause: The following applies for CU31x:
24 V power supply fault for the power unit.
- the 32.0 V threshold was exceeded.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].

Remedy: Check the 24 V DC voltage supply to power unit.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

F30045 Power unit: Supply undervoltage

Reaction: OFF2

Acknowledge: POWER ON

Cause: The following applies for CU31x:
Power supply fault in the power unit.
- the voltage monitoring on the DAC board signals an undervoltage fault on the module.

Remedy: Check the 24 V DC power supply for the power unit and if required replace the module.

A30046 (F) Power unit: Undervoltage, alarm

Reaction: NONE

Acknowledge: NONE

Cause: Before the last new start, a problem occurred at the power unit power supply.
- the voltage monitoring in the internal FPGA of the PSA signals an undervoltage fault on the module.
Fault value (r0949):
Register value of the voltage fault register.

Remedy: Check the 24 V DC power supply for the power unit and if required replace the module.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

F30047 Cooling system: Cooling medium flow rate too low

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Cooling system: Fault - flow rate has fallen below the fault value

Remedy:

F30050 Power unit: Supply overvoltage

Reaction: OFF2

Acknowledge: POWER ON

Cause: The following applies for CU31x and CUA31:
- the voltage monitoring on the DAC board signals an overvoltage fault on the module.

Remedy: Check the 24 V DC power supply of the CU and if required replace the module.

F30052 EEPROM data error

Reaction: NONE

Acknowledge: POWER ON

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Cause: EEPROM data error of the power unit module.
Fault value (r0949):
0: The EEPROM data read-in from the power unit module is inconsistent.
1: EEPROM data is not compatible to the firmware of the power unit application.

Remedy: Fault value (r0949):
0: Replace the power unit module or update the EEPROM data.
1: The following applies for CU31x and CUA31:
Update the firmware \SIEMENS\SINAMICS\CODE\SAC\cu31xi.ufw (cua31.ufw)

F30070 The power unit does not support the requested cycle.

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The following applies for CU31x and CUA31:
A cycle is requested that is not supported by the power unit.
Fault value (r0949):
The following applies for CU31x and CUA31:
0: The current control cycle is not supported.
1: The DriveCliQ cycle is not supported.
2: Internal timing problem (clearance between RX and TX instants too low)
3: Internal timing problem (TX instant too early)

Remedy: The following applies for CU31x and CUA31:
The power unit only supports the following cycles:
62.5us , 125us, 250us and 500us
Fault value (r0949):
The following applies for CU31x and CUA31:
0: Set a permitted current control cycle.
1: Set a permitted DriveCliQ cycle.
2/3: Contact the manufacturer (there is possibly an incompatible firmware release)

F30071 The power unit is no longer receiving new actual values.

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The following applies for CU31x and CUA31:
More than one actual value telegram from the power unit has failed.

Remedy: The following applies for CU31x and CUA31:
Check the interface (adjustment and locking) to the power unit.

F30072 Setpoints are no longer being transferred to the power unit.

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The following applies for CU31x and CUA31:
More than one setpoint telegram was not able to be transferred to the power unit.

Remedy: The following applies for CU31x and CUA31:
Check the interface (adjustment and locking) to the power unit.

A30073 (N) The actual value/setpoint conditioning is no longer in synchronism with DriveCliQ.

Reaction: NONE

Acknowledge: NONE

Cause: The following applies for CU31x and CUA31:
Communications to the power unit is no longer in synchronism with DriveCliQ.

Remedy: The following applies for CU31x and CUA31:
Wait until synchronization is re-established.

Reaction upon N: NONE

Acknowledge upon N: NONE

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F30074	**Communications error to the power unit**
Reaction:	NONE
Acknowledge:	POWER ON
Cause:	Communications is not possible to the power unit via the plug contact.
Remedy:	The following applies for CU31x and CUA31: Either replace the CU board or the power unit. You must check which of the two components must be replaced by replacing one and then the other component; if neither are available then both components must be returned.

F30105	**LT: Actual value sensing fault**
Reaction:	OFF2
Acknowledge:	IMMEDIATELY
Cause:	At least one incorrect actual value channel was detected on the Power Stack Adapter (PSA). The incorrect actual value channels are displayed in the following diagnostic parameters.
Remedy:	Evaluate the diagnostic parameters. If the actual value channel is incorrect, check the components and if required, replace.

F30600	**SI MM: STOP A initiated**
Reaction:	OFF2
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	The drive-based "Safety Integrated" function in the Motor Module (MM) has detected a fault and initiated STOP A (pulse cancellation via the safety shutdown path of the Motor Module). - forced checking procedure of the safety shutdown path of the Motor Module unsuccessful. - subsequent response to fault F30611 (defect in a monitoring channel). Fault value (r0949, decimal): 0: Stop request from the Control Unit. 1005: Pulses cancelled although SH not selected and there is not internal STOP A present. 1010: Pulses enabled although SH is selected or an internal STOP A is present. 9999: Subsequent response to fault F30611.
Remedy:	- select safe standstill and then de-select again. - replace the Motor Module involved. Re fault value = 9999: - carry-out diagnostics for fault F30611. Note: CU: Control Unit MM: Motor Module SH: Safe standstill SI: Safety Integrated

F30611	**SI MM: Defect in a monitoring channel".**
Reaction:	NONE (OFF1, OFF2, OFF3)
Acknowledge:	IMMEDIATELY (POWER ON)

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Cause: The drive-based "Safety Integrated" function in the Motor Module (MM) has detected a fault in the crosswise data comparison between the Control Unit (CU) and MM and initiated a STOP F.
As a result of this fault, after the parameterized transition has expired (p9858), fault F30600 is output (SI MM: STOP A initiated).
Fault value (r0949, decimal):
0: Stop request from the Control Unit.
1 to 999:
Number of the crosswise compared data that resulted in this fault.
1: SI monitoring clock cycle (r9780, r9880).
2: SI enable safety functions (p9601, p9801).
3: SI SGE changeover tolerance time (p9650, p9850).
4: SI transition period STOP F to STOP A (p9658, p9858).
5: SI enable Safe Brake Control (p9602, p9802).
6: SI motion enable, safety-relevant functions (p9501, internal value). This number is also displayed in r9895.
7: SI pulse cancellation delay time for Safe Stop 1 (p9652, p9852).
1000: Watchdog timer has expired. Within the time of approx. 5 * p9850 too many switching operations have occurred at the safety-related inputs of the Control Unit.
1001, 1002: Initialization error, change timer / check timer.
2000: Status of the SH terminals on the Control Unit and Motor Module are different.
2001: Feedback signal for safe pulse cancellation on the Control Unit and Motor Module are different.
2002: Status of the delay timer SS1 on the Control Unit and Motor Module are different.

Remedy: Re fault value = 1 to 999:
- check the crosswise compared data that resulted in a STOP F.
- carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 1000:
- check the wiring of the safety-relevant inputs (SGE) on the Control Unit (contact problems).

Re fault value = 1001, 1002:
- carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 2000, 2001, 2002:
- check the tolerance time SGE changeover and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- replace the Motor Module involved.

Note:
CU: Control Unit
MM: Motor Module
SGE: Safety-relevant input
SH: Safe standstill
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

N30620 (F, A) SI MM: Safe standstill active

Reaction: NONE

Acknowledge: NONE

Cause: The "safe standstill" function was selected on the Motor Module (MM) and is active.
Note:
This message does not result in a safety stop response.

Remedy: None necessary.
Note:
MM: Motor Module
SI: Safety Integrated

Reaction upon F: OFF2

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon A: NONE

Acknowledge upon A: NONE

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N30621 (F, A) SI MM: Safe Stop 1 active

Reaction: NONE

Acknowledge: NONE

Cause: The "Safe Stop 1" function (SS1) was selected on the Motor Module (MM) and is active.
Note:
This message does not result in a safety stop response.

Remedy: None necessary.
Note:
MM: Motor Module
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

Reaction upon F: OFF3

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon A: NONE

Acknowledge upon A: NONE

F30625 SI MM: Sign-of-life error in safety data

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function on the Motor Module (MM) has detected an error in the sign-of-life of the safety data between the Control Unit (CU) and MM and initiated a STOP A.
- there is either a DRIVE-CLIQ communications error or communications have failed.
- a time slice overflow of the safety software has occurred.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - select safe standstill and then de-select again.
- carry-out a POWER ON (power off/on) for all components.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry-out a diagnostics routine for the faults identified.
- de-select all drive functions that are not absolutely necessary.
- reduce the number of drives.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F30630 SI MM: Braking signal error

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function on the Motor Module (MM) has detected a braking signal error and initiated a STOP A.
- no motor holding brake connected.
- the motor holding brake control on the Motor Module or the Control Unit is faulty.
- a DRIVE-CLiQ communications error has occurred between the Control Unit and the Motor Module.
Fault value (r0949, decimal):
10: No brake connected or fault in the Motor Module brake control circuit ("open brake" operation).
30: Short-circuit in the brake winding or fault in the Motor Module brake control circuit ("close brake" operation).
40: Defect in the brake control circuit of the Motor Module ("brake closed" state).
60, 70: Fault in the braking signal of the Control Unit or communications fault between the Control Unit and Motor Module (braking signal).

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Remedy: - select safe standstill and then de-select again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry-out a diagnostics routine for the faults identified.
- check the electrical cabinet design and cable routing for EMC compliance
- replace the Motor Module involved.
Operation with Safe Brake Module:
- check the Safe Brake Modules connection.
- replace the Safe Brake Module. Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F30640 SI MM: Fault in the control shutdown path

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Motor Module has detected a communications error with the higher-level control to transfer the shutdown information.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - check the PROFIsafe address in the higher-level control and Motor Modules.
- carry-out a POWER ON for all components.
- upgrade the Motor Module software.
Note:
MM: Motor Module
SI: Safety Integrated
See also: p9810 (SI PROFIsafe address (Motor Module))

F30649 SI MM: Internal software error

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An internal error in the Safety Integrated software on the Motor Module has occurred.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- re-commission the Safety Integrated function and carry-out a POWER ON.
- upgrade the Motor Module software.
- contact the Hotline.
- replace the Motor Module.
Note:
MM: Motor Module
SI: Safety Integrated

F30650 SI MM: Acceptance test required

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The "Safety Integrated" function on the Motor Module requires an acceptance test.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, decimal):
130: No safety parameters available for the Motor Module.
1000: Reference and actual checksum in the Motor Module are not identical (booting).
- at least one checksum-checked piece of data is defective.
2000: Reference and actual checksum on the Motor Module are not identical (commissioning mode).
- reference checksum incorrectly entered into the Motor Module (p9899 not equal to r9898).
2003: Acceptance test is required as a safety parameter has been changed.
9999: Subsequent response of another safety-related fault, which occurred when booting and requires an acceptance test.

Remedy: Re fault value = 130:
- carry-out safety commissioning routine.
Re fault value = 1000:
- again carry-out safety commissioning routine.
- replace the CompactFlash card.
Re fault value = 2000:
- check the safety parameters in the Motor Module and adapt the reference checksum (p9899).
Re fault value = 2003:
- carry-out an acceptance test.
Re fault value = 9999:
- carry-out diagnostics for the other safety-related fault that is present.
Note:
MM: Motor Module
SI: Safety Integrated
See also: p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

F30651 SI MM: Synchronization with Control Unit unsuccessful

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function is requesting synchronization of the safety time slices on the Control Unit and Motor Module. This synchronization routine was not successful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
Note:
MM: Motor Module
SI: Safety Integrated

F30652 SI MM: Illegal monitoring clock cycle

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Safety Integrated monitoring clock cycle cannot be maintained due to the communication conditions requested in the system.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: Upgrade the Motor Module software.
Note:
MM: Motor Module
SI: Safety Integrated

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F30655 SI MM: Align monitoring functions

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An error has occurred when aligning the Safety Integrated monitoring functions on the Control Unit (CU) and Motor Module (MM). Control unit and Motor Module were not able to determine a common set of supported SI monitoring functions.
- there is either a DRIVE-CLIQ communications error or communications have failed.
- Safety Integrated software releases on the Control Unit and Motor Module are not compatible with one another.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry-out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F30656 SI MM: Motor Module parameter error

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: When accessing the Safety Integrated parameters for the Motor Module (MM) on the CompactFlash card, an error has occurred.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, decimal):
129: Safety parameters for the Motor Module corrupted.
131: Internal software error on the Control Unit.
255: Internal Motor Module software error.

Remedy: - re-commission the safety functions.
- upgrade the Control Unit software.
- upgrade the Motor Module software.
- replace the CompactFlash card.
Note:
MM: Motor Module
SI: Safety Integrated

F30659 SI MM: Write request for parameter rejected

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The write request for one or several Safety Integrated parameters on the Motor Module (MM) was rejected.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, decimal):
10: An attempt was made to enable the SH function although this cannot be supported.
11: An attempt was made to enable the SBC function although this cannot be supported.
13: An attempt was made to enable the SS1 function although this cannot be supported.
14: An attempt was made to enable the safe motion monitoring function with the higher-level control, although this cannot be supported.
See also: r9771 (SI common functions (Control Unit)), r9871 (SI common functions (Motor Module)

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Remedy: Re fault value = 10, 11:
- check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved (F01655, F30655) and if required, carry-out diagnostics for the faults involved.
- use a Motor Module that supports the function safe standstill or Safe Brake Control.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Note:
MM: Motor Module
SBC: Safe Brake Control
SH: Safe standstill
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

F30801 Power unit DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy:
- check the electrical cabinet design and cable routing for EMC compliance.
- replace the component involved.

See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F30802 Power unit: Time slice overflow

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Time slide overflow.

Remedy:

A30804 (F) Power unit: CRC

Reaction: NONE

Acknowledge: NONE

Cause: CRC error actuator

Remedy:

Reaction upon F: OFF2 (OFF1, OFF3)

Acknowledge upon F: IMMEDIATELY

F30805 Power unit: EPROM checksum error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.

Remedy: Replace the module.

F30809 Power unit: Switching information not valid

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: For 3P gating unit:
The last switching status word in the setpoint telegram is identified by the end ID. Such an end ID was not found.

Remedy:

A30810 (F) Power unit: Watchdog timer

Reaction: NONE

Acknowledge: NONE

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Cause: When booting it was detected that the cause of the previous reset was an SAC watchdog timer overflow.
Remedy:
Reaction upon F: NONE (OFF2)
Acknowledge upon F: IMMEDIATELY

F30820 Power unit DRIVE-CLiQ: Telegram error

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the power unit in the telegram and in the receive list do not match.
07: Power unit expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: Power unit does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F30835 Power unit DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F30836 Power unit DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry-out a POWER ON.

F30837 Power unit DRIVE-CLiQ: Component fault

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

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Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F30845 Power unit DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F30850 Power unit: Internal software error

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: An internal software error in the power unit has occurred.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - replace power unit.
- if required, upgrade the firmware in the power unit.
- contact the Hotline.

F30851 CU DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F30860 CU DRIVE-CLiQ: Telegram error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the power unit in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

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F30885 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F30886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F30887 CU DRIVE-CLiQ: Component fault

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F30895 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F30896 CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, decimal):
Component ID.

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Remedy: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry-out a POWER ON.

F30897 DRIVE-CLiQ: No communication to component

Reaction: OFF2 (DCBRAKE, ENCODER, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry-out a POWER ON.

F30899 (N, A) Power unit: Unknown fault

Reaction: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the power unit that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the power unit is more recent than the firmware on the Control Unit.
Fault value (r0949, decimal):
Fault number.
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the power unit by an older firmware version (r0128).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A30903 Power unit: I2C bus

Reaction: NONE

Acknowledge: NONE

Cause: Communications with EPROM not possible.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Replace the module.

F30907 Power unit: FPGA configuration unsuccessful

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: For the initialization within the power unit, an internal software error has occurred.

Remedy: - replace power unit.
- if required, upgrade the firmware in the power unit.
- contact the Hotline.

A30920 (F) Power unit: Temperature sensor fault

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, decimal):
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).

Remedy: - check that the sensor is connected correctly.
- replace sensor.

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Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY

A30999 (F, N) Power unit: Unknown alarm

Reaction: NONE
Acknowledge: NONE
Cause: An alarm occurred on the power unit that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the power unit is more recent than the firmware on the Control Unit.
Alarm value (r2124, decimal):
Alarm number.
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
Remedy: - replace the firmware on the power unit by an older firmware version (r0128).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F31100 (N, A) Encoder 1: Zero mark distance error

Reaction: ENCODER (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31101 (N, A) Encoder 1: Zero marked failed

Reaction: ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

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Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31110 (N, A) Encoder 1: Serial communications error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Fault value (r0949, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout with cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

Remedy: Re fault value:
Bit 0 = 1: Encoder defective. F31111 may provide additional details.
Bit 1 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 2 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 3 = 1: EMC / connect the cable shield, replace the encoder or encoder cable.
Bit 4 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 5 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 6 = 1: Update the Sensor Module firmware.
Bit 8 = 1: Check the parameterization (p0429.2).
Bit 9 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 10 = 1: Check the parameterization (p0429.2, p0449).
Bit 11 = 1: Check the parameterization (p0436).
Bit 12 = 1: Check the parameterization (p0429.6).

Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31111 (N, A) Encoder 1: Absolute encoder EnDat, internal fault/error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The EnDat encoder fault word contains fault bits that have been set.
Fault value (r0949, interpret binary):
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.
See also: p0491 (Motor encoder fault response ENCODER)

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Remedy: Re fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
Re fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.
Re fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 6 = 1:
The battery must be changed - only for encoders with battery back-up.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31112 (N, A) Encoder 1: The error bit is set in the serial protocol

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module SMCxx.
Fault value (r0949, interpret binary):

Remedy: Re fault value:

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31115 (N, A) Encoder 1: Amplitude error track A or B (A^2 + B^2)

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

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Cause: The amplitude (A^2 + B^2) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is < 230 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
Fault value (r0949, decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
- for measuring systems with their own bearing system: Ensure that the encoder housing is not subject to any axial force.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31116 (N, A) Encoder 1: Amplitude error, monitoring track A + B

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: The amplitude of the rectified encoder signals A and B is not within the tolerance bandwidth (hardware monitoring).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the hardware response thresholds are at < 176 mV and > 1.35 V.
Fault value (r0949, decimal):
Low word: Signal level, track A (16 bits with sign).
High word: Signal level, track B (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
These analog values are not measured at the same time with the hardware fault output.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31117 (N, A) Encoder 1: Inversion error, signals A and B and R

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: For a square-wave signal encoder (TTL. bipolar. double ended) the A* and B* and R* signals are not inverted with respect to signals A and B and R.
See also: p0491 (Motor encoder fault response ENCODER)

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Remedy: Check the setting of p0405: p0405.2 = 1 is only possible if the encoder is connected at X520.
Check the encoder/cable: Does the encoder supply TTL signals and the associated inverted signals?
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31118 (N, A) Encoder 1: Speed difference outside the tolerance range

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: PULSE INHIBIT
Cause: For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.
Encoder 1 is used as motor encoder and can be effective has fault response to change over to sensorless operation.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31120 (N, A) Encoder 1: Power supply voltage

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: PULSE INHIBIT
Cause: Encoder power supply voltage fault.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line (threshold 4.75 V).
Bit 1: Encoder power supply voltage overcurrent condition (threshold 450 mA).
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).
For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31121 (N, A) Encoder 1: Coarse position error

Reaction: ENCODER (NONE)
Acknowledge: PULSE INHIBIT
Cause: For the actual value sensing, an error was detected on the module. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.
See also: p0491 (Motor encoder fault response ENCODER)

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Remedy:	Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Reaction:	ENCODER (DCBRAKE, NONE)
Acknowledge:	PULSE INHIBIT
Cause:	The amplitude (track A or B) does not lie within the tolerance bandwidth (software monitoring function). SMC20: The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %). On the other hand, the response threshold is > 760 mV (frequency characteristic). SMC10: The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV. Fault value (r0949, decimal): Low word: Signal level, track A (16 bits with sign). High word: Signal level, track B (16 bits with sign). SMC20: A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec. SMC10: A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec. See also: p0491 (Motor encoder fault response ENCODER)
Remedy:	- check that the encoder cables are routed in compliance with EMC. - replace the encoder or encoder cable. - with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31129 (N, A) Encoder 1: Position difference, hall sensor/track C/D and A/B too large

Reaction:	ENCODER (DCBRAKE, NONE)
Acknowledge:	PULSE INHIBIT
Cause:	The error of track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical. One period of track C/D corresponds to 360 ° mechanical. One period of the Hall signal corresponds to 360 ° electrical. The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough. After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A31429. Fault value (r0949, decimal): Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °). See also: p0491 (Motor encoder fault response ENCODER)
Remedy:	- track C or D not connected. - correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D. - check that the encoder cables are routed in compliance with EMC. - check the adjustment of the Hall sensor.
Reaction upon N:	NONE
Acknowledge upon N:	NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F31130 (N, A) Encoder 1: Zero mark and position error from the coarse synchronization

Reaction: ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried-out after passing 2 zero marks. Fine synchronization was not carried-out.
The deviation may be up to 18 ° mechanical or up to 60 ° electrical.
Fault value (r0949, decimal):
Normalization: 32768 = 180 °
High word:
Mechanical zero mark position determined.
If the initialization via a track C/D is selected in p0404, then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
Low word:
Deviation of the zero mark from the expected position as electrical angle.
If the correction of the commutation position with the zero mark is selected in p0404, then a difference of a maximum of +/- 60 ° electrical is permitted.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check p0431 and if required, correct
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31131 (N, A) Encoder 1: Deviation, position incremental/absolute too large

Reaction: ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Absolute encoder: When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.
Limit value for the deviation:
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.
Fault value (r0949, decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F31150 (N, A) Encoder 1: Initialization error

Reaction: ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
The fault value is a bit field. Every set bit indicates functionality that is faulted.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).
See also: p0404 (Encoder configuration effective), p0491 (Motor encoder fault response ENCODER)

Remedy: - Check that p0404 is correctly set.
- check the encoder type used (incremental/absolute value) and for SMCxx, the encoder cable.
- if relevant, note additional fault/error messages that describe the fault in detail.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A31400 (F, N) Encoder 1: Alarm threshold, zero mark distance error

Reaction: NONE

Acknowledge: NONE

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

Reaction upon F: NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A31401 (F, N) Encoder 1: Alarm threshold, zero marked failed

Reaction: NONE

Acknowledge: NONE

Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

Reaction upon F: NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

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Reaction upon N: NONE
Acknowledge upon N: NONE

F31405 (N, A) Encoder 1: Encoder evaluation temperature too high

Reaction: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an excessively high temperature.
The fault threshold is 125 ° C.
Alarm value (r2124, decimal):
Measured board/module temperature in 0.1 °C.
Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

A31410 (F, N) Encoder 1: Serial communications

Reaction: NONE
Acknowledge: NONE
Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout with cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder.
Reaction upon F: NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A31411 (F, N) Encoder 1: EnDat encoder signals alarms

Reaction: NONE
Acknowledge: NONE
Cause: The error word of the EnDat encoder has alarm bits that have been set.
Alarm value (r2124, interpret binary):
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Replace encoder.

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Reaction upon F:	NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A31414 (F, N) Encoder 1: Amplitude error track C or D (C^2 + D^2)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
The nominal signal must be in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response thresholds are < 230 mV and > 750 mV (frequency characteristic).
This fault also occurs if the A/D converter is overcontrolled.
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.
Alarm value (r2124, decimal):
Low word: Signal level, track C (16 bits with sign).
High word: Signal level, track D (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- check the Hall sensor box

Reaction upon F:	NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

N31415 (F, A) Encoder 1: Amplitude alarm track A or B (A^2 + B^2)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (A^2 + B^2) of track A or B is not within the tolerance bandwidth.
SMC20:
The nominal signal level is at 500 mV (500 mV -25 % / +20 %). The response threshold is < 300 mV.
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
Alarm value (r2124, decimal):
Low word:
Amplitude square root(A*A + B*B).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
High word:
Angle 0 to 65535 corresponds to 0 to 360 degrees of the fine position. Zero degrees is at the negative zero crossover of track B.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- dirty code disk
- aged lighting system.

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Reaction upon F:	NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon A:	NONE
Acknowledge upon A:	NONE

A31418 (F, N) Encoder 1: Speed difference per sampling rate exceeded

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

Reaction upon F:	NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A31419 (F, N) Encoder 1: Track A or B outside the tolerance range

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude, phase or offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxx1: Minimum of the offset correction, track B
xxx2: Maximum of the offset correction, track B
xx1x: Minimum of the offset correction, track A
xx2x: Maximum of the offset correction, track A
x1xx: Minimum of the amplitude correction, track B/A
x2xx: Maximum of the amplitude correction, track B/A
1xxx: Minimum of the phase error correction
2xxx: Maximum of the phase error correction
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

Reaction upon F:	NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A31429 (F, N) Encoder 1: Position difference, hall sensor/track C/D and A/B too large

Reaction: NONE

Acknowledge: NONE

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Cause:	The error of track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical. One period of track C/D corresponds to 360 ° mechanical. One period of the Hall signal corresponds to 360 ° electrical. The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough. Alarm value (r2124, decimal): Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °). See also: p0491 (Motor encoder fault response ENCODER)
Remedy:	- track C or D not connected. - correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D. - check that the encoder cables are routed in compliance with EMC. - check the adjustment of the Hall sensor.
Reaction upon F:	NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A31431 (F, N) Encoder 1: Deviation, position incremental/absolute too large

Reaction:	NONE
Acknowledge:	NONE
Cause:	Absolute encoder: When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. Alarm value (r2124, decimal): Deviation in quadrants (1 pulse = 4 quadrants). Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected. See also: p0491 (Motor encoder fault response ENCODER)
Remedy:	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. - replace the encoder or encoder cable. - coding disk dirty or strong magnetic fields.
Reaction upon F:	NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

F31501 (N, A) Encoder 1: Position tracking encoder position outside tolerance window

Reaction:	OFF1 (NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	When powered-down, the drive/encoder was moved through a distance greater than what was set in the tolerance window. See also: p0413 (Measuring gearbox, position tracking tolerance window)
Remedy:	Re-adjust the drive.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31502 (N, A) Encoder 1: Encoder with measuring gear, without valid signals

Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	The encoder with measuring gear no longer provides any valid signals.
Remedy:	It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.

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Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31801 (N, A) Encoder 1 DRIVE-CLiQ: Sign-of-life missing

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check the electrical cabinet design and cable routing for EMC compliance.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31802 (N, A) Encoder 1: Time slice overflow

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: Time slice overflow, encoder 1.
Fault value (r0949, decimal):
9: Time slice overflow of the fast (current controller clock cycle) time slice.
10: Time slice overflow of the average time slice.
12: Time slice overflow of the slow time slice.
999: Timeout when waiting for SYNO, e.g. unexpected return to non-cyclic operation.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Reduce the current controller frequency.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31804 (N, A) Encoder 1: CRC CODE RAM

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: The checksum via the CODE-RAM of the Sensor Module has changed in operation.
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Hardware defect: Replace the Sensor Module.
Firmware error: If required, upgrade the firmware.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F31805 (N, A) Encoder 1: EPROM checksum error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Replace the module.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31806 (N, A) Encoder 1: Initialization error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The encoder was not successfully initialized.
Fault value (r0949, interpret hexadecimal):
1, 2, 3: Encoder initialization with the motor rotating.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Acknowledge the fault.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31811 (N, A) Encoder 1: Encoder serial number changed

Reaction: NONE (ENCODER, OFF2)

Acknowledge: IMMEDIATELY

Cause: The serial number of the motor encoder of a synchronous motor has changed. The change was only checked for encoders with serial number (e.g. EnDat encoders) and build-in motors (e.g. p300 = 401) or third-party motors (p0300 = 2).
Cause 1:
The motor with integrated and adjusted encoder was replaced.
Cause 2:
The encoder was replaced.
Cause 3:
A third-party, build-in or linear motor was re-commissioned.
Cause 4:
The firmware was updated to a version that checks the encoder serial number.
If the position control is active, the serial numbers of the adjusted encoders (p2507 = 3) are checked.
If the serial number has changed, the adjustment is reset (p2507 = 1).
See also: p0491 (Motor encoder fault response ENCODER)

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Remedy: Re causes 1, 4:
Accept the new serial number with p0440 = 1.
Re causes 2, 3:
Carry-out an automatic adjustment using the pole position identification routine. First, accept the serial number with p0440 = 1. Acknowledge the fault. Initiate the pole position identification routine with p1990 = 1. Then check that the pole position identification routine is correctly executed.
SERVO:
If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated.
or
Set the adjustment using parameter p0431. In this case, the new serial number is automatically accepted.
or
Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31812 (N, A) Encoder 1: A cycle requested from the CU or RX/TX timing is not supported

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A cycle requested from the CU or RX/TX timing is not supported
Fault value (r0949):
0: Application cycle is not supported.
1: DQ cycle is not supported.
2: Clearance between RX and TX instants in time too low.
3: TX instant in time too early.

Remedy:

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31820 (N, A) Encoder 1 DRIVE-CLiQ: Telegram error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the encoder in the telegram and in the receive list do not match.
07: The encoder expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: The encoder does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

Reaction upon N: NONE

Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F31835 (N, A) Encoder 1 DRIVE-CLiQ: Cyclic data transfer error

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31836 (N, A) Encoder 1 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Carry-out a POWER ON.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31837 (N, A) Encoder 1 DRIVE-CLiQ: Component fault

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.
Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F31845 (N, A) Encoder 1 DRIVE-CLiQ: Cyclic data transfer error

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31850 (N, A) Encoder 1: Sensor Module, internal software error

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: POWER ON
Cause: Internal software error in the Sensor Module of encoder 1.
Fault value (r0949, decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31851 (N, A) CU DRIVE-CLiQ: Sign-of-life missing

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Sensor Module (encoder 1) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: Upgrade the firmware of the component involved.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F31860 (N, A) CU DRIVE-CLiQ: Telegram error

Reaction: ENCODER (DCBRAKE, NONE)
Acknowledge: IMMEDIATELY

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Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the encoder in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the encoder in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31885 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31886 (N, A) CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

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Remedy: - carry-out a POWER ON.
- check whether the firmware version of the encoder (r0148) matches the firmware version of Control Unit (r0018).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31887 (N, A) CU DRIVE-CLiQ: Component fault

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31895 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F31896 (N, A) CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction: OFF2 (DCBRAKE, ENCODER, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, decimal):
Component ID.

Remedy: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry-out a POWER ON.

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Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31897 (N, A) DRIVE-CLiQ: No communication to component

Reaction:	ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	Communications with the DRIVE-CLiQ component specified by the fault value is not possible. One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn. Fault value (r0949, decimal): Component ID.
Remedy:	- check the DRIVE-CLiQ connections. - carry-out a POWER ON.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31899 (N, A) Encoder 1: Unknown fault

Reaction:	ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	A fault occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the Sensor Module for encoder 1 is more recent than the firmware on the Control Unit. Fault value (r0949, decimal): Fault number. If required, the significance of this new fault can be read about in a more recent description of the Control Unit. See also: p0491 (Motor encoder fault response ENCODER)
Remedy:	- replace the firmware on the Sensor Module by an older firmware version (r0148). - upgrade the firmware on the Control Unit (r0018).
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F31905 (N, A) Encoder 1: Parameterization error

Reaction:	ENCODER (DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY
Cause:	A parameter of encoder 1 was detected as being incorrect. It is possible that the parameterized encoder type does not match the connected encoder. The parameter involved can be determined as follows: - determine the parameter number using the fault value (r0949). - determine the parameter index (p0187). Fault value (r0949, decimal): Parameter number. See also: p0491 (Motor encoder fault response ENCODER)
Remedy:	- check whether the connected encoder type matches the encoder that has been parameterized. - correct the parameter specified by the fault value (r0949) and p0187.
Reaction upon N:	NONE
Acknowledge upon N:	NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

A31920 (F, N) Encoder 1: Temperature sensor fault

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, decimal):
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).

Reaction upon F: NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A31999 (F, N) Encoder 1: Unknown alarm

Reaction: NONE

Acknowledge: NONE

Cause: A alarm has occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the Sensor Module for encoder 1 is more recent than the firmware on the Control Unit.
Alarm value (r2124, decimal):
Alarm number.
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon F: NONE (DCBRAKE, ENCODER, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F32100 (N, A) Encoder 2: Zero mark clearance error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

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Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32101 (N, A) Encoder 2: Zero marked failed

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32110 (N, A) Encoder 2: Serial communications error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Fault value (r0949, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout with cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

Remedy: Re fault value:
Bit 0 = 1: Encoder defective. F31111 may provide additional details.
Bit 1 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 2 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 3 = 1: EMC / connect the cable shield, replace the encoder or encoder cable.
Bit 4 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 5 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 6 = 1: Update the Sensor Module firmware.
Bit 8 = 1: Check the parameterization (p0429.2).
Bit 9 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 10 = 1: Check the parameterization (p0429.2, p0449).
Bit 11 = 1: Check the parameterization (p0436).
Bit 12 = 1: Check the parameterization (p0429.6).

Reaction upon N:	NONE
Acknowledge upon N:	NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F32111 (N, A) Encoder 2: Absolute encoder EnDat, internal fault/error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The EnDat encoder fault word contains fault bits that have been set.
Fault value (r0949, interpret binary):
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.

Remedy: Re fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
Re fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.
Re fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 6 = 1:
The battery must be changed - only for encoders with battery back-up.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32112 (N, A) Encoder 2: The error bit is set in the serial protocol

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module SMCxx.
Fault value (r0949, decimal):

Remedy: Re fault value:

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F32115 (N, A) Encoder 2: Amplitude error track A or B (A^2 + B^2)

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (A^2 + B^2) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is < 230 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
Fault value (r0949, decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
- for measuring systems with their own bearing system: Ensure that the encoder housing is not subject to any axial force.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32116 (N, A) Encoder 2: Amplitude error, monitoring track A + B

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The amplitude of the rectified encoder signals A and B is not within the tolerance bandwidth (hardware monitoring).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the hardware response thresholds are at < 176 mV and > 1.35 V.
Fault value (r0949, decimal):
Low word: Signal level, track A (16 bits with sign).
High word: Signal level, track B (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
These analog values are not measured at the same time with the hardware fault output.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32117 (N, A) Encoder 2: Inversion error, signals A and B and R

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

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Cause: For a square-wave signal encoder (TTL. bipolar. double ended) the A* and B* and R* signals are not inverted with respect to signals A and B and R.

Remedy: Check the setting of p0405: p0405.2 = 1 is only possible if the encoder is connected at X520.
Check the encoder/cable: Does the encoder supply TTL signals and the associated inverted signals?

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32118 (N, A) Encoder 2: Speed difference outside the tolerance range

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy: - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32120 (N, A) Encoder 2: Power supply voltage

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Encoder power supply voltage fault.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line (threshold 4.75 V).
Bit 1: Encoder power supply voltage overcurrent condition (threshold 450 mA).

Remedy: For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).
For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32121 (N, A) Encoder 2: Coarse position error

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: For the actual value sensing, an error was detected on the module. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.

Remedy: Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

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Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (track A or B) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is > 760 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
Fault value (r0949, decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- replace the encoder or encoder cable.
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.

Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32129 (N, A) Encoder 2: Position difference, hall sensor/track C/D and A/B too large

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The error of track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A32429.
Fault value (r0949, decimal):
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

Remedy:
- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

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F32130 (N, A) Encoder 2: Zero mark and position error from the coarse synchronization

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried-out after passing 2 zero marks. Fine synchronization was not carried-out.
The deviation may be up to 18 ° mechanical or up to 60 ° electrical.
Fault value (r0949, decimal):
Normalization: 32768 = 180 °
High word:
Mechanical zero mark position determined.
If the initialization via a track C/D is selected in p0404, then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
Low word:
Deviation of the zero mark from the expected position as electrical angle.
If the correction of the commutation position with the zero mark is selected in p0404, then a difference of a maximum of +/- 60 ° electrical is permitted.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32131 (N, A) Encoder 2: Deviation, position incremental/absolute too large

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Absolute encoder: When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.
Limit value for the deviation:
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.
Fault value (r0949, decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32150 (N, A) Encoder 2: Initialization error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
The fault value is a bit field. Every set bit indicates functionality that is faulted.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).

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Remedy:	- Check that p0404 is correctly set. - check the encoder type used (incremental/absolute value) and for SMCxx, the encoder cable. - if relevant, note additional fault/error messages that describe the fault in detail.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

A32400 (F, N) Encoder 2: Alarm threshold, zero mark distance error

Reaction:	NONE
Acknowledge:	NONE
Cause:	The measured zero mark distance does not correspond to the parameterized zero mark distance. For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system. The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder). Alarm value (r2124, decimal): Last measured zero mark distance in increments (4 increments = 1 encoder pulse). The sign designates the direction of motion when detecting the zero mark distance.
Remedy:	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. . check the encoder type (encoder with equidistant zero marks). - adapt the parameter for the distance between zero marks (p0424, p0425). - replace the encoder or encoder cable.
Reaction upon F:	NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A32401 (F, N) Encoder 2: Alarm threshold, zero marked failed

Reaction:	NONE
Acknowledge:	NONE
Cause:	The 1.5 x parameterized zero mark distance was exceeded. The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder). Alarm value (r2124, decimal): Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
Remedy:	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. . check the encoder type (encoder with equidistant zero marks). - adapt the parameter for the clearance between zero marks (p0425). - replace the encoder or encoder cable.
Reaction upon F:	NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

F32405 (N, A) Encoder 2: Encoder evaluation temperature too high

Reaction:	NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY (POWER ON)

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Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an excessively high temperature.
The fault threshold is 125 ° C.
Alarm value (r2124, decimal):
Measured board/module temperature in 0.1 °C.

Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A32410 (F, N) Encoder 2: Serial communications

Reaction: NONE

Acknowledge: NONE

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout with cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A32411 (F, N) Encoder 2: EnDat encoder signals alarms

Reaction: NONE

Acknowledge: NONE

Cause: The error word of the EnDat encoder has alarm bits that have been set.
Alarm value (r2124, interpret binary):
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.

Remedy: Replace encoder.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

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A32414 (F, N) Encoder 2: Amplitude error track C or D (C^2 + D^2)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
The nominal signal must be in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response thresholds are < 230 mV and > 750 mV (frequency characteristic).
This fault also occurs if the A/D converter is overcontrolled.
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.
Alarm value (r2124, decimal):
Low word: Signal level, track C (16 bits with sign).
High word: Signal level, track D (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- check the Hall sensor box

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

N32415 (F, A) Encoder 2: Amplitude alarm track A or B (A^2 + B^2)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (A^2 + B^2) of track A or B is not within the tolerance bandwidth.
SMC20:
The nominal signal level is at 500 mV (500 mV -25 % / +20 %). The response threshold is < 300 mV.
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
Alarm value (r2124, decimal):
Low word:
Amplitude square root(A*A + B*B).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
High word:
Angle 0 to 65535 corresponds to 0 to 360 degrees of the fine position. Zero degrees is at the negative zero crossover of track B.

Remedy:
- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- dirty code disk
- aged lighting system.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon A: NONE

Acknowledge upon A: NONE

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A32418 (F, N) Encoder 2: Speed difference per sampling rate exceeded

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A32419 (F, N) Encoder 2: Track A or B outside the tolerance range

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude, phase or offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxx1: Minimum of the offset correction, track B
xxx2: Maximum of the offset correction, track B
xx1x: Minimum of the offset correction, track A
xx2x: Maximum of the offset correction, track A
x1xx: Minimum of the amplitude correction, track B/A
x2xx: Maximum of the amplitude correction, track B/A
1xxx: Minimum of the phase error correction
2xxx: Maximum of the phase error correction

Remedy:
- check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A32429 (F, N) Encoder 2: Position difference, hall sensor/track C/D and A/B too large

Reaction: NONE

Acknowledge: NONE

Cause: The error of track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
Alarm value (r2124, decimal):
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

Remedy:
- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

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Reaction upon F:	NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A32431 (F, N) Encoder 2: Deviation, position incremental/absolute too large

Reaction:	NONE
Acknowledge:	NONE
Cause:	Absolute encoder: When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. Alarm value (r2124, decimal): Deviation in quadrants (1 pulse = 4 quadrants). Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.
Remedy:	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. - replace the encoder or encoder cable. - coding disk dirty or strong magnetic fields.
Reaction upon F:	NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowledge upon N:	NONE

F32501 (N, A) Encoder 2: Position tracking encoder position outside tolerance window

Reaction:	OFF1 (NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	When powered-down, the drive/encoder was moved through a distance greater than what was set in the tolerance window. See also: p0413 (Measuring gearbox, position tracking tolerance window)
Remedy:	Re-adjust the drive.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32502 (N, A) Encoder 2: Encoder with measuring gear, without valid signals

Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	The encoder with measuring gear no longer provides any valid signals.
Remedy:	It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32801 (N, A) Encoder 2 DRIVE-CLiQ: Sign-of-life missing

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY

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Cause:	DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Fault value (r0949, interpret hexadecimal): 0A: The sign-of-life bit in the receive telegram is not set.
Remedy:	- check the electrical cabinet design and cable routing for EMC compliance. - replace the component involved. See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32802 (N, A) Encoder 2: Time slice overflow

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	Time slice overflow, encoder 2. Fault value (r0949, decimal): 9: Time slice overflow of the fast (current controller clock cycle) time slice. 10: Time slice overflow of the average time slice. 12: Time slice overflow of the slow time slice. 999: Timeout when waiting for SYNO, e.g. unexpected return to non-cyclic operation.
Remedy:	Reduce the current controller frequency.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32804 (N, A) Encoder 2: CRC CODE RAM

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	The checksum via the CODE-RAM of the Sensor Module has changed in operation. Fault value (r0949, interpret hexadecimal): Difference between the checksum at POWER ON and the actual checksum.
Remedy:	Hardware defect: Replace the Sensor Module. Firmware error: If required, upgrade the firmware.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32805 (N, A) Encoder 2: EPROM checksum error

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	Internal parameter data is corrupted. Fault value (r0949, interpret hexadecimal): 01: EEPROM access error. 02: Too many blocks in the EEPROM.
Remedy:	Replace the module.
Reaction upon N:	NONE
Acknowledge upon N:	NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F32806 (N, A) Encoder 2: Initialization error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: The encoder was not successfully initialized.
Fault value (r0949, interpret hexadecimal):
1, 2, 3: Encoder initialization with the motor rotating.
Remedy: Acknowledge the fault.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32812 (N, A) Encoder 2: A cycle requested from the CU or RX/TX timing is not supported

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A cycle requested from the CU or RX/TX timing is not supported
Fault value (r0949):
0: Application cycle is not supported.
1: DQ cycle is not supported.
2: Clearance between RX and TX instants in time too low.
3: TX instant in time too early.
Remedy:
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32820 (N, A) Encoder 2 DRIVE-CLiQ: Telegram error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the encoder in the telegram and in the receive list do not match.
07: The encoder expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: The encoder does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F32835 (N, A) Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32836 (N, A) Encoder 2 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry-out a POWER ON.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32837 (N, A) Encoder 2 DRIVE-CLiQ: Component fault

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F32845 (N, A) Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32850 (N, A) Encoder 2: Sensor Module, internal software error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: Internal software error in the Sensor Module of encoder 2.
Fault value (r0949, decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.

Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32851 (N, A) CU DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Sensor Module (encoder 2) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32860 (N, A) CU DRIVE-CLiQ: Telegram error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

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Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the encoder in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the encoder in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32885 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F32886 (N, A) CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

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Remedy:	Carry-out a POWER ON.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32887 (N, A) CU DRIVE-CLiQ: Component fault

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded. Fault value (r0949, interpret hexadecimal): 20: Error in the telegram header. 23: Receive error: The telegram buffer memory contains an error. 42: Send error: The telegram buffer memory contains an error. 43: Send error: The telegram buffer memory contains an error. 60: Response received too late during runtime measurement. 61: Time taken to exchange characteristic data too long.
Remedy:	- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...). - check the electrical cabinet design and cable routing for EMC compliance. - if required, use another DRIVE-CLiQ socket (p9904). - replace the component involved.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32895 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Fault value (r0949, interpret hexadecimal): 0B: Synchronization error during alternating cyclic data transfer.
Remedy:	Carry-out a POWER ON. See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F32896 (N, A) CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction:	OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge:	IMMEDIATELY
Cause:	The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced. Fault value (r0949, decimal): Component ID.
Remedy:	- when replacing cables, only use cables with the same length as the original cables. - when replacing components, use the same components and firmware releases. - carry-out a POWER ON.

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Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32897 (N, A) DRIVE-CLiQ: No communication to component

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry-out a POWER ON.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32899 (N, A) Encoder 2: Unknown fault

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Sensor Module for encoder 2 is more recent than the firmware on the Control Unit.
Fault value (r0949, decimal):
Fault number.
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F32905 (N, A) Encoder 2: Parameterization error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: A parameter of encoder 2 was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0188).
Fault value (r0949, decimal):
Parameter number.

Remedy: - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0188.

Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

A32920 (F, N) Encoder 2: Temperature sensor fault

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, decimal):
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).

Remedy: - check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A32999 (F, N) Encoder 2: Unknown alarm

Reaction: NONE

Acknowledge: NONE

Cause: A alarm has occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the Sensor Module for encoder 2 is more recent than the firmware on the Control Unit.
Alarm value (r2124, decimal):
Alarm number.
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F33100 (N, A) Encoder 3: Zero mark clearance error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F33101 (N, A) Encoder 3: Zero marked failed

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33110 (N, A) Encoder 3: Serial communications error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Fault value (r0949, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout with cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Remedy: Re fault value:
Bit 0 = 1: Encoder defective. F31111 may provide additional details.
Bit 1 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 2 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 3 = 1: EMC / connect the cable shield, replace the encoder or encoder cable.
Bit 4 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 5 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 6 = 1: Update the Sensor Module firmware.
Bit 8 = 1: Check the parameterization (p0429.2).
Bit 9 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 10 = 1: Check the parameterization (p0429.2, p0449).
Bit 11 = 1: Check the parameterization (p0436).
Bit 12 = 1: Check the parameterization (p0429.6).
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F33111 (N, A) Encoder 3: Absolute encoder EnDat, internal fault/error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The EnDat encoder fault word contains fault bits that have been set.
Fault value (r0949, interpret binary):
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.

Remedy: Re fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
Re fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.
Re fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 6 = 1:
The battery must be changed - only for encoders with battery back-up.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33112 (N, A) Encoder 3: The error bit is set in the serial protocol

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module SMCxx.
Fault value (r0949, decimal):

Remedy: Re fault value:

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33115 (N, A) Encoder 3: Amplitude error track A or B (A^2 + B^2)

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

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Cause: The amplitude (A^2 + B^2) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is < 230 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
Fault value (r0949, decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
- for measuring systems with their own bearing system: Ensure that the encoder housing is not subject to any axial force.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33116 (N, A) Encoder 3: Amplitude error, monitoring track A + B

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The amplitude of the rectified encoder signals A and B is not within the tolerance bandwidth (hardware monitoring).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the hardware response thresholds are at < 176 mV and > 1.35 V.
Fault value (r0949, decimal):
Low word: Signal level, track A (16 bits with sign).
High word: Signal level, track B (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
These analog values are not measured at the same time with the hardware fault output.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33117 (N, A) Encoder 3: Inversion error, signals A and B and R

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: For a square-wave signal encoder (TTL. bipolar. double ended) the A* and B* and R* signals are not inverted with respect to signals A and B and R.

Remedy: Check the setting of p0405: p0405.2 = 1 is only possible if the encoder is connected at X520.
Check the encoder/cable: Does the encoder supply TTL signals and the associated inverted signals?

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Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33118 (N, A) Encoder 3: Speed difference outside the tolerance range

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.
Fault value (r0949, decimal):
Only for internal Siemens troubleshooting.

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33120 (N, A) Encoder 3: Power supply voltage

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Encoder power supply voltage fault.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line (threshold 4.75 V).
Bit 1: Encoder power supply voltage overcurrent condition (threshold 450 mA).

Remedy:
For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).

For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33121 (N, A) Encoder 3: Coarse position error

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: For the actual value sensing, an error was detected on the module. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.

Remedy: Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F33125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Reaction: ENCODER (DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (track A or B) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is > 760 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
Fault value (r0949, decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- replace the encoder or encoder cable.
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33129 (N, A) Encoder 3: Position difference, hall sensor/track C/D and A/B too large

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The error of track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A33429.
Fault value (r0949, decimal):
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

Remedy: - track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F33130 (N, A) Encoder 3: Zero mark and position error from the coarse synchronization

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried-out after passing 2 zero marks. Fine synchronization was not carried-out.
The deviation may be up to 18 ° mechanical or up to 60 ° electrical.
Fault value (r0949, decimal):
Normalization: 32768 = 180 °
High word:
Mechanical zero mark position determined.
If the initialization via a track C/D is selected in p0404, then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
Low word:
Deviation of the zero mark from the expected position as electrical angle.
If the correction of the commutation position with the zero mark is selected in p0404, then a difference of a maximum of +/- 60 ° electrical is permitted.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33131 (N, A) Encoder 3: Deviation, position incremental/absolute too large

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Absolute encoder: When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.
Limit value for the deviation:
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.
Fault value (r0949, decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33150 (N, A) Encoder 3: Initialization error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
The fault value is a bit field. Every set bit indicates functionality that is faulted.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).

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Remedy: - Check that p0404 is correctly set.
- check the encoder type used (incremental/absolute value) and for SMCxx, the encoder cable.
- if relevant, note additional fault/error messages that describe the fault in detail.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A33400 (F, N) Encoder 3: Alarm threshold, zero mark distance error

Reaction: NONE

Acknowledge: NONE

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A33401 (F, N) Encoder 3: Alarm threshold, zero marked failed

Reaction: NONE

Acknowledge: NONE

Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
. check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

F33405 (N, A) Encoder 3: Encoder evaluation temperature too high

Reaction: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

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Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an excessively high temperature.
The fault threshold is 125 ° C.
Alarm value (r2124, decimal):
Measured board/module temperature in 0.1 °C.

Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A33410 (F, N) Encoder 3: Serial communications

Reaction: NONE

Acknowledge: NONE

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout with cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A33411 (F, N) Encoder 3: EnDat encoder signals alarms

Reaction: NONE

Acknowledge: NONE

Cause: The error word of the EnDat encoder has alarm bits that have been set.
Alarm value (r2124, interpret binary):
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.

Remedy: Replace encoder.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

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A33414 (F, N) Encoder 3: Amplitude error track C or D (C^2 + D^2)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
The nominal signal must be in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response thresholds are < 230 mV and > 750 mV (frequency characteristic).
This fault also occurs if the A/D converter is overcontrolled.
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.
Alarm value (r2124, decimal):
Low word: Signal level, track C (16 bits with sign).
High word: Signal level, track D (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- check the Hall sensor box

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

N33415 (F, A) Encoder 3: Amplitude alarm track A or B (A^2 + B^2)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (A^2 + B^2) of track A or B is not within the tolerance bandwidth.
SMC20:
The nominal signal level is at 500 mV (500 mV -25 % / +20 %). The response threshold is < 300 mV.
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
Alarm value (r2124, decimal):
Low word:
Amplitude square root(A*A + B*B).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
High word:
Angle 0 to 65535 corresponds to 0 to 360 degrees of the fine position. Zero degrees is at the negative zero crossover of track B.

Remedy:
- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the encoder module (e.g. contacts).
- dirty code disk
- aged lighting system.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon A: NONE

Acknowledge upon A: NONE

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A33418 (F, N) Encoder 3: Speed difference per sampling rate exceeded

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
Alarm value (r2124, decimal):
Only for internal Siemens troubleshooting.

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A33419 (F, N) Encoder 3: Track A or B outside the tolerance range

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude, phase or offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxx1: Minimum of the offset correction, track B
xxx2: Maximum of the offset correction, track B
xx1x: Minimum of the offset correction, track A
xx2x: Maximum of the offset correction, track A
x1xx: Minimum of the amplitude correction, track B/A
x2xx: Maximum of the amplitude correction, track B/A
1xxx: Minimum of the phase error correction
2xxx: Maximum of the phase error correction

Remedy:
- check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A33429 (F, N) Encoder 3: Position difference, hall sensor/track C/D and A/B too large

Reaction: NONE

Acknowledge: NONE

Cause: The error of track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
Alarm value (r2124, decimal):
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

Remedy:
- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

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Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A33431 (F, N) Encoder 3: Deviation, position incremental/absolute too large

Reaction: NONE
Acknowledge: NONE
Cause: Absolute encoder: When cyclically reading the absolute position, an excessively high difference to the incremental position was detected.
Alarm value (r2124, decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- coding disk dirty or strong magnetic fields.
Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

F33501 (N, A) Encoder 3: Position tracking encoder position outside tolerance window

Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: When powered-down, the drive/encoder was moved through a distance greater than what was set in the tolerance window.
See also: p0413 (Measuring gearbox, position tracking tolerance window)
Remedy: Re-adjust the drive.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33502 (N, A) Encoder 3: Encoder with measuring gear, without valid signals

Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The encoder with measuring gear no longer provides any valid signals.
Remedy: It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33801 (N, A) Encoder 3 DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY

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Cause:	DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Fault value (r0949, interpret hexadecimal): 0A: The sign-of-life bit in the receive telegram is not set.
Remedy:	- check the electrical cabinet design and cable routing for EMC compliance. - replace the component involved. See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F33802 (N, A) Encoder 3: Time slice overflow

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	Time slice overflow, encoder 3. Fault value (r0949, decimal): 9: Time slice overflow of the fast (current controller clock cycle) time slice. 10: Time slice overflow of the average time slice. 12: Time slice overflow of the slow time slice. 999: Timeout when waiting for SYNO, e.g. unexpected return to non-cyclic operation.
Remedy:	Reduce the current controller frequency.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F33804 (N, A) Encoder 3: CRC CODE RAM

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	The checksum via the CODE-RAM of the Sensor Module has changed in operation. Fault value (r0949, interpret hexadecimal): Difference between the checksum at POWER ON and the actual checksum.
Remedy:	Hardware defect: Replace the Sensor Module. Firmware error: If required, upgrade the firmware.
Reaction upon N:	NONE
Acknowledge upon N:	NONE
Reaction upon A:	NONE
Acknowledge upon A:	NONE

F33805 (N, A) Encoder 3: EPROM checksum error

Reaction:	OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	Internal parameter data is corrupted. Fault value (r0949, interpret hexadecimal): 01: EEPROM access error. 02: Too many blocks in the EEPROM.
Remedy:	Replace the module.
Reaction upon N:	NONE
Acknowledge upon N:	NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F33806 (N, A) Encoder 3: Initialization error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: The encoder was not successfully initialized.
Fault value (r0949, interpret hexadecimal):
1, 2, 3: Encoder initialization with the motor rotating.
Remedy: Acknowledge the fault.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33812 (N, A) Encoder 3: A cycle requested from the CU or RX/TX timing is not supported

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A cycle requested from the CU or RX/TX timing is not supported
Fault value (r0949):
0: Application cycle is not supported.
1: DQ cycle is not supported.
2: Clearance between RX and TX instants in time too low.
3: TX instant in time too early.
Remedy:
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33820 (N, A) Encoder 3 DRIVE-CLiQ: Telegram error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the encoder in the telegram and in the receive list do not match.
07: The encoder expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: The encoder does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

F33835 (N, A) Encoder 3 DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33836 (N, A) Encoder 3 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry-out a POWER ON.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33837 (N, A) Encoder 3 DRIVE-CLiQ: Component fault

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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F33845 (N, A) Encoder 3 DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33850 (N, A) Encoder 3: Sensor Module, internal software error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: Internal software error in the Sensor Module of encoder 3.
Fault value (r0949, decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.

Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33851 (N, A) CU DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Sensor Module (encoder 3) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33860 (N, A) CU DRIVE-CLiQ: Telegram error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

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Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the encoder in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the encoder in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33885 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F33886 (N, A) CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

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Remedy: Carry-out a POWER ON.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33887 (N, A) CU DRIVE-CLiQ: Component fault

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.
Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33895 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33896 (N, A) CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, decimal):
Component ID.
Remedy: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry-out a POWER ON.

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Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33897 (N, A) DRIVE-CLiQ: No communication to component

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry-out a POWER ON.

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33899 (N, A) Encoder 3: Unknown fault

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the Sensor Module for encoder 3 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Sensor Module for encoder 3 is more recent than the firmware on the Control Unit.
Fault value (r0949, decimal):
Fault number.
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

F33905 (N, A) Encoder 3: Parameterization error

Reaction: OFF1 (DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: A parameter of encoder 3 was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0189).
Fault value (r0949, decimal):
Parameter number.

Remedy: - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0189.

Reaction upon N: NONE
Acknowledge upon N: NONE

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Reaction upon A: NONE
Acknowledge upon A: NONE

A33920 (F, N) Encoder 3: Temperature sensor fault

Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, decimal):
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Remedy: - check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).
Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A33999 (F, N) Encoder 3: Unknown alarm

Reaction: NONE
Acknowledge: NONE
Cause: A alarm has occurred on the Sensor Module for encoder 3 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the Sensor Module for encoder 3 is more recent than the firmware on the Control Unit.
Alarm value (r2124, decimal):
Alarm number.
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).
Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F34207 (N, A) VSM: Temperature fault threshold exceeded

Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The temperature (r3666) measured using the Voltage Sensing Module (VSM) has exceeded the threshold value (p3668).
This fault can only be initiated if the temperature evaluation was activated (p3665 = 2 for a KTY sensor or p3665 = 1 for a PTC sensor).
Fault value (r0949, decimal):
The hundred thousands and ten thousands position specifies the component number of the VSM where the fault occurred.
Remedy: - check the fan.
- reduce the power.
Reaction upon N: NONE
Acknowledge upon N: NONE
Reaction upon A: NONE
Acknowledge upon A: NONE

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A34211 (F, N) VSM: Temperature alarm threshold exceeded

Reaction: NONE
Acknowledge: NONE
Cause: The temperature (r3666) measured using the Voltage Sensing Module (VSM) has exceeded the threshold value (p3667).
Alarm value (r2124, decimal):
The hundred thousands and ten thousands position specifies the component number of the VSM where the fault occurred.
Remedy: - check the fan.
- reduce the power.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F34801 VSM DRIVE-CLiQ: Sign-of-life missing

Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM).
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: - check the DRIVE-CLiQ connection.
- replace the Terminal Module.

F34802 VSM: Time slice overflow

Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Time slice overflow on the Voltage Sensing Module.
Remedy: Replace the Voltage Sensing Module.

F34803 VSM: Memory test

Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: An error has occurred during the memory test on the Voltage Sensing Module.
Remedy: - check whether the permissible ambient temperature for the Voltage Sensing Module is being maintained.
- replace the Voltage Sensing Module.

F34804 VSM: CRC

Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A checksum error has occurred when reading-out the program memory on the Voltage Sensing Module (VSM).
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Voltage Sensing Module.

F34805 VSM: EPROM checksum error

Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Voltage Sensing Module (VSM).

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F34806 **VSM: Initialization**

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: For the Voltage Sensing Module (VSM), a fault has occurred while initializing.

Remedy: Replace the Voltage Sensing Module.

A34807 (F, N) **VSM: Sequence control, time monitoring**

Reaction: NONE

Acknowledge: NONE

Cause: Error, timeout in the sequence control on the Voltage Sensing Module (VSM).

Remedy: Replace the Voltage Sensing Module.

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

F34820 **VSM DRIVE-CLiQ: Telegram error**

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the encoder in the telegram and in the receive list do not match.
07: The encoder expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: The encoder does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F34835 **VSM DRIVE-CLiQ: Cyclic data transfer error**

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry-out a POWER ON.
- replace the component involved.

F34836 **VSM DRIVE-CLiQ: Send error for DRIVE-CLiQ data**

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

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Remedy: Carry-out a POWER ON.

F34837 VSM DRIVE-CLiQ: Component fault

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F34845 VSM DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM).
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F34850 VSM: Internal software error

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: An internal software error in the Voltage Sensing Module (VSM) has occurred.
Fault value (r0949, decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.

Remedy: - replace the Voltage Sensing Module (VSM).
- if required, upgrade the firmware in the Voltage Sensing Module.
- contact the Hotline.

F34851 CU DRIVE-CLiQ: Sign-of-life missing

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM). The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F34860 CU DRIVE-CLiQ: Telegram error

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the Voltage Sensing Module in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the Voltage Sensing Module in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F34885 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F34886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the VSM involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F34887 CU DRIVE-CLiQ: Component fault

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F34895 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F34896 CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, decimal):
Component ID.

Remedy: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry-out a POWER ON.

F34897 DRIVE-CLiQ: No communication to component

Reaction: OFF2 (DCBRAKE, ENCODER, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry-out a POWER ON.

F34899 (N, A) VSM: Unknown fault

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the Voltage Sensing Module that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the Voltage Sensing Module is more recent than the firmware on the Control Unit.
Fault value (r0949, decimal):
Fault number.
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Voltage Sensing Module by an older firmware version (r0xyz).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A34903 (F, N) VSM: Error I2C bus

Reaction: NONE

Acknowledge: NONE

Cause: An error has occurred in while accessing via the internal TM I2C bus.

Remedy: Replace the Terminal Module.

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Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A34904 (F, N) VSM: EEPROM

Reaction: NONE
Acknowledge: NONE
Cause: An error has occurred accessing the non-volatile memory on the Terminal Module.
Remedy: Replace the Terminal Module.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A34905 (F, N) VSM: Parameter access

Reaction: NONE
Acknowledge: NONE
Cause: The Control Unit attempted to write an illegal parameter value into the Voltage Sensing Module (VSM).
Remedy: - check whether the firmware version of the VSM (r0158) matches the firmware version of Control Unit (r0018).
- if required, replace the Voltage Sensing Module.
Note:
The firmware versions that match each other are in the readme.txt file on the CompactFlash card.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A34920 (F, N) VSM: Temperature sensor fault

Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, decimal):
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Remedy: - check that the sensor is connected correctly.
- replace sensor.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A34999 (F, N) VSM: Unknown alarm

Reaction: NONE
Acknowledge: NONE

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Cause: A fault occurred on the Voltage Sensing Module (VSM) an alarm has occurred that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the module is more recent than the firmware on the Control Unit.
Alarm value (r2124, decimal):
Alarm number.
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Voltage Sensing Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

A35200 (F, N) TM: Calibration data

Reaction: NONE

Acknowledge: NONE

Cause: An error was detected in the calibration data of the Terminal Module.
Alarm value (r2124, decimal):
The hundred thousands and ten thousands location specifies the component Id of the Terminal Module where the fault occurred.
The thousands location specifies whether the analog input 0 (=0) or analog output 1 (= 1) is involved.
The hundreds location specifies the fault type:
0: No calibration data available.
1: Offset too high (> 100 mV).
The tens and ones location specifies the number of the input involved.

Remedy: Power-down the unit and power-up again.
If the fault is still present, replace the module/board.

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

F35207 (N, A) TM: Temperature fault threshold exceeded

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105) has exceeded the threshold value to initiate this fault (p4102[1]).
Please note that this fault can only be initiated if the temperature evaluation was activated (p4100 = 2 for KTY sensor or p4100 = 1 for PTC sensor).
Fault value (r0949, decimal):
The hundred thousands and ten thousands location specifies the component number of the TMxx where the fault occurred.
Alarm:
Please note that Fault F35207 only causes the drive to be shut down if there is at least one BICO interconnection between the drive and TM31.

Remedy: - allow the temperature sensor to cool down.
- if required, set the fault response to NONE (p2100, p2101).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

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A35211 (F, N) TM: Temperature alarm threshold exceeded

Reaction: NONE

Acknowledge: NONE

Cause: The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105) has exceeded the threshold value to initiate this alarm (p4102[0]).
Alarm value (r2124, decimal):
The hundred thousands and ten thousands location specifies the component number of the TMxx where the fault occurred.

Remedy: Allow the temperature sensor to cool down.

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

F35220 (N, A) TM: Frequency limit reached for signal output

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The signals output from the Terminal Module 41 (TM41) for tracks A/B have reached the limit frequency. The output signals are no longer in synchronism with the specified setpoint.

Remedy: - enter a lower speed setpoint (p1155).
- reduce the encoder pulse number (p0408).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

F35221 (N, A) TM: Setpoint - actual value deviation, outside the tolerance range

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The deviation between the setpoint and the output signals (track A/B) exceeds the tolerance of +/-3 %.

Remedy: - reduce the basic clock cycle (p0110, p0111).
- replace the module.

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A35222 (F, N) TM: Encoder pulse number not permissible

Reaction: NONE

Acknowledge: NONE

Cause: The encoder pulse number entered does not match the permissible pulse number from a hardware perspective.
Fault value (r0949, decimal):
1: Encoder pulse number is too high.
2: Encoder pulse number is too low.
4: Encoder pulse number is less than the zero mark offset (p4426)

Remedy: Enter the encoder pulse number in the permissible range (p0408).

Reaction upon F: OFF1 (NONE, OFF2, OFF3)

Acknowledge upon F: IMMEDIATELY (POWER ON)

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Reaction upon N: NONE
Acknowledge upon N: NONE

A35223 (F, N) TM: ZM offset not permissible

Reaction: NONE
Acknowledge: NONE
Cause: The entered zero mark offset is not permissible.
Fault value (r0949, decimal):
1: Zero mark offset is too high.
Remedy: Enter the zero mark offset in the permissible range (p4426).
Reaction upon F: OFF1 (NONE, OFF2, OFF3)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A35801 (F, N) TM DRIVE-CLiQ: Sign-of-life missing

Reaction: NONE
Acknowledge: NONE
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved.
Alarm value (r2124, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: - check the DRIVE-CLiQ connection.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowledge upon N: NONE

A35802 (F, N) TM: Time slice overflow

Reaction: NONE
Acknowledge: NONE
Cause: Time slice overflow on Terminal Module.
Remedy: Replace the Terminal Module.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A35803 (F, N) TM: Memory test

Reaction: NONE
Acknowledge: NONE
Cause: An error has occurred during the memory test on the Terminal Module.
Remedy: - check whether the permissible ambient temperature for the Terminal Module is being maintained.
- replace the Terminal Module.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)

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Reaction upon N: NONE
Acknowledge upon N: NONE

A35804 (F, N) TM: CRC

Reaction: NONE
Acknowledge: NONE
Cause: A checksum error has occurred when reading-out the program memory on the Terminal Module.
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Terminal Module.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A35805 (F, N) TM: EPROM checksum error

Reaction: NONE
Acknowledge: NONE
Cause: Internal parameter data is corrupted.
Alarm value (r2124, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Terminal Module 31 (TM31).
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A35807 (F, N) TM: Sequence control, time monitoring

Reaction: NONE
Acknowledge: NONE
Cause: Error, timeout, sequence control on the Terminal Module.
Remedy: Replace the Terminal Module.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

F35820 TM DRIVE-CLiQ: Telegram error

Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the Terminal Module in the telegram and in the receive list do not match.
07: Terminal Module expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: Terminal Module does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F35835 TM DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F35836 TM DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F35837 PTM DRIVE-CLiQ: Component fault

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F35845 TM DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

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Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F35850 TM: Internal software error

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: An internal software error in the Terminal Module (TM) has occurred.
Fault value (r0949, decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.

Remedy: - replace the Terminal Module (TM).
- if required, upgrade the firmware in the Terminal Module.
- contact the Hotline.

F35851 CU DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F35860 CU DRIVE-CLiQ: Telegram error

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the Terminal Module in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the Terminal Module in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F35885 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F35886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F35887 CU DRIVE-CLiQ: Component fault

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F35895 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F35896 CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction: OFF2 (DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, decimal):
Component ID.

Remedy: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry-out a POWER ON.

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F35897 **DRIVE-CLiQ: No communication to component**

Reaction: OFF2 (DCBRAKE, ENCODER, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry-out a POWER ON.

F35899 (N, A) **TM: Unknown fault**

Reaction: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Terminal Module is more recent than the firmware on the Control Unit.
Fault value (r0949, decimal):
Fault number.
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Terminal Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE

Acknowledge upon N: NONE

Reaction upon A: NONE

Acknowledge upon A: NONE

A35903 (F, N) **TM: Error I2C bus**

Reaction: NONE

Acknowledge: NONE

Cause: An error has occurred while accessing the internal I2C bus of the Terminal Module.

Remedy: Replace the Terminal Module.

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

A35904 (F, N) **TM: EEPROM**

Reaction: NONE

Acknowledge: NONE

Cause: An error has occurred accessing the non-volatile memory on the Terminal Module.

Remedy: Replace the Terminal Module.

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

A35905 (F, N) **TM: Parameter access**

Reaction: NONE

Acknowledge: NONE

Cause: The Control Unit attempted to write an illegal parameter value into the Terminal Module.

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Remedy:	- check whether the firmware version of the TM (r0158) matches the firmware version of Control Unit (r0018). - if required, replace the Terminal Module. Note: The firmware versions that match each other are in the readme.txt file on the CompactFlash card.
Reaction upon F:	NONE
Acknowledge upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A35906 (F, N) TM: 24 V power supply missing

Reaction:	NONE
Acknowledge:	NONE
Cause:	The 24 V power supply for the digital outputs is missing. Alarm value (r2124, interpret hexadecimal): 01: TM17 24 V power supply for DI/DO 0 ... 7 missing. 02: TM17 24 V power supply for DI/DO 8 ... 15 missing. 04: TM15 24 V power supply for DI/DO 0 ... 7 (X520) missing. 08: TM15 24 V power supply for DI/DO 8 ... 15 (X521) missing. 10: TM15 24 V power supply for DI/DO 16 ... 23 (X522) missing. 20: TM41 24 V power supply for DI/DO 0 ... 3 missing.
Remedy:	Check the terminals for the power supply voltage (L1+, L2+, L3+, M).
Reaction upon F:	NONE
Acknowledge upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A35907 (F, N) TM: Hardware initialization error

Reaction:	NONE
Acknowledge:	NONE
Cause:	The Terminal Module was not successfully initialized. Alarm value (r2124, interpret hexadecimal): 01: TM17 or TM41 - incorrect configuration request. 02: TM17 or TM41 - programming not successful. 04: TM17 or TM41 - invalid time stamp
Remedy:	Carry-out a POWER ON.
Reaction upon F:	NONE
Acknowledge upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowledge upon N:	NONE

A35910 (F, N) TM: Module overtemperature

Reaction:	NONE
Acknowledge:	NONE
Cause:	The temperature in the module has exceeded the highest permissible limit.
Remedy:	- reduce the ambient temperature. - replace the Terminal Module.
Reaction upon F:	NONE
Acknowledge upon F:	IMMEDIATELY (POWER ON)

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Reaction upon N: NONE
Acknowledge upon N: NONE

A35911 (F, N) TM: PROFIBUS clock synchronous operation sign-of-life missing

Reaction: NONE
Acknowledge: NONE
Cause: The maximum permissible number of errors in the master sign-of-life (clock synchronous PROFIBUS) has been exceeded in cyclic operation.
When the alarm is output, the module outputs are reset up to the next synchronization.
Remedy: - check the physical bus configuration (terminating resistor, shielding, etc.).
- check the interconnection of the master sign-of-life (r4201 via p0915).
- check whether the master correctly sends the sign-of-life (e.g. set-up a trace with r4201.12 ... r4201.15 and trigger signal r4301.9).
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).

Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A35920 (F, N) TM: Temperature sensor fault

Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, decimal):
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Remedy: - check that the sensor is connected correctly.
- replace sensor.

Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

A35999 (F, N) TM: Unknown alarm

Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Terminal Module is more recent than the firmware on the Control Unit.
Alarm value (r2124, decimal):
Alarm number.
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
Remedy: - replace the firmware on the Terminal Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon F: NONE (DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowledge upon N: NONE

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A36801 (F, N) DMC DRIVE-CLiQ: Sign-of-life missing

Reaction: NONE

Acknowledge: NONE

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Alarm value (r2124, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: - check the DRIVE-CLiQ connection.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowledge upon N: NONE

A36804 (F, N) DMC: CRC

Reaction: NONE

Acknowledge: NONE

Cause: A checksum error has occurred when reading-out the program memory on the DRIVE-CLiQ Hub Module Cabinet (DMC).
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.

Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the DRIVE-CLiQ Hub Module Cabinet (DMC).

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

A36805 (F, N) DMC: EPROM checksum error

Reaction: NONE

Acknowledge: NONE

Cause: Internal parameter data is corrupted.
Alarm value (r2124, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.

Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the DRIVE-CLiQ Hub Module Cabinet (DMC).

Reaction upon F: NONE

Acknowledge upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowledge upon N: NONE

F36820 DMC DRIVE-CLiQ: Telegram error

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
01. CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the Terminal Module in the telegram and in the receive list do not match.
07: Terminal Module expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: Terminal Module does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F36835 DMC DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F36836 DMC DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F36837 DMC DRIVE-CLiQ: Component fault

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F36845 DMC DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F36851 CU DRIVE-CLiQ: Sign-of-life missing

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F36860 CU DRIVE-CLiQ: Telegram error

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the Terminal Module in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the Terminal Module in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

F36885 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.

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F36886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F36887 CU DRIVE-CLiQ: Component fault

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F36895 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F36896 CU DRIVE-CLiQ: Inconsistent component characteristics

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component, specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, decimal):
Component ID.

Remedy: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry-out a POWER ON.

F40000 Fault on the drive object at the DRIVE-CLiQ socket X100

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X100.
Fault value (r0949, decimal):
First fault that has occurred for this drive object.

Remedy: Evaluate the fault buffer of the specified object.

F40001 Fault on the drive object at the DRIVE-CLiQ socket X101

Reaction: NONE

Acknowledge: IMMEDIATELY

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Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X101.
Fault value (r0949, decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40002 Fault on the drive object at the DRIVE-CLiQ socket X102

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X102.
Fault value (r0949, decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40003 Fault on the drive object at the DRIVE-CLiQ socket X103

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X103.
Fault value (r0949, decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40004 Fault on the drive object at the DRIVE-CLiQ socket X104

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X104.
Fault value (r0949, decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40005 Fault on the drive object at the DRIVE-CLiQ socket X105

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X105.
Fault value (r0949, decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

A40100 Alarm on the drive object at the DRIVE-CLiQ socket X100

Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X100.
Alarm value (r2124, decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40101 Alarm on the drive object at the DRIVE-CLiQ socket X101

Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X101.
Alarm value (r2124, decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40102 Alarm on the drive object at the DRIVE-CLiQ socket X102

Reaction: NONE
Acknowledge: NONE

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Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X102.
Alarm value (r2124, decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40103 Alarm on the drive object at the DRIVE-CLiQ socket X103

Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X103.
Alarm value (r2124, decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40104 Alarm on the drive object at the DRIVE-CLiQ socket X104

Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X104.
Alarm value (r2124, decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40105 Alarm on the drive object at the DRIVE-CLiQ socket X105

Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X105.
Alarm value (r2124, decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

F40799 CU-Link: Configured transfer end time exceeded

Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The configured transfer end time when transferring the cyclic actual values was exceeded.
Remedy: - carry-out a POWER ON (power off/on) for all components.
- contact the Hotline.

F40801 CX32 DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F40820 CX32 DRIVE-CLiQ: Telegram error

Reaction: OFF2
Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the controller extension in the telegram and in the receive list do not match.
07: Controller extension expects a SYNC telegram, but the receive telegram is not a SYNC telegram.
08: Controller extension does not expect a SYNC telegram, but the receive telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F40835 CX32 DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry-out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F40836 CX32 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F40837 CX32 DRIVE-CLiQ: Component fault

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F40845 CX32 DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

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Remedy: Carry-out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error, shutdown threshold, slave)

F40851 CU DRIVE-CLiQ: Sign-of-life missing

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F40860 CU DRIVE-CLiQ: Telegram error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the controller extension in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the controller extension in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry-out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance.
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F40885 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry-out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F40886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Reaction: OFF2

Acknowledge: IMMEDIATELY

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Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry-out a POWER ON.

F40887 CU DRIVE-CLiQ: Component fault

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance.
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F40895 CU DRIVE-CLiQ: Cyclic data transfer error

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry-out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error, shutdown threshold, master)

F49150 Cooling system: Fault occurred

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The cooling system signals a general fault.

Remedy: - check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.
See also: p0266 (Cooling system, signal source feedback signals)

F49151 Cooling system: Conductivity has exceeded the fault threshold

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The conductivity of the cooling water has exceeded the selected fault threshold (p0269[2]).
See also: p0261 (Cooling system, starting time 2), p0262 (Cooling system, fault conductivity delay time), p0266 (Cooling system, signal source feedback signals)

Remedy: Check the device to de-ionize the cooling water.

F49152 Cooling system: ON command, feedback signal missing

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The feedback signal of the ON command of the cooling system is missing.
- after the ON command, the feedback signal has not been received within the selected starting time (p0260).
- the feedback signal has failed in operation.
See also: p0260 (Cooling system, starting time 1), r0267 (Cooling system status word display)

Remedy: - check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.

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F49153 **Cooling system: Water flow too low**

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The drive converter cooling system signals that the water flow is too low.
- after the ON command, the feedback signal has not been received within the selected starting time (p0260).
- in operation, the feedback signal has failed for longer than the permitted failure time (p0263).
See also: p0260 (Cooling system, starting time 1), p0263 (Cooling system fault water flow, delay time), r0267 (Cooling system status word display)

Remedy: - check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.

F49154 **Cooling system: Water has leaked**

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The leakage water monitoring function has responded.
See also: r0267 (Cooling system status word display)

Remedy: - check the cooling system for leaks in the cooling circuit.
- check the wiring of the input terminal (Terminal Module) used to monitor the leakage water.

F49155 **Cooling system: Power Stack Adapter, firmware version too old**

Reaction: OFF2

Acknowledge: POWER ON

Cause: The firmware version in the Power Stack Adapter (PSA) is too old and does not support the water cooling.

Remedy: Upgrade the firmware version.

F49156 **Cooling system: Cooling water temperature has exceeded the fault threshold**

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The cooling water intake temperature has exceeded the permanently set fault threshold.

Remedy: Check the cooling system and the ambient conditions.

A49170 **Cooling system: Alarm has occurred**

Reaction: NONE

Acknowledge: NONE

Cause: The cooling system signals a general alarm.

Remedy: - check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.

A49171 **Cooling system: Conductivity has exceeded the alarm threshold**

Reaction: NONE

Acknowledge: NONE

Cause: The conductivity of the cooling water has exceeded the selected alarm threshold (p0269[1]).
See also: p0261 (Cooling system, starting time 2), p0262 (Cooling system, fault conductivity delay time), p0266 (Cooling system, signal source feedback signals)

Remedy: Check the device to de-ionize the cooling water.

A49172 **Cooling system: Conductivity actual value is not valid**

Reaction: NONE

Acknowledge: NONE

Cause: When monitoring the conductivity of the cooling water, there is a fault in the wiring or in the sensor.

Remedy: - check the wiring between the cooling system and the Power Stack Adapter (PSA).
- check the function of the sensor to measure the conductivity.

A49173 **Cooling system: Cooling water temperature has exceeded the alarm threshold**

Reaction: NONE

Acknowledge: NONE

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Cause: The cooling water intake temperature has exceeded the permanently set alarm threshold.
Remedy: Check the cooling system and the ambient conditions.

F49200 Excitation group signal fault

Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The excitation sequence control signals a fault.
Fault value (r0949, hexadecimal):
Bit 0:
When powered-down or when powering-down the excitation, the signal "excitation ready to power-up feedback signal" was not received within the monitoring time.
Bit 1:
After an ON command, the signal "excitation ready feedback signal" was not received within the monitoring time.
Bit 2:
After the pulses were enabled, the signal "excitation operational feedback signal" was not received within the monitoring time.
Bit 3:
The "excitation group signal fault" signal is present.
Remedy: - check the excitation.
- check commands, feedback signals and BICO interconnections.

A49201 (F) Excitation, group signal alarm

Reaction: NONE
Acknowledge: NONE
Cause: The "excitation group signal alarm" signal is present.
Remedy: Check the excitation equipment.
Reaction upon F: NONE
Acknowledge upon F: IMMEDIATELY

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List of Abbreviations

A

Abbreviation	German	English
A		
A...	Warnung	Alarm
AC	Wechselstrom	Alternating Current
ADC	Analog-Digital-Konverter	Analog Digital Converter
AI	Analogeingang	Analog Input
ALM	Active Line Module	Active Line Module
AO	Analogausgang	Analog Output
AOP	Advanced Operator Panel	Advanced Operator Panel
APC	Advanced Positioning Control	Advanced Positioning Control
ASC	Ankerkurzschluss	Armature Short-Circuit
ASCII	Amerikanische Code-Norm für den Informationsaustausch	American Standard Code for Information Interchange
ASM	Asynchronmotor	Induction motor
B		
BB	Betriebsbedingung	Operating condition
BERO	Firmenname für einen Näherungsschalter	Tradename for a type of proximity switch
BI	Binektoreingang	Binector Input
BIA	Berufsgenossenschaftliches Institut für Arbeitssicherheit	Berufsgenossenschaftliches Institut für Arbeitssicherheit (German Institute for Occupational Safety)
BICO	Binektor-Konnektor-Technologie	Binector Connector Technology
BLM	Basic Line Module	Basic Line Module
BOP	Basic Operator Panel	Basic Operator Panel
C		
C	Kapazität	Capacitance
C...	Safety-Meldung	Safety message
CAN	Serielles Bussystem	Controller Area Network
CBC	Kommunikationsbaugruppe CAN	Communication Board CAN
CD	Compact Disc	Compact Disc
CDS	Befehlsdatensatz	Command Data Set
CI	Konnektoreingang	Connector Input
CNC	Computerunterstützte numerische Steuerung	Computer Numerical Control
CO	Konnektorausgang	Connector Output

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Abbreviation	German	English
CO/BO	Konnektor-/Binektorausgang	Connector Output/Binector Output
COB-ID	CAN Object-Identification	CAN Object-Identification
COM	Mittelkontakt eines Wechselkontaktes	Common contact of a change-over relay
CP	Kommunikationsprozessor	Communications Processor
CPU	Zentralbaugruppe	Central Processing Unit
CRC	Checksummenprüfung	Cyclic Redundancy Check
CSM	Control Supply Module	Control Supply Module
CU	Control Unit	Control Unit
D		
DAC	Digital-Analog-Konverter	Digital Analog Converter
DC	Gleichstrom	Direct Current
DCN	Gleichstrom negativ	Direct current negative
DCP	Gleichstrom positiv	Direct current positive
DDS	Antriebsdatensatz	Drive Data Set
DI	Digitaleingang	Digital Input
DI/DO	Digitaleingang/-ausgang bidirektional	Bidirectional Digital Input/Output
DMC	DRIVE-CLiQ Module Cabinet (Hub)	DRIVE-CLiQ Module Cabinet (Hub)
DO	Digitalausgang	Digital Output
DO	Antriebsobjekt	Drive Object
DPRAM	Speicher mit beidseitigem Zugriff	Dual Ported Random Access Memory
DRAM	Dynamischer Speicher	Dynamic Random Access Memory
DRIVE-CLiQ	Drive Component Link with IQ	Drive Component Link with IQ
DSC	Dynamic Servo Control	Dynamic Servo Control
E		
EDS	Geberdatensatz	Encoder Data Set
EGB	Elektrostatisch gefährdete Baugruppen	Electrostatic Sensitive Devices (ESD)
ELP	Erdschlussüberwachung	Earth Leakage Protection
EMK	Elektromagnetische Kraft	Electromagnetic Force (EMF)
EMV	Elektromagnetische Verträglichkeit	Electromagnetic Compatibility (EMC)
EN	Europäische Norm	European Standard
EnDat	Geber-Schnittstelle	Encoder-Data-Interface
EP	Impulsfreigabe	Enable Pulses
EPOS	Einfachpositionierer	Basic positioner
ES	Engineering System	Engineering System
ESB	Ersatzschaltbild	Equivalent circuit diagram
ESR	Erweitertes Stillsetzen und Rückziehen	Extended Stop and Retract
F		
F...	Störung	Fault
FAQ	Häufig gestellte Fragen	Frequently Asked Questions
FCC	Function Control Chart	Function Control Chart
FCC	Flussstromregelung	Flux Current Control

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Abbreviation	German	English
FEM	Fremderregter Synchronmotor	Separately excited synchronous motor
FEPROM	Schreib- und Lesespeicher nichtflüchtig	Flash-EPROM
FG	Funktionsgenerator	Function Generator
FI	Fehlerstrom-Schutzschalter	Earth Leakage Circuit-Breaker (ELCB)
FP	Funktionsplan	Function diagram
FW	Firmware	Firmware
G		
GB	Gigabyte	Gigabyte
GC	Global-Control-Telegramm (Broadcast-Telegramm)	Global Control Telegram (Broadcast Telegram)
GSD	Gerätestammdatei: beschreibt die Merkmale eines PROFIBUS-Slaves	Device master file: describes the features of a PROFIBUS slave
GSV	Gate Supply Voltage	Gate Supply Voltage
H		
HF	Hochfrequenz	High frequency
HFD	Hochfrequenzdrossel	High frequency reactor
HLG	Hochlaufgeber	Ramp-function generator
HMI	Mensch-Maschine-Schnittstelle	Human Machine Interface
HTL	Logik mit hoher Störschwelle	High-Threshold Logic
HW	Hardware	Hardware
I		
i. V.	In Vorbereitung: diese Eigenschaft steht zur Zeit nicht zur Verfügung	In preparation: this feature is currently not available
IBN	Inbetriebnahme	Commissioning
I/O	Eingang/Ausgang	Input/Output
ID	Identifizierung	Identifier
IEC	Internationale Norm in der Elektrotechnik	International Electrotechnical Commission
IGBT	Bipolartransistor mit isolierter Steuerelektrode	Insulated Gate Bipolar Transistor
IL	Impulslöschung	Pulse suppression
IT	Drehstromversorgungsnetz ungeerdet	Insulated three-phase supply network
IVP	Interner Spannungsschutz	Internal Voltage Protection
J		
JOG	Tippen	Jogging
K		
KDV	Kreuzweiser Datenvergleich	Data cross-checking
KIP	Kinetische Pufferung	Kinetic buffering
Kp	Proportionalverstärkung	Proportional gain
KTY	Spezieller Temperatursensor	Special temperature sensor
L		
L	Induktivität	Inductance
LED	Leuchtdiode	Light Emitting Diode

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Abbreviation	German	English
LIN	Linearmotor	Linear motor
LR	Lageregler	Position controller
LSB	Niederstwertiges Bit	Least Significant Bit
LSS	Netzschalter	Line Side Switch
LU	Längeneinheit	Lenght Unit
M		
M	Masse	Reference potential, zero potential
MB	Megabyte	Megabyte
MCC	Motion Control Chart	Motion Control Chart
MDS	Motordatensatz	Motor Data Set
MLFB	Maschinenlesbare Fabrikatebezeichnung	Machine-readable product designation
MMC	Mensch Maschine Kommunikation	Man-Machine Communication
MSB	Höchstwertiges Bit	Most Significant Bit
MSCY_C1	Zyklische Kommunikation zwischen Master (Klasse 1) und Slave	Master Slave Cycle Class 1
MT	Messtaster	Measuring probe
N		
N. C.	Nicht angeschlossen	Not Connected
N...	Keine Meldung oder Interne Meldung	No Report
NAMUR	Normenarbeitsgemeinschaft für Mess- und Regeltechnik in der chemischen Industrie	Standardization association for measurement and control in chemical industries
NC	Öffner	Normally Closed (contact)
NC	Numerische Steuerung	Numerical Control
NEMA	Normengremium in USA (United States of America)	National Electrical Manufacturers Association
NM	Nullmarke	Zero Mark
NO	Schließer	Normally Open (contact)
O		
OA	Open Architecture	Open Architecture
OEM	Original Equipment Manufacturer	Original Equipment Manufacturer
OLP	Busstecker für Lichtleiter	Optical Link Plug
OMI	Option Module Interface	Option Module Interface
P		
p...	Einstellparameter	Adjustable parameter
PcCtrl	Steuerungshoheit	Master Control
PDS	Leistungsteildatensatz	Power unit Data Set
PE	Schutzerde	Protective Earth
PELV	Schutzkleinspannung	Protective Extra Low Voltage
PEM	Permanenterregter Synchronmotor	Permanent-magnet synchronous motor
PG	Programmiergerät	Programming terminal
PI	Proportional Integral	Proportional Integral

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Abbreviation	German	English
PID	Proportional Integral Differential	Proportional Integral Differential
PLC	Speicherprogrammierbare Steuerung (SPS)	Programmable Logical Controller
PLL	Baustein zur Synchronisierung	Phase Locked Loop
PNO	PROFIBUS Nutzerorganisation	PROFIBUS user organisation
PPI	Punkt zu Punkt Schnittstelle	Point to Point Interface
PRBS	Weißes Rauschen	Pseudo Random Binary Signal
PROFIBUS	Serieller Datenbus	Process Field Bus
PS	Stromversorgung	Power Supply
PSA	Power Stack Adapter	Power Stack Adapter
PTC	Positiver Temperaturkoeffizient	Positive Temperature Coefficient
PTP	Punkt zu Punkt	Point To Point
PWM	Pulsweitenmodulation	Pulse Width Modulation
PZD	PROFIBUS Prozessdaten	PROFIBUS Process data
Q		
R		
r...	Beobachtungsparameter (nur lesbar)	Display parameter (read only)
RAM	Speicher zum Lesen und Schreiben	Random Access Memory
RCCB	Fehlerstrom-Schutzschalter	Residual Current Circuit Breaker
RCD	Fehlerstrom-Schutzschalter	Residual Current Device
RJ45	Norm. Beschreibt eine 8-polige Steckverbindung mit Twisted-Pair Ethernet.	Standard. Describes an 8-pole plug connector with twisted pair Ethernet.
RKA	Rückkühlanlage	Recooling system
RO	Nur lesbar	Read Only
RPDO	Receive Process Data Object	Receive Process Data Object
RS232	Serielle Schnittstelle	Serial Interface
RS485	Norm. Beschreibt die Physik einer digitalen seriellen Schnittstelle.	Standard. Describes the physical characteristics of a digital serial interface.
RTC	Echtzeituhr	Real Time Clock
S		
S1	Dauerbetrieb	Continuous operation
S3	Aussetzbetrieb	Periodic duty
SBC	Sichere Bremsenansteuerung	Safe Brake Control
SBH	Sicherer Betriebshalt	Safe operating stop
SBR	Sichere Bremsrampe	Safe braking ramp
SBT	Sicherer Bremsentest	Safe Brake Test
SCA	Sichere Nocke	Safe Cam
SDI	Sichere Richtung	Safe Direction
SE	Sicherer Software-Endschalter	Safe software limit switch
SG	Sicher reduzierte Geschwindigkeit	Safely reduced speed
SGA	Sicherheitsgerichteter Ausgang	Safety-related output
SGE	Sicherheitsgerichteter Eingang	Safety-related input
SH	Sicherer Halt	Safe standstill

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Abbreviation	German	English
SI	Safety Integrated	Safety Integrated
SIL	Sicherheitsintegritätsgrad	Safety Integrity Level
SLI	Sicheres Schrittmaß	Safely Limited Increment
SLM	Smart Line Module	Smart Line Module
SLP	Sichere Endlage	Safely Limited Position
SLS	Sicher reduzierte Geschwindigkeit	Safely Limited Speed
SLVC	Geberlose Vektorregelung	Sensorless Vector Control
SM	Sensor Module	Sensor Module
SMC	Sensor Module Cabinet	Sensor Module Cabinet
SME	Sensor Module External	Sensor Module External
SN	Sicherer Software-Nocken	Safe software cam
SOS	Sicherer Betriebshalt	Safe Operational Stop
SPC	Sollwertkanal	Setpoint Channel
SPS	Speicherprogrammierbare Steuerung	Programmable Logic Controller (PLC)
SS1	Safe Stop 1	Safe Stop 1
SS2	Safe Stop 2	Safe Stop 2
SSI	Synchron Serielle Schnittstelle	Synchronous Serial Interface
SSM	Sichere Geschwindigkeitsanzeige n < nx	Safe Speed Monitoring n < nx
SSR	Sichere Bremsrampe	Safe Stop Ramp
STO	Sicherer Halt	Safe Torque Off
STW	PROFIBUS Steuerwort	PROFIBUS control word
T		
TB	Terminal Board	Terminal Board
TIA	Totally Integrated Automation	Totally Integrated Automation
TM	Terminal Module	Terminal Module
TN	Drehstromversorgungsnetz geerdet	Grounded three-phase supply network
Tn	Nachstellzeit	Integral time
TPDO	Transmit Process Data Object	Transmit Process Data Object
TT	Drehstromversorgungsnetz geerdet	Grounded three-phase supply network
TTL	Transistor-Transistor-Logik	Transistor-Transistor-Logic
U		
UL	Underwriters Laboratories Inc.	Underwriters Laboratories Inc.
USV	Unterbrechungsfreie Stromversorgung	Uninteruptible power supply
V		
VC	Vektorregelung	Vector Control
Vdc	Zwischenkreisspannung	DC link voltage
VdcN	Teilzwischenkreisspannung negativ	Partial DC link voltage negative
VdcP	Teilzwischenkreisspannung positiv	Partial DC link voltage positive
VDE	Verband Deutscher Elektrotechniker	Association of German Electrical Engineers
VDI	Verein Deutscher Ingenieure	Association of German Engineers
Vpp	Volt Spitze zu Spitze	Volt peak to peak

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Abbreviation	German	English
VSM	Voltage Sensing Module	Voltage Sensing Module
W		
WEA	Wiedereinschaltautomatik	Automatic restart
WZM	Werkzeugmaschine	Machine tool
X		
XML	Erweiterbare Auszeichnungssprache (Standardsprache für Web-Publishing und Dokumentenmanagement)	Extensible Markup Language
Y		
Z		
ZK	Zwischenkreis	DC link
ZSW	PROFIBUS Zustandswort	PROFIBUS status word

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References

B

SINAMICS Documentation

Catalogs

/D11.1/ **SINAMICS G110 Converter Chassis Units 0.12 kW to 3 kW**

Order No.: E86060-K5511-A111-A2 Edition: 10.2005

/D11/ **SINAMICS G130 Drive Converter Chassis Units**
SINAMICS G150 Drive Converter Cabinet Units

Order No.: E86060-K5511-A101-A3 Edition: 12.2005

/D21.1/ **SINAMICS S120 Chassis Units**

Order No.: E86060-K5521-A111-A2 Edition: 06.2006

/D21.3/ **SINAMICS S150 Converter Cabinet Units**
75 kW to 1200 kW

Order No.: E86060-K5521-A131-A1 Edition: 05.2004

Related catalogs

/ST70/ **SIMATIC Components for Totally Integrated Automation**
Ordering documentation

Order No.: E86060-K4670-A111-A9 Edition: 10.2004

/PM10/ **SIMOTION Motion Control System**
Ordering documentation

Order No.: E86060-K4910-A101-A5 Edition: 07.2005

/NC61/ **SINUMERIK & SINAMICS,**
Automation Systems for Machine Tools
Ordering documentation

Order No.: E86060-K4461-A101-A1 Edition: 09.2005

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Interactive catalogs

/CA01/ **Automation and Drives' Offline Mall**
CD-ROM
Order No.: E86060-D4001-A100-C4 Edition: 10.2005

/Mall/ **A&D Mall, Catalog and Online Ordering System**
http://www.siemens.com/automation/mall

Electronic documentation

/CD2/ **SINAMICS**
The SINAMICS System
Order No.: 6SL3097-2CA00-0YG3 Edition: 05.2006

User documentation

/BA1/ **SINAMICS G150**
Operating Instructions
Order No.: On request Edition: 03.2006

/BA2/ **SINAMICS G130**
Operating Instructions
Order No.: On request Edition: 03.2006

/BA3/ **SINAMICS S150**
Operating Instructions
Order No.: On request Edition: 03.2006

/GH1/ **SINAMICS S120**
Equipment Manual for Control Units and Additional System Components
Order No.: 6SL3097-2AH00-0BP3 Edition: 03.2006

/GH2/ **SINAMICS S120**
Equipment Manual for Booksize Power Units
Order No.: 6SL3097-2AC00-0BP3 Edition: 03.2006

/GH3/ **SINAMICS S120**
Equipment Manual for Chassis Power Modules
Order No.: 6SL3097-2AE00-0BP1 Edition: 03.2006

/GH4/ **SINAMICS S120**
Equipment Manual Power Modules Booksize Cold-Plate
Order No.: 6SL3097-2AJ00-0BP3 Edition: 03.2006

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/GH5/ **SINAMICS S120**
Equipment Manual Cabinet Modules
Order No.: On request Edition: 03.2006

/GH6/ **SINAMICS S120**
Equipment Manual AC DRIVE
Order No.: 6SL3097-2AL00-0BP0 Edition: 03.2006

/GS1/ **SINAMICS S120**
Getting Started
Order no.: 6SL3097-2AG00-0BP2 Edition: 03.2006

/IH1/ **SINAMICS S120**
Installation and Startup Manual
Order No.: 6SL3097-2AF00-0BP4 Edition: 03.2006

/IH2/ **SINAMICS S120**
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/PFT6S/ **SINAMICS 1FT6 Synchronous Motors**
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PROFIBUS documentation

/P1/ **PROFIBUS-DP/DPV1 IEC 61158**
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Hüthig; Manfred Popp, 2nd Edition

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/P2/ **PROFIBUS-DP, Getting Started**
PROFIBUS Nutzerorganisation e.V.; Manfred Popp

Order no.: 4.071

/P3/ **Distributed Layouts using PROFIBUS-DP**
Architecture and Fundamentals, Configuration and Use of PROFIBUS-DP with SIMATIC S7
SIEMENS; Publicis MCD Verlag; Josef Weigmann, Gerhard Kilian

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/P4/ **Manual for PROFIBUS Networks, SIEMENS**

Order No.: 6GK1970-5CA20-0BA0

/P5/ **PROFIBUS Profile PROFIdrive Profile Drive Technology**
PROFIBUS Nutzerorganisation e. V.
Haid-und-Neu-Straße 7, D-76131 Karlsruhe

Order No.: 3.172 Version 3.1 November 2002

/IKPI/ **Industrial Communication for Automation and Drives**
Catalog

Order No.: E86060-K6710-A101-B4 Edition: 2005

/PDP/ **PROFIBUS Installation Guidelines**
Installation Guideline for PROFIBUS-FMS/DP
Installation and wiring recommendation for RS 485 Transmission

Order No. 2.111 (German)
2.112 (English) Version 1.0

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Documentation for Safety Equipment

Note

For more information about technical documentation for Safety Integrated, visit the following address:

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The following list contains some of the safety-related documentation available.

/LV1/ **Low-Voltage Switchgear SIRIUS-SENTRON-SIVACON**
Catalog
Order No.: E86060-K1002-A101-A5 Edition: 2006

/MRL/ **Directive 98/37/EC of the European Parliament and Council**
Machinery Directive
Bundesanzeiger-Verlags GmbH Edition: 22.06.1998

/SISH/ **Safety Integrated**
System Manual
Order no.: 6ZB5000-0AA01-0BA1 5th edition

/SICD/ **Safety Integrated**
CD-ROM
Order No.: E20001-D10-M103-X-7400 Edition: 09.2004

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