Indstilling af relæer [ACTI]:P

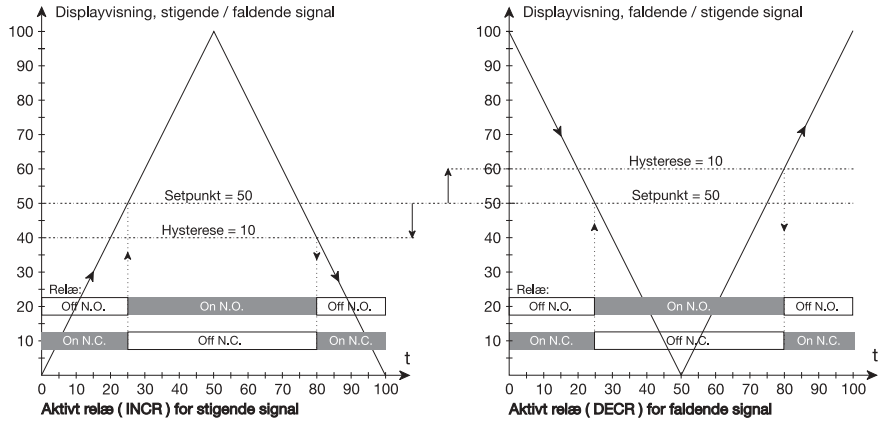


Table of contents

GENERAL

WARNING!

This module is designed for connection to hazardous electric voltages. Ignoring this warning can result in severe personal injury or mechanical damage. To avoid the risk of electric shock and fire, the safety instructions of this manual must be observed and the guidelines followed. The specifications must not be exceeded, and the module must only be applied as described in the following. Prior to the commissioning of the module, this manual must be examined carefully. Only qualified personnel (technicians) should install this module.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

HAZARD-OUS VOLTAGE

WARNING!

Until the module is fixed, do not connect hazardous voltages to the module.
The following operations should only be carried out on a disconnected module and under ESD safe conditions:
Troubleshooting the module.

Repair of the module must be done by PR electronics A/S only.

Symbol identification

Triangle with an exclamation mark: Warning / demand. Potentially lethal situations.

The CE mark proves the compliance of the module with the essential requirements of the directives.

Safety instructions

DEFINITIONS:
Hazardous voltages have been defined as the ranges: 75 to 1500 Volt DC, and 50 to 1000 Volt AC.
Technicians are qualified persons educated or trained to mount, operate, and also troubleshoot technically correct and in accordance with safety regulations.
Operators, being familiar with the contents of this manual, adjust and operate the knobs or potentiometers during normal operation.

RECEIPT AND UNPACKING:
Unpack the module without damaging it and make sure that the manual always follows the module and is always available. The packing should always follow the module until this has been permanently mounted.
Check at the receipt of the module whether the type corresponds to the one ordered.

ENVIRONMENT:
Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock, as well as rain and heavy moisture. If necessary, heating in excess of the stated limits for ambient temperatures should be avoided by way of ventilation.
All modules fall under Installation Category II, Pollution Degree 1, and Insulation Class II.

MOUNTING:
Only technicians who are familiar with the technical terms, warnings, and instructions in the manual and who are able to follow these should connect the module.
Should there be any doubt as to the correct handling of the module, please contact your local distributor or, alternatively,

PR electronics A/S, Lerbakken 10, DK-8410 Rønde, Denmark,
tel: +45 86 37 26 77.

Mounting and connection of the module should comply with national legislation for mounting of electric materials, i.a. wire cross section, protective fuse, and location. Descriptions of Input / Output and supply connections are shown in the block diagram and side label.

The following apply to fixed hazardous voltages-connected modules:
The max. size of the protective fuse is 10 A and, together with a power switch, it should be easily accessible and close to the module.
The power switch should be marked with a label telling it will switch off the voltage to the module.

CALIBRATION AND ADJUSTMENT:
During calibration and adjustment, the measuring and connection of external voltages must be carried out according to the specifications of this manual. The technician must use tools and instruments that are safe to use.

NORMAL OPERATION:
Operators are only allowed to adjust and operate modules that are safely fixed in panels, etc., thus avoiding the danger of personal injury and damage. This means there is no electrical shock hazard, and the module is easily accessible.

CLEANING:
When disconnected, the module may be cleaned with a cloth moistened with distilled water or ethyl alcohol.

LIABILITY:
To the extent the instructions in this manual are not strictly observed, the customer cannot advance a demand against PR electronics A/S that would otherwise exist according to the concluded sales agreement.

DECLARATION OF CONFORMITY

As manufacturer

PR electronics A/S
Lerbakken 10
DK-8410 Rønde

hereby declares that the following product

Type: 5714
Name: PROGRAMMABLE LED INDICATOR
From serial No: 040189001

is in conformity with the following directives and standards:

EMC directive 89/336/EEC and later amendments

EN 61 326

This declaration is issued in compliance with article 10, subclause 1 of the EMC directive. For specification of the acceptable EMC performance level, refer to the electrical specifications for the module.

The Low Voltage directive 73/23/EEC and later amendments

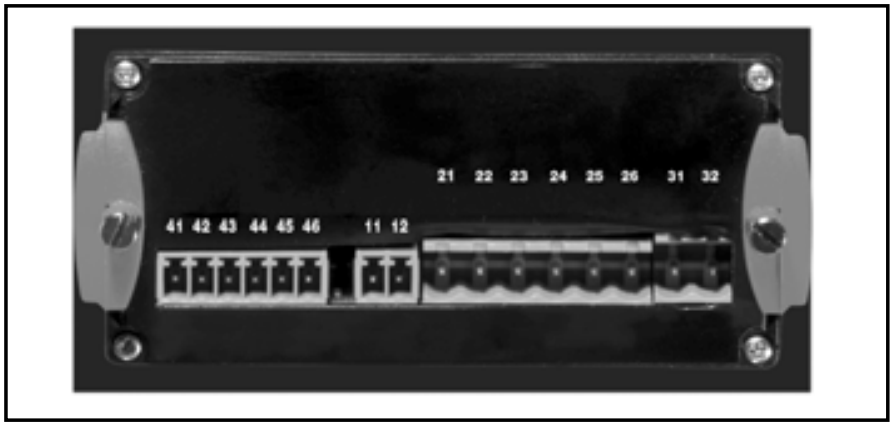
EN 61 010-1

Rønde, 23 February 2004

Peter Rasmussen
Manufacturer's signatur

Front and back layout

Picture 1: Front of PReview 5714.



Picture 2: Back of PReview 5714.

Programmable LED indicator PReview 5714

- *4-digit 14 segment LED indicator*
- *Input for mA, V, Pt100, TC and potentiometer*
- *2 relays and analogue output*
- *Universal voltage supply*
- *Front key programmable*

Application:

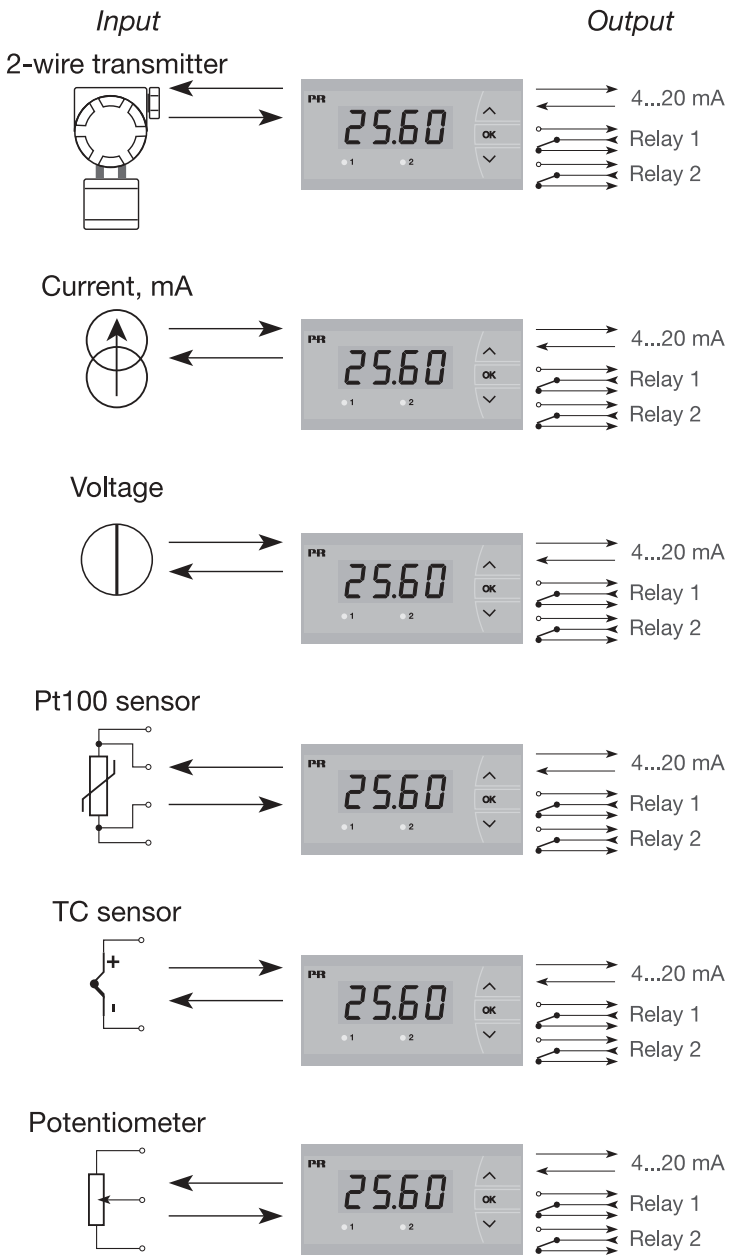
- Display for digital readout of current, voltage, temperature or potentiometer signals.
- Process control with 2 potential free relays and / or analogue output.
- For local readout in extreme wet atmospheres with a special designed splash-proof cover.

Technical characteristics:

- 4-digit LED indicator with 13.8 mm 14 segment characters. Max. display readout -1999...9999 with programmable decimal point, relay ON / OFF-indication.
- With the function front keys all operational parameters can be adjusted to any application.
- PReview 5714 is available fully-configured acc. to specifications ready for process control and visualisation.
- In versions with relay outputs the user can minimise the installation test time by activating / deactivating each relay independent of the input signal.

Mounting:

- To be mounted in board front panel. An included rubber packing must be mounted between the panel cutout hole and the display front to obtain IP65 (NEMA 4) tightness. PReview 5714 can be delivered with a speial designed splash-proof cover as accessory to obtain IP67 tightness.



Order: 5714

Type	Version	Language
5714	Standard : A 2 Relays : B Analogue output : C Analogue output and 2 relays : D	English : UK Dansk : DK Français : FR Deutsch : DE Svenska : SE Italiano : IT Espanõl : ES

NB! Please order the splash-proof cover (IP67) seperately. Order No 8335.

Electrical specifications:

Specifications range:
-20°C to +60°C

Common specifications:

Supply voltage..... 24...230 VAC ±10%
50...60 Hz
24...250 VDC ±20%
Max. consumption ..... ≤ 3.5 W
Isolation voltage / operation..... 2.3 kVAC / 250 VAC
Signal- / noise ratio..... min. 60 dB (0...100 kHz)
Response time (0...90 %, 100...10 %):
Temperature input..... < 1 s
Current / Voltage input..... < 400 ms
Calibration temperature ..... 20...28°C
Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of reading	≤ ±0.01% of reading / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	≤ ±4 µA	≤ ±0,4 µA /°C
Volt	≤ ±20 µV	≤ ±2 µV /°C
Pt100	≤ ±0.2°C	≤ ±0.02°C /°C
Potentiometer	≤ ±0.1 Ω	≤ ±0.01 Ω /°C
TC-type: E, J, K, L, N, T, U	≤ ±1°C	≤ ±0,05°C /°C
TC-type: B, R, S, W3, W5	≤ ±2°C	≤ ±0,2°C /°C

Auxiliary supplies:

2 wire supply ..... 25...15 VDC / 0...20 mA
Wire size, pin 41-46 (max.) ..... 1 x 1.5 mm^2 multicore cable
Wire size, others (max.) ..... 1 x 2.5 mm^2 multicore cable
Screw terminal torsion ..... 0.5 Nm
Relative humidity ..... < 95% RH (non cond.)
Dimensions (HxWxD) ..... 48 x 96 x 120 mm
Cutout dimensions ..... 44.5 x 91.5 mm
Tightness (mounted in panel) ..... IP65 (IP67 with cover 8335)
Weight ..... 230 g

Pt100- and potentiometer input:

Input type	Min. value	Max. value	Norm
Pt100 Potentiometer	-200°C 10 Ω	+850°C 100 kΩ	IEC 60751 -

Cable resistance pr. wire, Pt100 (max.) 50 Ω
Sensor current, Pt100 ..... Nom. 0.2 mA
Effect of sensor cable resistance
(3- / 4-wire), Pt100 ..... < 0.002 Ω / Ω
Sensor error detection, Pt100 ..... Yes
Short curcuit detection, Pt100 ..... < 15 Ω

TC input:

Type	Min. value	Max. value	Norm
B	+400°C	+1820°C	IEC 60584-1
E	-100°C	+1000°C	IEC 60584-1
J	-100°C	+1200°C	IEC 60584-1
K	-180°C	+1372°C	IEC 60584-1
L	-200°C	+900°C	DIN 43710
N	-180°C	+1300°C	IEC 60584-1
R	-50°C	+1760°C	IEC 60584-1
S	-50°C	+1760°C	IEC 60584-1
T	-200°C	+400°C	IEC 60584-1
U	-200°C	+600°C	DIN 43710
W3	0°C	+2300°C	ASTM E988-90
W5	0°C	+2300°C	ASTM E988-90

Cold junction compensation (CJC) ..... < ±1.0 °C
Sensor error detection ..... Yes
Sensor error current:
when detecting ..... Nom. 2 µA
else ..... 0 µA

Current input:

Measure range ..... -1...25 mA
Programmable measure ranges ..... 0...20 and 4...20 mA
Input resistance ..... Nom. 20 Ω + PTC 25 Ω

Voltage input:

Measure range ..... -20 mV...12 VDC
Programmable measure ranges ..... 0...1, 0,2...1, 0...10 and 2...10 VDC
Input resistance ..... Nom. 10 MΩ

Display:

Display readout ..... -1999...9999 (4 digits)
Decimal point ..... Programmable
Digit height ..... 13.8 mm
Display updating ..... 2.2 times / s
Input outside input range is indicated by ..... Explaining text

Current outout:

Signal range (span)..... 0...20 mA
Programmable signal ranges..... 0...20, 4...20,
20...0 and 20...4 mA
Load (max.)..... 20 mA / 800 Ω / 16 VDC
Load stability..... ≤ 0.01% of span / 100 Ω
Sensor error detection..... 0 / 3,5 / 23 mA or none
NAMUR NE 43 Upscale ..... 23 mA
NAMUR NE 43 Downscale..... 3,5 mA
Current limit..... ≤ 28 mA

Relay outputs:

Max. voltage..... 250 VRMS
Max. current..... 2 A / AC
Max. AC power..... 500 VA
Max. current at 24 VDC ..... 1 A
Sensor error detection..... Make/Break/Hold

Marine approval:

Det Norske Veritas Rules for ships..... Certificat. Notes No.2.4

Observed authority requirements: **Standard:**

EMC 89/336/EEC:
Emission and immunity..... EN 61326
LVD 73/23/EEC..... EN 61010-1
UL, Standard for Safety: ..... UL 508 and UL 873

Sensor error detection / sensor error detection outside range:

Sensor error check in 5714 variants		
Variant:	Configuration	Sensor error detection:
5714A	Always:	ON
5714B	ERR1=NONE, ERR2=NONE:	OFF
	else:	ON
5714C	O.ERR=NONE:	OFF
	else:	ON
5714D	ERR1=NONE, ERR2=NONE, O.ERR=NONE:	OFF
	else:	ON

Outside range readout (IN.LO, IN.HI): At excession of the valid range of the A/D converter or the polynomial			
Input	Range	Readout	Limit
VOLT	0..1V / 0,2..1V	IN.LO	< -25 mV
		IN.HI	> 1,2 V
	0..10V / 2..10V	IN.LO	< -25 mV
		IN.HI	> 12 V
CURR	0..20mA / 4..20mA	IN.LO	< -1,05 mA
		IN.HI	> 25,05 mA
POTM	-	IN.LO	< -0,5%
		IN.HI	> 100,5%
TEMP	TC / PT-100	IN.LO	< temperature range
		IN.HI	> temperature range

Sensor error detection (SE.BR, SE.SH):			
Input	Range	Readout	Limit
CURR	Loop break (4..20mA)	SE.BR	<= 3,6 mA; > = 21 mA
TEMP	TC	SE.BR	> ca. 750 kohm / (1,25V)
	PT-100 2-wire	SE.BR	> ca. 15 kohm
		SE.SH	< ca. 15 ohm
	PT-100 3-wire	SE.BR	> ca. 15 kohm
		SE.SH	< ca. 15 ohm
	PT-100 4-wire	SE.BR	> ca. 15 kohm
		SE.SH	< ca. 15 ohm

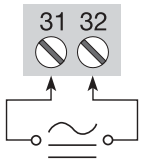
Display readout below min. / above max. (-1.9.9.9, 9.9.9.9):			
Input	Range	Readout	Limit
CURR	All	-1.9.9.9	Display readout <-1999
		9.9.9.9	Display readout >9999
VOLT	All	-1.9.9.9	Display readout <-1999
		9.9.9.9	Display readout >9999
POTM	-	-1.9.9.9	Display readout <-1999
		9.9.9.9	Display readout >9999

Readout at hardware error		
Error search	Readout	Error cause
Test of internal communication uC / ADC	HW.ER	Permanent error in ADC
Test of internal CJC sensor	CJ.ER	CJC sensor defect
Check-sum test of the configuration in RAM	RA.ER	Error in RAM
Check-sum test of the configuration in EEPROM	EE.ER	Error in EEPROM

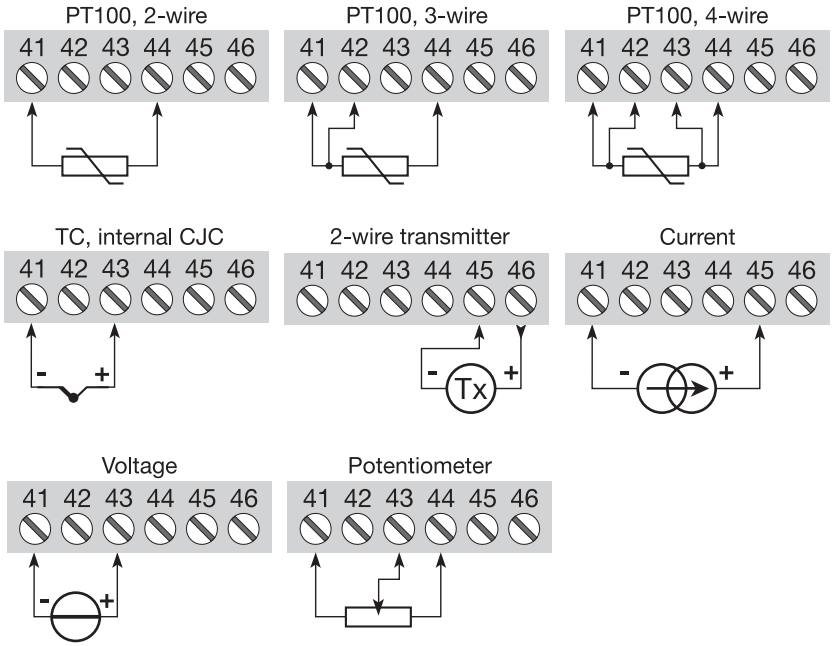
! Error inidcations in the display blinks once a second. The help text explains the error.

Connections:

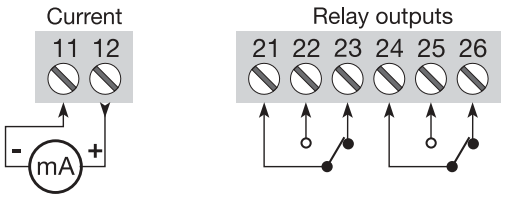
Supply:



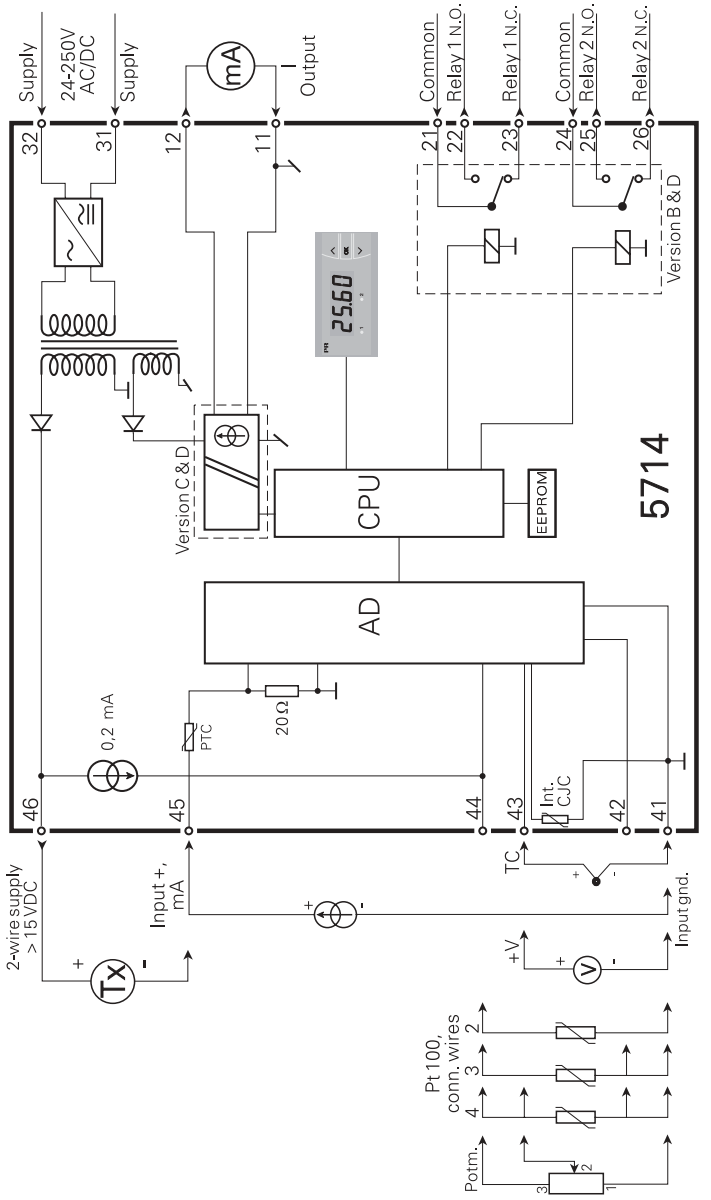
Input:



Output:



Block diagram

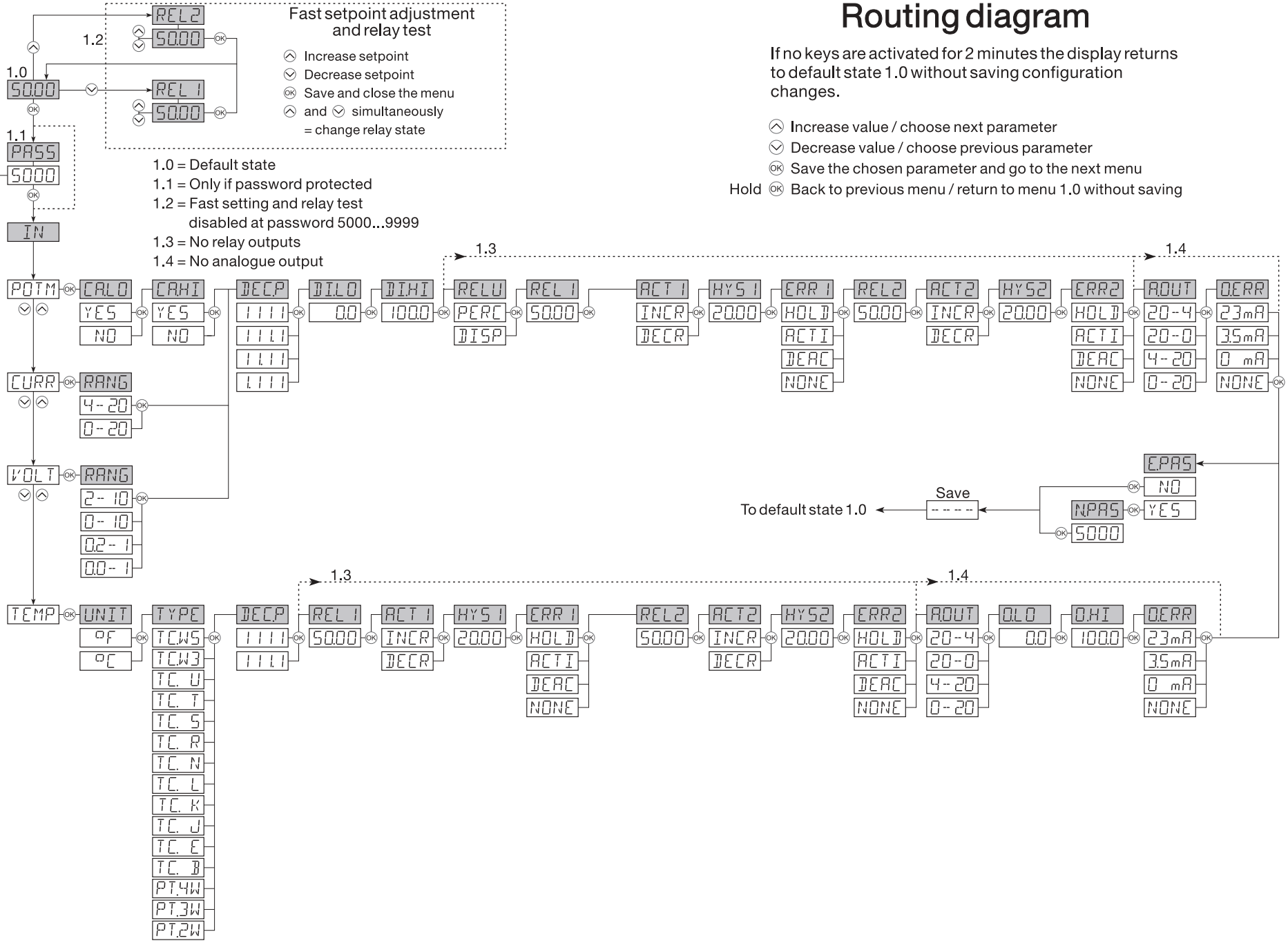


Routing diagram

If no keys are activated for 2 minutes the display returns to default state 1.0 without saving configuration changes.

- Increase value / choose next parameter
- Decrease value / choose previous parameter
- OK Save the chosen parameter and go to the next menu

Hold OK Back to previous menu / return to menu 1.0 without saving



Scrolling help text

Process Value (»Normal«): xxxx
SE.BR --> SENSOR WIRE BREAKAGE
SE.SH --> SENSOR SHORT CIRCUIT
IN.HI --> INPUT OVERRANGE
IN.LO --> INPUT UNDERRANGE
9.9.9.9 --> DISPLAY OVERRANGE
-1.9.9.9--> DISPLAY UNDERRANGE
HW.ER --> HARDWARE ERROR
EE.ER --> EEPROM MEMORY ERROR
RA.ER --> RAM MEMORY ERROR
CJ.ER --> CJC SENSOR ERROR
NO.CA --> DEVICE NOT CALIBRATED
FastSet (set enabled):
REL1
xxxx --> SETPOINT RELAY 1 - PRESS OK TO SAVE
REL2
xxxx --> SETPOINT RELAY 2 - PRESS OK TO SAVE
FastSet (set disabled):
REL1
xxxx --> SETPOINT RELAY 1 - READ ONLY
REL2
xxxx --> SETPOINT RELAY 2 - READ ONLY
Configuration Setup:
PASS
xxxx --> SET PASSWORD

IN
POTM --> POTENTIOMETER INPUT
CURR --> CURRENT INPUT
VOLT --> VOLTAGE INPUT
TEMP --> TEMPERATURE SENSOR INPUT

RANG (when volt selected)
2-10 --> INPUT RANGE IN VOLTS
0-10 --> INPUT RANGE IN VOLTS
0.2-1 --> INPUT RANGE IN VOLTS
0.0-1 --> INPUT RANGE IN VOLTS

DEC.P
1111 --> DECIMAL POINT POSITION
111.1 --> DECIMAL POINT POSITION
11.11 --> DECIMAL POINT POSITION
1.111 --> DECIMAL POINT POSITION

DI.LO
xxxx --> DISPLAY READOUT LO W
DI.HI -->
xxxx --> DISPLAY READOUT HIGH

REL.U
PERC --> SET RELAY IN PERCENTAGE
DISP --> SET RELAY IN DISPLAY UNITS

REL1
xxxx --> SETPOINT RELAY 1

ACT1
INCR --> ACTIVATE AT INCREASING SIGNAL
DECR --> ACTIVATE AT DECREASING SIGNAL

HYS1
xxxx --> HYSTERESIS RELAY 1

ERR1
HOLD --> HOLD RELAY AT ERROR
ACTI --> ACTIVATE RELAY AT ERROR
DEAC --> DEACTIVATE RELAY AT ERROR
NONE --> UNDEFINED STATUS AT ERROR
REL2
xxxx --> SETPOINT RELAY 2

ACT2
INCR --> ACTIVATE AT INCREASING SIGNAL
DECR --> ACTIVATE AT DECREASING SIGNAL
HYS2
xxxx --> HYSTERESIS RELAY 2

ERR2
HOLD --> HOLD RELAY AT ERROR
ACTI --> ACTIVATE RELAY AT ERROR
DEAC --> DEACTIVATE RELAY AT ERROR
NONE --> UNDEFINED STATUS AT ERROR

A.OUT
20-4 --> OUTPUT RANGE IN mA
20-0 --> OUTPUT RANGE IN mA
4-20 --> OUTPUT RANGE IN mA
0-20 --> OUTPUT RANGE IN mA

O.LO
xxxx --> DISPLAY VALUE FOR OUTPUT LOW

O.HI
xxxx --> DISPLAY VALUE FOR OUTPUT HIGH

O.ERR
23mA --> NAMUR NE43 UPSCALE AT ERROR
3,5mA --> NAMUR NE43 DOWNSCALE AT ERROR
0mA --> DOWNSCALE AT ERROR
NONE --> UNDEFINED OUTPUT AT ERROR

E.PAS
NO --> ENABLE PASSWORD PROTECTION
YES --> ENABLE PASSWORD PROTECTION

N.PAS
xxxx --> SELECT NEW PASSWORD

RANG (when current selected)
4-20 --> INPUT RANGE IN mA
0-20 --> INPUT RANGE IN mA

CA.LO
YES --> CALIBRATE POTENTIOMETER LOW
NO --> CALIBRATE POTENTIOMETER LOW

CA.HI
YES --> CALIBRATE POTENTIOMETER HIGH
NO --> CALIBRATE POTENTIOMETER HIGH

UNIT
°F FAHRENHEIT
°C CELSIUS
TYPE
TC.W5 --> TC TYPE W5
TC.W3 --> TC TYPE W3
TC. U --> TC TYPE U
TC. T --> TC TYPE T
TC. S --> TC TYPE S
TC. R --> TC TYPE R
TC. N --> TC TYPE N
TC. L --> TC TYPE L
TC. K --> TC TYPE K
TC. J --> TC TYPE J
TC. E --> TC TYPE E
TC. B --> TC TYPE B
PT.4W --> PT-100 4-WIRE
PT.3W --> PT-100 3-WIRE
PT.2W --> PT-100 2-WIRE

DEC.P (when temp selected)
1111 --> DECIMAL POINT POSITION
111.1 --> DECIMAL POINT POSITION

Configuration / Operating function keys

Documentation for routing diagram

In general:

When configuring the display you are guided through all parameters, you can choose the settings which fit the application. For each menu there is a scrolling help text which is automatically shown in the display, this starts after 5 seconds if no key has been activated.

Configuration is carried out by using the 3 function keys.

- ⌃ will increase the numerical value or choose the next parameter.
- ⌄ will decrease the numerical value or choose the previous parameter.
- OK will accept the chosen value and end the menu.

If a function does not exist in the display all parameters are skipped to make the configuration as simple as possible.

Once the configuration has been entered the display will show "----".

Pressing and holding OK will return to the previous menu or return to the default state (1.0) without saving the changed values or parameters.

If no key is activated for 2 minutes, the display will return to the default state (1.0) without saving the changed values or parameters.

Further explanations:

Fast setpoint adjustment and relay test:

These menus allow you to change the set point quickly and to check the operation of the relays.

Pressing ⌃ and ⌄ at the same time will change the state of the relay – this change is indicated by the diodes on the display.

Pressing OK will save the set point change.

Holding down OK for more than 0.5 seconds will return the unit to the default state without changing the set point.

Password protection:

Using a password will stop access to the menu and parameters.

There are two levels of password protection.

Passwords between 0000... 4999 allow access to the fast set point adjustment and relay test.

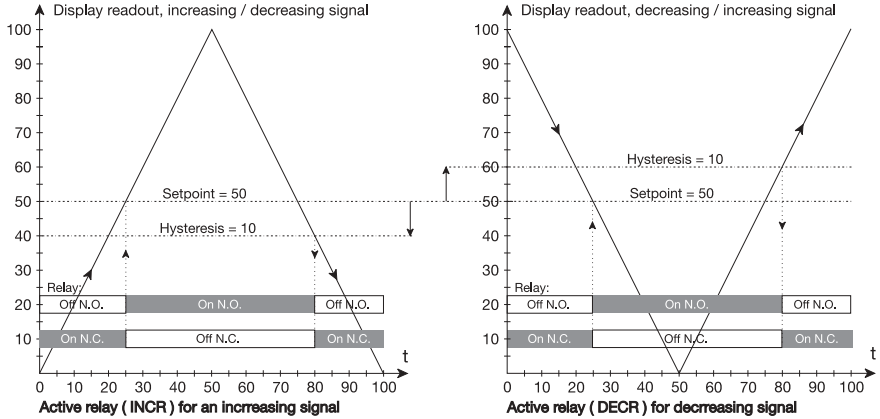
(Using this password stops access to all other parts of the menu)

Passwords between 5000... 9999 stop access to all parts of the menu, fast set point and relay test.

(Current set point is still shown)

By using the master password 2008, all configuration menus are available.

Setting of relays [ACTI]:



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