

ELECTRIC ACTUATORS

for industrial applications and civil vessels

TECHNICAL DOCUMENTATION 2021

BASIC RANGE

ED 25 – ED 50/EQ 60 – EQ 600

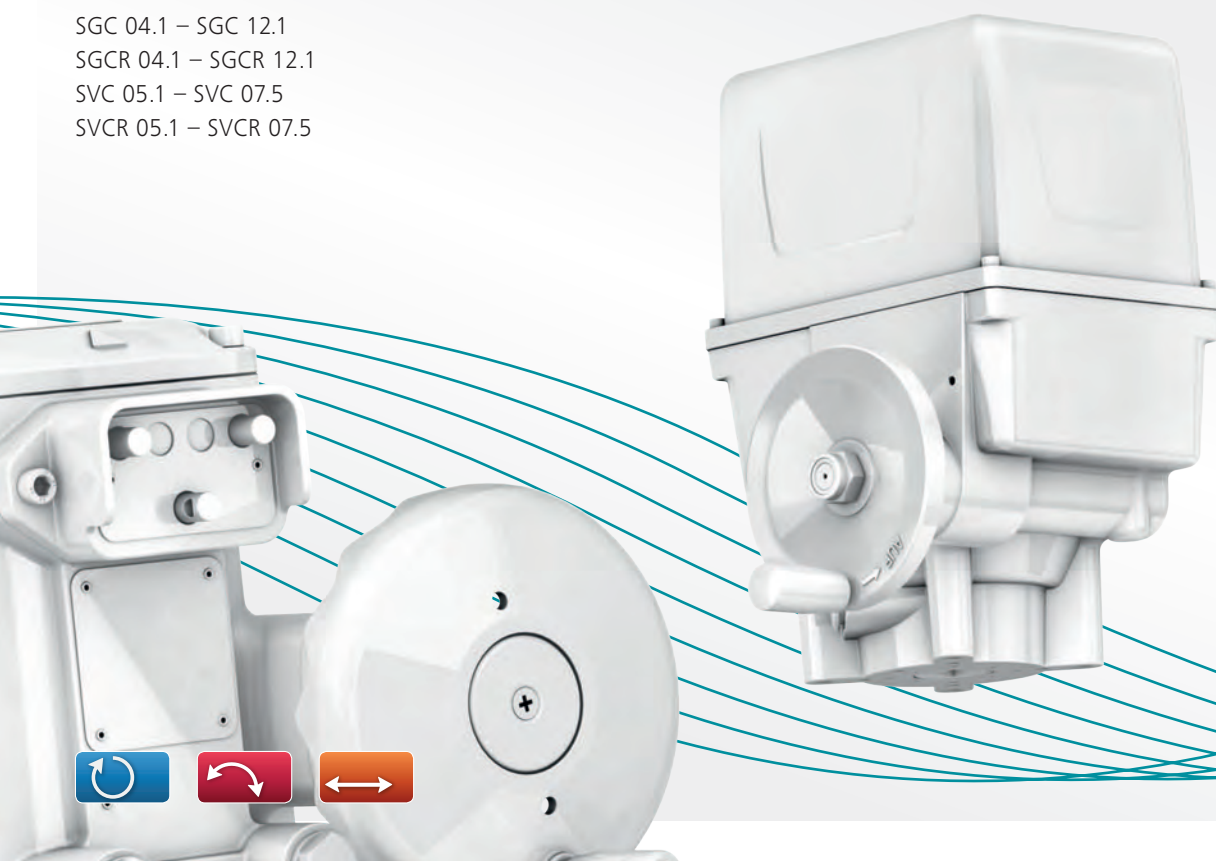
SMART RANGE

SGC 04.1 – SGC 12.1

SGCR 04.1 – SGCR 12.1

SVC 05.1 – SVC 07.5

SVCR 05.1 – SVCR 07.5



Manual
Technical documentation
1st edition 2021

We reserve the right to alter data according to improvements made.

Please refer to our website: www.auma.com to access
the individual documents included in this folder.

Previous documents become invalid with the issue of this document.

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1 Technical data Actuators

Basic Range	6
for open-close and modulating duty	
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for open-close and modulating duty	
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Technical data Part-turn actuators for open-close and modulating duty

General information

Part-turn actuators for controlling and automating final elements within the field of process engineering with part-turn movements between 90° and 180° for e.g. butterfly valves and ball valves.

Type	Torque range		Operating time for 90° in seconds			Motor protection ¹⁾	Valve attachment	Weight
	Open-close duty Min. [Nm]	Modulating duty Max. [Nm]	AC 50 Hz	AC 60 Hz ²⁾	DC ³⁾	Example 230 V AC	Standard EN ISO 5211	approx. [kg]
ED 25	25	25	15	12	6	B	F03, (F04) ⁴⁾ , F05, F07	4.0
			30	25	10	B		
			70	59	18	B		
ED 50	50	50	15	12	7	T	F03, (F04) ⁴⁾ , F05, F07	4.0
			30	25	10	B		
			70	59	18	B		

1) B = Stall-proof motor (S1 - 100 %), T = thermoswitch for temperature monitoring

2) Power consumption is increased by 20 % compared to the 50 Hz AC variant

3) For DC, the operating time is reduced with increasing load. The indicated operating time is valid for no load

4) Offset by 45°, F12 on request

Features and functions of actuator

Type of duty	Open-close duty:	Short-time duty S2 - 15 min, class A																												
	Modulating duty:	Intermittent duty S3 - 50 %, S4 - 50 % or S1 - 100 % with maximum number of starts of 1,200 starts per hour. Specific data for the respective model, refer to electrical data.																												
		Intermittent duty S1 - 100 % with maximum number of starts of up to 1,200 starts per hour; not available for all versions (option)																												
	For nominal voltage and +40 °C ambient temperature and at run or modulating torque load. The type of duty must not be exceeded.																													
Motor	Synchronous motor																													
Mains voltage, mains frequency	Standard voltages:																													
	1-phase AC Voltages/frequencies <table><tr><td>Volt</td><td>230</td><td>220</td></tr><tr><td>Hz</td><td>50</td><td>60</td></tr></table>										Volt	230	220	Hz	50	60														
	Volt	230	220																											
	Hz	50	60																											
	Options:																													
	3-phase AC Voltages/frequencies <table><tr><td>Volt</td><td>380</td><td>400</td><td>400</td><td>440</td></tr><tr><td>Hz</td><td>50</td><td>50</td><td>60</td><td>60</td></tr></table>					Volt	380	400	400	440	Hz	50	50	60	60	1-phase AC Voltages/frequencies <table><tr><td>24</td><td>24</td><td>115</td><td>110</td></tr><tr><td>50</td><td>60</td><td>50</td><td>60</td></tr></table>				24	24	115	110	50	60	50	60	DC current Voltage <table><tr><td>24</td></tr><tr><td>–</td></tr></table>	24	–
	Volt	380	400	400	440																									
	Hz	50	50	60	60																									
	24	24	115	110																										
	50	60	50	60																										
24																														
–																														
Further voltages on request																														
Permissible variation of mains voltage: ±10 %																														
Permissible variation of mains frequency: ±5 %																														
Insulation class	E, B, F																													
Motor protection	Without torque switches and, therefore, without motor protection as standard.																													
Heater (option)	Heating resistor with thermoswitch against moisture with autonomous temperature control, max. 15 W, supply voltage 24, 115, 230 V/50/60 [HZ/WP]																													
Self-locking	Yes																													
Swing angle	90°, 120°, 150°, 180°																													
Manual operation	Emergency manual operation with hexagon socket																													
Electrical connection	Internal terminal rail, for terminal assignment refer to terminal plan																													
Cable entry	2 blanking plugs M16 x 1.5																													
Hood	Standard:	Polycarbonate (flammability class V0)																												
	Options:	Aluminium with indicator glass																												

Technical data Part-turn actuators for open-close and modulating duty

Features and functions of actuator controls		
Limit switching and digital outputs	Standard:	2 switches for limit seating in the end positions. Used to set the limit positions for the end positions.
	Options:	- Additional limit switches for signalling the end positions or intermediate positions, freely adjustable max. 250 V AC, max. 10 A (resistive load), max. 5 A (inductive load), max. 2 switches [2WE] - Additional limit switches for signalling the end positions or intermediate positions, freely adjustable with gold-plated contacts for low voltage, max. 30 V AC, max. 0.1 A (resistive load), max. 2 switches [2WE-G]
Digital inputs	Standard:	None
	Options:	With 2 inputs (reversing contactors) for OPEN and CLOSE, option for: 24 V DC; 1,7 W appropriate for PLC [WSE] 24 V AC/DC 110 V AC 230 V AC
Positioner (option)	Positioning electronics for actuator control [PEL100, PEL-GL] Input 0 – 10 V, 0/4 – 20 mA, output 0 – 10 V, 0/4 – 20 mA	
Position feedback signal, analogue (options)	- Potentiometer 100/130/200/500/1 000/5 000 Ω or 10 kΩ [POT] Linearity fault $\leq 0.5\%$, max. 1.5 W, wiper current 30 mA, max. 2 units - Electronic position feedback signal 2/3-wire technology [ESR100] Output 0/4 – 20 mA, connecting voltage 24 V DC	

Service conditions		
Mounting position	Any position, but not suspended downward	
Installation altitude	$\leq 2,000$ m above sea level $> 2,000$ m above sea level on request	
Ambient temperature	Standard:	0 °C to +60 °C with options (a.o. electronic sub-assembly) 0 °C to +50 °C with positioner option (PEL)
	Option:	–20 °C to +60 °C (heater required)
Enclosure protection according to EN 60529	Standard:	IP67 IP65 for versions with local controls, FSC module or transformer
	Option:	IP68 (version with larger output drive unit and valve attachment F05/F07/F10) According to AUMA definition, enclosure protection IP68 meets the following requirements: - Depth of water: maximum 8 m head of water - Duration of continuous immersion in water: Max. 96 hours
Explosion-protection (option)	Ex II 3D IP65 T 150°C Dc [A-Ex]	
Corrosion protection	C2 according to EN ISO 12944-2	
Coating	Powder coating	
Colour	AUMA silver-grey (similar to RAL 7037)	
Lifetime	AUMA part-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.	

Further information	
EU Directives	Machinery Directive 2006/42/EC Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU RoHS Directive 2011/65/EU

Technical data Part-turn actuators for open-close and modulating duty

General information

Part-turn actuators for controlling and automating final elements within the field of process engineering with part-turn movements between 90° and 180° for e.g. butterfly valves and ball valves.

Type	Torque range		Operating time for 90° in seconds			Motor protection ¹⁾	Valve attachment ²⁾	Handwheel	Weight
	Open-close duty Min. [Nm]	Modulating duty Max. [Nm]	AC 50 Hz	AC 60 Hz ³⁾	DC ⁴⁾	Example 230 V AC	Standard EN ISO 5211	Ø [mm]	approx. [kg]
EQ 40	40	20	15	12	14	B	(F04) ⁵⁾ , F05, F07, F10	100	7.5
			30	25	22	B			
			60	50	45	B			
EQ 60	60	40	20	16	14	T	(F04) ⁵⁾ , F05, F07, F10	100	7.5
			30	25	22	T			
			60	50	45	B			
EQ 100	100	60	20 ⁶⁾	16	14	B	(F04) ⁵⁾ , F05, F07, F10	100	7.5
			30	25	22	T			
			60	50	45	T			
EQ 150	150	80	20 ⁶⁾	16	14	T	(F04) ⁵⁾ , F05, F07, F10	100	7.5
			30 ⁶⁾	25	22	B			
			60	50	45	T			
EQ 300	300	180	40 ⁶⁾	33	38	T	F07, F10, (F12) ⁵⁾	100	15
			80 ⁶⁾	66	70	B			
			160	133	140	T			
EQ 600	600	300	80 ⁶⁾	66	75	T	F07, F10, (F12) ⁵⁾	100	15
			160 ⁶⁾	133	115	B			

1) B = Stall-proof motor (S1 - 100 %), T = thermoswitch for temperature monitoring

2) EQ 40 – EQ 150: For variants with couplings at higher diameter, IP68 and with base and lever, a larger output drive unit is used with combined flange F05/F07/F10.

3) Power consumption is increased by 20 % compared to the 50 Hz AC variant

4) For DC, the operating time is reduced with increasing load. The indicated operating time is valid for no load

5) Offset by 45°, F12 on request

6) With positioner option, the metallic hood is required

Features and functions of actuator

Type of duty	Open-close duty:	Short-time duty S2 - 15 min, class A								
	Modulating duty:	Intermittent duty S3 - 50 %, S4 - 50 % or S1 - 100 % with maximum number of starts of 1,200 starts per hour. Specific data for the respective model, refer to electrical data.								
		Intermittent duty S1 - 100 % with maximum number of starts of up to 1,200 starts per hour; not available for all versions (option)								
	For nominal voltage and +40 °C ambient temperature and at run or modulating torque load. The type of duty must not be exceeded.									
Motor	Synchronous motor									
Mains voltage, mains frequency	Standard voltages:									
	1-phase AC									
	Voltages/frequencies									
	Volt	230			220					
	Hz	50			60					
	Options:									
	3-phase AC					1-phase AC				DC current
	Voltages/frequencies					Voltages/frequencies				Voltage
	Volt	380	400	400	440	24	24	115	110	24
	Hz	50	50	60	60	50	60	50	60	—
Further voltages on request										
Permissible variation of mains voltage: ±10 %										
Permissible variation of mains frequency: ±5 %										

Technical data Part-turn actuators for open-close and modulating duty

Features and functions of actuator	
Insulation class	E, B, F
Motor protection	The motor shall be protected by correct switching off at maximum torque. Motors for operation of S1 - 100% operation on are stall-proof and offer additional protection. For all other motors, an additional protection for temperature monitoring can be provided using integrated thermostats. For AC motors only. Not provided for DC motors. There are two types of thermostats: either the motor is automatically switched off, or a switch signal is lead outside for customer connection. The type to be used depends on the motor version and cannot be freely selected. For details, refer to Electrical data or in the order-related documents.
Heater (option)	Heating resistor with thermostat against moisture with autonomous temperature control, max. 15 W, supply voltage 24, 115, 230 V/50/60 [HZ/WP]
Self-locking	Yes
Swing angle (option)	Standard: 90° ±15° Options: 120° ±15° [SWE] 150° ±15° 180° ±15°
Manual operation	Handwheel
End positions	Mechanical end stops, adjustable from outside
Electrical connection	Standard: Internal terminal rail, for terminal assignment refer to terminal plan Options: - Separate electrical terminal compartment at actuator with 32-pole terminal rail [ASK] - Compact connector 10-pole silver/24-pole silver [KS1, KS3]
Cable entry	3 blanking plugs M20 x 1.5
Hood	Standard: Polycarbonate (flammability class V0) Options: Aluminium with indicator glass
Local controls [VSE] (option), IP65	- MANUAL/AUTO change-over - Rotary switch (non latching) for OPEN and CLOSE [VSE]

With base and lever (option)

Lever size	- With lever size 100 mm (distance from axis to bore) [LAG-HEB] - Lever lengths 150/200 mm on request
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Features and functions of actuator controls

Limit switching and digital outputs	Standard:	2 switches for limit seating in the end positions. Used to set the limit positions for the end positions.
	Options:	- Additional limit switches for signalling the end positions or intermediate positions, freely adjustable max. 250 V AC, max. 10 A (resistive load), max. 5 A (inductive load), max. 2 switches [2WE] - Additional limit switches for signalling the end positions or intermediate positions, freely adjustable with gold-plated contacts for low voltage, max. 30 V AC, max. 0.1 A (resistive load), max. 2 switches [2WE-G]
Torque switching and digital outputs	Standard:	2 switches used to switch off the actuator when reaching the maximum torque. Not adjustable
	Option:	2 additional potential-free torque switches [2DE] signalling once the maximum torque is reached, not adjustable. Max. 250 V AC, max. 10 A (resistive load), max. 5 A (inductive load)
Digital inputs	Standard:	None
	Options:	With 2 inputs (reversing contactors) for OPEN and CLOSE, option for: 24 V DC; 1,7 W appropriate for PLC [WSE] 24 V AC/DC 110 V AC 230 V AC
Positioner (option)	Positioning electronics for actuator control [PEL100, PEL-GL] Input 0 – 10 V, 0/4 – 20 mA, output 0 – 10 V, 0/4 – 20 mA	
Position feedback signal, analogue (options)	- Potentiometer 100/130/200/500/1 000/5 000 Ω or 10 kΩ [POT] Linearity fault ≤0.5 %, max. 1.5 W, wiper current 30 mA, max. 2 units - Electronic position feedback signal 2/3-wire technology [ESR100] Output 0/4 – 20 mA, connecting voltage 24 V DC	

Technical data Part-turn actuators for open-close and modulating duty

Emergency operation module (option)

Emergency operation module	• 250 Nm with 24 V DC or 90 – 264 V AC [FSC20] • 450 Nm with 24 V DC or 90 – 264 V AC [FSC20]
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Service conditions

Mounting position	Any position, but not suspended downward
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request
Ambient temperature	Standard: 0 °C to +60 °C with options (a.o. electronic sub-assembly) 0 °C to +50 °C with positioner option (PEL) Option: –20 °C to +60 °C (heater required)
Enclosure protection according to EN 60529	Standard: IP67 IP65 for versions with local controls, FSC module or transformer Option: IP68 (version with larger output drive unit and valve attachment F05/F07/F10) According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Duration of continuous immersion in water: Max. 96 hours
Explosion-protection (option)	Ex II 3D IP65 T 150°C Dc [A-Ex]
Corrosion protection	C2 according to EN ISO 12944-2
Coating	Powder coating
Colour	AUMA silver-grey (similar to RAL 7037)
Lifetime	AUMA part-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.

Further information

EU Directives	Machinery Directive 2006/42/EC Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU RoHS Directive 2011/65/EU
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**Technical data Part-turn actuators with integral actuator controls
for open-close and modulating duty**

Type	Operating time for 90° in seconds (adjustable in 9 steps)	Torque range ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Valve attach- ment	Valve shaft			Handwheel		Weight ⁴⁾
	50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	ø [mm]	Turns for 90°	approx. [kg]
SGC/SGCR 04.1	4 – 63	25 – 63	32	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 05.1	4 – 63	50 – 125	63	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 07.1	4 – 63	100 – 250	125	F07	25.4	22	22	125	13.5	10
SGC/SGCR 10.1	5.6 – 90	200 – 500	250	F10	38	30	27	160	13.5	15
SGC/SGCR 12.1	20 – 275	400 – 1,000	500	F12	50	36	41	125	35	25

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty
4) Weight	Indicated weight includes part-turn actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SGC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2	
	Modulating duty SGCR:	Intermittent duty S4 - 40 % class C in compliance with EN 15714-2 with maximum number of 1,800 starts per hour (option)	
	For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.		
Motor	Variable speed, brushless motor		
Insulation class	F, tropicalized		
Motor protection	PTC thermistors (according to DIN 44081)		
Self-locking	Yes		
Swing angle	Standard:	SGC/SGCR 04.1 – 10.1: 82° – 98° adjustable between min. and max. values SGC/SGCR 12.1: 75 ° – 105 °	
	Options:	Available swing angles on request	
Limit switching	Via position transmitter potentiometer, status signals for directions OPEN and CLOSE		
Torque switching	Via electronic current measurement, status signals for directions OPEN and CLOSE, adjustable in 8 steps		
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED		
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation		
Coupling	Standard:	Coupling unbored	
	Options:	• Coupling unbored extended • Finish machining of coupling (standard or extended) - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211	
Valve attachment	Dimensions according to EN ISO 5211		

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Features and functions of actuator controls		
Power supply	Standard voltages:	
	1-phase AC current Voltages/frequencies	
	Volt	115230
	Hz	50/6050/60
	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 % For current consumption, refer to Electrical data Part-turn actuators SGC/SGCR	
External supply of the electronics (option)	24 V DC +20 %/–15 %, Current consumption: With options up to 200 mA The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.	
Overvoltage category	Category III according to IEC 60364-4-443	
Power electronics	Power electronics with integral motor controller	
Rated power	Controls are designed for rated motor power, refer to Electrical Data Part-turn actuators SGC/SGCR	
Control (input signals)	4 digital inputs (via opto-isolator, with one common) - Control voltage 24 V DC, current consumption: approx. 15 mA per input - Minimum pulse duration for shortest operation pulse: 100 ms - All digital inputs must be supplied with the same potential. Assignment for open-close actuators: - OPEN, STOP, CLOSE (standard) - OPEN, STOP, CLOSE, EMERGENCY (option) - OPEN, STOP, CLOSE, MODE in combination with positioner (option) - OPEN, EMERGENCY, CLOSE, MODE in combination with positioner (option) Assignment for modulating actuators: - OPEN, STOP, CLOSE, MODE (standard) - OPEN, EMERGENCY, CLOSE, MODE (option) - Analogue input 0/4 – 20 mA (option) Used as input signal for position setpoint E1 (in combination with positioner) or as input signal for motor speed E3.	
Status signals (output signals)	- Output contacts: 4 programmable semi-conductor output contacts, per contact max. 24 V DC, 1 A (resistive load) 2 NO contacts with one common Default configuration: End position OPEN, end position CLOSED 1 potential-free NO contact for collective fault signal Default configuration: Torque fault, motor protection tripped 1 potential-free change-over contact Default configuration: Push button REMOTE - Analogue output: Galvanically isolated position feedback 0/4 – 20 mA (load 500 Ω).	
Voltage output	Auxiliary voltage 24 V DC, max. 40 mA for supply of control inputs, galvanically isolated from internal voltage supply. Not available for option "external electronics supply".	
Local controls	Standard:	- Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE 2 multi-colour indication lights: - End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue)
	Option:	Local controls mounted separately on wall bracket

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Functions	- Switch-off mode adjustable: - Limit or torque seating for end positions OPEN and CLOSED - Torque monitoring across the whole travel - Torque by-pass - Programmable EMERGENCY behaviour - Digital input low active, - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN - Positioner (for modulating actuators): - Position setpoint via analogue input E1 = 0/4 – 20 mA - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via digital MODE input		
Electrical connection	Standard:	Plug/socket connector with crimp connection	
	Option:	AUMA plug/socket connector with screw-type connection	
Wiring diagram (basic version)	Open-close duty:	TPC B-0E6-2C7-0530 TPA 50R200-0A0-000	
	Modulating duty:	TPC B-1H6-2C7-0530 TPA 50R200-0A0-000	

Service conditions			
Mounting position	Any position		
Installation altitude	≤ 2 000 m above seal level > 2,000 m above sea level on request		
Ambient temperature	−25 °C to +70 °C		
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Duration of continuous immersion in water: Max. 96 hours • Up to 10 operations during continuous immersion • Modulating duty is not possible during continuous immersion		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.		
GL approval (option)	Environmental categories D, G, EMC2		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED, at a respective rotary movement of 90°.	
	Modulating duty:	5 million modulating steps	
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.		

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1 Electrical data SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1

**Technical data Part-turn actuators with integral actuator controls
for open-close and modulating duty**

Type	Operating time for 90° in seconds (adjustable in 9 steps)	Torque range ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Valve attach- ment	Valve shaft			Handwheel		Weight ⁴⁾
	50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	ø [mm]	Turns for 90°	approx. [kg]
SGC/SGCR 04.1	4 – 63	25 – 63	32	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 05.1	4 – 63	50 – 125	63	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 07.1	4 – 63	100 – 250	125	F07	25.4	22	22	125	13.5	10
SGC/SGCR 10.1	5.6 – 90	200 – 500	250	F10	38	30	27	160	13.5	15
SGC/SGCR 12.1	20 – 275	400 – 1,000	500	F12	50	36	41	125	35	25

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty
4) Weight	Indicated weight includes part-turn actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SGC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2
	Modulating duty SGCR:	Intermittent duty S4 - 40 %, class C according to EN 15714-2 with maximum number of 1,800 starts per hour (option)
	For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.	
Motor	Variable speed, brushless motor	
Insulation class	F, tropicalized	
Motor protection	PTC thermistors (according to DIN 44081)	
Self-locking	Yes	
Swing angle	Standard:	SGC/SGCR 04.1 – 10.1: 82° – 98° adjustable between min. and max. values SGC/SGCR 12.1: 75 ° – 105°
	Options:	Available swing angles on request
Limit switching	Via position transmitter potentiometer, status signals for directions OPEN and CLOSE Signalling via fieldbus interface	
Torque switching	Via electronic current measurement, status signals for directions OPEN and CLOSE, adjustable in 8 steps Signalling via fieldbus interface	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
Coupling	Standard:	Coupling unbored
	Options:	- Coupling unbored extended - Finish machining of coupling (standard or extended) - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211
Valve attachment	Dimensions according to EN ISO 5211	

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Features and functions of actuator controls		
Power supply	Standard voltages:	
	1-phase AC current	
	Voltages/frequencies	
	Volt	115 230
	Hz	50/60 50/60
	Permissible variation of mains voltage: ±10 %	
	Permissible variation of mains frequency: ±5 %	
	For current consumption, refer to Electrical data Part-turn actuators SGC/SGCR	
External supply of the electronics (option)	24 V DC +20 %/–15 %, Current consumption: With options up to 200 mA The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.	
Overvoltage category	Category III according to IEC 60364-4-443	
Power electronics	Power electronics with integral motor controller	
Rated power	Controls are designed for rated motor power, refer to Electrical Data Part-turn actuators SGC/SGCR	
Control (input signals)	Operation commands and setpoint via fieldbus interface	
Status signals (output signals)	Via fieldbus interface	
Profibus DP-V1 (option)	Access to parameters, the electronic name plate and the operating and diagnostic services with acyclic write/read services	
Local controls	Standard:	• Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE • 2 multi-colour indication lights: - End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue)
	Option:	Local controls mounted separately on wall bracket
Functions	• Switch-off mode adjustable: - Limit or torque seating for end positions OPEN and CLOSED • Torque monitoring across the whole travel • Torque by-pass • Programmable EMERGENCY behaviour - via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN • Positioner: - Position setpoint via fieldbus interface - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via fieldbus interface	
Electrical connection	Standard:	Plug/socket connector with crimp connection
	Option:	AUMA plug/socket connector with screw-type connection
Wiring diagram (basic version)	TPCBA000-2A7-0540 TPA50R200-0A0-000	

Settings/programming the Profibus DP interface	
Baud rate setting	Automatic baud rate recognition
Setting the Profibus DP interface	Setting of the Profibus DP address is performed via switches, alternatively also via parameters
Configurable process representation via GSD file	For an optimum adaptation to the process control system, the process representation can be configured as desired.

General Profibus DP interface data	
Communication protocol	Profibus DP according to IEC 61158 and IEC 61784-1
Network topology	- Line (fieldbus) structure. - When using repeaters, tree structures can also be implemented. - Coupling and uncoupling of devices during operation without affecting other devices is possible.

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Transmission medium	Twisted, screened copper cable according to IEC 61158
Fieldbus interface	EIA-485 (RS485)
Transmission rate/cable length	- Baud rate and maximum cable length (segment length) without repeater: - between 9.6 and 93.75 kbit/s: 1,200 m - for 187.5 kbit/s: 1,000 m - for 500 kbit/s: 400 m - for 1,500 kbit/s: 200 m - Baud rate and possible cable length with repeater (total network cable length): - between 9.6 and 93.75 kbit/s: approx. 10 km - for 187.5 kbit/s: approx. 10 km - for 500 kbit/s: approx. 4 km - for 1,500 kbit/s: approx. 2 km
Device types	- DP master class 1, e.g. central controllers such as PLC, PC, ... - DP master class 2, e.g. programming/configuration tools - DP slave, e.g. devices with digital and/or analogue inputs/outputs such as actuators, sensors
Number of devices	32 devices without repeater, with repeater expandable to 126
Fieldbus access	- Token-passing between masters and polling for slaves - Mono-master or multi-master systems are possible
Supported fieldbus functions	Cyclic data exchange, sync mode, freeze mode, fail-safe mode
Profibus DP ident no.	0x0C77: Standard applications with Profibus DP-V0 and DP-V1

Commands and signals of the Profibus DP interface

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, EMERGENCY operation command, motor speed
Process representation input (feedback signals)	- End positions OPEN, CLOSED - Actual position value - Selector switch in position LOCAL/REMOTE - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED
Process representation input (fault signals)	- Motor protection tripped - Torque switch tripped in mid-travel
Behaviour on loss of communication	The behaviour of the actuator is programmable: - Stop in current position - Travel to end position OPEN or CLOSED - Travel to any intermediate position - Execute last received operation command

Service conditions

Mounting position	Any position
Installation altitude	≤ 2 000 m above seal level > 2,000 m above sea level on request
Ambient temperature	–25 °C to +70 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range
Enclosure protection according to EN 60529	IP68 According to AUMA definition, enclosure protection IP68 meets the following requirements: - Depth of water: maximum 8 m head of water - Duration of continuous immersion in water: Max. 96 hours - Up to 10 operations during continuous immersion - Modulating duty is not possible during continuous immersion
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.

**Technical data Part-turn actuators with integral actuator controls
for open-close and modulating duty**

GL approval (option)	Environmental categories D, G, EMC2		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED, at a respective rotary movement of 90°.	
		Modulating duty:	5 million modulating steps
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.		

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1 Electrical data SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1

**Technical data Part-turn actuators with integral actuator controls
for open-close and modulating duty**

Type	Operating time for 90° in seconds (adjustable in 9 steps)	Torque range ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Valve attach- ment	Valve shaft			Handwheel		Weight ⁴⁾
	50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	ø [mm]	Turns for 90°	approx. [kg]
SGC/SGCR 04.1	4 – 63	25 – 63	32	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 05.1	4 – 63	50 – 125	63	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 07.1	4 – 63	100 – 250	125	F07	25.4	22	22	125	13.5	10
SGC/SGCR 10.1	5.6 – 90	200 – 500	250	F10	38	30	27	160	13.5	15
SGC/SGCR 12.1	20 – 275	400 – 1,000	500	F12	50	36	41	125	35	25

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty
4) Weight	Indicated weight includes part-turn actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SGC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2	
	Modulating duty SGCR:	Intermittent duty S4 - 40 %, class C according to EN 15714-2 with maximum number of 1,800 starts per hour (option)	
	For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.		
Motor	Variable speed, brushless motor		
Insulation class	F, tropicalized		
Motor protection	PTC thermistors (according to DIN 44081)		
Self-locking	Yes		
Swing angle	Standard:	SGC/SGCR 04.1 – 10.1: 82° – 98° adjustable between min. and max. values SGC/SGCR 12.1: 75 ° – 105°	
	Options:	Available swing angles on request	
Limit switching	Via position transmitter potentiometer, status signals for directions OPEN and CLOSE Signalling via fieldbus interface		
Torque switching	Via electronic current measurement, status signals for directions OPEN and CLOSE, adjustable in 8 steps Signalling via fieldbus interface		
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED		
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation		
Coupling	Standard:	Coupling unbored	
	Options:	• Coupling unbored extended • Finish machining of coupling (standard or extended) - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211	
Valve attachment	Dimensions according to EN ISO 5211		

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Features and functions of actuator controls			
Power supply	Standard voltages:		
	1-phase AC current		
	Voltages/frequencies		
	Volt	115	230
	Hz	50/60	50/60
	Permissible variation of mains voltage: ±10 %		
	Permissible variation of mains frequency: ±5 %		
	For current consumption, refer to Electrical data Part-turn actuators SGC/SGCR		
External supply of the electronics (option)	24 V DC +20 %/–15 %, Current consumption: With options up to 200 mA The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.		
Overvoltage category	Category III according to IEC 60364-4-443		
Power electronics	Power electronics with integral motor controller		
Rated power	Controls are designed for rated motor power, refer to Electrical Data Part-turn actuators SGC/SGCR		
Control (input signals)	Operation commands and setpoint via fieldbus interface		
Status signals (output signals)	Via fieldbus interface		
Local controls	Standard:	• Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE • 2 multi-colour indication lights: - End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue)	
	Option:	Local controls mounted separately on wall bracket	
Functions	• Switch-off mode adjustable: - Limit or torque seating for end positions OPEN and CLOSED • Torque monitoring across the whole travel • Torque by-pass • Programmable EMERGENCY behaviour - via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN • Positioner: - Position setpoint via fieldbus interface - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via fieldbus interface		
Electrical connection	Standard:	Plug/socket connector with crimp connection	
	Option:	Plug/socket connector with screw-type connection	
Wiring diagram (basic version)	TPCBC000-2A7-0540 TPA50R200-0A0-000		

Settings/programming the Modbus RTU interface	
Setting the Modbus RTU interface	The Modbus address is set via switches (DIP switches in the actuator), alternatively also via parameters (using AUMA Software CDT and AUMA service cable Z100.999). Parity and baud rate are set via parameters.

General data of the Modbus RTU interface	
Communication protocol	Modbus RTU according to IEC 61158 and IEC 61784
Network topology	Line (bus) structure. When using repeaters, tree structures can also be implemented. Coupling and uncoupling of devices during operation without affecting other devices is possible.
Transmission medium	Twisted, screened copper cable according to IEC 61158
Fieldbus interface	EIA-485 (RS485)

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Transmission rate/cable length	Line topology:		
	Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length):
	9.6 – 38.4	1,200 m	approx. 10 km
	Redundant loop topology:		
	Baud rate (kbit/s)	Max. cable length between actuators (without repeater)	Max. possible cable length of redundant loop
	9.6 – 38.4	1,200 m	approx. 290 km
Device types	Modbus slave, e.g. devices with digital and/or analogue inputs/outputs such as actuators, sensors		
Number of devices	32 devices without repeater, with repeater expandable to 247		
Fieldbus access	Polling between master and slaves (query response).		
Supported Modbus functions (services)	01	Read Coil Status	
	02	Read Input Status	
	03	Read Holding Registers	
	04	Read Input Registers	
	05	Force Single Coil	
	15 (0FHex)	Force Multiple Coils	
	06	Preset Single Register	
	16 (10Hex)	Preset Multiple Registers	
	17 (11Hex)	Report Slave ID	
	08	Diagnostics: 00 00 Loopback 00 10 (0AHex) Clear Counters and Diagnostic Register 00 11 (0BHex) Return Bus Message Count 00 12 (0CHex) Return Bus Communication Error Count 00 13 (0DHex) Return Bus Exception Error Count 00 14 (0EHex) Return Slave Message Count 00 15 (0FHex) Return Slave No Response Count 00 16 (10Hex) Return Slave NAK Count 00 17 (11Hex) Return Slave Busy Count 00 18 (12Hex) Return Character Overrun Count	

Commands and signals of the Modbus RTU interface

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, EMERGENCY operation command, motor speed
Process representation input (feedback signals)	- End positions OPEN, CLOSED - Actual position value - Selector switch in position LOCAL/REMOTE - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED
Process representation input (fault signals)	- Motor protection tripped - Torque switch tripped in mid-travel
Behaviour on loss of communication	The behaviour of the actuator is programmable: - Stop in current position - Travel to end position OPEN or CLOSED - Travel to any intermediate position - Execute last received operation command

Service conditions

Mounting position	Any position
Installation altitude	≤ 2 000 m above seal level > 2,000 m above sea level on request

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Ambient temperature	–25 °C to +70 °C		
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Duration of continuous immersion in water: Max. 96 hours • Up to 10 operations during continuous immersion • Modulating duty is not possible during continuous immersion		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.		
GL approval (option)	Environmental categories D, G, EMC2		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED, at a respective rotary movement of 90°.	
	Modulating duty:	5 million modulating steps	
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.		

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1 Electrical data SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1

Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty

Type	Output speed rpm	Torque range ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Valve attachment	Valve shaft			Stem stroke	Stem diameter	Handwheel		Weight ⁵⁾
	(adjustable in 9 steps) 50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	for rising valve stem ⁴⁾ max. [mm]	for rising valve stem ⁴⁾ max. [mm]	ø [mm]	Reduction ratio	approx. [kg]
SVC/SVCR 05.1	1.6 – 22	10 – 25	13	F05/F07	20	17	17	60	23	100	13 : 1	7.0
SVC/SVCR 07.1	1.6 – 22	20 – 50	25	F07	25.4	22	22	70	26	125	13 : 1	10
SVC/SVCR 07.5	0.6 – 8.0	40 – 100	50	F07	25.4	22	22	70	26	125	13 : 1	10

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty.
4) Rising valve stem	For output drive type A
5) Weight	Indicated weight includes globe valve actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SVC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2
	Modulating duty SVCR:	Intermittent duty S4 - 40 %, class C according to EN 15714-2 with maximum number of 1,800 starts per hour
	For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.	
Motor	Variable speed, brushless motor	
Insulation class	F, tropicalized	
Motor protection	PTC thermistors (according to DIN 44081)	
Self-locking	Yes	
Limit switching	• Via position transmitter potentiometer, status signals for directions OPEN and CLOSE • Turns per stroke: Available in subranges out of a total range between 1 – 40 (heed max. stem stroke). However, the turns per stroke can only be set within the subrange ordered. More than 40 turns per stroke on request.	
Torque switching	Via electronic current measurement, status signals for directions OPEN and CLOSE, adjustable in 8 steps	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
Coupling	Standard:	Coupling unbored
	Options:	• Coupling unbored extended • Finish machining of coupling (standard or extended) - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211
Valve attachment	Standard:	With coupling, dimensions according to EN ISO 5211
	Options:	With output drive type A
		With LE linear thrust unit
		With GS worm gearbox

Technical data Globe valve actuators with integral actuator controls for open-close and modulating duty

Features and functions of actuator controls		
Power supply	Standard voltages:	
	Wechselstrom Spannungen/Frequenzen	
	Volt	115230
	Hz	50/6050/60
	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 % For current consumption, refer to Electrical data Globe valve actuators SVC/SVCR	
External supply of the electronics (option)	24 V DC +20 %/–15 %, Current consumption: With options up to 200 mA The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.	
Overvoltage category	Category III according to IEC 60364-4-443	
Power electronics	Power electronics with integral motor controller	
Rated power	Controls are designed for rated motor power, refer to Electrical data Globe valve actuators SVC/SVCR	
Control (input signals)	4 digital inputs (via opto-isolator, with one common) - Control voltage 24 V DC, current consumption: approx. 15 mA per input - Minimum pulse duration for shortest operation pulse: 100 ms - All digital inputs must be supplied with the same potential. Assignment for open-close actuators: - OPEN, STOP, CLOSE (standard) - OPEN, STOP, CLOSE, EMERGENCY (option) - OPEN, STOP, CLOSE, MODE in combination with positioner (option) - OPEN, EMERGENCY, CLOSE, MODE in combination with positioner (option) Assignment for modulating actuators: - OPEN, STOP, CLOSE, MODE (standard) - OPEN, EMERGENCY, CLOSE, MODE (option) - Analogue input 0/4 – 20 mA (option) Used as input signal for position setpoint E1 (in combination with positioner) or as input signal for motor speed E3.	
Status signals (output signals)	- Output contacts: 4 programmable semi-conductor output contacts, per contact max. 24 V DC, 1 A (resistive load) 2 NO contacts with one common Default configuration: End position OPEN, end position CLOSED 1 potential-free NO contact for collective fault signal Default configuration: Torque fault, motor protection tripped 1 potential-free change-over contact Default configuration: Push button REMOTE - Analogue output: Galvanically isolated position feedback 0/4 – 20 mA (load 500 Ω).	
Voltage output	Auxiliary voltage 24 V DC, max. 40 mA for supply of control inputs, galvanically isolated from internal voltage supply. Not available for option "external electronics supply".	
Local controls	Standard:	- Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE 2 multi-colour indication lights: - End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue)
	Option:	Local controls mounted separately on wall bracket

Technical data Globe valve actuators with integral actuator controls for open-close and modulating duty

Functions	• Switch-off mode adjustable: - Limit or torque seating for end positions OPEN and CLOSED • Torque monitoring across the whole travel • Torque by-pass • Programmable EMERGENCY behaviour - Digital input low active, - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN • Positioner (for modulating actuators): - Position setpoint via analogue input E1 = 0/4 – 20 mA - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via digital MODE input		
Electrical connection	Standard:	Plug/socket connector with crimp connection	
	Option:	AUMA plug/socket connector with screw-type connection	
Wiring diagram (basic version)	Open-close duty:	TPC B-0E6-2C7-0530 TPA 50R200-0A0-000	
	Modulating duty:	TPC B-1H6-2C7-0530 TPA 50R200-0A0-000	

Service conditions			
Mounting position	Any position		
Installation altitude	≤ 2 000 m über NN > 2,000 m above sea level on request		
Ambient temperature	−25 °C to +70 °C		
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Duration of continuous immersion in water: Max. 96 hours • Up to 10 operations during continuous immersion • Modulating duty is not possible during continuous immersion		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.		
GL approval	Environmental categories D, G, EMC2		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED	
	Modulating duty:	5 million modulating steps	
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.		

SVC 05.1 – SVC 07.5/SVCR 05.1 – SVCR 07.5

Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty



Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5 Electrical data SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5

Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty

Type	Output speed rpm	Torque range ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Valve attachment	Valve shaft			Stem stroke	Stem diameter	Handwheel		Weight ³⁾
	(adjustable in 9 steps) 50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	for rising valve stem ⁴⁾ max. [mm]	for rising valve stem ⁴⁾ max. [mm]	ø [mm]	Reduction ratio	approx. [kg]
SVC/SVCR 05.1	1.6 – 22	10 – 25	13	F05/F07	20	17	17	60	23	100	13 : 1	7.0
SVC/SVCR 07.1	1.6 – 22	20 – 50	25	F07	25,4	22	22	70	26	125	13 : 1	10
SVC/SVCR 07.5	0.6 – 8.0	40 – 100	50	F07	25,4	22	22	70	26	125	13 : 1	10

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty
4) Rising valve stem	For output drive type A
5) Weight	Indicated weight includes globe valve actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SVC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2
	Modulating duty SVCR:	Intermittent duty S4 - 40 %, class C according to EN 15714-2 with maximum number of 1,800 starts per hour
	For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.	
Motor	Variable speed, brushless motor	
Insulation class	F, tropicalized	
Motor protection	PTC thermistors (according to DIN 44081)	
Self-locking	Yes	
Limit switching	• Via position transmitter potentiometer, status signals for directions OPEN and CLOSE • Turns per stroke: Available in subranges out of a total range between 1 – 40 (heed max. stem stroke). However, the turns per stroke can only be set within the subrange ordered. More than 40 turns per stroke on request. • Signalling for fi eldbus interface	
Torque switching	Via electronic current measurement, status signals for directions OPEN and CLOSE, adjustable in 8 steps Signalling for fieldbus interface	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
Coupling	Standard:	Coupling unbored
	Options:	• Coupling unbored extended • Finish machining of coupling (standard or extended) - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211
Valve attachment	Standard:	With coupling, dimensions according to EN ISO 5211
	Options:	With output drive type A With LE linear thrust unit With GS worm gearbox

Technical data Globe valve actuators with integral actuator controls for open-close and modulating duty

Features and functions of actuator controls			
Power supply	Standard voltages:		
	1-phase AC current		
	Voltages/frequencies		
	Volt	115	230
	Hz	50/60	50/60
	Permissible variation of mains voltage: ±10 %		
	Permissible variation of mains frequency: ±5 %		
	For current consumption, refer to Electrical data Globe valve actuators SVC/SVCR		
External supply of the electronics (option)	24 V DC +20 %/–15 %, Current consumption: With options up to 200 mA The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.		
Overvoltage category	Category III according to IEC 60364-4-443		
Power electronics	Power electronics with integral motor controller		
Rated power	Controls are designed for rated motor power, refer to Electrical data Globe valve actuators SVC/SVCR		
Control (input signals)	Operation commands and setpoint via fieldbus interface		
Status signals (output signals)	Via fieldbus interface		
Profibus DP-V1 (option)	Access to parameters, the electronic name plate and the operating and diagnostic services with acyclic write/read services		
Local controls	Standard:	• Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE • 2 multi-colour indication lights: - End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue)	
	Option:	Local controls mounted separately on wall bracket	
Functions	• Switch-off mode adjustable: - Limit or torque seating for end positions OPEN and CLOSED • Torque monitoring across the whole travel • Torque by-pass • Programmable EMERGENCY behaviour - via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN • Programmable behaviour in case of loss of bus communication • Positioner: - Position setpoint via fieldbus interface - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via fieldbus interface		
Electrical connection	Standard:	Plug/socket connector with crimp connection	
	Option:	AUMA plug/socket connector with screw-type connection	
Wiring diagram (basic version)	TPCBA000-2A7-0540 TPA50R200-0A0-000		

Settings/programming the Profibus DP interface	
Baud rate setting	Automatic baud rate recognition
Setting the Profibus DP interface	Setting of the Profibus DP address is performed via switches, alternatively also via parameters
Configurable process representation via GSD file	For an optimum adaptation to the process control system, the process representation can be configured as desired.

General Profibus DP interface data	
Communication protocol	Profibus DP according to IEC 61158 and IEC 61784-1
Network topology	- Line (fieldbus) structure. - When using repeaters, tree structures can also be implemented. - Coupling and uncoupling of devices during operation without affecting other devices is possible.

Technical data Globe valve actuators with integral actuator controls for open-close and modulating duty

Transmission medium	Twisted, screened copper cable according to IEC 61158
Fieldbus interface	EIA-485 (RS485)
Transmission rate/cable length	- Baud rate and maximum cable length (segment length) without repeater: - between 9.6 and 93.75 kbit/s: 1,200 m - for 187.5 kbit/s: 1,000 m - for 500 kbit/s: 400 m - for 1,500 kbit/s: 200 m - Baud rate and possible cable length with repeater (total network cable length): - between 9.6 and 93.75 kbit/s: approx. 10 km - for 187.5 kbit/s: approx. 10 km - for 500 kbit/s: approx. 4 km - for 1,500 kbit/s: approx. 2 km
Device types	- DP master class 1, e.g. central controllers such as PLC, PC, ... - DP master class 2, e.g. programming/configuration tools - DP slave, e.g. devices with digital and/or analogue inputs/outputs such as actuators, sensors
Number of devices	32 devices without repeater, with repeater expandable to 126
Fieldbus access	- Token-passing between masters and polling for slaves - Mono-master or multi-master systems are possible
Supported fieldbus functions	Cyclic data exchange, sync mode, freeze mode, fail-safe mode
Profibus DP ident no.	0x0C77: Standard applications with Profibus DP-V0 and DP-V1

Commands and signals of the Profibus DP interface

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, EMERGENCY operation command, motor speed
Process representation input (feedback signals)	- End positions OPEN, CLOSED - Actual position value - Selector switch in position LOCAL/REMOTE - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED
Process representation input (fault signals)	- Motor protection tripped - Torque switch tripped in mid-travel
Behaviour on loss of communication	The behaviour of the actuator is programmable: - Stop in current position - Travel to end position OPEN or CLOSED - Travel to any intermediate position - Execute last received operation command

Service conditions

Mounting position	Any position
Installation altitude	$\leq 2\,000$ m über NN $> 2,000$ m above sea level on request
Ambient temperature	-25 °C to $+70\text{ °C}$
Humidity	Up to 100 % relative humidity across the entire permissible temperature range
Enclosure protection according to EN 60529	IP68 According to AUMA definition, enclosure protection IP68 meets the following requirements: - Depth of water: maximum 8 m head of water - Duration of continuous immersion in water: Max. 96 hours - Up to 10 operations during continuous immersion - Modulating duty is not possible during continuous immersion
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.
GL approval (option)	Environmental categories D, G, EMC2

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

**Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty**

Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED	
	Modulating duty:	5 million modulating steps	
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.		

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5 Electrical data SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5

Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty

Type	Output speed rpm ¹⁾	Torque range	Running torque ^{2)/} Modulating torque ³⁾	Valve attachment	Valve shaft			Stem stroke	Stem diameter	Handwheel		Weight ⁵⁾
	(adjustable in 9 steps) 50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	for rising valve stem ⁴⁾ max. [mm]	for rising valve stem ⁴⁾ max. [mm]	ø [mm]	Reduc- tion ratio	approx. [kg]
SVC/SVCR 05.1	1.6 – 22	10 – 25	13	F05/F07	20	17	17	60	23	100	13 : 1	7.0
SVC/SVCR 07.1	1.6 – 22	20 – 50	25	F07	25.4	22	22	70	26	125	13 : 1	10
SVC/SVCR 07.5	0.6 – 8.0	40 – 100	50	F07	25.4	22	22	70	26	125	13 : 1	10

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty.
4) Rising valve stem	For output drive type A
5) Weight	Indicated weight includes globe valve actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SVC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2
	Modulating duty SVCR:	Intermittent duty S4 - 40 %, class C according to EN 15714-2 with maximum number of 1,800 starts per hour (option)
	For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.	
Motor	Variable speed, brushless motor	
Insulation class	F, tropicalized	
Motor protection	PTC thermistors (according to DIN 44081)	
Self-locking	Yes	
Limit switching	• Via position transmitter potentiometer, status signals for directions OPEN and CLOSE • Turns per stroke: Available in subranges out of a total range between 1 – 40 (heed max. stem stroke). However, the turns per stroke can only be set within the subrange ordered. More than 40 turns per stroke on request • Signalling for fieldbus interface	
Torque switching	Via electronic current measurement, status signals for directions OPEN and CLOSE, adjustable in 8 steps Signalling for fieldbus interface	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
Coupling	Standard:	Coupling unbored
	Options:	• Coupling unbored extended • Finish machining of coupling (standard or extended) - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211
Valve attachment	Standard:	With coupling, dimensions according to EN ISO 5211
	Options:	With output drive type A With LE linear thrust unit With GS worm gearbox

Technical data Globe valve actuators with integral actuator controls for open-close and modulating duty

Features and functions of actuator controls		
Power supply	Standard voltages:	
	Wechselstrom Spannungen/Frequenzen	
	Volt	115230
	Hz	50/6050/60
	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 % For current consumption, refer to Electrical data Globe valve actuators SVC/SVCR	
External supply of the electronics (option)	24 V DC +20 %/–15 %, Current consumption: With options up to 200 mA The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.	
Overvoltage category	Category III according to IEC 60364-4-443	
Power electronics	Power electronics with integral motor controller	
Rated power	Controls are designed for rated motor power, refer to Electrical data Globe valve actuators SVC/SVCR	
Control (input signals)	Operation commands and setpoint via fieldbus interface	
Status signals (output signals)	Via fieldbus interface	
Local controls	Standard:	- Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE 2 multi-colour indication lights: - End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue)
	Option:	Local controls mounted separately on wall bracket
Functions	- Switch-off mode adjustable: - Limit or torque seating for end positions OPEN and CLOSED - Torque monitoring across the whole travel - Torque by-pass - Programmable EMERGENCY behaviour - via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN - Programmable behaviour in case of loss of bus communication - Positioner: - Position setpoint via fieldbus interface - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via fieldbus interface	
Electrical connection	Standard:	Plug/socket connector with crimp connection
	Option:	AUMA plug/socket connector with screw-type connection
Wiring diagram (basic version)	TPCBC000-2A7-0540 TPA50R200-0A0-000	

Settings/programming the Modbus RTU interface	
Setting the Modbus RTU interface	The Modbus address is set via switches (DIP switches in the actuator), alternatively also via parameters (using AUMA Software CDT and AUMA service cable Z100.999). Parity and baud rate are set via parameters.

General data of the Modbus RTU interface	
Communication protocol	Modbus RTU according to IEC 61158 and IEC 61784-1
Network topology	Line (bus) structure. When using repeaters, tree structures can also be implemented. Coupling and uncoupling of devices during operation without affecting other devices is possible.
Transmission medium	Twisted, screened copper cable according to IEC 61158
Fieldbus interface	EIA-485 (RS485)

**Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty**

Transmission rate/cable length	Line topology:		
	Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length):
	9.6 – 38.4	1,200 m	approx. 10 km
	Redundant loop topology:		
	Baud rate (kbit/s)	Max. cable length between actuators (without repeater)	Max. possible cable length of redundant loop
	9.6 – 38.4	1,200 m	approx. 290 km
Device types	Modbus slave, e.g. devices with digital and/or analogue inputs/outputs such as actuators, sensors		
Number of devices	32 devices without repeater, with repeater expandable to 247		
Fieldbus access	Polling between master and slaves (query response).		
Supported Modbus functions (services)	01	Read Coil Status	
	02	Read Input Status	
	03	Read Holding Registers	
	04	Read Input Registers	
	05	Force Single Coil	
	15 (0FHex)	Force Multiple Coils	
	06	Preset Single Register	
	16 (10Hex)	Preset Multiple Registers	
	17 (11Hex)	Report Slave ID	
	08	Diagnostics: • 00 00 Loopback • 00 10 (0AHex) Clear Counters and Diagnostic Register • 00 11 (0BHex) Return Bus Message Count • 00 12 (0CHex) Return Bus Communication Error Count • 00 13 (0DHex) Return Bus Exception Error Count • 00 14 (0EHex) Return Slave Message Count • 00 15 (0FHex) Return Slave No Response Count • 00 16 (10Hex) Return Slave NAK Count • 00 17 (11Hex) Return Slave Busy Count • 00 18 (12Hex) Return Character Overrun Count	

Commands and signals of the Modbus RTU interface

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, EMERGENCY operation command, motor speed
Process representation input (feedback signals)	• End positions OPEN, CLOSED • Actual position value • Selector switch in position LOCAL/REMOTE • Torque switches OPEN, CLOSED • Limit switches OPEN, CLOSED
Process representation input (fault signals)	• Motor protection tripped • Torque switch tripped in mid-travel
Behaviour on loss of communication	The behaviour of the actuator is programmable: - Stop in current position - Travel to end position OPEN or CLOSED - Travel to any intermediate position - Execute last received operation command

Service conditions

Mounting position	Any position
Installation altitude	≤ 2 000 m above seal level > 2,000 m above sea level on request

**Technical data Globe valve actuators with integral actuator controls
for open-close and modulating duty**

Ambient temperature	–25 °C to +70 °C		
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Duration of continuous immersion in water: Max. 96 hours • Up to 10 operations during continuous immersion • Modulating duty is not possible during continuous immersion		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.		
GL approval (option)	Environmental categories D, G, EMC2		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED	
	Modulating duty:	5 million modulating steps	
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.		

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5 Electrical data SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5

2 Technical data Miscellaneous

Connectors

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Lubricants

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Phoenix connectors	Power contacts	Protective earth	Control contacts
No. of contacts max.	2 (+3)	1	19
Designation	1, 2 (4, 5, 6)	PE	1 – 19
Connection voltage max.	230 V (630 V)	–	24 V (150 V)
Rated current max.	10 A (30 A)	–	1 A (8 A)
Type of customer termination	Crimp		
Connection diameter max.	1.5 mm ²	1.5 mm ²	1 mm ²
Material - pin socket carrier	Polyamide		
Material - contacts	Brass/gold		

General information

Mating plugs used as connecting plug for the customer are called plug and socket assemblies. The plug and socket assembly is the interface to the actuator.

Cable diameter	Power plug (power supply):		2 – 14.5 mm		
	Signal connector (parallel interface):		2 – 10.5 mm		
AUMA article numbers	Plug and socket assembly for power supply and parallel interface: Z100.935A including:				
	6-pin	K007.818A K007.814	Power connector (1x) in KS (KX on request) Crimp contact (6x) [RC-5CS2000]		
	19-pin	K007.819 K007.816 K007.877 K007.817	Signal connector (1x) in KS (KX on request) Crimp contact (16x) [RC-67S2000] Crimp contact (2x) [RC-6ES2000] Crimp contact (1x) [RC-6FS2000]		
Crimping pliers (for signal and power connectors)	Phoenix designation: AUMA article number:		4-arbor crimping pliers with digital display for turned contacts: RC-Z2514 K008.074		
	Phoenix designation: AUMA article number:		4-arbor crimping pliers for turned contacts: RC-Z2504 K008.106		
Crimping pliers settings (RC-Z2514/RC-Z2504) (for signal and power connectors)	AUMA article number	Phoenix designation crimp contact	Cross section [mm ²]	Crimp arbor setting [mm]	Locator
	K007.814	RC-5CS2000	1.00	0.97	5
			1.50	1.02	
	K007.816	RC-67S2000	0.75	0.85	7
			1.00	0.88	
	K007.877	RC-6ES2000	0.75	0.85	9
			1.00	0.88	
	K007.817	RC-6FS2000	0.75	0.85	9
			1.00	0.88	
	Insertion and ejection tool (for signal and power connectors)	Phoenix designation: AUMA article number:		Insertion and ejection tool for RC crimp contacts Ø 1 mm: RC-Z2494 K008.107	
Phoenix designation: AUMA article number:		Insertion and ejection tool for RC crimp contacts Ø 1.5 mm: RC-Z2274 K008.108			
Ready-made mating connectors with cables	Phoenix designation		Power connectors cable length as desired in xxx metres		Signal connectors cable length as desired in xxx metres
	Straight		KC-03018EKC1xxx		KC-01618EBK1xxx
	90° angled		KC-0301TEKC1xxx		KC-0161TEBK1Axxx

Technical description Types of corrosion protection

This overview accounts for atmospheric ambient conditions, but not for special chemical atmospheres, requiring absence of aluminium or non-ferrous heavy metal, for example.

Corrosivity categories according to ISO 12944-2 and EN 15714-2 Classification of environments	Corrosion protection	AUMA	
		Painting specification (total film thickness)	
		Powder coating	Wet paint
C1 (very low): Heated buildings with clean atmospheres	KN	P1.001 (140 µm)	N1.001 (60 µm)
C2 (low): Unheated buildings and areas with low level of pollution			
C3 (medium): Production rooms with high humidity and some pollution. Urban and industrial atmospheres with moderate pollution	KS		N1.003 (140 µm)
C4 (high): Chemical plants and areas with moderate salinity			
C5/C5-M (very high, marine): Coastal and offshore areas with almost permanent condensation, high salinity and high pollution			N1.008 (220 µm)
C5-I (very high, industrial): Industrial areas with almost permanent condensation and aggressive atmosphere	KX		
CX (Extreme): Offshore and industrial areas with extreme humidity, high salinity and aggressive atmosphere	KX	P1.001 (140 µm)	N1.020 (300 µm)
	KX KX-G (aluminium-free)	P1.004 (280 µm)	

Corrosion protection

Technical description Corrosion protection KS with powder coating in accordance with painting specification P1.001

This description applies to AUMA products with powder coating in accordance with painting specification P1.001.

Corrosion protection KS based on painting specification P1.001 is suitable for use in areas with high salinity, almost permanent condensation, and high pollution. Corrosion protection includes the use of suitable material for outer parts and structure of the painting.

1. Materials

- 1.1 Outside fasteners (e.g. screws) are made of stainless steel with additional metallic surface protection.
- 1.2 Name plates are made of aluminium.

2. Surface treatment

- 2.1 After machining, steel parts are covered with metallic surface protection (except SQ/GS coupling and internal GS coupling compartment)
- 2.2 Aluminium parts such as the handwheel are electrophoretically coated.

3. General information

- 3.1 Housing parts made of GJL/GJS are blasted: Sa 2 ½ in accordance with EN ISO 12944-4.
- 3.2 Aluminium housing parts are not blasted.

4. Painting system

- 4.1 During preliminary treatment, housing parts are chemically cleaned and painted with an Oxsilan® conversion coating.

- 4.2 Housing parts are primer coated with:

Product: FREOPOX PE 1204A
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on epoxy resin.
 Colour: RAL 7035
 Film thickness: 70 µm

- 4.3 Housing parts are finish coated with:

Product: FREIOTHERM PU 4003M
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on polyurethane.
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey)
 Film thickness: 70 µm

5. Total film thickness (dry)

The average total film thickness (dry) of the powder coated housing is 140 µm.
 For reasons of geometry, powder coating thickness varies between 60 µm and 220 µm. Variation of film thickness has no impact on corrosion protection.

6. Notes

- 6.1 The top coat can be painted with all common 1- or 2-component coating materials (i.e. artificial resin, epoxy resin, PVC, polyurethane, polyamide and acrylic enamels).
 We recommend verifying the compatibility of the paints before applying a new wet painting layer.
 For this, the surfaces to be painted must be slightly ground and carefully cleaned, i. e. free of foreign substance, grease, oily dirt and dust.
- 6.2 Mounting surface to the valve is powder coated.

Corrosion protection

Technical description Corrosion protection KS with powder coating in accordance with painting specification P1.002

This description applies to AUMA products with powder coating in accordance with painting specification P1.002.

Corrosion protection KS based on painting specification P1.002 is suitable for use in areas with high salinity, almost permanent condensation, and high pollution. Corrosion protection includes the use of suitable material for outer parts and structure of the painting.

1. Materials

- 1.1 Outside fasteners (e.g. screws) are made of stainless steel with additional metallic surface protection.
- 1.2 Name plates are made of aluminium.

2. Surface treatment

- 2.1 After machining, steel parts are covered with metallic surface protection (except SQ/GS coupling and internal GS coupling compartment)
- 2.2 Aluminium parts such as the handwheel are electrophoretically coated.

3. General information

- 3.1 Housing parts made of GJL/GJS are blasted: Sa 2 ½ in accordance with EN ISO 12944-4.
- 3.2 Aluminium housing parts are not blasted.

4. Painting system

- 4.1 During preliminary treatment, housing parts are chemically cleaned and painted with an Oxilan® conversion coating.

- 4.2 Housing parts are primer coated with:

Product: FREOPOX PE 1204A
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on epoxy resin.
 Colour: RAL 7035
 Film thickness: 70 µm

- 4.3 Housing parts are finish coated with:

Product: FREIOTHERM PU 4003M
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on polyurethane.
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey)
 Film thickness: 70 µm

- 4.4 Finish painting

The finish painting is applied after device assembly and depends on the desired colour.

- 4.4.1 Housing parts are finish painted with:

Product: SikaCor EG 4
 Manufacturer: Sika Deutschland GmbH
 Structure: 2-component finish painting based on polyurethane with micaceous iron oxide
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey) or DB colour according to work order
 Film thickness: 60 µm (dry)

- 4.4.2 Housing parts are coated with finish painting for special colours:

Product: SikaCor EG 5
 Manufacturer: Sika Deutschland GmbH
 Structure: 2-component finish painting based on polyurethane
 Colour: Special colour according to work order
 Film thickness: 60 µm (dry)

5. Total film thickness (dry)

Average total film thickness (dry) of the powder coated housings including finish painting is 200 µm. For reasons of geometry, powder coating thickness varies between 60 µm and 220 µm. Variation of film thickness has no impact on corrosion protection.

6. Notes

- 6.1 The top coat can be painted with all common 1- or 2-component coating materials (i.e. artificial resin, epoxy resin, PVC, polyurethane, polyamide and acrylic enamels).
Subsequent finishing with chlorine rubber paints subject to restrictions.
We recommend verifying the compatibility of the paints before applying a new wet painting layer. For this, the surfaces to be painted must be slightly ground and carefully cleaned, i. e. free of foreign substance, grease, oily dirt and dust.
- 6.2 Mounting surface to the valve is powder coated.

This description applies to AUMA products with powder coating in accordance with painting specification P1.001.

KX corrosion protection based on painting specification P1.001 is suitable for use in areas with extremely high salinity, almost permanent condensation, and high pollution. Corrosion protection includes the use of suitable material for outer parts and painting system.

1. Materials

- 1.1 Outside fasteners (e.g. screws) are made of stainless steel with additional metallic surface protection.
- 1.2 The name plates are made of aluminium.

2. Surface treatment

- 2.1 After machining, the parts are coated with a metallic surface protection or are made of stainless steel (except for internal GS coupling compartment).
- 2.2 Aluminium parts such as the handwheel are electrophoretically coated.

3. General

- 3.1 Housing parts made of GJL/GJS are blasted: Sa 2 ½ in accordance with EN ISO 12944-4.
- 3.2 Aluminium housing parts are not blasted.

4. Painting system

- 4.1 During preliminary treatment, housing parts are chemically cleaned and painted with an Oxsilan® conversion coating.

- 4.2 Housing parts are primer coated with:

Product:	FREPOX PE 1204A
Manufacturer:	Emil Frei GmbH & Co. KG
Structure:	Thermally hardening powder coating based on epoxy resin
Colour:	RAL 7035
Film thickness:	70 µm

- 4.3 Housing parts are finish coated with:

Product:	FREIOTHERM PU 4003M
Manufacturer:	Emil Frei GmbH & Co. KG
Structure:	Thermally hardening powder coating based on polyurethane
Colour:	A0001, AUMA silver-grey (similar to RAL 7037 dust grey)
Film thickness:	70 µm

5. Total film thickness (dry)

The average total film thickness (dry) of the powder coated housing is 140 µm.

For reasons of geometry, powder coating thickness varies between 60 µm and 220 µm. Variation of film thickness has no impact on corrosion protection.

6. Notes

- 6.1 The top coat can be painted with all common 1- or 2-component coating materials (i.e. artificial resin, epoxy resin, PVC, polyurethane, polyamide and acrylic enamels). We recommend verifying the compatibility of the paints before applying a new wet painting layer. For this, the surfaces to be painted must be slightly ground and carefully cleaned, i. e. free of foreign substance, grease, oily dirt and dust.
- 6.2 Mounting surface to the valve is powder coated.

Corrosion protection

Technical description Corrosion protection KX with powder coating in accordance with painting specification P1.002

This description applies to AUMA products with powder coating in accordance with painting specification P1.002.

Corrosion protection KX based on painting specification P1.002 is suitable for use in areas with high salinity, almost permanent condensation, and high pollution. Corrosion protection includes the use of suitable material for outer parts and structure of the painting.

1. Materials

- 1.1 Outside fasteners (e.g. screws) are made of stainless steel with additional metallic surface protection.
- 1.2 Name plates are made of aluminium.

2. Surface treatment

- 2.1 After machining, steel parts are covered with metallic surface protection (except SQ/GS coupling and internal GS coupling compartment)
- 2.2 Aluminium parts such as the handwheel are electrophoretically coated.

3. General information

- 3.1 Housing parts made of GJL/GJS are blasted: Sa 2 ½ in accordance with EN ISO 12944-4.
- 3.2 Aluminium housing parts are not blasted.

4. Painting system

- 4.1 During preliminary treatment, housing parts are chemically cleaned and painted with an Oxsilan® conversion coating.

- 4.2 Housing parts are primer coated with:

Product: FREOPOX PE 1204A
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on epoxy resin.
 Colour: RAL 7035
 Film thickness: 70 µm

- 4.3 Housing parts are finish coated with:

Product: FREIOTHERM PU 4003M
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on polyurethane.
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey)
 Film thickness: 70 µm

- 4.4 Finish painting

The finish painting is applied after device assembly and depends on the desired colour.

- 4.4.1 Housing parts are finish painted with:

Product: SikaCor EG 4
 Manufacturer: Sika Deutschland GmbH
 Structure: 2-component finish painting based on polyurethane with micaceous iron oxide
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey) or DB colour according to work order
 Film thickness: 60 µm (dry)

- 4.4.2 Housing parts are coated with finish painting for special colours:

Product: SikaCor EG 5
 Manufacturer: Sika Deutschland GmbH
 Structure: 2-component finish painting based on polyurethane
 Colour: Special colour according to work order
 Film thickness: 60 µm (dry)

5. Total film thickness (dry)

Average total film thickness (dry) of the powder coated housings including finish painting is 200 µm.
 For reasons of geometry, powder coating thickness varies between 60 µm and 220 µm. Variation of film thickness has no impact on corrosion protection.

6. Notes

- 6.1 The top coat can be painted with all common 1- or 2-component coating materials (i.e. artificial resin, epoxy resin, PVC, polyurethane, polyamide and acrylic enamels).
Subsequent finishing with chlorine rubber paints subject to restrictions.
We recommend verifying the compatibility of the paints before applying a new wet painting layer. For this, the surfaces to be painted must be slightly ground and carefully cleaned, i. e. free of foreign substance, grease, oily dirt and dust.
- 6.2 Mounting surface to the valve is powder coated.

Technical description Powder coating, primer coating and finish coating

1. General information

- 1.1 Housing parts made of GJL/GJS are blasted: Sa 2 ½ in accordance with EN ISO 12944-4.
- 1.2 Aluminium housing parts are not blasted.

2. Painting system

- 2.1 During preliminary treatment, housing parts are chemically cleaned and painted with an Oxsilan® conversion coating.

- 2.2 Housing parts are primer coated with:

Product: FREOPOX PE 1204A
Manufacturer: Emil Frei GmbH & Co. KG
Structure: Thermally hardening powder coating based on epoxy resin.
Colour: RAL 7035
Film thickness: 70 µm

- 2.3 Housing parts are finish coated with:

Product: FREIOTHERM PU 4003M
Manufacturer: Emil Frei GmbH & Co. KG
Structure: Thermally hardening powder coating based on polyurethane.
Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey)
Film thickness: 70 µm

3. Total film thickness (dry)

Average total film thickness (dry) of the powder coated housing is 140 µm.
For reasons of geometry, powder coating thickness varies between 60 µm and 220 µm. Variation of film thickness has no impact on corrosion protection.

4. Notes

- 4.1 The top coat can be painted with all common 1- or 2-component coating materials (i.e. artificial resin, epoxy resin, PVC, polyurethane, polyamide and acrylic enamels).
We recommend verifying the compatibility of the paints before applying a new wet painting layer.
For this, the surfaces to be painted must be slightly ground and carefully cleaned, i. e. free of foreign substance, grease, oily dirt and dust.
- 4.2 Mounting surface to the valve is powder coated.

Technical description Powder coating, primer coating, finish coating and wet painting layer

1. General information

- 1.1 Housing parts made of GJL/GJS are blasted: Sa 2 ½ in accordance with EN ISO 12944-4.
- 1.2 Aluminium housing parts are not blasted.

2. Painting system

- 2.1 During preliminary treatment, housing parts are chemically cleaned and painted with an Oxsilan® conversion coating.

- 2.2 Housing parts are primer coated with:

Product: FREOPOX PE 1204A
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on epoxy resin.
 Colour: RAL 7035
 Film thickness: 70 µm

- 2.3 Housing parts are finish coated with:

Product: FREIOTHERM PU 4003M
 Manufacturer: Emil Frei GmbH & Co. KG
 Structure: Thermally hardening powder coating based on polyurethane.
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey)
 Film thickness: 70 µm

- 2.4 Finish painting

The finish painting is applied after device assembly and depends on the desired colour.

- 2.4.1 Housing parts are finish painted with:

Product: SikaCor EG 4
 Manufacturer: Sika Deutschland GmbH
 Structure: 2-component finish painting based on polyurethane with micaceous iron oxide
 Colour: A0001, AUMA silver-grey (similar to RAL 7037 dust grey) or DB colour according to work order
 Film thickness: 60 µm (dry)

- 2.4.2 Housing parts are coated with finish painting for special colours:

Product: SikaCor EG 5
 Manufacturer: Sika Deutschland GmbH
 Structure: 2-component finish painting based on polyurethane
 Colour: Special colour according to work order
 Film thickness: 60 µm (dry)

3. Total film thickness (dry)

Average total film thickness (dry) of the powder coated housings including wet painting layer is 200 µm.
 For reasons of geometry, powder coating thickness varies between 60 µm and 220 µm. Variation of film thickness has no impact on corrosion protection.

4. Notes

- 4.1 The top coat can be painted with all common 1- or 2-component coating materials (i.e. artificial resin, epoxy resin, PVC, polyurethane, polyamide and acrylic enamels). Subsequent finishing with chlorine rubber paints subject to restrictions.
 We recommend verifying the compatibility of the paints before applying a new wet painting layer.
 For this, the surfaces to be painted must be slightly ground and carefully cleaned, i. e. free of foreign substance, grease, oily dirt and dust.
- 4.2 Mounting surface to the valve is powder coated.

Technical data Grease and oil quantities

This data applies to¹⁾:

Multi-turn actuators	SA 07.1 – SA 48.1; SAR 07.1 – SAR 30.1; SA 07.2 – SA 16.2; SAR 07.2 – SAR 16.2 SA 07.2-UW – SA 16.2-UW; SAR 07.2-UW – SAR 16.2-UW SAV 07.2 – SAV 16.2; SARV 07.2 – SARV 16.2 SAExC 07.1 – SAExC 16.1; SARExC 07.1 – SARExC 16.1; SAEx 25.1 – SAEx 40.1; SAREx 25.1 – SAREx 30.1 SAEx 07.2 – SAEx 16.2; SAREx 07.2 – SAREx 16.2 SAVEx 07.2 – SARVEx 16.2; SARVEx 07.2 – SARVEx 16.2 SAN 07.1 – SAN 25.1; SARN 07.1 – 25.1; SAN 07.2 – SAN 16.2; SARN 07.2 – SARN 16.2 SAI 07.2 – SAI 16.2; SARI 07.2 – SARI 16.2
Part-turn actuators	SQ 05.2 – SQ 14.2; SQR 05.2 – SQR 14.2; SQEx 05.2 – SQEx 14.2; SQREx 05.2 – SQREx 14.2 SG 05 – SG 12; SG 05.1 – SG 12.1; SGR 05.1 – SGR 12.1; SGExC 05.1 – SGExC 12.1 SG 04.2 – SG 10.2; SG 03.3 – SG 05.3 SGM 04.1 – SGM 10.1; SGMR 04.1 – SGMR 10.1; SGC 04.1 – SGC 10.1; SGCR 04.1 – SGCR 10.1
Globe valve actuators	SV 05.1 – SV 07.1; SVM 05.1 – SVM 07.5; SVMR 05.1 – SVMR 07.5; SVC 05.1 – SVC 07.5; SVCR 05.1 – SVCR 07.5
Worm gearboxes	GS 50.3 – GS 250.3; GS 315 – GS 500; GS 630.3
Primary reduction gearing	GZ 16 – GZ 40; GZ 630.3
Coaxial planetary gearing	GP 10.1 – GP 30.1
Spur gearboxes	GST 10.1 – GST 40.1
Bevel gearboxes	GK 10.2 – GK 40.2
Linear thrust units	LE 12.1 – LE 200.1
Multi-turn gearboxes	GHT 320.3 – GHT 1200.3

Multi-turn actuators

SA		07.1/07.5		10.0/10.1	14.1/14.5	16.1	25.1	30.1	35.1	40.1	48.1
Qty	dm ³	0.62 -0.03		0.93 -0.04	2.3 -0.1	4.5 ±0.1	11.0 ±0.2	16.0 ±0.2	29.0 +0.4	36.0 +0.4	56.0 +0.5
Weight	kg ²⁾	0.56 -0.03		0.84 -0.04	2.1 -0.1	4.1 ±0.1	9.9 ±0.2	14.4 ±0.2	26.1 +0.4	32.4 +0.4	50.4 +0.5
SA		07.2/07.6		10.2	14.2/14.6	16.2					
		F07	F10/G0								
Qty	dm ³	0.58 ±0.02	0.525 ±0.02	0.9 ±0.02	1.76 ±0.05	3.1 ±0.05					
Weight	kg ²⁾	0.52 ±0.02	0.47 ±0.02	0.81 ±0.02	1.58 ±0.05	2.8 ±0.05					

Part-turn actuators

SQ		05.2	07.2	10.2	12.2	14.2					
Qty	dm ³	0.7 ±0.02	0.7 ±0.02	1.3 ±0.02	1.7 ±0.02	1.8 ±0.05					
Weight	kg ²⁾	0.63 ±0.02	0.63 ±0.02	1.17 ±0.02	1.53 ±0.02	1.62 ±0.05					
SG		05	07	10	12						
Qty	dm ³	0.3	0.3	0.52	0.8						
Weight	kg ²⁾	0.27	0.27	0.47	0.72						
SG		05.1	07.1	10.1	12.1						
Qty	dm ³	0.3	0.3	0.52	0.8						
Weight	kg ²⁾	0.27	0.27	0.47	0.72						
SG		04.2	05.2	07.2	10.2						
Qty	dm ³	0.09	0.14	0.30	0.52						
Weight	kg ³⁾	0.07	0.12	0.25	0.43						
SG		03.3	04.3	05.3							
Qty	dm ³	0.14	0.14	0.23							
Weight	kg ³⁾	0.12	0.12	0.19							
SGM/SGC		04.1	05.1	07.1	10.1						
Qty	dm ³	0.11	0.11	0.24	0.40						
Weight	kg ³⁾	0.09	0.09	0.20	0.33						

1) – 2) Refer to notes on page 3.

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Technical data Grease and oil quantities

Globe valve actuators

SV		05.1	07.1								
Qty	dm ³	0.14	0.30								
Weight	kg ³⁾	0.12	0.25								
SVM/SVC		05.1	07.1/07.5								
Qty	dm ³	0.11	0.24								
Weight	kg ³⁾	0.09	0.20								

Worm gearboxes

GS		50.3	63.3	80.3	100.3 (52:1)	100.3 (126:1)	100.3 (160:1)	100.3 (208:1)	125.3 (52:1)	125.3 (126:1)	125.3 (160:1)
Qty	dm ³	0.1	0.3	0.4	1	1.35	1.35	1.35	1.3	1.65	1.65
Weight	kg ²⁾	0.09	0.27	0.36	0.9	1.22	1.22	1.22	1.17	1.49	1.49
GS		125.3 (208:1)	160.3 (54:1)	160.3 (218:1)	160.3 (442:1)	160.3 (880:1)	200.3 (53:1)	200.3 (67:1)	200.3 (214:1)	200.3 (434:1)	200.3 (864:1)
Qty	dm ³	1.65	3.3	4.3	4.3	4.3	6.6	6.6	8.1	8.1	8.6
Weight	kg ²⁾	1.49	3	3.9	3.9	3.9	6	6	7.4	7.4	7.8
GS		200.3 (1 752:1)	250.3 (52:1)	250.3 (210:1)	250.3 (411:1)	250.3 (848:1)	250.3 (1 718:1)				
Qty	dm ³	8.6	12.2	14.4	14.4	14.7	14.7				
Weight	kg ²⁾	7.8	11	13	13	13.3	13.3				
GS		315	400	500	630.3						
Qty	dm ³	27.5	55.0	110.0	216.7						
Weight	kg ²⁾	25.0	50.0	100.0	195.0						

Primary reduction gearing

GZ		30	35	40	40/16						
Qty	dm ³	17.6	18.7	57.2	61.9						
Weight	kg ²⁾	16.0	17.0	52.0	56.3						
GZ		630.3 (4:1/8:1)	630.3 (16:1/32:1)	630.3 (64:1/133:1)							
Qty	dm ³	11.1	16.7	21.1							
Weight	kg ²⁾	10.0	15.0	19.0							

Coaxial planetary gearing

GP		10.1/14.1 (2, 4:1)	10.1/14.1 (3:1)	10.1/14.1 (4:1)	16.1	25.1 (4:1/8:1)	25.1 (16:1)	30.1 (4:1/8:1)	30.1 (16:1)		
Qty	dm ³	0.35	0.35	0.35	1.0	1.5	2.0	2.2	2.5		
Weight	kg ²⁾	0.32	0.32	0.32	0.9	1.4	1.8	2.0	2.25		

Spur gearboxes

GST		10.1	14.1/14.5	16.1	25.1	30.1	35.1	40.1			
Qty	dm ³	0.7	1.5	3.0	8.0	12.0	20.0	27.0			
Weight	kg ²⁾	0.62	1.3	2.7	7.1	10.7	17.8	24.0			

Bevel gearboxes

GK		10.2	14.2/14.6	16.2	25.2	30.2	35.2	40.2			
Qty	dm ³	0.25	0.6	1.0	4.0	14.0	20.0	22.0			
Weight	kg ²⁾	0.22	0.53	0.9	3.6	12.5	17.8	19.6			

Multi-turn gearboxes

GHT		320.3	500.3	800.3	1200.3						
Qty	dm ³	30.0	71.5	93.5	146.5						
Weight	kg ²⁾	27	64.4	84.2	131.9						

1) – 2) Refer to notes on page 3.

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Technical data Grease and oil quantities

Linear thrust units

LE		12.1-50 25.1-50	12.1-100 25.1-100	12.1-125 25.1-125	12.1-200 25.1-200	12.1-250 25.1-250	12.1-400 25.1-400	12.1-500 25.1-500	50.1-63	50.1-125	50.1-250
Qty	dm ³	0.10	0.13	0.16	0.28	0.36	0.54	0.65	0.26	0.41	0.65
Weight	kg ²⁾	0.09	0.12	0.15	0.26	0.33	0.50	0.60	0.28	0.38	0.70
LE		50.1-400	70.1-80 100.1-80	70.1-160 100.1-160	70.1-320 100.1-320	70.1-400 100.1-400	200.1-100	200.1-200	200.1-400	200.1-500	
Qty	dm ³	1.09	0.52	0.88	1.48	1.79	1.71	2.80	4.92	6.11	
Weight	kg ²⁾	1.01	0.48	0.81	1.37	1.65	1.58	2.58	4.53	5.63	

Notes on tables on pages 1 and 2

- | | |
|----|--|
| 1) | This overview is not applicable for products with F21. |
| 2) | For ρ = approx. 0.9 kg/dm ³ |
| 3) | For ρ = approx. 0.83 kg/dm ³ |

Technical data Ambient temperatures/lubricant in the gear housing

Type		Temperature range							
		Normal (standard)		Low temperature		Extreme low temperature		High temperature	
		N		L		EL-60		H	
		°C	Grease/oil	°C	Grease	°C	Grease	°C	Grease
SA 07.2 – 16.2	Standard	–40/+80	F15	–	–	–60/+60	F2	0/+120	F3
SA 07.2-UW – 16.2-UW	Standard	–30/+70	F15	–	–	–	–	–	–
SAV 07.2 – 16.2	Standard	–40/+70	F15	–	–	–60/+60	F2	–	–
SA 25.1 – 48.1	Standard	–40/+80	F15	–	–	–60/+60	F2	0/+120	F3
SA 25.1-UW – 30.1-UW	Standard	–30/+70	F15	–	–	–	–	–	–
SA 07.2 – 16.2	With oil ¹⁾	–25/+80	O9	–	–	–	–	–	–
SAR 07.2 – 16.2	Standard	–40/+70	F15	–	–	–60/+60	F2	0/+100	F3
SAR 07.2-UW – 16.2-UW	Standard	–30/+70	F15	–	–	–	–	–	–
SARV 07.2 – 16.2	Standard	–40/+70	F15	–	–	–60/+60	F2	–	–
SAR 25.1 – 30.1	Standard	–40/+70	F15	–	–	–60/+60	F2	0/+100	F3
SAR 25.1-UW – 30.1-UW	Standard	–30/+70	F15	–	–	–	–	–	–
SAR 07.2 – 16.2	With oil ¹⁾	–25/+70	O9	–	–	–	–	–	–
SAEx 07.2	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAEx 07.6	4 – 32 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	45 – 180 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAEx 10.2	4 – 11 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	16 – 180 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAEx 14.2	4 – 11 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	16 – 180 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAEx 14.6	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAEx 16.2	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAVEx 07.2 – 16.2	Ex	–30/+40 (+60)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAEx 25.1 – 48.1	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAEx 07.2 – 16.2	With oil ¹⁾	–25/+70	O9	–	–	–	–	–	–
SAREx 07.2	4 – 45 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	63 – 90 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAREx 07.6	4 – 45 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	63 – 90 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAREx 10.2	4 – 32 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	45 – 90 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAREx 14.2	4 – 11 rpm	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
	16 – 90 rpm	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–
SAREx 14.6	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAREx 16.2	Ex	–30/+40 (+60/+80)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SARVEx 07.2 – 16.2	Ex	–30/+40 (+60)	F11	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAREx 25.1 – 30.1	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SAREx 07.2 – 16.2	With oil ¹⁾	–25/+70	O9	–	–	–	–	–	–
SAN 07.1 – 35.1	Nuclear power plants	–25/+80	F11	–	–	–	–	–	–
SARN 07.1 – SARN 35.1	Nuclear power plants	–25/+80	F11	–	–	–	–	–	–
SAI 6 – 100	Nuclear power plants	–20/+80	F11	–	–	–	–	–	–
SAI 07.2 – 16.2	Nuclear power plants	–30/+80	F11	–	–	–	–	–	–
SARI 07.2 – 16.2	Nuclear power plants	–30/+60	F11	–	–	–	–	–	–
SAN 07.2 – 16.2	Nuclear power plants	–30/+80	F11	–	–	–	–	–	–
SARN 07.2 – SARN 16.2	Nuclear power plants	–30/+60	F11	–	–	–	–	–	–

1) Refer to notes on page 2.

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Technical data Ambient temperatures/lubricant in the gear housing

Type		Temperature range							
		Normal (standard)		Low temperature		Extreme low temperature		High temperature	
		N		L		EL-60		H	
		°C	Grease/ oil	°C	Grease	°C	Grease	°C	Grease
List designation	Version								
Actuator									
SQ 05.2 – 14.2	Standard	–40/+80	F15	–	–	–60/+60	F2	0/+120	F3
SQR 05.2 – 14.2	Standard	–40/+70	F15	–	–	–60/+60	F2	0/+100	F3
SQEx 05.2 – SQEx 14.2	Ex	–30/+60 (+80)	F15	–40/+60	F2	–60/+60	F2	–	–
SQREx 05.2 – 14.2	Ex	–30/+40 (+60/+80)	F15	–40/+40 (+60)	F2	–60/+40 (+60)	F2	–	–
SGC 04.1 – 12.1	Marine	–25/+70	O2	–	–	–	–	–	–
SGCR 04.1 – 12.1	Marine	–25/+70	O2	–	–	–	–	–	–
SGM 04.1 – 12.1	Marine	–25/+70	O2	–	–	–	–	–	–
SGMR 04.1 – 12.1	Marine	–25/+70	O2	–	–	–	–	–	–
SVC 05.1 – 07.5	Marine	–25/+70	O2	–	–	–	–	–	–
SVCR 04.1 – 12.1	Marine	–25/+70	O2	–	–	–	–	–	–
SVM 05.1 – 07.5	Marine	–25/+70	O2	–	–	–	–	–	–
SVMR 04.1 – 12.1	Marine	–25/+70	O2	–	–	–	–	–	–

Notes on table on page 1

1) With oil Mounting position: Perpendicular hollow shaft and bearing flange at the bottom stipulated

Lubricants:

F2 = Fuchs Discor R EP 000
 F3 = Zepf AR 12 K
 F11 = Fuchs Renolit LST
 F15 = Shell Alvania 1029
 O2 = Fuchs Unisyn SC 32
 O9 = Oest SAE 75W-90

3 Electrical data Actuators

Basic Range

3-phase AC current		54
ED 25 – ED 50, EQ 40 – EQ 600	380 V/50 Hz	54
	400 V/50 Hz	55
	400 V/60 Hz	56

1-phase AC current

ED 25 – ED 50, EQ 40 – EQ 600	24 V/50 Hz	57
	24 V/60 Hz	58
	110 V/60 Hz	59
	115 V/50 Hz	60
	220 V/60 Hz	61
	230 V/50 Hz	62

Direct current

ED 25 – ED 50, EQ 40 – EQ 600	24 V DC	63
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Smart Range

1-phase AC current		64
SGC 04.1 – SGC 12.1/SGCR 04.1 – SGCR 12.1	115 V, 230 V/50 Hz/60 Hz	64
SVC 05.1 – SVC 07.5/SVCR 05.1 – SVCR 07.5	115 V, 230 V/50 Hz/60 Hz	65

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	15	18.8	1,800	0.12	0.12	0.90	S3 - 30 %	F
			15	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	21	1,000	0.12	0.12	0.96	S1 - 100 %	F
			70	3.1	500	0.02	0.02	0.95	S1 - 100 %	E
ED 50	50	50	15	18.8	1,800	0.12	0.12	0.96	S3 - 30 %	F
			15	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	21	1,000	0.12	0.12	0.96	S1 - 100 %	F
			70	3.1	500	0.02	0.02	0.95	S1 - 100 %	E
EQ 40	40	20	15	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			15	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 %	F
EQ 60	60	40	20	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			20	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 100	100	60	20	36	1,500	0.11	0.11	~1	S1 - 100 %	F
			30	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 150	150	80	20	49	1,500	0.18	0.18	0.90	S3 - 75 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 %	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 300	300	180	40	49	1,500	0.18	0.18	0.90	S3 - 75 %	F
			80	36	1,500	0.11	0.11	~1	S1 - 100 %	F
			160	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			160	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 600	600	300	80	49	1,500	0.18	0.18	0.90	S3 - 75 %	F
			160	36	1,500	0.11	0.11	~1	S1 - 100 %	F

Notes on table

1) Power P	Output of mechanical power at motor shaft at maximum torque of part-turn actuator. The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Nominal current I _N	Rated current at maximum modulating torque and indicated operating time
3) Max. current I _{max}	Current at maximum torque. We recommend selecting the switchgear in compliance with these values.
4) Type of duty	All actuators are also suitable for type of duty S2 - 15 min
5)	Option: S1 - 100 %

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	15	18.8	1,800	0.12	0.12	0.90	S3 - 30 %	F
			15	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	21	1,000	0.12	0.12	0.96	S1 - 100 %	F
			70	3.1	500	0.02	0.02	0.95	S1 - 100 %	E
ED 50	50	50	15	18.8	1,800	0.12	0.12	0.96	S3 - 30 %	F
			15	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	21	1,000	0.12	0.12	0.96	S1 - 100 %	F
			70	3.1	500	0.02	0.02	0.95	S1 - 100 %	E
EQ 40	40	20	15	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			15	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 60	60	40	20	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			20	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			30	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 100	100	60	20	36	1,500	0.11	0.11	~1	S1 - 100 %	F
			30	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 150	150	80	20	49	1,500	0.18	0.18	0.90	S3 - 75 %	F
			30	36	1,500	0.11	0.11	~1	S1 - 100 %	F
			60	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			60	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 300	300	180	40	49	1,500	0.18	0.18	0.90	S3 - 75 %	F
			80	36	1,500	0.11	0.11	~1	S1 - 100 %	F
			160	18.8	1,500	0.10	0.10	0.90	S3 - 30 %	F
			160	36	1,500	0.11	0.11	~1	S1 - 100 % ⁵⁾	F
EQ 600	600	300	80	49	1,500	0.18	0.18	0.90	S3 - 75 %	F
			160	36	1,500	0.11	0.11	~1	S1 - 100 %	F

Notes on table

1) Power P	Output of mechanical power at motor shaft at maximum torque of part-turn actuator. The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Nominal current I _N	Rated current at maximum modulating torque and indicated operating time
3) Max. current I _{max}	Current at maximum torque. We recommend selecting the switchgear in compliance with these values.
4) Type of duty	All actuators are also suitable for type of duty S2 - 15 min
5)	Option: S1 - 100 %

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	12	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			12	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			25	19	1,200	0.10	0.10	0.96	S1 - 100 %	F
			59	3.1	600	0.01	0.01	0.94	S1 - 100 %	E
ED 50	50	50	12	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			12	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			25	19	1,200	0.10	0.10	0.96	S1 - 100 %	F
			59	3.1	600	0.01	0.01	0.94	S1 - 100 %	E
EQ 40	40	20	12.5	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			12.5	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			25	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			25	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			50	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
EQ 60	60	40	50	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			16	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			16	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			25	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			25	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
EQ 100	100	60	50	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			50	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			16	38	1,800	0.10	0.10	0.90	S1 - 100 %	F
			25	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			25	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
EQ 150	150	80	50	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			50	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			16	53	1,800	0.16	0.16	0.90	S3 - 75 %	F
			25	38	1,800	0.10	0.10	0.90	S1 - 100 %	F
EQ 300	300	180	50	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			50	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			33	53	1,800	0.16	0.16	0.90	S3 - 75 %	F
			66	38	1,800	0.10	0.10	0.90	S1 - 100 %	F
EQ 600	600	300	133	22.6	1,800	0.12	0.12	0.90	S3 - 30 %	F
			133	38	1,800	0.10	0.10	0.90	S1 - 100 % ⁵⁾	F
			66	53	1,800	0.16	0.16	0.90	S3 - 75 %	F
			133	38	1,800	0.10	0.10	0.90	S1 - 100 %	F

Notes on table

1) Power P	Output of mechanical power at motor shaft at maximum torque of part-turn actuator. The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Nominal current I _N	Rated current at maximum modulating torque and indicated operating time
3) Max. current I _{max}	Current at maximum torque. We recommend selecting the switchgear in compliance with these values.
4) Type of duty	All actuators are also suitable for type of duty S2 - 15 min
5)	Option: S1 - 100 %

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	15	5.1	375	0.5	0.5	~1	S1 - 100 %	E
			30	5.1	375	0.5	0.5	~1	S1 - 100 %	E
			70	2.4	500	0.3	0.3	~1	S1 - 100 %	E
ED 50	50	50	15	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			15	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			30	5.1	375	0.5	0.5	~1	S1 - 100 %	E
			70	2.4	500	0.3	0.3	~1	S1 - 100 %	E
EQ 40	40	20	15	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			15	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			30	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			30	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			60	5.1	375	0.5	0.5	~1	S1 - 100 %	E
EQ 60	60	40	20	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			20	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			30	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			30	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			60	5.1	375	0.5	0.5	~1	S1 - 100 %	E
EQ 100	100	60	20	30	1,500	2.1	2.1	~1	S1 - 100 %	F
			30	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			30	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			60	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			60	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
EQ 150	150	80	20	35	1,500	2.8	2.8	~1	S3 - 75 %	F
			30	30	1,500	2.1	2.1	~1	S1 - 100 %	F
			60	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			60	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
EQ 300	300	180	40	35	1,500	2.8	2.8	~1	S3 - 75 %	F
			80	30	1,500	2.1	2.1	~1	S1 - 100 %	F
			160	15.7	1,500	2.1	2.1	~1	S3 - 30 %	F
			160	30	1,500	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
EQ 600	600	300	80	35	1,500	2.8	2.8	~1	S3 - 75 %	F
			160	30	1,500	2.1	2.1	~1	S1 - 100 %	F

Notes on table

- | | |
|-----------------------------------|---|
| 1) Power P | Output of mechanical power at motor shaft at maximum torque of part-turn actuator.
The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$ |
| 2) Nominal current I _N | Rated current at maximum modulating torque and indicated operating time |
| 3) Max. current I _{max} | Current at maximum torque. We recommend selecting the switchgear in compliance with these values. |
| 4) Type of duty | All actuators are also suitable for type of duty S2 - 15 min |
| 5) | Option: S1 - 100 % |

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	12	5.5	450	0.5	0.5	~1	S1 - 100 %	E
			25	5.5	450	0.5	0.5	~1	S1 - 100 %	E
			59	2.6	600	0.3	0.3	~1	S1 - 100 %	E
ED 50	50	50	12	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			12	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			25	5.5	450	0.5	0.5	~1	S1 - 100 %	E
			59	2.6	600	0.3	0.3	~1	S1 - 100 %	E
			12.5	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
EQ 40	40	20	12.5	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			25	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			25	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			50	5.5	450	0.5	0.5	~1	S1 - 100 %	E
			16	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
EQ 60	60	40	16	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			25	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			25	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			50	5.5	450	0.5	0.5	~1	S1 - 100 %	E
			16	35	1,800	2.1	2.1	~1	S1 - 100 %	F
EQ 100	100	60	25	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			25	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			50	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			50	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			16	42.4	1,800	3.0	3.0	~1	S3 - 75 %	F
EQ 150	150	80	25	35	1,800	2.1	2.1	~1	S1 - 100 %	F
			50	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			50	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
			33	42.4	1,800	3.0	3.0	~1	S3 - 75 %	F
EQ 300	300	180	66	35	1,800	2.1	2.1	~1	S1 - 100 %	F
			133	18.8	1,800	2.3	2.3	~1	S3 - 30 %	F
			133	35	1,800	2.1	2.1	~1	S1 - 100 % ⁵⁾	F
EQ 600	600	300	66	42.4	1,800	3.0	3.0	~1	S3 - 75 %	F
			133	35	1,800	2.1	2.1	~1	S1 - 100 %	F

Notes on table

- | | |
|-----------------------------------|---|
| 1) Power P | Output of mechanical power at motor shaft at maximum torque of part-turn actuator.
The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$ |
| 2) Nominal current I _N | Rated current at maximum modulating torque and indicated operating time |
| 3) Max. current I _{max} | Current at maximum torque. We recommend selecting the switchgear in compliance with these values. |
| 4) Type of duty | All actuators are also suitable for type of duty S2 - 15 min |
| 5) | Option: S1 - 100 % |

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	18	15.6	1,200	0.2	0.2	~1	S1 - 100 %	F
			36	3.1	450	0.6	0.6	~1	S1 - 100 %	E
			84	2.6	600	0.1	0.1	~1	S1 - 100 %	E
ED 50	50	50	18	19.5	1,200	0.4	0.4	0,98	S1 - 100 %	F
			36	15.6	1,200	0.2	0.2	~1	S1 - 100 %	F
			84	2.6	600	0.1	0.1	~1	S1 - 100 %	E
EQ 40	40	20	18	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			36	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			72	35	1,800	0.5	0.5	~1	S1 - 100 %	F
EQ 60	60	40	24	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			36	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			72	35	1,800	0.5	0.5	~1	S1 - 100 %	F
EQ 100	100	60	24	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			36	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			72	35	1,800	0.5	0.5	~1	S1 - 100 %	F
EQ 150	150	80	24	49	1,800	0.8	0.8	~1	S3 - 50 %	F
			36	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			72	35	1,800	0.5	0.5	~1	S1 - 100 %	F
EQ 300	300	180	48	49	1,800	0.8	0.8	~1	S3 - 50 %	F
			96	35	1,800	0.5	0.5	~1	S1 - 100 %	F
			192	35	1,800	0.5	0.5	~1	S1 - 100 %	F
EQ 600	600	300	96	49	1,800	0.8	0.8	~1	S3 - 50 %	F
			192	35	1,800	0.5	0.5	~1	S1 - 100 %	F

Notes on table

- | | |
|-----------------------------------|---|
| 1) Power P | Output of mechanical power at motor shaft at maximum torque of part-turn actuator.
The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$ |
| 2) Nominal current I _N | Rated current at maximum modulating torque and indicated operating time |
| 3) Max. current I _{max} | Current at maximum torque. We recommend selecting the switchgear in compliance with these values. |
| 4) Type of duty | All actuators are also suitable for type of duty S2 - 15 min |

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	15	13,3	1,000	0,2	0,2	~1	S1 - 100 %	F
			30	2,7	375	0,1	0,1	0,99	S1 - 100 %	E
			70	2,4	500	0,1	0,1	~1	S1 - 100 %	E
ED 50	50	50	15	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			30	13,3	1,000	0,2	0,2	~1	S1 - 100 %	F
			70	2,4	500	0,1	0,1	~1	S1 - 100 %	E
EQ 40	40	20	15	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			30	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			60	30	1,500	0,5	0,5	~1	S1 - 100 %	F
EQ 60	60	40	20	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			30	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			60	30	1,500	0,5	0,5	~1	S1 - 100 %	F
EQ 100	100	60	20	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			30	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			60	30	1,500	0,5	0,5	~1	S1 - 100 %	F
EQ 150	150	80	20	44	1,500	0,7	0,7	~1	S3 - 50 %	F
			30	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			60	30	1,500	0,5	0,5	~1	S1 - 100 %	F
EQ 300	300	180	40	44	1,500	0,7	0,7	~1	S3 - 50 %	F
			80	30	1,500	0,5	0,5	~1	S1 - 100 %	F
			160	30	1,500	0,5	0,5	~1	S1 - 100 %	F
EQ 600	600	300	80	44	1,500	0,7	0,7	~1	S3 - 50 %	F
			160	30	1,500	0,5	0,5	~1	S1 - 100 %	F

Notes on table

1) Power P	Output of mechanical power at motor shaft at maximum torque of part-turn actuator. The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Nominal current I _N	Rated current at maximum modulating torque and indicated operating time
3) Max. current I _{max}	Current at maximum torque. We recommend selecting the switchgear in compliance with these values.
4) Type of duty	All actuators are also suitable for type of duty S2 - 15 min

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	12	5.5	450	0.05	0.05	~1	S1 - 100 %	E
			25	5.5	450	0.05	0.05	~1	S1 - 100 %	E
			59	2.6	600	0.03	0.03	~1	S1 - 100 %	E
ED 50	50	50	12	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			12	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			25	5.5	450	0.05	0.05	~1	S1 - 100 %	E
			59	2.6	600	0.03	0.03	~1	S1 - 100 %	E
EQ 40	40	20	12.5	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			12.5	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			25	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			25	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			50	5.5	450	0.05	0.05	~1	S1 - 100 %	E
EQ 60	60	40	16	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			16	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			25	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			25	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			50	5.5	450	0.05	0.05	~1	S1 - 100 %	E
EQ 100	100	60	16	35	1,800	0.23	0.23	~1	S1 - 100 %	F
			25	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			25	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			50	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			50	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
EQ 150	150	80	16	56.5	1,800	0.39	0.39	~1	S3 - 30 %	F
			25	35	1,800	0.23	0.23	~1	S1 - 100 %	F
			50	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			50	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
EQ 300	300	180	33	56.5	1,800	0.39	0.39	~1	S3 - 50 %	F
			66	35	1,800	0.23	0.23	~1	S1 - 100 %	F
			133	22.6	1,800	0.30	0.30	~1	S3 - 30 %	F
			133	35	1,800	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
EQ 600	600	300	66	56.5	1,800	0.39	0.39	~1	S3 - 50 %	F
			133	35	1,800	0.23	0.23	~1	S1 - 100 %	F

Notes on table

- | | |
|-----------------------------------|---|
| 1) Power P | Output of mechanical power at motor shaft at maximum torque of part-turn actuator.
The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$ |
| 2) Nominal current I _N | Rated current at maximum modulating torque and indicated operating time |
| 3) Max. current I _{max} | Current at maximum torque. We recommend selecting the switchgear in compliance with these values. |
| 4) Type of duty | All actuators are also suitable for type of duty S2 - 15 min |
| 5) | Option: S1 - 100 % |

Part-turn actuator				Motor						
Type	Torque range		Operating time for 90° in seconds	Power ¹⁾ P [W]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	cos φ	Type of duty ⁴⁾	Insulation class
	Open-close duty max. [Nm]	Modulating duty max. [Nm]								
ED 25	25	25	15	5.5	375	0.05	0.05	~1	S1 - 100 %	E
			30	5.5	375	0.05	0.05	~1	S1 - 100 %	E
			70	2.4	500	0.03	0.03	~1	S1 - 100 %	E
ED 50	50	50	15	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
			15	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			30	5.1	375	0.05	0.05	~1	S1 - 100 %	E
EQ 40	40	20	70	2.4	500	0.03	0.03	~1	S1 - 100 %	E
			15	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
			15	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
EQ 60	60	40	30	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
			30	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			60	5.1	375	0.05	0.05	~1	S1 - 100 %	E
EQ 100	100	60	20	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
			20	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			30	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
EQ 150	150	80	30	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			60	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
			60	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
EQ 300	300	180	20	50	1,500	0.35	0.35	~1	S3 - 50 %	F
			30	30	1,500	0.23	0.23	~1	S1 - 100 %	F
			60	18.9	1,500	0.28	0.28	~1	S3 - 30 %	F
EQ 600	600	300	160	30	1,500	0.23	0.23	~1	S1 - 100 % ⁵⁾	F
			80	50	1,500	0.35	0.35	~1	S3 - 50 %	F
			160	30	1,500	0.23	0.23	~1	S1 - 100 %	F

Notes on table

- | | |
|-----------------------------------|---|
| 1) Power P | Output of mechanical power at motor shaft at maximum torque of part-turn actuator.
The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$ |
| 2) Nominal current I _N | Rated current at maximum modulating torque and indicated operating time |
| 3) Max. current I _{max} | Current at maximum torque. We recommend selecting the switchgear in compliance with these values. |
| 4) Type of duty | All actuators are also suitable for type of duty S2 - 15 min |
| 5) | Option: S1 - 100 % |

Part-turn actuator				Motor					
Type	Torque range		Operating time for 90° in sec- onds ¹⁾	Power ²⁾ P [W]	Speed ³⁾ [rpm]	Nominal current ⁴⁾ I _N [A]	Max. current ⁵⁾ I _{max} [A]	Starting current I _A [A]	Type of duty ⁶⁾
	Open-close duty max. [Nm]	Modulating duty max. [Nm]							
ED 25	25	25	5 - 7	13	3,500	0.8	0.8	4	S1 - 100 %
			9 - 10	13	3,500	0.8	0.8	4	S1 - 100 %
			15 - 25	4	3,000	0.3	0.3	0.8	S1 - 100 %
			60 - 61	2	1,900	0.2	0.2	4	S1 - 100 %
ED 50	50	50	7 - 8	25	2,700	1.9	1.9	5.7	S4 - 50 %
			9 - 12	17	3,000	1.3	1.3	4	S4 - 50 %
			17 - 21	18	3,600	0.5	0.5	4	S1 - 100 %
			60 - 64	2	1,800	0.2	0.2	4	S1 - 100 %
EQ 40	40	20	12 - 17	18	2,900	0.6	1.3	4	S4 - 50 %
			19 - 27	18	2,900	0.6	1.3	4	S1 - 100 %
			40 - 65	7	1,200	0.5	0.8	4	S1 - 100 %
EQ 60	60	40	12 - 18	20	2,600	1.2	1.5	4	S4 - 30 %
			19 - 27	16	2,900	0.7	1.3	4	S4 - 50 %
			40 - 65	7	1,200	0.6	0.8	4	S1 - 100 %
EQ 100	100	60	13 - 19	32	2,700	1.8	2.1	5.7	S4 - 30 %
			21 - 27	25	2,900	1.3	1.5	5.7	S4 - 50 %
			40 - 72	8	1,100	0.7	1.1	4	S4 - 50 %
EQ 150	150	80	13 - 15	45	3,100	2.2	2.7	18	S1 - 100 %
			21 - 30	29	2,700	1.5	2.1	5.7	S4 - 30 %
			40 - 80	9	1,000	0.8	1.2	4	S4 - 50 %
EQ 300	300	180	36 - 40	45	3,100	1.8	2.7	18	S1 - 100 %
			65 - 90	24	2,800	1.2	1.6	5.7	S4 - 50 %
			125 - 250	7.2	1,000	0.8	1.2	4	S4 - 50 %
EQ 600	600	300	70 - 80	45	3,100	1.8	2.7	18	S1 - 100 %
			105 - 165	30	2,500	1.3	2.1	5.7	S4 - 30 %

Notes on table

1) Operating time	Operating times may vary depending on the load.
2) Power P	Output of mechanical power at motor shaft at maximum torque of part-turn actuator.
3) Output speed	Motor speed at max. torque
4) Nominal current I _N	Rated current at maximum modulating torque and indicated operating time.
5) Max. current I _{max}	Current at maximum torque. We recommend selecting the switchgear in compliance with these values.
6) Type of duty	All actuators are also suitable for type of duty S2 - 15 min Number of starts: 600 cycles per hour

Electrical data for connection to 1-phase AC 115 V, 50 Hz/60 Hz								
Type	Operating time for 90°	Torque ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Power	Motor speed	Rated current ⁴⁾	Max. current ⁵⁾	Starting current ⁶⁾
	[Seconds]	Max. [Nm]	Max. [Nm]	P _N [W]	Max. [rpm]	I _N [A]	I _{max} [A]	I _A [A]
SGC/SGCR 04.1	4 – 63	25 – 63	32	80	2,250	1.1	1.5	3,7
SGC/SGCR 05.1	4 – 63	50 – 125	63	120	2,250	1.6	3.0	3,7
SGC/SGCR 07.1	4 – 63	100 – 250	125	175	2,250	2.4	4.1	3,7
SGC/SGCR 10.1	5.6 – 90	200 – 500	250	225	2,250	3.2	6.0	3,7
SGC/SGCR 12.1	20 – 275	400 – 1,000	500	175	2,250	2.4	4.0	3,7

Electrical data for connection to 1-phase AC 230 V, 50 Hz/60 Hz								
Type	Operating time for 90°	Torque ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Power	Motor speed	Rated current ⁴⁾	Max. current ⁵⁾	Starting current ⁶⁾
	[Seconds]	Max. [Nm]	Max. [Nm]	P _N [W]	Max. [rpm]	I _N [A]	I _{max} [A]	I _A [A]
SGC/SGCR 04.1	4 – 63	25 – 63	32	80	2,250	0.55	0.75	7,4
SGC/SGCR 05.1	4 – 63	50 – 125	63	120	2,250	0.8	1.5	7,4
SGC/SGCR 07.1	4 – 63	100 – 250	125	175	2,250	1.2	2.1	7,4
SGC/SGCR 10.1	5.6 – 90	200 – 500	250	225	2,250	1.6	3.0	7,4
SGC/SGCR 12.1	20 – 275	400 – 1,000	500	175	2,250	1.2	2.0	7,4

Notes on table

1) Torque	Adjustable tripping torque								
2) Running torque	Permissible average torque in open-close duty S2 - 15 min								
3) Modulating torque	Maximum torque in modulating duty S4 - 40 %								
4) Rated current	Rated current at maximum modulating torque and shortest operating time								
5) Max. current	Current at maximum torque and maximum speed. We recommend selecting the switchgear in compliance with these values.								
6) Starting current	The starting current circuit includes a capacitor. The starting current limit of this circuit amounts to 44 Ohm. The indicated maximum values of the starting current occur during switching on when the AC voltage reaches its peak amount. <table> <tr> <td>230V</td><td>7.4 A</td></tr> <tr> <td>230V + 10%</td><td>8.2 A</td></tr> <tr> <td>115V</td><td>3.7 A</td></tr> <tr> <td>115V + 10%</td><td>4.1 A</td></tr> </table> These values are present for a very short period only when the capacitor is still discharged: less than 10 milliseconds.	230V	7.4 A	230V + 10%	8.2 A	115V	3.7 A	115V + 10%	4.1 A
230V	7.4 A								
230V + 10%	8.2 A								
115V	3.7 A								
115V + 10%	4.1 A								

Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given. The permissible variation of the nominal voltage is $\pm 10\%$. Higher voltage failures cause reduction in nominal output torque.

The output data of the fuses to be provided on site must not exceed the following values:
15 A/250 V at a maximum mains current of 5,000 A AC.

For protection with circuit breakers, devices with 6 A at 230 V AC, or 13 A at 115 V AC with characteristics D according to VDE 0641 and IEC 60898 with at least 15 kA switching power are recommended.
Groups of up to four actuators can be protected via one circuit breaker with at least 15 kA switching power, 20 A at 230 V AC, or 40 A at 115 V AC, characteristics D according to IEC 60898.

For further information, refer to "Technical data Part-turn actuators SGC/SGCR 04.1 – SGC/SGCR 12.1 with integral actuator controls".

Electrical data for connection to 1-phase AC 115 V, 50 Hz/60 Hz								
Type	Output speed	Torque ¹⁾	Running torque ²⁾ / Modulating torque ³⁾	Power	Motor speed	Rated current ⁴⁾	Max. current ⁵⁾	Starting current ⁶⁾
	[rpm]	Max. [Nm]	Max. [Nm]	P _N [W]	Max. [rpm]	I _N [A]	I _{max} [A]	I _A [A]
SVC/SVCR 05.1	1.6 – 22	10 – 25	13	225	2,250	3.2	5.0	3,7
SVC/SVCR 07.1	1.6 – 22	20 – 50	25	280	2,250	4.0	6.0	3,7
SVC/SVCR 07.5	0.6 – 8.0	40 – 100	50	175	2,250	2.4	4.0	3,7

Electrical data for connection to 1-phase AC 230 V, 50 Hz/60 Hz								
Type	Output speed	Torque ¹⁾	Running torque ²⁾ / Modulating torque ³⁾	Power	Motor speed	Rated current ⁴⁾	Max. current ⁵⁾	Starting current ⁶⁾
	[rpm]	Max. [Nm]	Max. [Nm]	P _N [W]	Max. [rpm]	I _N [A]	I _{max} [A]	I _A [A]
SVC/SVCR 05.1	1.6 – 22	10 – 25	13	225	2,250	1.6	2.5	7,4
SVC/SVCR 07.1	1.6 – 22	20 – 50	25	280	2,250	2.0	3.0	7,4
SVC/SVCR 07.5	0.6 – 8.0	40 – 100	50	175	2,250	1.2	2.0	7,4

Notes on table

1) Torque	Adjustable tripping torque								
2) Running torque	Permissible average torque in open-close duty S2 - 15 min								
3) Modulating torque	Maximum torque in modulating duty S4 - 40 %								
4) Rated current	Rated current at maximum modulating torque and shortest operating time								
5) Max. current	Current at maximum torque and maximum speed. We recommend selecting the switchgear in compliance with these values.								
6) Starting current	The starting current circuit includes a capacitor. The starting current limit of this circuit amounts to 44 Ohm. The indicated maximum values of the starting current occur during switching on when the AC voltage reaches its peak amount. <table> <tr> <td>230V</td><td>7.4 A</td></tr> <tr> <td>230V + 10%</td><td>8.2 A</td></tr> <tr> <td>115V</td><td>3.7 A</td></tr> <tr> <td>115V + 10%</td><td>4.1 A</td></tr> </table> These values are present for a very short period only when the capacitor is still discharged: less than 10 milliseconds.	230V	7.4 A	230V + 10%	8.2 A	115V	3.7 A	115V + 10%	4.1 A
230V	7.4 A								
230V + 10%	8.2 A								
115V	3.7 A								
115V + 10%	4.1 A								

Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given. The permissible variation of the nominal voltage is $\pm 10\%$. Higher voltage failures cause reduction in nominal output torque.

The output data of the fuses to be provided on site must not exceed the following values:
15 A/250 V at a maximum mains current of 5,000 A AC.

For protection with circuit breakers, devices with 6 A at 230 V AC, or 13 A at 115 V AC with characteristics D according to VDE 0641 and IEC 60898 with at least 15 kA switching power are recommended.

Groups of up to four actuators can be protected via one circuit breaker with at least 15 kA switching power, 20 A at 230 V AC, or 40 A at 115 V AC, characteristics D according to IEC 60898.

For further information, refer to "Technical data Globe valve actuators SVC/SVCR 05.1 – SVC/SVCR 07.5 with integral actuator controls".

4 Dimensions Actuators

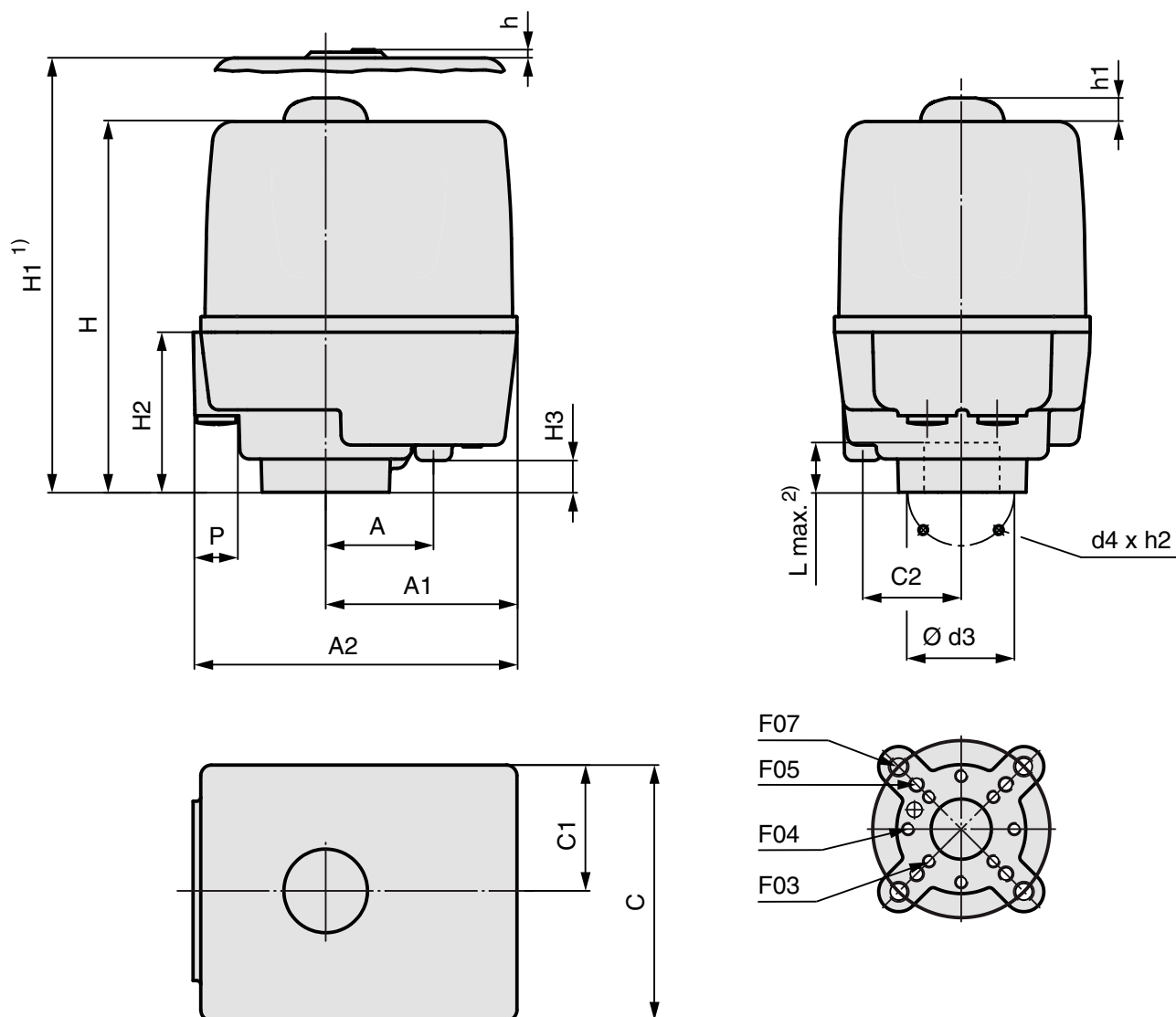
Basic Range

ED 25 – ED 50	68
EQ 40 – EQ 150	70
EQ 300 – EQ 600	72
EQ 40 – EQ 600 with base and lever	74

Smart Range

SGC(R) 04.1 – SGC(R) 10.1 / SVC(R) 05.1 – SVC(R) 07.5	75
SGC 12.1 / SGCR 12.1	77

Dimensions Part-turn actuators



1) Dimensions for actuator with aluminium hood

2) Max. fitting dimension

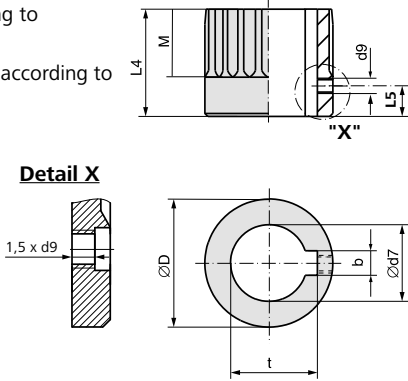
Output drives according to EN ISO 5211
 Dimensions of couplings see overleaf

Dimensions	ED 25 – ED 50			
EN ISO 5211	F03	F04	F05	F07
A		55		
A1		98		
A2		166		
C		131		
C1		65		
C2		50		
H		190		
H1 ¹⁾		220		
H2		82		
H3		16		
L max. ²⁾		30		
P		2 x M16 x 1.5		
$\varnothing d_3$	36	42	50	70
$\varnothing d_4$	4 x M5	4 x M5	4 x M6	4 x M8
h		4		
h1		12		
h2	8	8	9	12

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

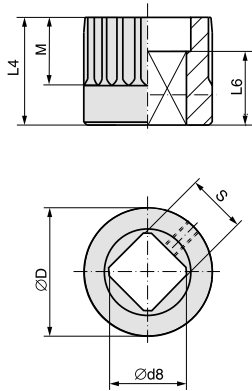
Dimensions Couplings according to EN ISO 5211

Bore according to
EN ISO 5211
With keyway according to
DIN 6885-1



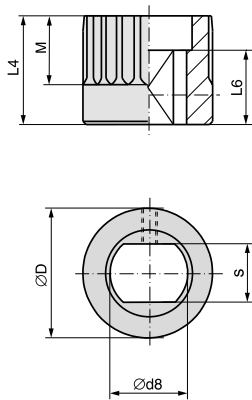
Dimensions	ED 25 – ED 50			
	F03	F04	F05	F07
EN ISO 5211				
Ø D			24.8	
b JS9 ¹⁾			nach DIN 6885-1	
Ø d7 max.			15	
d9 ²⁾			M4	
L4			25	
L5 ²⁾			5	
M			17	
t ¹⁾			nach DIN 6885-1	

Square bore
according to EN ISO 5211



Dimensions	ED 25 – ED 50			
	F03	F04	F05	F07
EN ISO 5211				
Ø D			24.8	
Ø d8 max.			18.1	
L4			25	
L6 min.			25	
M			17	
s H11 max.			14	

Bore with two-flats
according to EN ISO 5211



Dimensions	ED 25 – ED 50			
	F03	F04	F05	F07
EN ISO 5211				
Ø D			24.8	
Ø d8 max.			18.1	
L4			25	
L6 min.			25	
M			17	
s H11 max.			14	

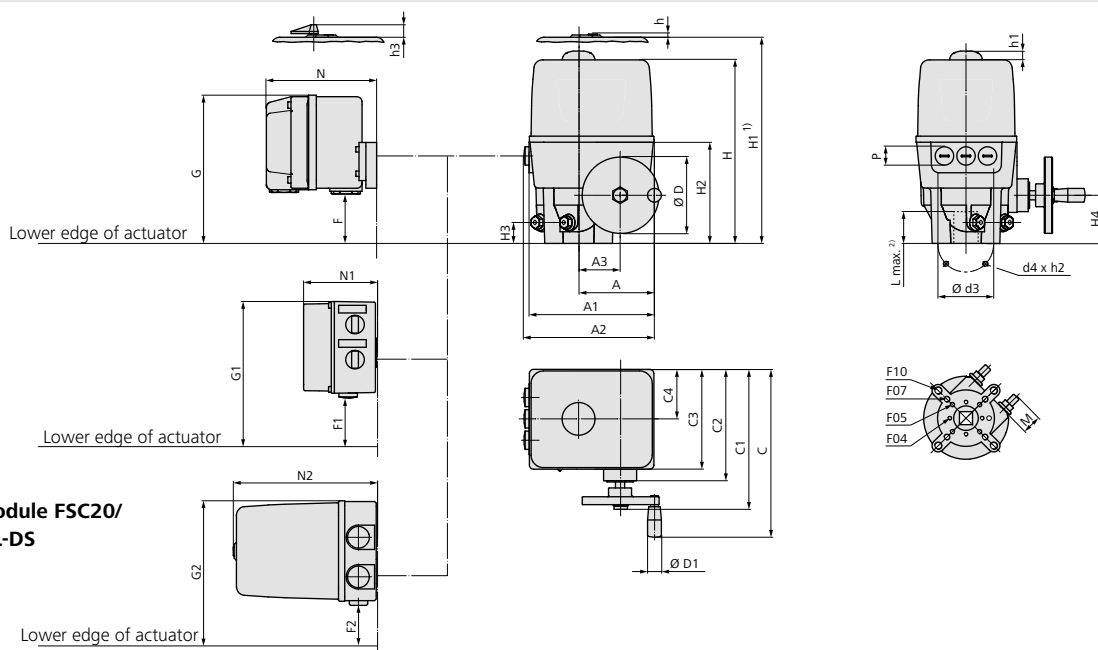
1) Dimensions depend on Ø d7, refer to DIN 6885-1
2) Thread with grub screw

Dimensions Part-turn actuators

Option:
KS1 compact connector

Option:
Local controls VSE

Option:
Emergency operation module FSC20/
transformer housing PEL-DS



1) Dimensions for actuator with aluminium hood

2) Max. fitting dimension

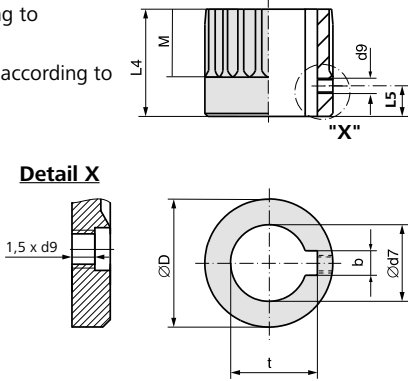
Output drives according to EN ISO 5211
Dimensions of couplings see overleaf

Dimensions EN ISO 5211	EQ 40 – EQ 150			
	F04	F05	F07	F10
A		98		
A1		162		
A2		169		
A3		54		
C		220		
C1		183		
C2		146		
C3		131		
C4		65		
Ø D		100		
Ø D1		18		
F		65		
F1		53		
F2		64		
G		194		
G1		180		
G2		201		
H		246		
H1 ¹⁾		274		
H2		133		
H3		27.5		
H4		63		
L max. ²⁾		41		
M	min. 12.9 (~ -15°)	Standard 19 (~ -90°)		max. 25.1 (~ +15°)
N		144		
N1		96		
N2		188		
P		3 x M20 x 1.5		
Ø d3	42	50	70	102
Ø d4	4 x M5	4 x M6	4 x M8	4 x M10
h		4		
h1		12		
h2	8	9	12	15
h3		21		

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

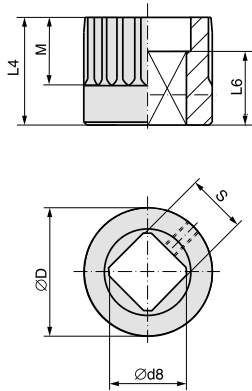
Dimensions Couplings according to EN ISO 5211

Bore according to
EN ISO 5211
With keyway according to
DIN 6885-1



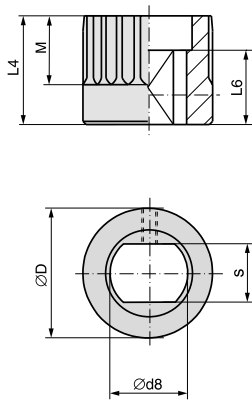
Dimensions	EQ 40 – EQ 150				EQ 40 – EQ 150		
EN ISO 5211	F04	F05	F07	F10	F05	F07	F10
Ø D	31.75				41.75		
b JS9 ¹⁾	nach DIN 6885-1						
Ø d7 max.					25.4		
d9 ²⁾	M4				M5		
L4	35				35		
L5 ²⁾	8				8		
M	20				20		
t ¹⁾	nach DIN 6885-1						

Square bore
according to EN ISO 5211



Dimensions	EQ 40 – EQ 150				EQ 40 – EQ 150		
EN ISO 5211	F04	F05	F07	F10	F05	F07	F10
Ø D	31.75				41.75		
Ø d8 max.	22.2				28.2		
L4	35				35		
L6 min.	30				30		
M	20				20		
s H11 max.	17				22		

Bore with two-flats
according to EN ISO 5211



Dimensions	EQ 40 – EQ 150				EQ 40 – EQ 150		
EN ISO 5211	F04	F05	F07	F10	F05	F07	F10
Ø D	31.75				41.75		
Ø d8 max.	22.2				28.2		
L4	35				35		
L6 min.	25				25		
M	20				20		
s H11 max.	17				22		

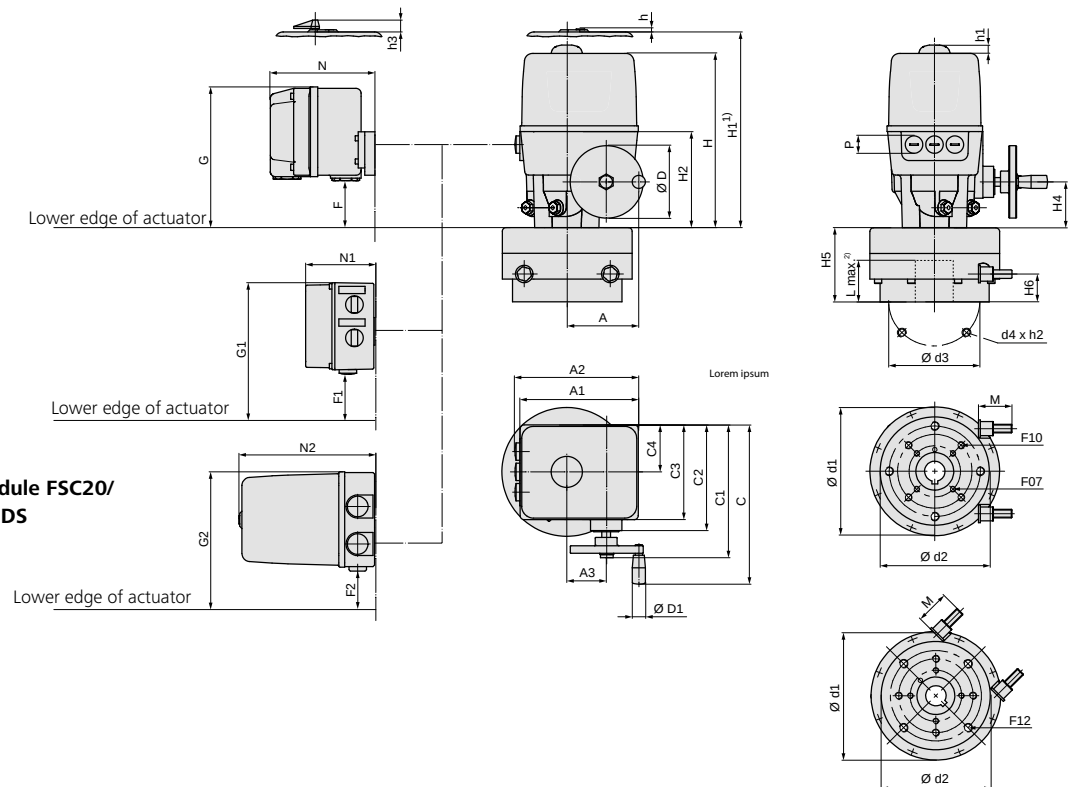
1) Dimensions depend on Ø d7, refer to DIN 6885-1
2) Thread with grub screw

Dimensions Part-turn actuators

Option:
KS1 compact connector

Option:
Local controls VSE

Option:
Emergency operation module FSC20/
transformer housing PEL-DS



Output drives according to EN ISO 5211
Dimensions of couplings see overleaf

1) Dimensions for actuator with aluminium hood

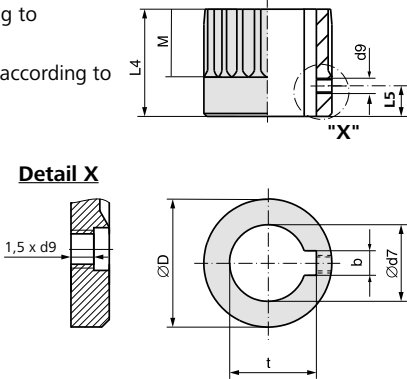
2) Max. fitting dimension

Dimensions	EQ 300 – EQ 600		
EN ISO 5211	F07	F10	F12
A		98	
A1		162	
A2		169	
A3		54	
C		220	
C1		183	
C2		146	
C3		131	
C4		65	
Ø D		100	
Ø D1		18	
F		65	
F1		53	
F2		64	
G		194	
G1		180	
G2		201	
H		246	
H1 ¹⁾		274	
H2		133	
H4		63	
H5		103	
H6		38.5	
L max. ²⁾		50	
M	min. -3 (~ -15°)	Standard 12 (~ 90°)	max. 27 (~ +15°)
N		144	
N1		96	
N2		188	
P		3 x M20 x 1.5	
Ø d1		178	
Ø d2		150	
Ø d3	70	102	125
Ø d4	4 x M8	4 x M10	4 x M12
h		4	
h1		12	
h2	12	15	20
h3		21	

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

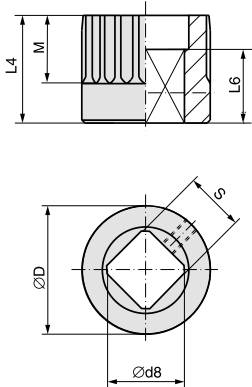
Dimensions Couplings according to EN ISO 5211

Bore according to
EN ISO 5211
With keyway according to
DIN 6885-1



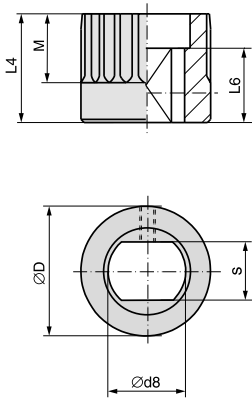
Dimensions	EQ 300/EQ 600		
	F07	F10	F12
EN ISO 5211			
Ø D	51.75		
b JS9 ¹⁾	nach DIN 6885-1		
Ø d7 max.	38		
d9 ²⁾	M6		
L4	45		
L5 ²⁾	10		
M	30		
t ¹⁾	nach DIN 6885-1		

Square bore
according to EN ISO 5211



Dimensions	EQ 300/EQ 600		
	F07	F10	F12
EN ISO 5211			
Ø D	51.75		
Ø d8 max.	40.2 ³⁾		
L4	45		
L6 min.	30		
M	30		
s H11 max.	30 ³⁾		

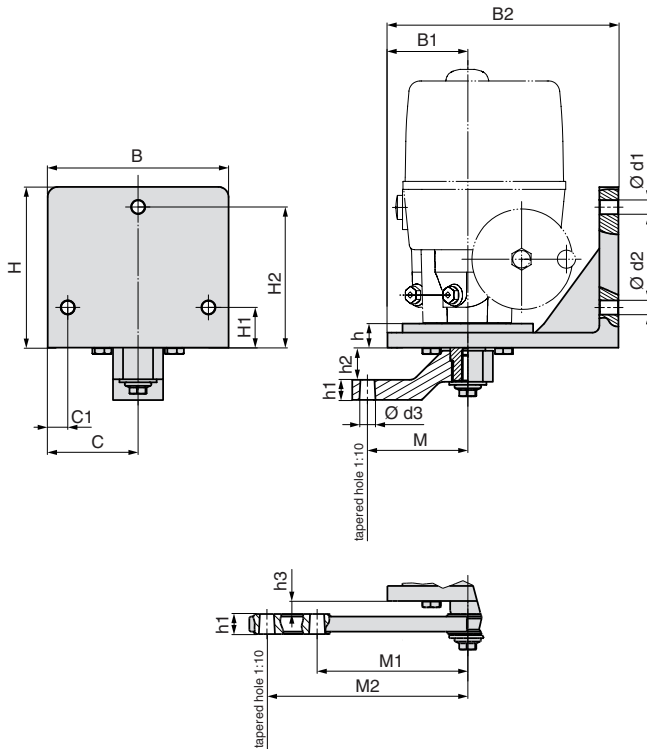
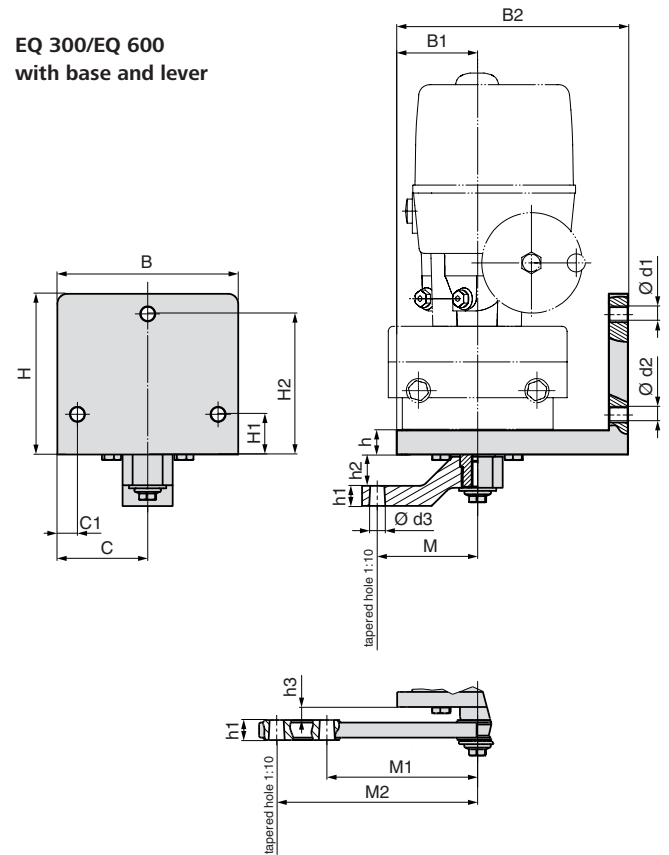
Bore with two-flats
according to EN ISO 5211



Dimensions	EQ 300/EQ 600		
	F07	F10	F12
EN ISO 5211			
Ø D	51.75		
Ø d8 max.	36.2		
L4	45		
L6 min.	25		
M	30		
s H11 max.	27		

1) Dimensions depend on Ø d7, refer to DIN 6885-1
2) Thread with grub screw
3) According to DIN 79

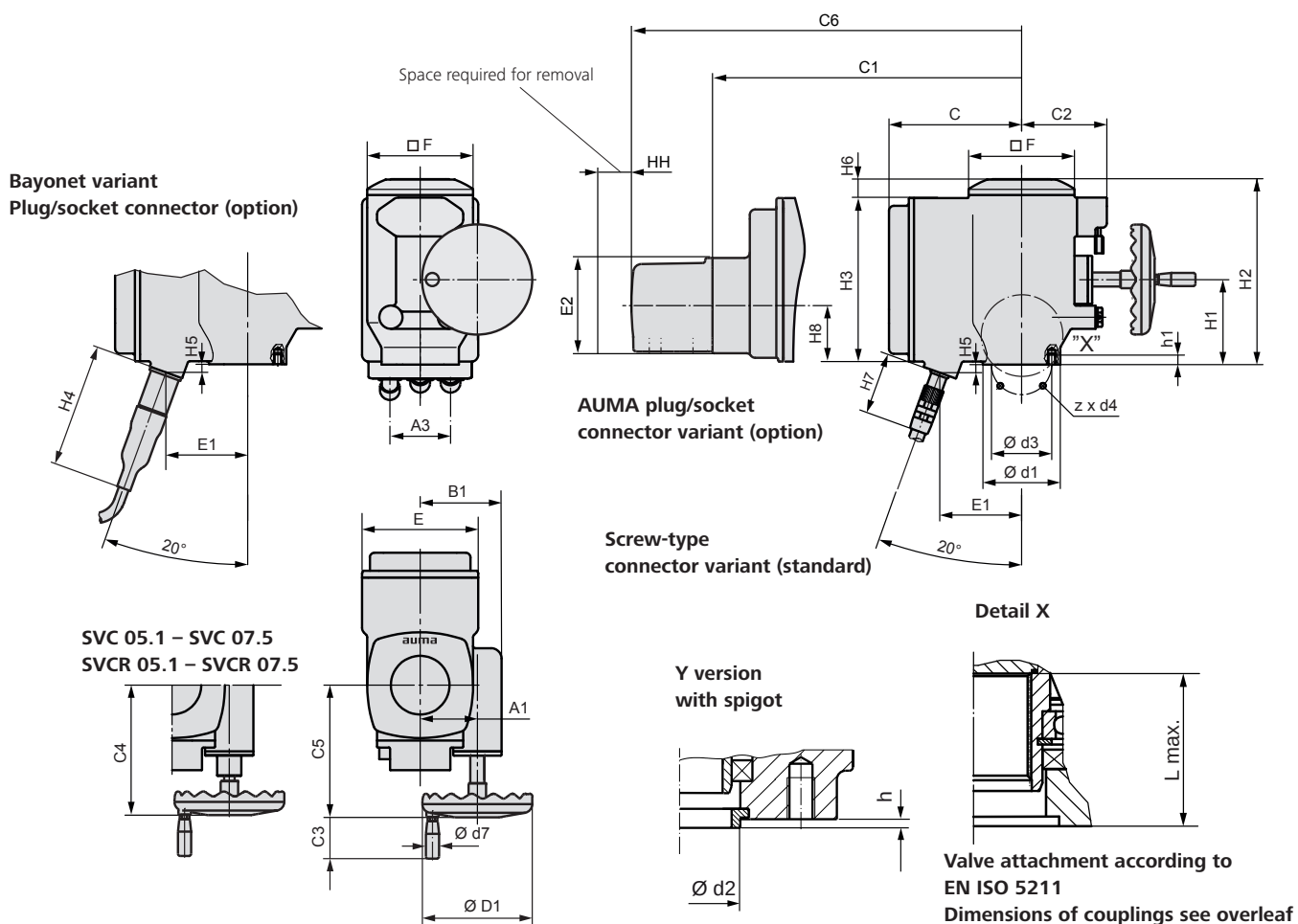
Dimensions Part-turn actuators with base and lever

EQ 40 – EQ 150
with base and leverEQ 300/EQ 600
with base and lever

For missing dimensions, refer to Dimensions EQ Part-turn actuators in standard version

Dimensions	EQ 40 – EQ 150	EQ 300/EQ 600
B	180	180
B1	80	80
B2	230	230
C	90	90
C1	20	20
H	160	160
H1	40	40
H2	140	140
M	100	100
M1	150	150
M2	200	200
Ø d1	14	15
Ø d2	14	15
Ø d3 H8	16	16
h	24	24
h1	20	20
h2	32	32
h3	13	–

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Dimensions	SGC/SGCR 04.1/SGC/SGCR 05.1 SVC/SVCR 05.1		SGC/SGCR 07.1 SVC/SVCR 07.1/SVC/SVCR 07.5	SGC(R) 10.1
EN ISO 5211	F05	F07	F07	F10
A1	53.5		66.5	82.5
A3	80		80	80
B1	77		95	111
C	144		155	155
C1	199		210	210
C2	87		99	114
C3	47		47	60
C4	140		150	–
C5	138		153	174
C6	299		310	310
Ø D1	100		125	160
E	125		135	135
E1	90		100	115
E2	115		115	115
F	100		123	152
H1	84.5		101.5	111
H2	194		219	244
H3	165		190	190
H4	144		144	144
H5	4		10	17
H6	20		23	24
H7	81		81	81
H8	62.5		67.5	67.5
HH min.	30		30	30
L max.	40		50	60
Ø d1	90		90	125
Ø d2 f8	35	55	55	70
Ø d3	50	70	70	102
d4	M6	M8	M8	M10
Ø d7	15		15	20
h	3		3	3
h1	12	15	15	14
z	4		4	4

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

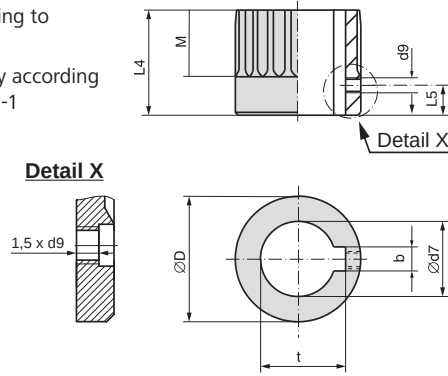
SGC 04.1 – SGC 10.1/SVC 05.1 – SVC 07.5

SGCR 04.1 – SGCR 10.1/SVCR 05.1 – SVCR 07.5

Dimensions Couplings according to EN ISO 5211, DIN 6885

Bore according to
EN ISO 5211

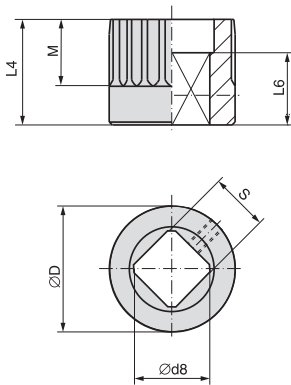
With keyway according
to DIN 6885-1



Dimensions	SGC(R) 04.1/SGC(R) 05.1 SVC(R) 05.1		SGC(R) 07.1 SVC(R) 07.1/SVC(R) 07.5	SGC(R) 10.1
EN ISO 5211	F05	F07	F07	F10
Ø D	31.75		41.75	51.75
b JS9 ¹⁾	6		6	8
Ø d7 H8 ²⁾	18		22	28
Ø d7 max.	20		25.4	38
d9 ³⁾	M4		M5	M6
L4	35		35	45
L5 ³⁾	8		8	10
M	20		20	35
t ¹⁾	20.8		24.8	31.3

Square bore

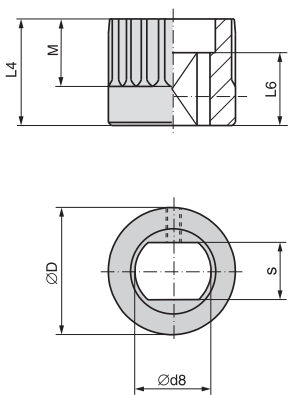
according to EN ISO 5211



Dimensions	SGC(R) 04.1/SGC(R) 05.1 SVC(R) 05.1		SGC(R) 07.1 SVC(R) 07.1/SVC(R) 07.5	SGC(R) 10.1
EN ISO 5211	F05	F07	F07	F10
Ø D	31.75		41.75	51.75
Ø d8 min. ²⁾	18.1		22.2	28.2
Ø d8 max.	22.2		28.2	40.2 ⁴⁾
L4	35		35	45
L6 min.	30		30	30
M	20		20	35
s H11 ²⁾	14		17	22
s H11 max.	17		22	30 ⁴⁾

Bore with two-flats

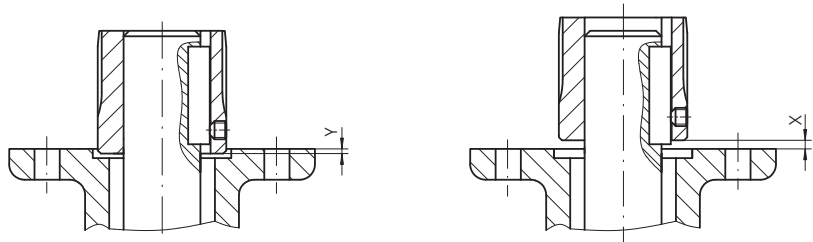
according to EN ISO 5211



Dimensions	SGC(R) 04.1/SGC(R) 05.1 SVC(R) 05.1		SGC(R) 07.1 SVC(R) 07.1/SVC(R) 07.5	SGC(R) 10.1
EN ISO 5211	F05	F07	F07	F10
Ø D	31.75		41.75	51.75
Ø d8 min. ²⁾	18.1		22.2	28.2
Ø d8 max.	22.2		28.2	36.2
L4	35		35	45
L6 min.	25		25	25
M	20		20	35
s H11 ²⁾	14		17	22
s H11 max.	17		22	27

Mounting position of coupling

X max.	2.5	3.5
Y max.	6	10



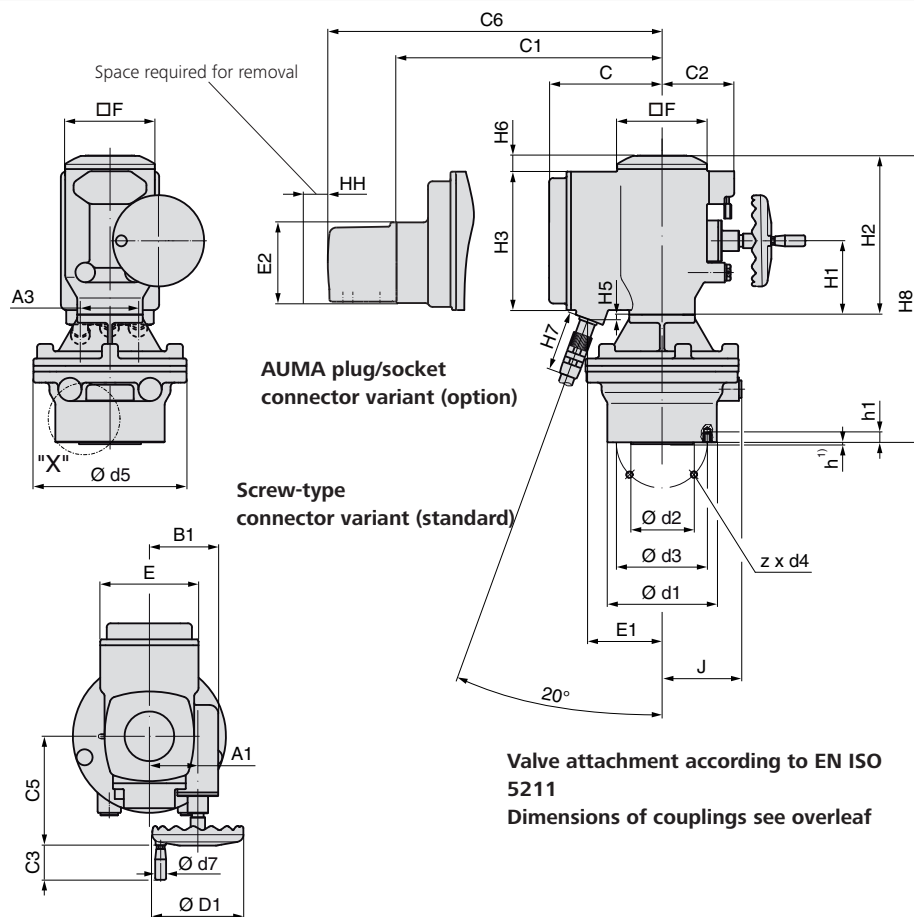
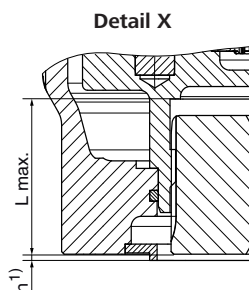
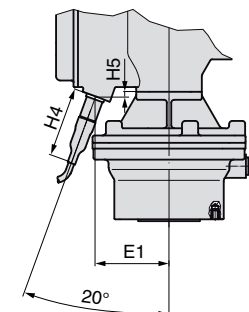
1) Dimensions depend on Ø d7, refer to DIN 6885-1

2) Recommended size according to EN ISO 5211

3) Thread with grub screw

4) According to DIN 79

Bayonet variant
Plug/socket connector (option)



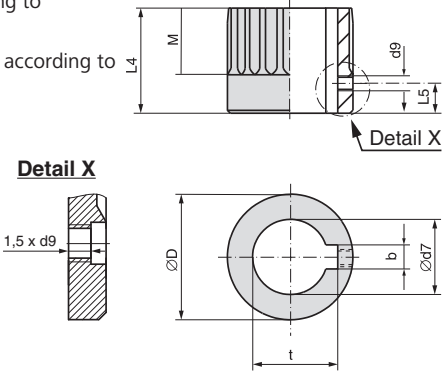
Valve attachment according to EN ISO 5211
Dimensions of couplings see overleaf

Dimensions	SGC/SGCR 12.1		
EN ISO 5211	F12	F14	F16
A1		66.5	
A3		80	
B1		94.5	
C		155	
C1		210	
C2		99	
C3		47	
C5		150	
C6		310	
Ø D1		125	
E		135	
E1		100	
E2		115	
F		123	
H1		101.5	
H2		219	
H3		190	
H4		144	
H5		10	
H6		23	
H7		81	
H8	394	434	444
HH min.		30	
J		109	
L max.	61	101	111
Ø d1	150	175	210
Ø d2 f8	85	100	130
Ø d3	125	140	165
d4	M12	M16	M20
Ø d5		210	
Ø d7		15	
h ¹⁾	2.5	3.5	4.5
h1	22	25	32
z		4	

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Dimensions Couplings according to EN ISO 5211, DIN 6885

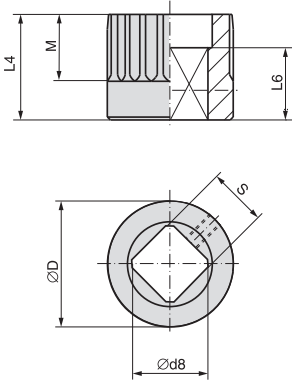
Bore according to
EN ISO 5211
With keyway according to
DIN 6885-1



Dimensions	SGC/SGCR 12.1		
EN ISO 5211	F12	F14	F16
Ø D	67.6		
b JS9 ¹⁾	10		
Ø d7 H8 ²⁾	36		
Ø d7 max.	50		
d9 ³⁾	M6		
L4	55	95	105
L5 ³⁾	10		
M	40		
t ¹⁾	39.3		

Square bore

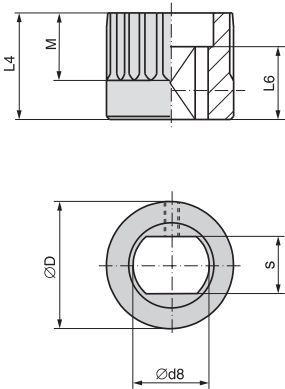
according to EN ISO 5211



Dimensions	SGC/SGCR 12.1		
EN ISO 5211	F12	F14	F16
Ø D	67.6		
Ø d8 min. ²⁾	36.2		
Ø d8 max.	48.2		
L4	55	95	105
L6 min.	30	30	40
M	40		
s H11 ²⁾	27		
s H11 max.	36		

Bore with two-flats

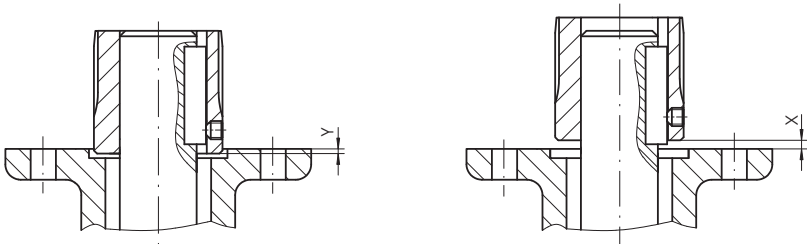
according to EN ISO 5211



Dimensions	SGC/SGCR 12.1		
EN ISO 5211	F12	F14	F16
Ø D	67.6		
Ø d8 min. ²⁾	36.2		
Ø d8 max.	48.2 (48 ⁵⁾)		
L4	55	95	105
L6 min.	30	30	40
M	40		
s H11 ²⁾	27		
s H11 max.	36 (41 ⁵⁾)		

Mounting position of coupling

X max.	5	8
Y max.	10	10



1) Dimensions depend on Ø d7, refer to DIN 6885-1
2) Recommended size according to EN ISO 5211
3) Thread with grub screw
4) According to DIN 79
5) According to DIN 475

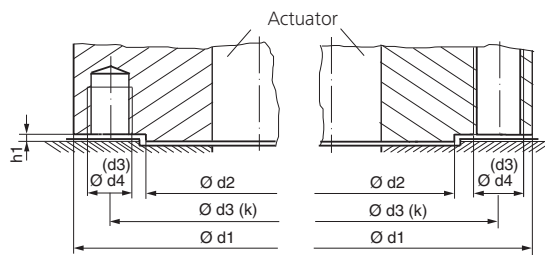
5 Dimensions Output drive types

Valve attachments for actuators and gearboxes	80
Couplings for SG/SV/SQ/GS/GHE	
Couplings (standard), bore with keyway according to DIN 6885-1	82
Couplings (standard), two-flat bore according to EN ISO 5211	84
Couplings (standard), square bore according to EN ISO 5211	86

EN ISO 5210/EN ISO 5211/DIN 3210/DIN 3338

Comparison between EN ISO 5210/EN ISO 5211 and DIN 3210/DIN 3338

- EN ISO 5210 Multi-turn valve actuator attachments
- EN ISO 5211 Part-turn valve actuator attachments
- DIN 3210 Output drives of electric actuators for valves (Standard withdrawn)
- DIN 3338 Multi-turn actuator attachments, type C



Designations deviating from EN ISO are indicated in brackets

Flange abbreviation			Dimensions (in mm)										Quantity of screws and bolts	
EN ISO 5210	EN ISO 5211	DIN 3210	EN ISO 5210 5211	DIN 3210	EN ISO 5210 5211	DIN 3210	EN ISO 5210 5211	DIN 3210	EN ISO 5210 5211	DIN 3210	EN ISO 5210 5211	DIN 3210	EN ISO 5210 5211	DIN 3210
DIN 3338			DIN 3338		DIN 3338		DIN 3338		DIN 3338		DIN 3338		DIN 3338	
			Ø d1	Ø d1	Ø d2	Ø d2	Ø d3	(k)	Ø d4	(d3)	h1 max.	h1 max.		
–	F03	–	46	–	25	–	36	–	M5	–	3	–	4	–
–	F04	–	54	–	30	–	42	–	M5	–	3	–	4	–
–	F05	–	65	–	35	–	50	–	M6	–	3	–	4	–
F07	F07	–	90	–	55	–	70	–	M8	–	3	–	4	–
F10	F10	G0	125	125	70 ¹⁾	60 ¹⁾	102	102	M10	M10	3	3	4	4
F12	F12	–	150	–	85	–	125	–	M12	–	3	–	4	–
F14	F14	G1/2	175	175	100	100	140	140	M16	M16	4	4	4	4
F16	F16	G3	210	210	130	130	165	165	M20	M20	5	5	4	4
F25	F25	G4	300	300	200 ¹⁾	160 ¹⁾	254	254	M16	M16	5	5	8	8
F30	F30	G5	350	350	230 ¹⁾	180 ¹⁾	298 ¹⁾	300 ¹⁾	M20	M20	5	5	8	8
F35	F35	G6	415 ¹⁾	410 ¹⁾	260 ¹⁾	220 ¹⁾	356	356	M30	M30	5	5	8	8
F40	F40	G7	475	475	300 ¹⁾	230 ¹⁾	406	406	M36	M36	8	8	8	8
–	F48	–	560	–	370	–	483	–	M36	–	8	–	12	–
–	F60	–	686	–	470	–	603	–	M36	–	8	–	20	–

1) Deviating dimensions between EN ISO 5210/EN ISO 5211/DIN 3338 and DIN 3210

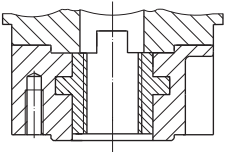
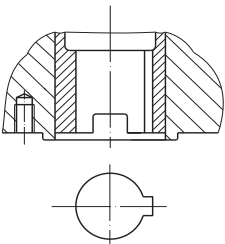
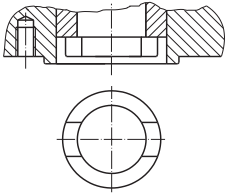
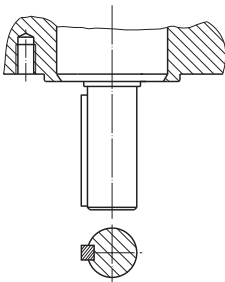
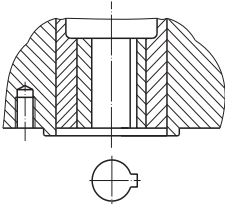
Arrangement of bores for screws Ø d4 (d3)



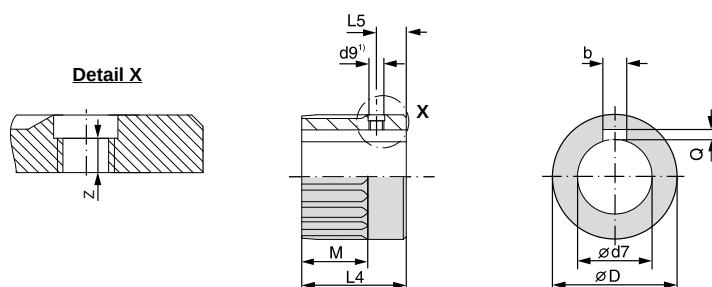
EN ISO 5210	F07 – F16	F25 – F40	–	–
EN ISO 5211	F03 – F16	F25 – F40	F48	F60
DIN 3210	G0 – G3	G4 – G7	–	–
DIN 3338	F07 – F16	F25 – F40	–	–

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

EN ISO 5210/DIN 3210/DIN3338

	Designation			Torque transmission	Thrust possible	Application
	EN ISO 5210	DIN 3210	DIN 3338			
stem nut		A	—	X	X	rising, non-rotating valve stem
Output drive plug sleeve		B 1 B 2	—	X	—	rotating, non-rising valve stem or rising, non-rotating valve stem
Dog coupling		—	C	X	—	rotating, non-rising valve stem or rising, non-rotating valve stem
Shaft end		—	D	X	—	Operation via lever arrangement or coupling
Bore with keyway		B 3 B 4	—	X	—	rotating, non-rising valve stem

Dimensions Couplings (standard), bore with keyway according to DIN 6885-1



1) Thread with grub screw made of A2

2) Article number refers to unbored version, KN, KS

3) Combined flange F05/F07 without spigot (standa d).

As an alternative an individual flange F07 can be ordered with spigot

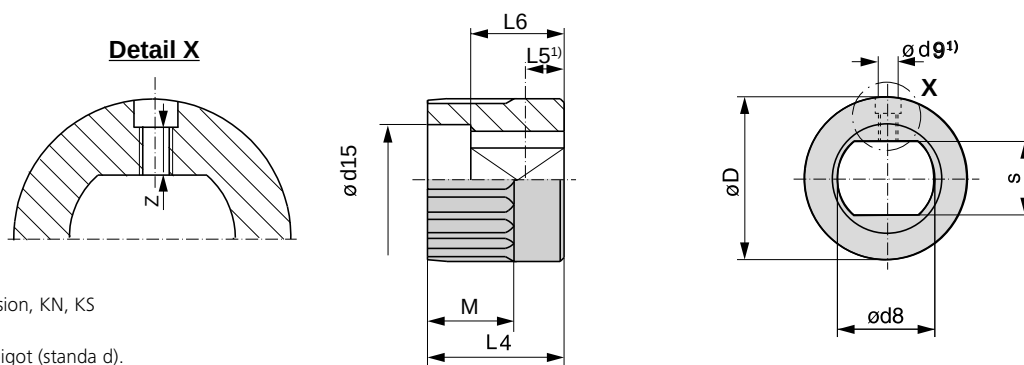
Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	Ø d7 max.	Ø d7 H8 over to		b JS 9	Q	Parallel key DIN 6885-1	Ø d9 ¹⁾	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SG 03.3/SG 04.3 ED 25 – ED 50	2009.977	24.8	25	17	25x1x24	15	12	15	5	2.3 + 0.1	5 x 5 x ..	M4	5	M4 x 4	6
							10	12	4	1.8 + 0.1	4 x 4 x ..				
							8	10	3	1.4 + 0.1	3 x 3 x ..				
SG 04.2	2009.992	24.8	35	17	25x1x24	15	12	15	5	2.3 + 0.1	5 x 5 x ..	M4	8	M4 x 4	6
							10	12	4	1.8 + 0.1	4 x 4 x ..				
							8	10	3	1.4 + 0.1	3 x 3 x ..				
SGC/SGM 04.1/05.1 SVC/SVM 05.1 SG 05.2 SG 05.3 EQ 40 – EQ 150 GS 50.3 F05 GHE 05.1 PF-Q80/150 PF-M25/50	2010.132	31.75	35	20	32x1.25x24	20	17	20	6	2.8 + 0.1	6 x 6 x ..	M4	8	M4 x 4	6
							12	17	5	2.3 + 0.1	5 x 5 x ..				
							10	12	4	1.8 + 0.1	4 x 4 x ..				
SGC/SGM 07.1 SQ 05.2 – F05/F07 ³⁾ SQ 07.2 – F05/F07 ³⁾ SG 07.2 EQ 40 – EQ 150 GHE 07.1 SVC/SVM 07.1/5 FQM 05.1/07.1	2010.369	41.75	35	20	42x1.25x32	25.4	22	25.4	8	3.3 + 0.2	8 x 7 x ..	M5	8	M5 x 5	7.5
	2021.449						17	22	6	2.8 + 0.2	6 x 6 x ..				
							12	17	5	2.3 + 0.1	5 x 5 x ..				
SG 05.1/SG 07.1	2010.169	41.75	40	20	42x1.25x32	25.4	22	25.4	8	3.3 + 0.2	8 x 7 x ..	M5	8	M5 x 5	7.5
							17	22	6	2.8 + 0.1	6 x 6 x ..				
							12	17	5	2.3 + 0.1	5 x 5 x ..				
SQ 07.2 – F10	2010.658	41.75	60	20	42x1.25x32	25.4	22	25.4	8	3.3 + 0.2	8 x 7 x ..	M5	8	M5 x 5	7.5
							17	22	6	2.8 + 0.1	6 x 6 x ..				
							12	17	5	2.3 + 0.1	5 x 5 x ..				
SGC/SGM 10.1 SQ 10.2 – F10 GS 50.3 GHE 10.1 SG 10.2 EQ 300/EQ 600 PF-Q300/600 PF-M100	2010.302	51.75	45	30	52x1.25x40	38	30	38	10	3.3 + 0.2	10 x 8 x ..	M6	10	M6 x 6	9
							22	30	8	3.3 + 0.2	8 x 7 x ..				
							17	22	6	2.8 + 0.1	6 x 6 x ..				
SG 10.1	2010.328	51.75	65	35	52x1.25x40	38	30	38	10	3.3 + 0.2	10 x 8 x ..	M6	10	M6 x 6	9
							22	30	8	3.3 + 0.2	8 x 7 x ..				
							17	22	6	2.8 + 0.1	6 x 6 x ..				
SQ 10.2 – F12	2044.911	51.75	75	30	52x1.25x40	38	30	38	10	3.3 + 0.2	10 x 8 x ..	M6	10	M6 x 6	9
							22	30	8	3.3 + 0.2	8 x 7 x ..				
							17	22	6	2.8 + 0.1	6 x 6 x ..				
SQ 12.2 – F12 GS 63.3 GHE 12.1 FQM 10.1/12.1	2010.368	67.6	55	40	68x2x32	50	44	50	14	3.8 + 0.2	14 x 9 x ..	M6	10	M6 x 6	9
	2021.415						38	44	12	3.3 + 0.2	12 x 8 x ..				
							30	38	10	3.3 + 0.2	10 x 8 x ..				

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Couplings (standard), bore with keyway according to DIN 6885-1

Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	Ø d7 max.	Ø d7 H8 over	to	b JS 9	Q	Parallel key DIN 6885-1	Ø d9 ¹⁾	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SG 12.1	Z010.184	67.6	75	40	68x2x32	50	44	50	14	3.8 + 0.2	14 x 9 x ..	M6	10	M6 x 6	9
							38	44	12	3.3 + 0.2	12 x 8 x ..				
							30	38	10	3.3 + 0.2	10 x 8 x ..				
SQ 12.2 – F14	Z006.070	67.6	95	40	68x2x32	50	44	50	14	3.8 + 0.2	14 x 9 x ..	M6	10	M6 x 6	9
							38	44	12	3.3 + 0.2	12 x 8 x ..				
							30	38	10	3.3 + 0.2	10 x 8 x ..				
SQ 12.2 – F16	Z006.071	67.6	105	40	68x2x32	50	44	50	14	3.8 + 0.2	14 x 9 x ..	M6	10	M6 x 6	9
							38	44	12	3.3 + 0.2	12 x 8 x ..				
							30	38	10	3.3 + 0.2	10 x 8 x ..				
SQ 14.2 – F14 GS 80.3	Z010.394	81.6	65	47	82x2x40	60	58	60	18	4.4 + 0.2	18 x 11 x ..	M6	10	M6 x 6	9
							50	58	16	4.3 + 0.2	16 x 10 x ..				
							44	50	14	3.8 + 0.2	14 x 9 x ..				
SQ 14.2 – F16	Z111.676	81.6	115	40	82x2x40	60	58	60	18	4.4 + 0.2	18 x 11 x ..	M6	10	M6 x 6	9
							50	58	16	4.3 + 0.2	16 x 10 x ..				
							44	50	14	3.8 + 0.2	14 x 9 x ..				
GS 100.3	Z015.955	105.8	80	50	106x2x52	80	75	80	22	5.4 + 0.2	22 x 14 x ..	M8	18	M8 x 8	12
							65	75	20	4.9 + 0.2	20 x 12 x ..				
							58	65	18	4.4 + 0.2	18 x 11 x ..				
GS 125.3	Z017.441	119.6	110	70	120x2x60	90	85	90	25	5.4 + 0.2	25 x 14 x ..	M8	18	M8 x 8	12
							75	85	22	5.4 + 0.2	22 x 14 x ..				
							65	75	20	4.9 + 0.2	20 x 12 x ..				

Dimensions Couplings (standard), two-flat bore according to ISO 5211



1) Thread with grub screw made of A2

2) Article number refers to unbored version, KN, KS

3) DIN 475

4) Combined flange F05/F07 without spigot (standard).

As an alternative an individual flange F07 can be ordered with spigot

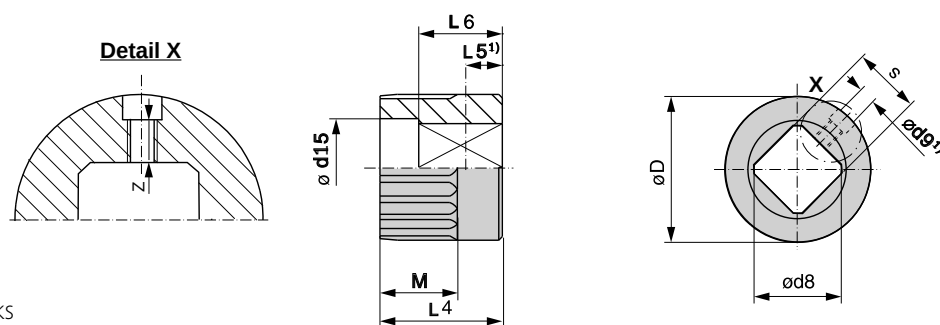
Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	S H11 over	to	Ø d8 max.	L6	Ø d9 ¹⁾	Ø d15	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SG 03.3/SG 04.3 ED 25 – ED 50	Z009.977	24.8	25	17	25x1x24	11	14	18.1	25	M4	16	5	M4 x 4	6
SG 04.2	Z009.992	24.8	35	17	25x1x24	11	14	18.1	25	M4	16	8	M4 x 4	6
SGC/SGM 04.1/05.1 SVC/SVM 05.1 SG 05.2 SG 05.3 EQ 40 – EQ 150 GS 50.3 F05 GHE 05.1 PF-Q80/150 PF-M25/50	Z010.132	31.75	35	20	32x1.25x24	11	16 ³⁾	18 ³⁾	25	M4	22.5	8	M4 x 4	6
SGC/SGM 07.1 SQ 05.2 – F05/F07 ⁴⁾ SQ 07.2 – F05/F07 ⁴⁾ SG 07.2 EQ 40 – EQ 150 GHE 07.1 SVC/SVM 07.1/5 FQM 05.1/07.1	Z010.369	41.75	35	20	42x1.25x32	11	16 ³⁾	18 ³⁾	25	M5	22.5	8	M5 x 5	7.5
	Z021.449					16 ³⁾	22	28.2	30		31			
SG 05.1/SG 07.1	Z010.169	41.75	40	20	42x1.25x32	11	16 ³⁾	18 ³⁾	25	M5	22.5	8	M5 x 5	7.5
						16 ³⁾	22	28.2	30		31			
SQ 07.2 – F10	Z010.658	41.75	60	20	42x1.25x32	11	16 ³⁾	18 ³⁾	25	M5	22.5	8	M5 x 5	7.5
						16 ³⁾	22	28.2	30		31			
SGC/SGM 10.1 SQ 10.2 – F10 GS 50.3 GHE 10.1 SG 10.2 EQ 300/EQ 600 PF-Q300/600 PF-M100	Z010.302	51.75	45	30	52x1.25x40	11	16 ³⁾	18 ³⁾	25	M6	22.5	10	M6 x 6	9
						16 ³⁾	22	28.2	30		31			
						22	27	36.2	40		41			
SG 10.1	Z010.328	51.75	65	35	52x1.25x40	11	16 ³⁾	18 ³⁾	25	M6	22.5	10	M6 x 6	9
						16 ³⁾	22	28.2	30		31			
						22	27	36.2	40		41			
SQ 10.2 – F12	Z044.911	51.75	75	30	52x1.25x40	11	16 ³⁾	18 ³⁾	25	M6	22.5	10	M6 x 6	9
						16 ³⁾	22	28.2	30		31			
						22	27	36.2	40		41			
SQ 12.2 – F12 GS 63.3 GHE 12.1 FQM 10.1/12.1	Z010.368	67.6	55	40	68x2x32	16 ³⁾	22	28.2	30	M6	31	10	M6 x 6	9
	Z021.415					22	27	36.2	40		41			
						27	36 (41 ³⁾)	48.2 (48 ³⁾)	45		53			
SG 12.1	Z010.184	67.6	75	40	68x2x32	16 ³⁾	22	28.2	30	M6	31	10	M6 x 6	9
						22	27	36.2	40		41			
						27	36 (41 ³⁾)	48.2 (48 ³⁾)	45		53			

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Couplings (standard), two-flat bore according to ISO 5211

Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	S H11 over to		Ø d8 max.	L6	Ø d9 ¹⁾	Ø d15	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SQ 12.2 – F14	Z006.070	67.6	95	40	68x2x32	16 ³⁾	22	28.2	30	M6	31	10	M6 x 6	9
						22	27	36.2	40		41			
						27	36 (41 ³⁾)	48.2 (48 ³⁾)	45		53			
SQ 12.2 – F16	Z006.071	67.6	105	40	68x2x32	16 ³⁾	22	28.2	30	M6	31	10	M6 x 6	9
						22	27	36.2	40		41			
						27	36 (41 ³⁾)	48.2 (48 ³⁾)	45		53			
SQ 14.2 – F14 GS 80.3	Z010.394	81.6	65	47	82x2x40	22	27	36.2	40	M6	41	10	M6 x 6	9
						27	36 (41 ³⁾)	48.2 (48 ³⁾)	45		53			
						36 (41 ³⁾)	46	60.2	59		64			
SQ 14.2 – F16	Z111.676	81.6	115	40	82x2x40	22	27	36.2	40	M6	41	10	M6 x 6	9
						27	36 (41 ³⁾)	48.2 (48 ³⁾)	45		53			
						36 (41 ³⁾)	46	60.2	59		64			
GS 100.3	Z015.955	105.8	80	50	106x2x52	27	36 (41 ³⁾)	48.2 (48 ³⁾)	45	M8	53	18	M8 x 8	12
						36 (41 ³⁾)	46	60.2	59		64			
						46	55	72.2	77		85			
GS 125.3	Z017.441	119.6	110	70	120x2x60	36 (41 ³⁾)	46	60.2	59	M8	64	18	M8 x 8	12
						46	55	72.2	77		85			
						55	75	98.2	94		95			

Dimensions Couplings (standard), square bore according to ISO 5211



1) Thread with grub screw made of A2

2) Article number refers to unbored version, KN, KS

3) DIN 79

4) Combined flange F05/F07 without spigot (standa d).

As an alternative an individual flange F07 can be ordered with spigot

Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	S H11 over	to	Ø d8 max.	L6	Ø d9 ¹⁾	Ø d15	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SG 03.3/SG 04.3 ED 25 – ED 50	2009.977	24.8	25	17	25x1x24	11	14	14.1 18.1	25	M4	16	5	M4 x 4	6
SG 04.2	2009.992	24.8	35	17	25x1x24	11	14	14.1 18.1	30	M4	16	8	M4 x 4	6
SGC/SGM 04.1/05.1 SVC/SVM 05.1 SG 05.2 SG 05.3 EQ 40 – EQ 150 GS 50.3 F05 GHE 05.1 PF-Q80/150 PF-M25/50	2010.132	31.75	35	20	32x1.25x24	11	14	14.1 18.1 22.2	30	M4	16 20 24	8	M4 x 4	6
SGC/SGM 07.1 SQ 05.2 – F05/F07 ⁴⁾ SQ 07.2 – F05/F07 ⁴⁾ SG 07.2 EQ 40 – EQ 150 GHE 07.1 SVC/SVM 07.1/5 FQM 05.1/07.1	2010.369 2021.449	41.75	35	20	42x1.25x32	11 14 17	14 17 22	18.1 22.2 28.2	30	M5	20 24 31.5	8	M5 x 5	7.5
SG 05.1/SG 07.1	2010.169	41.75	40	20	42x1.25x32	11 14 17	14 17 22	18.1 22.2 28.2	30	M5	20 24 31.5	8	M5 x 5	7.5
SQ 07.2 – F10	2010.658	41.75	60	20	42x1.25x32	11 14 17	14 17 22	18.1 22.2 28.2	30	M5	20 24 31.5	8	M5 x 5	7.5
SGC/SGM 10.1 SQ 10.2 – F10 GS 50.3 GHE 10.1 SG 10.2 EQ 300/EQ 600 PF-Q300/600 PF-M100	2010.302	51.75	45	30	52x1.25x40	14 17 22	17 22 30 ³⁾	22.2 28.2 40.2 ³⁾	30 30 40	M6	24 31.5 41.5	10	M6 x 6	9
SG 10.1	2010.328	51.75	65	35	52x1.25x40	14 17 22	17 22 30 ³⁾	22.2 28.2 40.2 ³⁾	30 30 40	M6	24 31.5 41.5	10	M6 x 6	9
SQ 10.2 – F12	2044.911	51.75	75	30	52x1.25x40	14 17 22	17 22 30 ³⁾	22.2 28.2 40.2 ³⁾	30 30 40	M6	24 31.5 41.5	10	M6 x 6	9
SQ 12.2 – F12 GS 63.3 GHE 12.1 FQM 10.1/12.1	2010.368 2021.415	67.6	55	40	68x2x32	17 22 30 ³⁾	22 30 ³⁾ 36	28.2 40.2 ³⁾ 48.2	30 40 50	M6	31.5 41.5 50	10	M6 x 6	9

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Couplings (standard), square bore according to ISO 5211

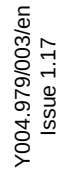
Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	S H11		Ø d8 max.	L6	Ø d9 ¹⁾	Ø d15	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
						over	to							
SG 12.1	Z010.184	67.6	75	40	68x2x32	17	22	28.2	30	M6	31.5	10	M6 x 6	9
						22	30 ³⁾	40.2 ³⁾	40		41.5			
						30 ³⁾	36	48.2	50		50			
SQ 12.2 – F14	Z006.070	67.6	95	40	68x2x32	17	22	28.2	30	M6	31.5	10	M6 x 6	9
						22	30 ³⁾	40.2 ³⁾	40		41.5			
						30 ³⁾	36	48.2	50		50			
SQ 12.2 – F16	Z006.071	67.6	105	40	68x2x32	17	22	28.2	30	M6	31.5	10	M6 x 6	9
						22	30 ³⁾	40.2 ³⁾	40		41.5			
						30 ³⁾	36	48.2	50		50			
SQ 14.2 – F14 GS 80.3	Z010.394	81.6	65	47	82x2x40	22	30 ³⁾	40.2 ³⁾	40	M6	41.5	10	M6 x 6	9
						30 ³⁾	36	48.2	50		50			
						36	46	60.2	50		64			
SQ 14.2 – F16	Z111.676	81.6	115	40	82x2x40	22	30 ³⁾	40.2 ³⁾	40	M6	41.5	10	M6 x 6	9
						30 ³⁾	36	48.2	50		50			
						36	46	60.2	50		64			
GS 100.3	Z015.955	105.8	80	50	106x2x52	30 ³⁾	36	48.2	50	M8	50	18	M8 x 8	12
						36	46	60.2	50		64			
						46	55	72.2	60		82			
GS 125.3	Z017.441	119.6	110	70	120x2x60	36	46	60.2	50	M8	64	18	M8 x 8	12
						46	55	72.2	60		82			
						55	75	98.2	80		95			

6 Spare parts lists

Smart Range

SGC 04.1 – SGC 10.1 / SGCR 04.1 – SGCR 10.1	90
SGC 12.1	92
SGC 04.1 – SGC 10.1 / SGCR 04.1 – SGCR 10.1 Fieldbus	94
SGC 12.1 Fieldbus	96
SVC 05.1 – SVC 07.5 / SVCR 05.1 – SVCR 07.5	98
SVC 05.1 – SVC 07.5 / SVCR 05.1 – SVCR 07.5 Fieldbus	100

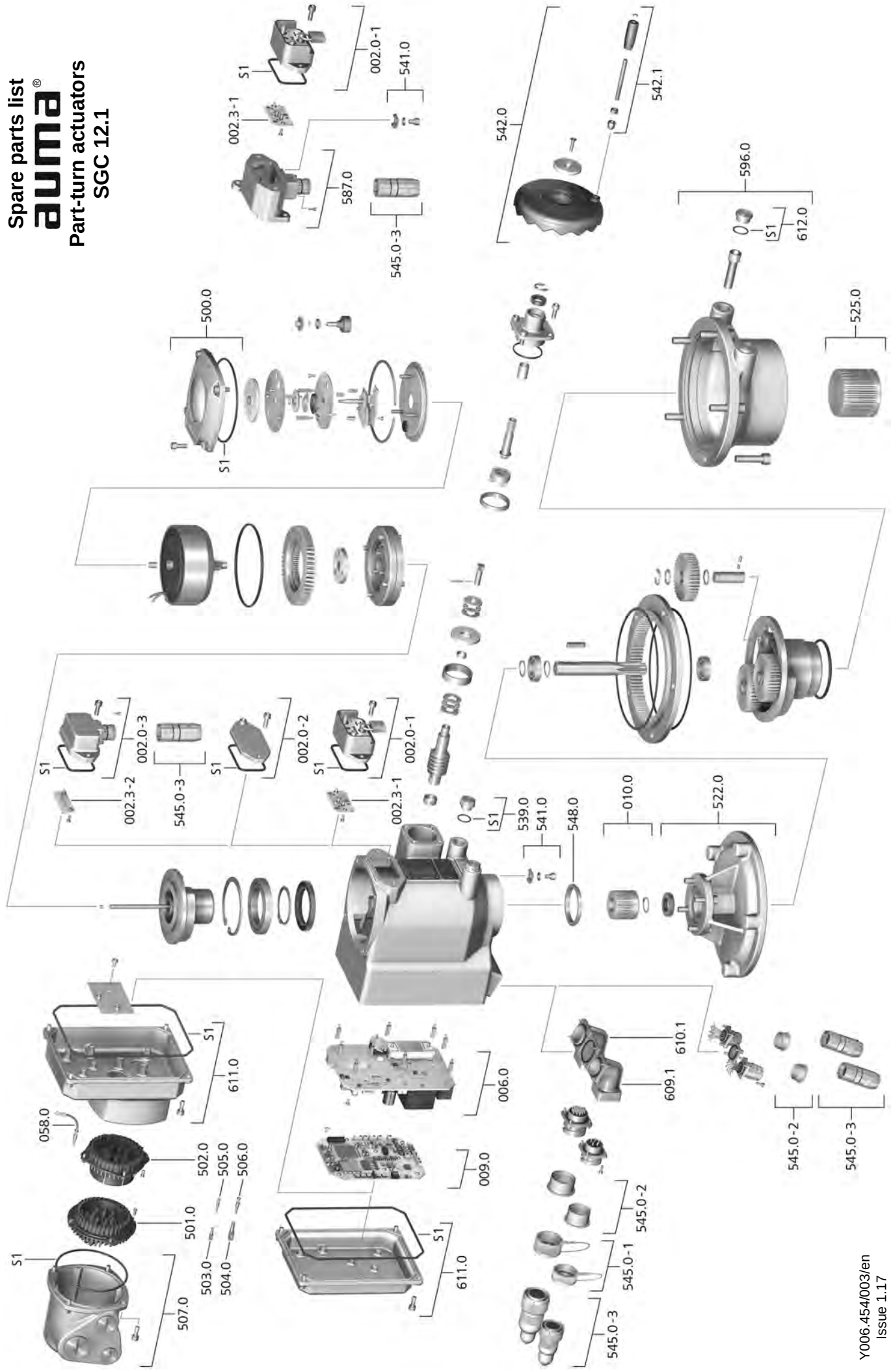
Part-turn actuators
SGC 04.1 – SGC 10.1
SGCR 04.1 – SGCR 10.1



Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type
002.0-1	Local controls	Sub-assembly
002.0-2	Cover (for version without local controls)	Sub-assembly
002.0-3	Cover with socket for connecting separately mounted local controls	Sub-assembly
002.3-1	Board for local controls 002.0-1	Sub-assembly
002.3-2	Board in connecting cover 002.0-3	Sub-assembly
006.0	Power supply unit/switchgear	Sub-assembly
009.0	Logic board	Sub-assembly
058.0	Wire for protective earth	
500.0	Cover	Sub-assembly
501.0	Socket carrier (complete with sockets)	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
503.0	Socket for control	Sub-assembly
504.0	Socket for motor	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
525.0	Coupling	Sub-assembly
539.0	Screw plug	
541.0	Protective earth connection	Sub-assembly
542.0	Handwheel	Sub-assembly
542.1	Ball handle	Sub-assembly
545.0-1	Protective cap with cord	Sub-assembly
545.0-2	Protective cap without cord	Sub-assembly
545.0-3	Mating plug	Sub-assembly
587.0	Wall bracket	
611.0	Cover	Sub-assembly
S1	Seal kit, small	Set

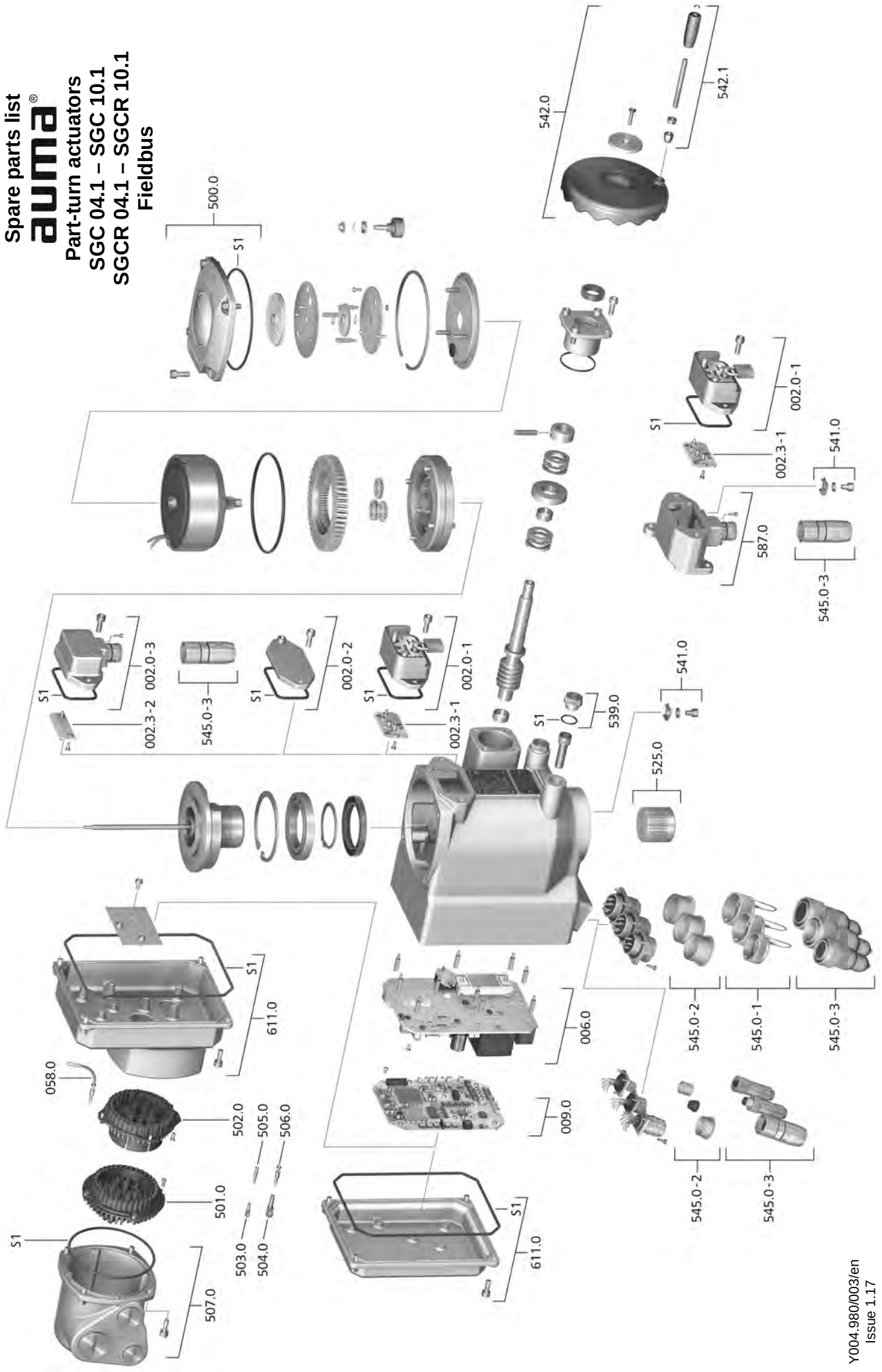
Spare parts list
auma®
 Part-turn actuators
 SGC 12.1



Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type
002.0-1	Local controls	Sub-assembly
002.0-2	Cover (for version without local controls)	Sub-assembly
002.0-3	Cover with socket for connecting separately mounted local controls	Sub-assembly
002.3-1	Local controls board for 022.0-1	Sub-assembly
002.3-2	Board in connecting cover for 022.0-3	Sub-assembly
006.0	Power supply unit/switchgear	
009.0	Logic board	Sub-assembly
010.0	Coupling	Sub-assembly
058.0	Wire for protective earth	Sub-assembly
500.0	Cover	Sub-assembly
501.0	Socket carrier (complete with sockets)	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
503.0	Socket for control	Sub-assembly
504.0	Socket for motor	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
522.0	Flange	Sub-assembly
525.0	Coupling	Sub-assembly
539.0	Screw plug	
541.0	Protective earthing	Sub-assembly
542.0	Handwheel	Sub-assembly
542.1	Ball handle	Sub-assembly
545.0-1	Protective cap with cord	Sub-assembly
545.0-2	Protective cap without cord	Sub-assembly
545.0-3	Mating plug	Sub-assembly
548.0	Spigot ring	
587.0	Wall bracket	
596.0	Output drive flange	Sub-assembly
609.1	Angle adapter for mains cables	Sub-assembly
610.1	Angle adapter for control contacts	Sub-assembly
611.0	Cover	Sub-assembly
612.0	Screw plug for end stop	
S1	Seal kit, small	Set

Spare parts list
auma®
 Part-turn actuators
 SGC 04.1 – SGC 10.1
 SGCR 04.1 – SGCR 10.1
 Fieldbus



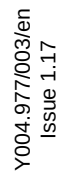
Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type
002.0-1	Local controls	Sub-assembly
002.0-2	Cover (for version without local controls)	Sub-assembly
002.0-3	Cover with socket for separately mounted local controls	Sub-assembly
002.3-1	Board for local controls 002.0-1	Sub-assembly
002.3-2	Board in connecting cover 002.0-3	Sub-assembly
006.0	Power supply unit/switchgear	Sub-assembly
009.0	Logic board	
058.0	Wire for protective earth	Sub-assembly
500.0	Cover	Sub-assembly
501.0	Socket carrier (complete with sockets)	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
503.0	Socket for control	Sub-assembly
504.0	Socket for motor	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
525.0	Coupling	Sub-assembly
544.0	Screw plug	
541.0	Protective earth connection	Sub-assembly
542.0	Handwheel	Sub-assembly
542.1	Ball handle	Sub-assembly
545.0-1	Protective cap with cord	Sub-assembly
545.0-2	Protective cap without cord	Sub-assembly
545.0-3	Mating plug	Sub-assembly
587.0	Wall bracket	
611.0	Cover	Sub-assembly
S1	Seal kit, small	Set

Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type
002.0-1	Local controls	Sub-assembly
002.0-2	Cover (for version without local controls)	Sub-assembly
002.0-3	Cover with socket for connecting separately mounted local controls	Sub-assembly
002.3-1	Local controls board for 022.0-1	Sub-assembly
002.3-2	Board in connecting cover for 022.0-3	Sub-assembly
006.0	Power supply unit/switchgear	
009.0	Logic board	Sub-assembly
010.0	Coupling	Sub-assembly
058.0	Wire for protective earth	Sub-assembly
500.0	Cover	Sub-assembly
501.0	Socket carrier (complete with sockets)	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
503.0	Socket for control	Sub-assembly
504.0	Socket for motor	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
522.0	Flange	Sub-assembly
525.0	Coupling	Sub-assembly
539.0	Screw plug	
541.0	Protective earthing	Sub-assembly
542.0	Handwheel	
542.1	Ball handle	Sub-assembly
545.0-1	Protective cap with cord	Sub-assembly
545.0-2	Protective cap without cord	Sub-assembly
545.0-3	Mating plug	Sub-assembly
548.0	Spigot ring	
587.0	Wall bracket	
596.0	Output drive flange	Sub-assembly
609.1	Angle adapter for mains cables	Sub-assembly
610.1	Angle adapter for control contacts	Sub-assembly
611.0	Cover	Sub-assembly
612.0	Screw plug for end stop	
S1	Seal kit, small	Set

Globe valve actuators
SVC 05.1 – SVC 07.5
SVCR 05.1 – SVCR 07.5



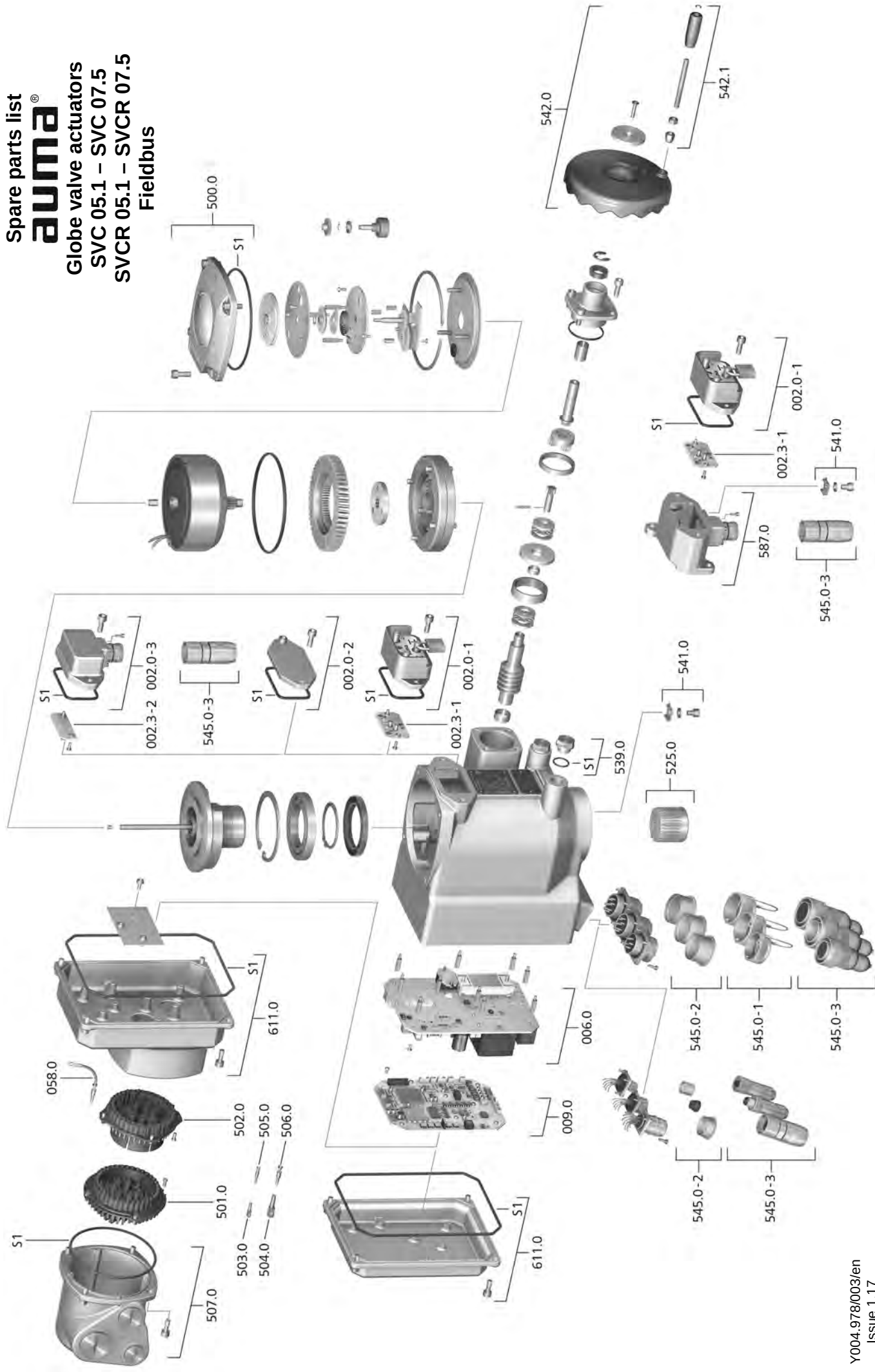
SVC 05.1 – SVC 07.5
SVCR 05.1 – SVCR 07.5
Spare parts list Globe valve actuators



Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type
002.0-1	Local controls	Sub-assembly
002.0-2	Cover (for version without local controls)	Sub-assembly
002.0-3	Cover with socket for separately mounted local controls	Sub-assembly
002.3-1	Board for local controls 002.0-1	Sub-assembly
002.3-2	Board in connecting cover 002.0-3	Sub-assembly
006.0	Power supply unit/switchgear	Sub-assembly
009.0	Logic board	
058.0	Wire for protective earth	Sub-assembly
500.0	Cover	Sub-assembly
501.0	Socket carrier (complete with sockets)	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
503.0	Socket for control	Sub-assembly
504.0	Socket for motor	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
525.0	Coupling	Sub-assembly
544.0	Screw plug	
541.0	Protective earth connection	Sub-assembly
542.0	Handwheel	Sub-assembly
542.1	Ball handle	Sub-assembly
545.0-1	Protective cap with cord	Sub-assembly
545.0-2	Protective cap without cord	Sub-assembly
545.0-3	Mating plug	Sub-assembly
587.0	Wall bracket	
611.0	Cover	Sub-assembly
S1	Seal kit, small	Set

Spare parts list
auma®
 Globe valve actuators
 SVC 05.1 – SVC 07.5
 SVCr 05.1 – SVCr 07.5
 Fieldbus



Spare parts list Globe valve actuators Fieldbus

Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type
002.0-1	Local controls	Sub-assembly
002.0-2	Cover (for version without local controls)	Sub-assembly
002.0-3	Cover with socket for separately mounted local controls	Sub-assembly
002.3-1	Board for local controls 002.0-1	Sub-assembly
002.3-2	Board in connecting cover 002.0-3	Sub-assembly
006.0	Power supply unit/switchgear	Sub-assembly
009.0	Logic board	
058.0	Wire for protective earth	Sub-assembly
500.0	Cover	Sub-assembly
501.0	Socket carrier (complete with sockets)	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
503.0	Socket for control	Sub-assembly
504.0	Socket for motor	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
525.0	Coupling	Sub-assembly
544.0	Screw plug	
541.0	Protective earth connection	Sub-assembly
542.0	Handwheel	Sub-assembly
542.1	Ball handle	Sub-assembly
545.0-1	Protective cap with cord	Sub-assembly
545.0-2	Protective cap without cord	Sub-assembly
545.0-3	Mating plug	Sub-assembly
587.0	Wall bracket	
611.0	Cover	Sub-assembly
S1	Seal kit, small	Set

7 Wiring diagrams

Basic Range

Selection of wiring diagrams

104

Smart Range

Selection of wiring diagrams

117

Wiring diagram selection

The short designations (B1 etc.) are descriptive numberings.

SBA synchronous motor / 1-phase AC 230 V

B1:	2 x switches for torque, heater Represented options:
	• Additional limit switches • Potentiometer • Position feedback signal (0/4 – 20 mA) • Positioning electronics
	28H-170.050.20

SBA asynchronous motor / 1-phase AC 230 V with thermoswitches

B2:	2 x switches for torque, heater Represented options:
	• Additional limit switches • Additional torque switches • Potentiometer • Position feedback signal (0/4 – 20 mA)
	28H-170.050.03

SBA asynchronous motor / 1-phase AC 400 V with thermoswitches

B3:	External reversing contactor unit 2 x switches for torque, heater Represented options:
	• Additional limit switches • Additional torque switches • Potentiometer • Position feedback signal (0/4 – 20 mA)
	28H-170.050.100

SBA DC motor 24 V

B4:	External reversing contactor unit 2 x switches for torque, heater Represented options:
	• Additional limit switches • Potentiometer • Position feedback signal (0/4 – 20 mA)
	28H-170.050.80

SBA DC motor 24 V

B5:	2 x switches for torque, heater Positioning electronics (including reversing contactor unit) Represented options:
	• Additional limit switches • Potentiometer • Position feedback signal (0/4 – 20 mA) • Positioning electronics
	28H-170.050.86

NR / 1-phase AC

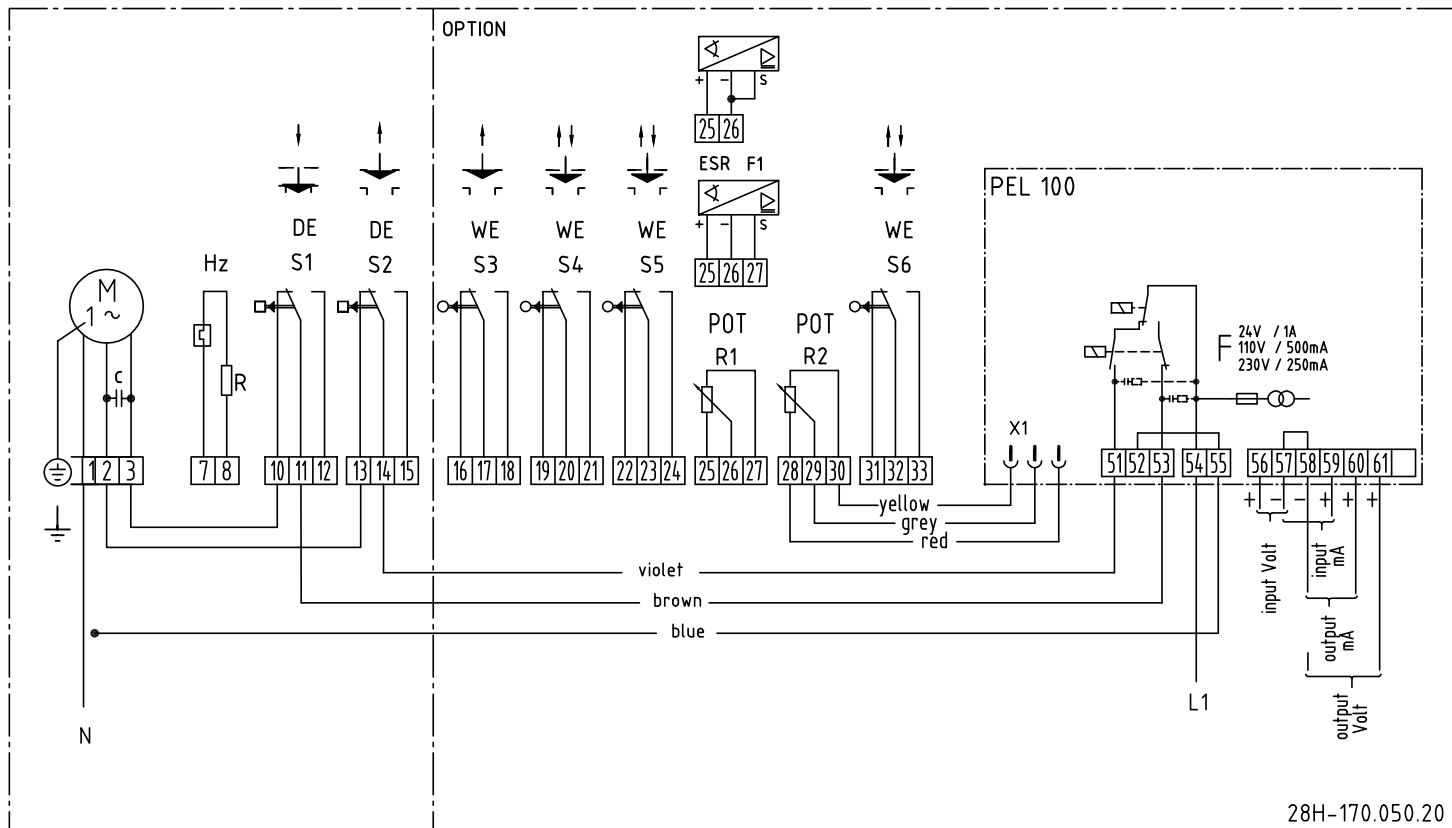
C1:	2 x limit switches Represented options:
	• Additional limit switches • Potentiometer • Positioning electronics
	NR2.1-170.050.10

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Wiring diagram selection

ED / DC 24 V	
D1:	External reversing contactor unit 2 x limit switches Represented options: • Additional limit switches • Heater • Potentiometer • Position feedback signal (0/4 – 20 mA) ED50-170.050.01
EQ / 1-phase AC 230 V	
D2:	2 x limit switches, 2 x torque switches Represented options: • Additional limit switches • Heater • Potentiometer • Position feedback signal (0/4 – 20 mA) EQ150-170.050.00
EQ / Gleichstrom 24 V	
D3:	External reversing contactor unit 2 x limit switches, 2 x torque switches Represented options: • Additional limit switches • Heater • Potentiometer • Position feedback signal (0/4 – 20 mA) EQ150-170.050.01
EQ / 3-phase AC 400 V	
D4:	Internal reversing contactor unit 2 x limit switches, 2 x torque switches Represented options: • Additional limit switches • Heater • Potentiometer • Position feedback signal (0/4 – 20 mA) EQ150-170.050.02
EQ / 1-phase AC 230 V	
D5:	2 x limit switches, 2 x torque switches Represented options: • Additional limit switches • Heater • Potentiometer • Positioning electronics • Position feedback signal (0/4 – 20 mA) EQ150-170.050.03

OPTION



28H-170.050.20

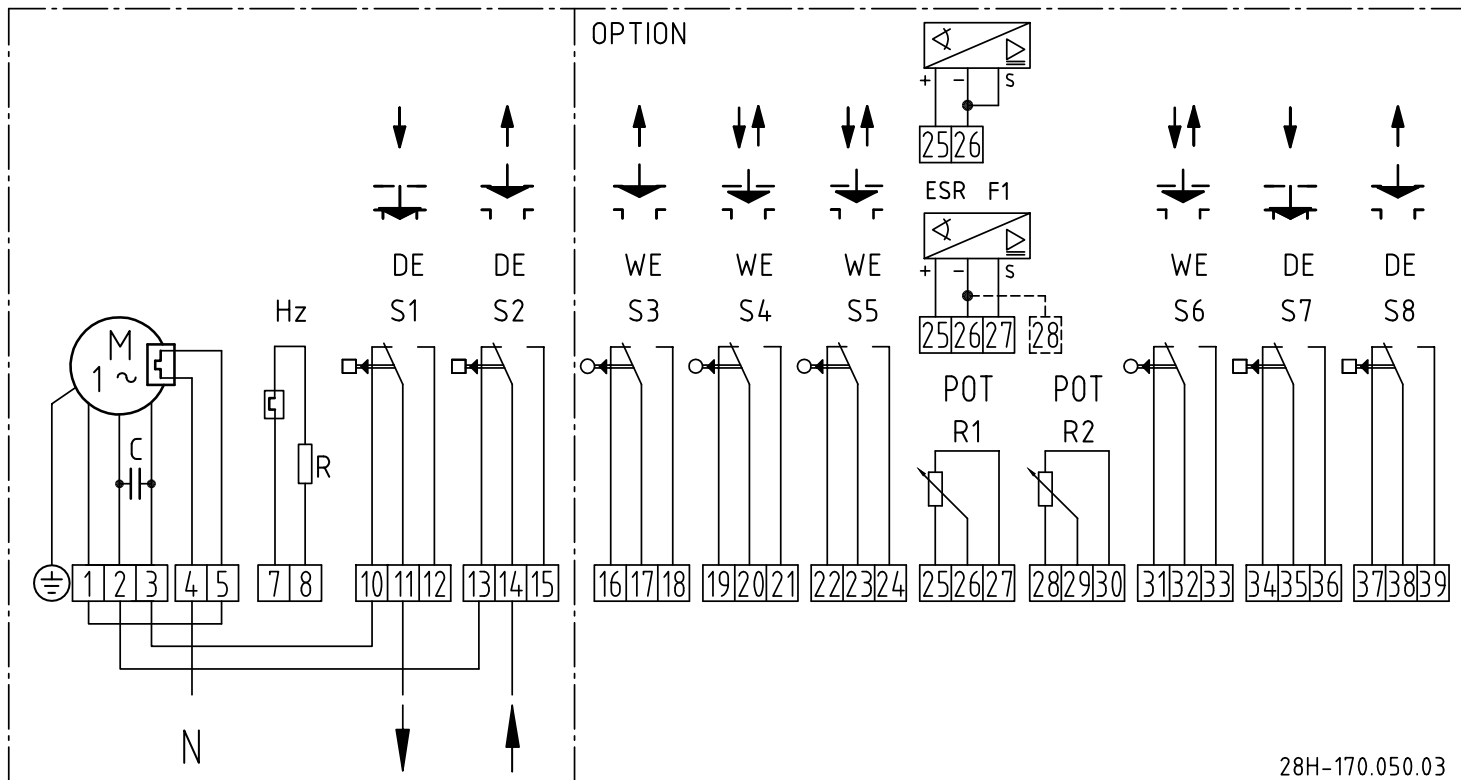
Code: B1

Schaltplan SBA80 mit Synchronmotor, 1x 230V, ESR und PEL

28H-170.050.20

auma®

	Datum	Name
Bearb.	25.02.2005	Opiela
Gepr.	25.02.2005	Opiela
Datei	28H-170_050_20	



28H-170.050.03

Code: B2

Schaltplan SBA80, mit Asynchronmotor, mit Thermowächter
und ESR

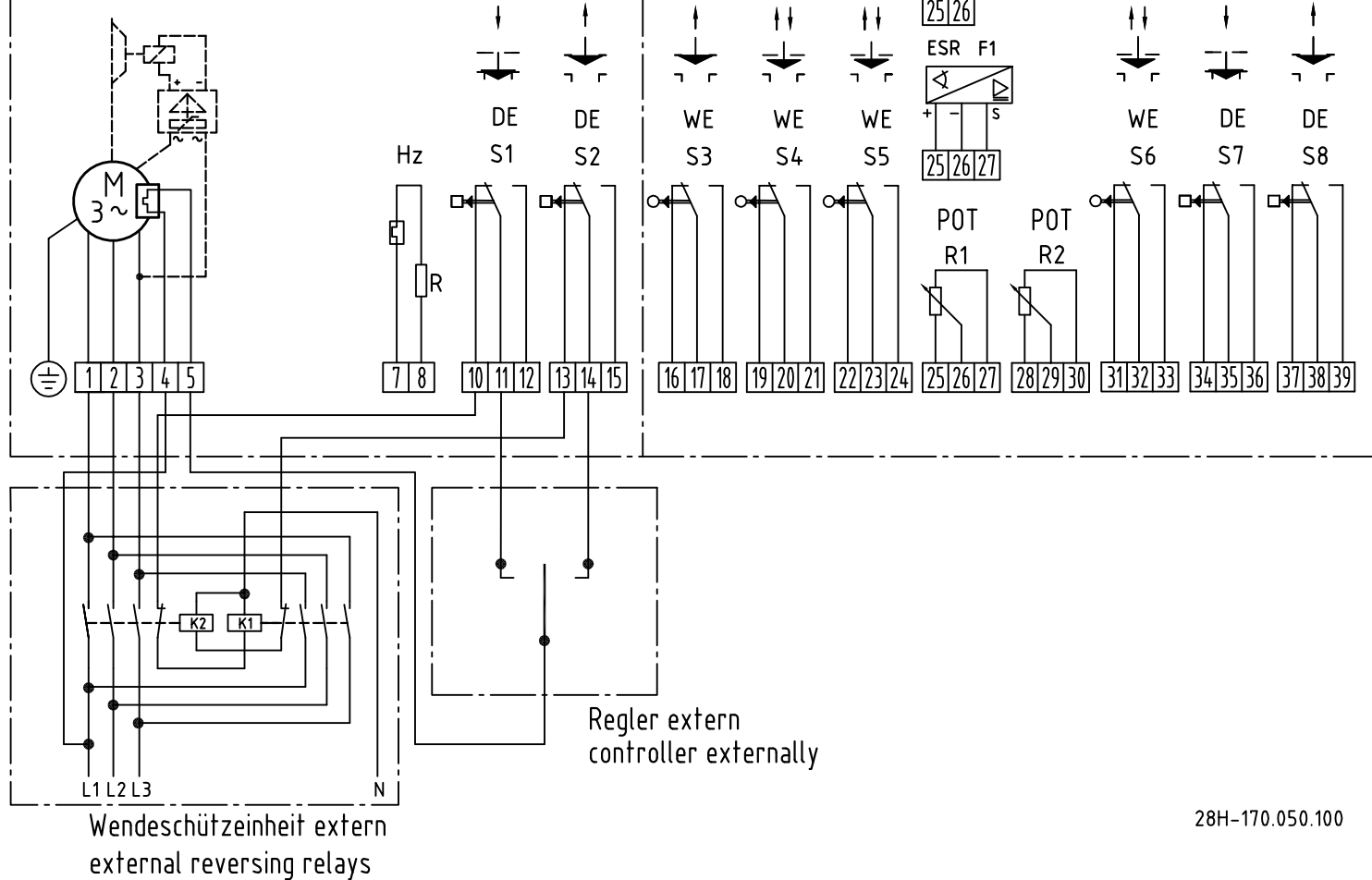
28H-170.050.03

auma®

	Datum	Name
Bearb.	03.03.2004	Opiela
Gepr.	03.03.2004	Opiela
Datei	28H-170_050_03	

SBA80 - SBA200

OPTION



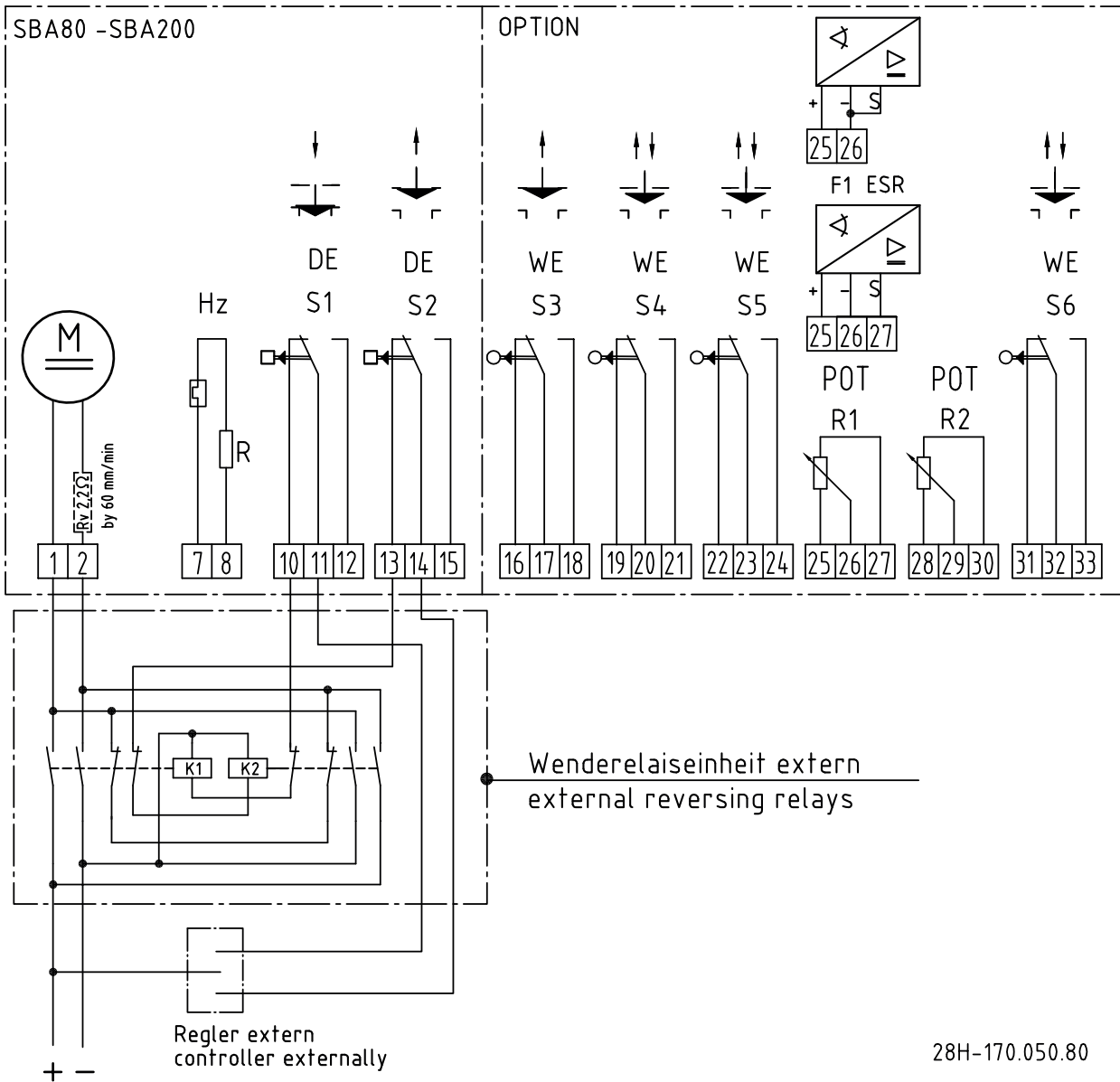
Code: B3

Schaltplan SBA80 , Asynchronmotor 3x 400V, Thermowächter,
mit externer Wendeschützeinheit

28H-170.050.100

auma®

	Datum	Name
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Gepr.	15.11.2004	Opiela
Datei	28H-170_050_100	



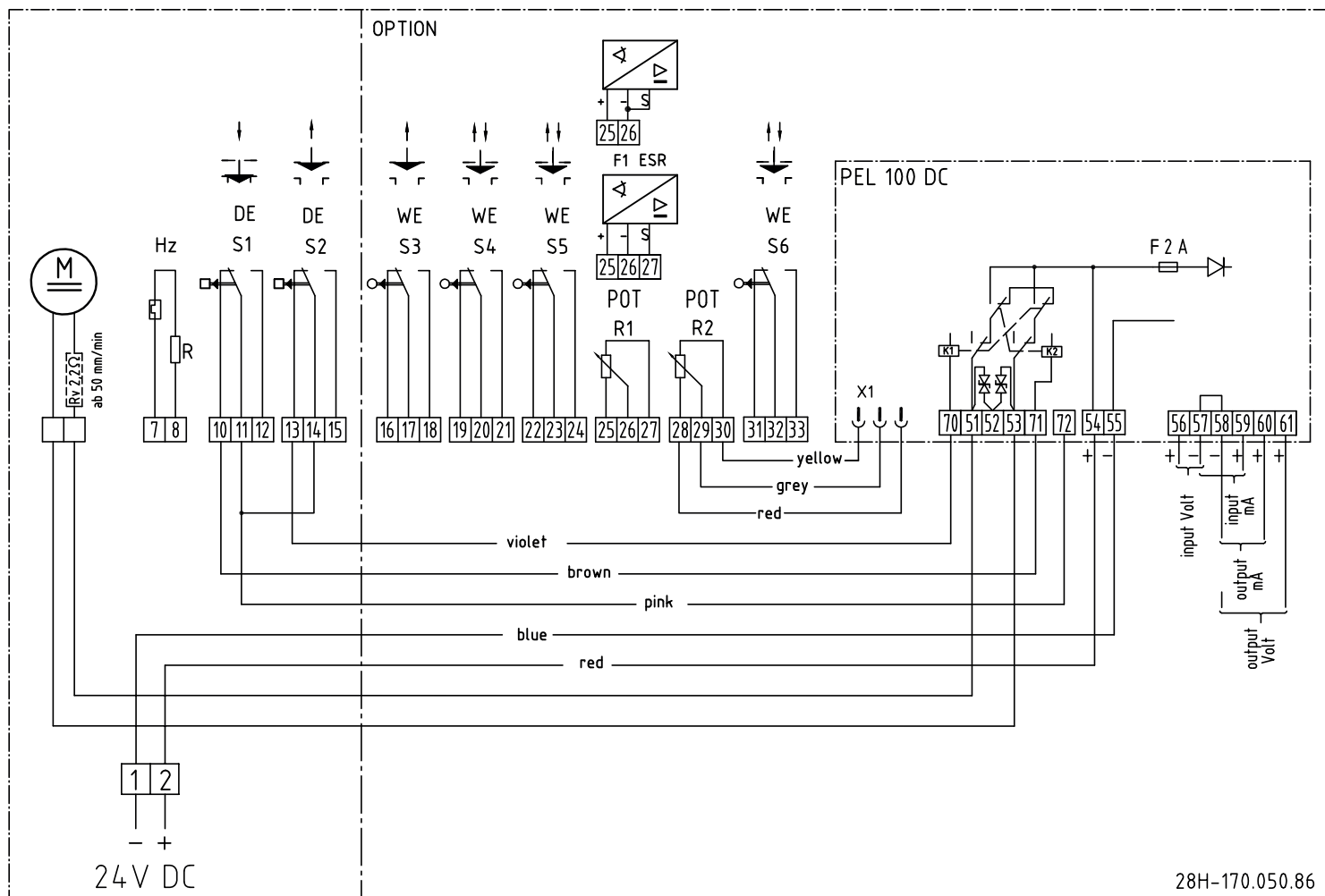
Code: B4

Schaltplan SBA80 - SBA200, Gleichstrom, ESR,
mit externer Wenderelaiseinheit

28H-170.050.80

auma®

	Datum	Name
Bearb.	28.10.2004	Opiela
Gepr.	02.07.2008	Opiela
Datei	28H-170 050 80	



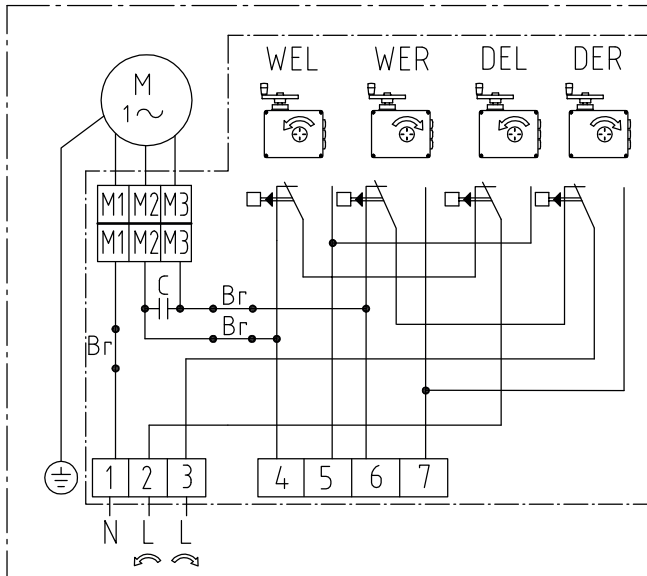
Code: B5

Schaltplan SBA80 Gleichstrom 24V mit PEL

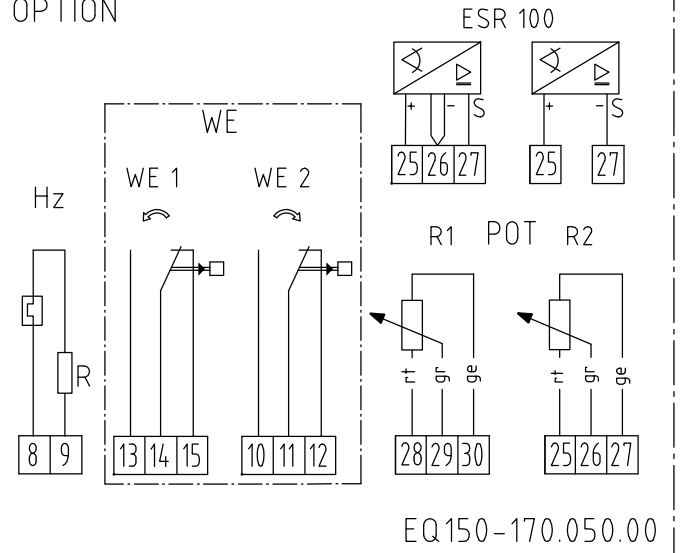
28H-170.050.86

auma®

	Datum	Name
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Gepr.	10.11.2005	Opiela
Datei	28H-170_050_86	



OPTION



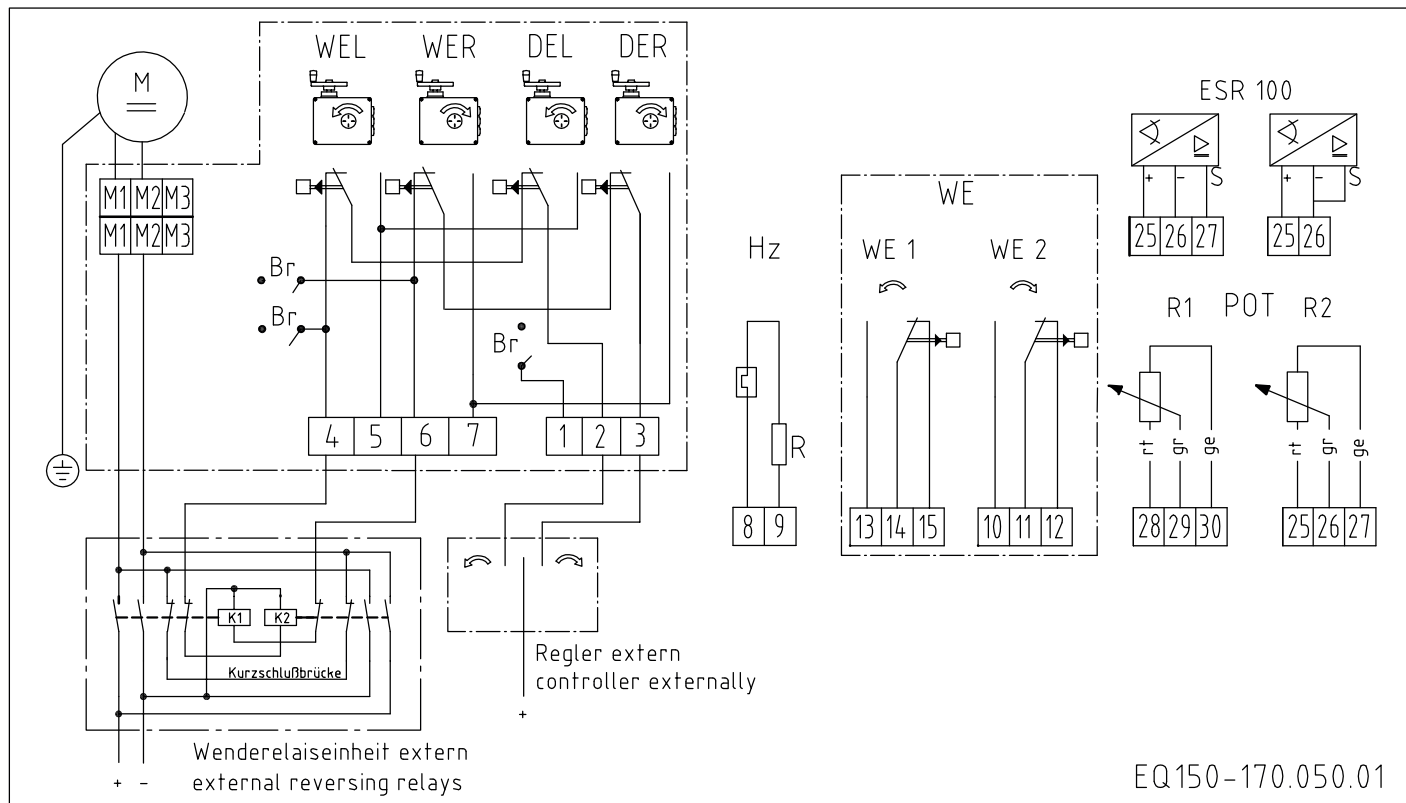
Code: D2

Schaltplan EQ150 mit 2WE, 2 POTI, HZ

EQ150-170.050.00

auma®

	Datum	Name
Bearb.	24.03.2010	Morlang
Gepr.	06.10.2010	Morlang
Datei	EQ150-170_050_00	



EQ150-170.050.01

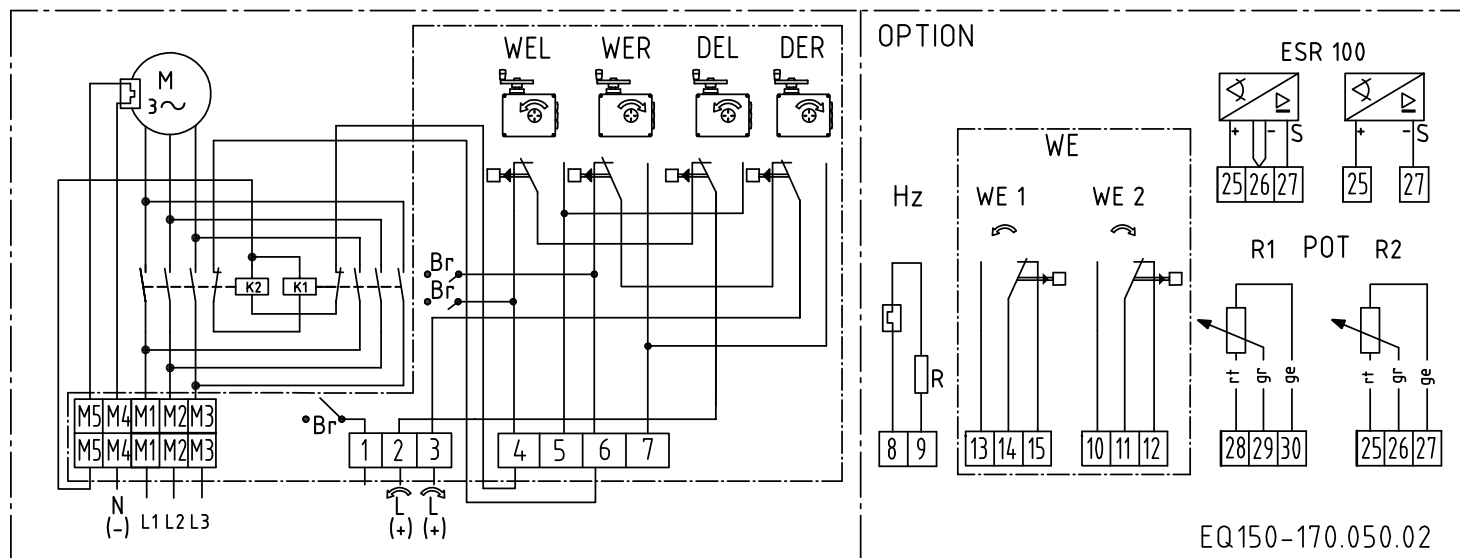
Code: D3

Schaltplan EQ150 DC mit 2WE, 2 POTI, HZ, ESR

EQ150-170.050.01

auma®

	Datum	Name
Bearb.	18.03.2010	Morlang
Gepr.	06.10.2010	Morlang
Datei	EQ150-170.050.01	



Code: D4

Schaltplan EQ150 3~ mit int. Wendeschütz, 2WE, 2 POTI, HZ, ESP

EQ150-170.050.02

auma®

	Datum	Name
Bearb.	18.03.2010	Morlang
Gepr.	06.10.2010	Morlang
Datei	EQ150-170.050.02	

Wiring diagram selection

The short designations (E1 etc.) are descriptive numberings.

SGC/SVC basic version (I/O) / open-close duty / 1-phase AC 115 V or 230 V

E1:	3 x binary inputs (24 V DC): OPEN, STOP, CLOSE 4 x binary outputs: OPEN, CLOSE, torque fault, REMOTE Position feedback signal (0/4 – 20 mA)
	Industrial plug TPCB-0E6-2C7-0530 TPA50R200-0A0-000
	AUMA plug/socket connector: TPCB-0E6-2C7-0000 TPA50R200-0A0-000

SGC/SVC basic version (I/O) / modulating duty / 1-phase AC 115 V or 230 V

E2:	4 x binary inputs (24 V DC): OPEN, STOP, CLOSE, MODE 4 x binary outputs: OPEN, CLOSE, torque fault, REMOTE Position feedback signal (0/4 – 20 mA) Positioner (0/4 – 20 mA)
	Industrial plug TPCB-1H6-2C7-0530 TPA50R200-0A0-000
	AUMA plug/socket connector: TPCB-1H6-2C7-0000 TPA50R200-0A0-000

SGC/SVC Profibus DP / open-close duty and modulating duty / 1-phase AC 115 V or 230 V

E3:	Position feedback signal and positioner
	Industrial plug TPCBA000-2A7-0540 TPA50R200-0A0-000
	AUMA plug/socket connector: TPCBA000-2A7-0000 TPA50R200-0A0-000

SGC/SVC Modbus RTU / open-close duty and modulating duty / 1-phase AC 115 V or 230 V

E4:	Position feedback signal and positioner
	Industrial plug TPCBC000-2A7-0540 TPA50R200-0A0-000
	AUMA plug/socket connector: TPCBC000-2A7-0000 TPA50R200-0A0-000

SDM/SDL 1-phase AC 230 V

F1:	3 x binary inputs: CLOSE, OPEN, MODE (change-over between analogue and 3-point control) 1 x binary output: Fault Contact for zero adjustment Position feedback signal(0/4 – 20 mA) Positioner (0/4 – 20mA)
	SD25-170.050.03

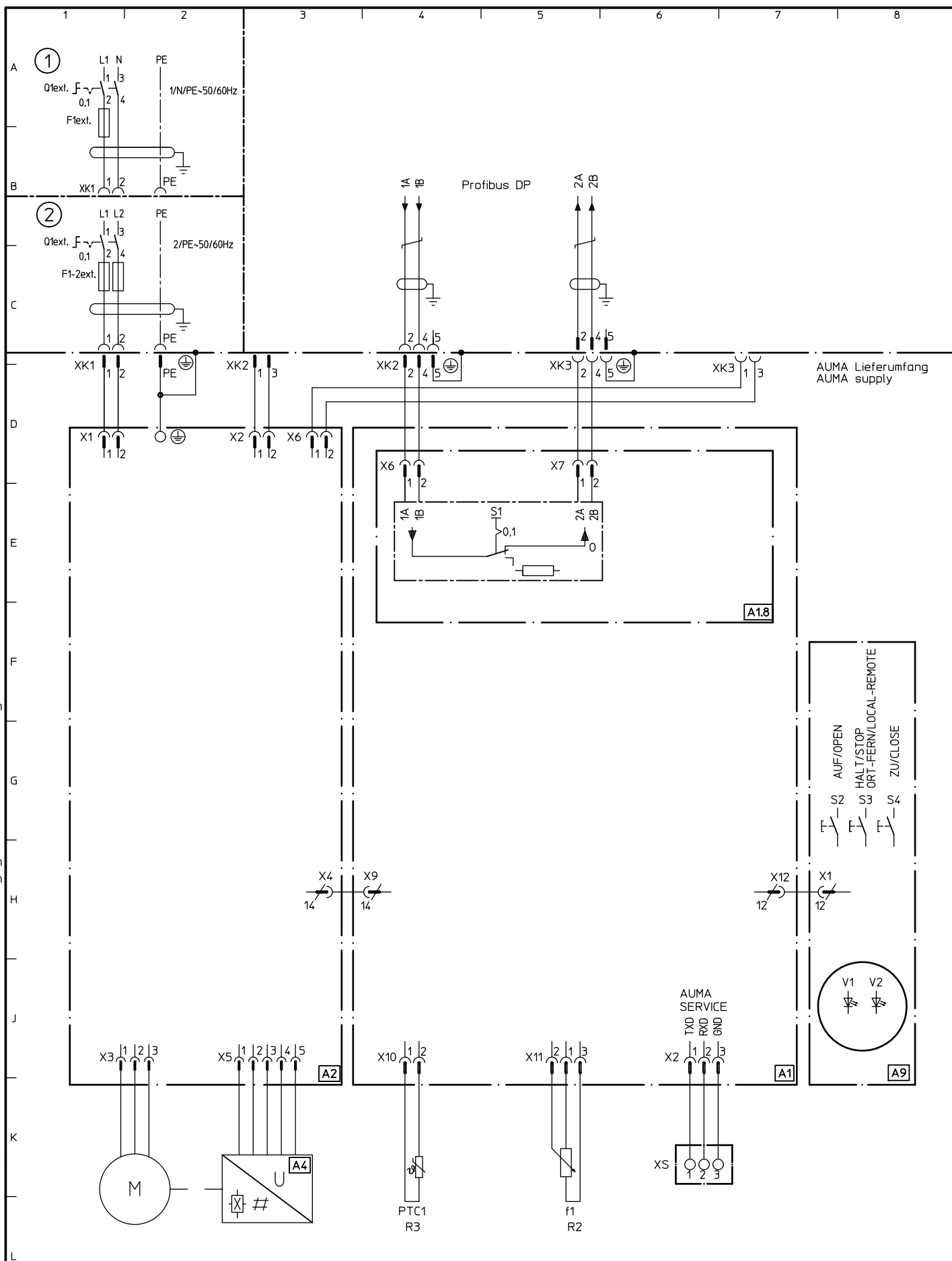
SDM/SDL 1-phase AC 230 V

F2:	3 x binary inputs: CLOSE, OPEN, MODE (change-over between analogue and 3-point control) 4 x binary outputs (relays): OPEN, CLOSE, intermediate position, fault Contact for zero adjustment Position feedback signal(0/4 – 20 mA) Positioner (0/4 – 20mA)
	SD25-170.050.06

SDM/SDL DC 24 V

F3:	3 x binary inputs: CLOSE, OPEN, MODE (change-over between analogue and 3-point control) 1 x binary output: Fault Contact for zero adjustment Position feedback signal(0/4 – 20 mA) Positioner (0/4 – 20mA)
	SD25-170.050.01

Für diese Zeichnung gelten die Bestimmungen über den Schutz für Urheberrecht.



Code: E3

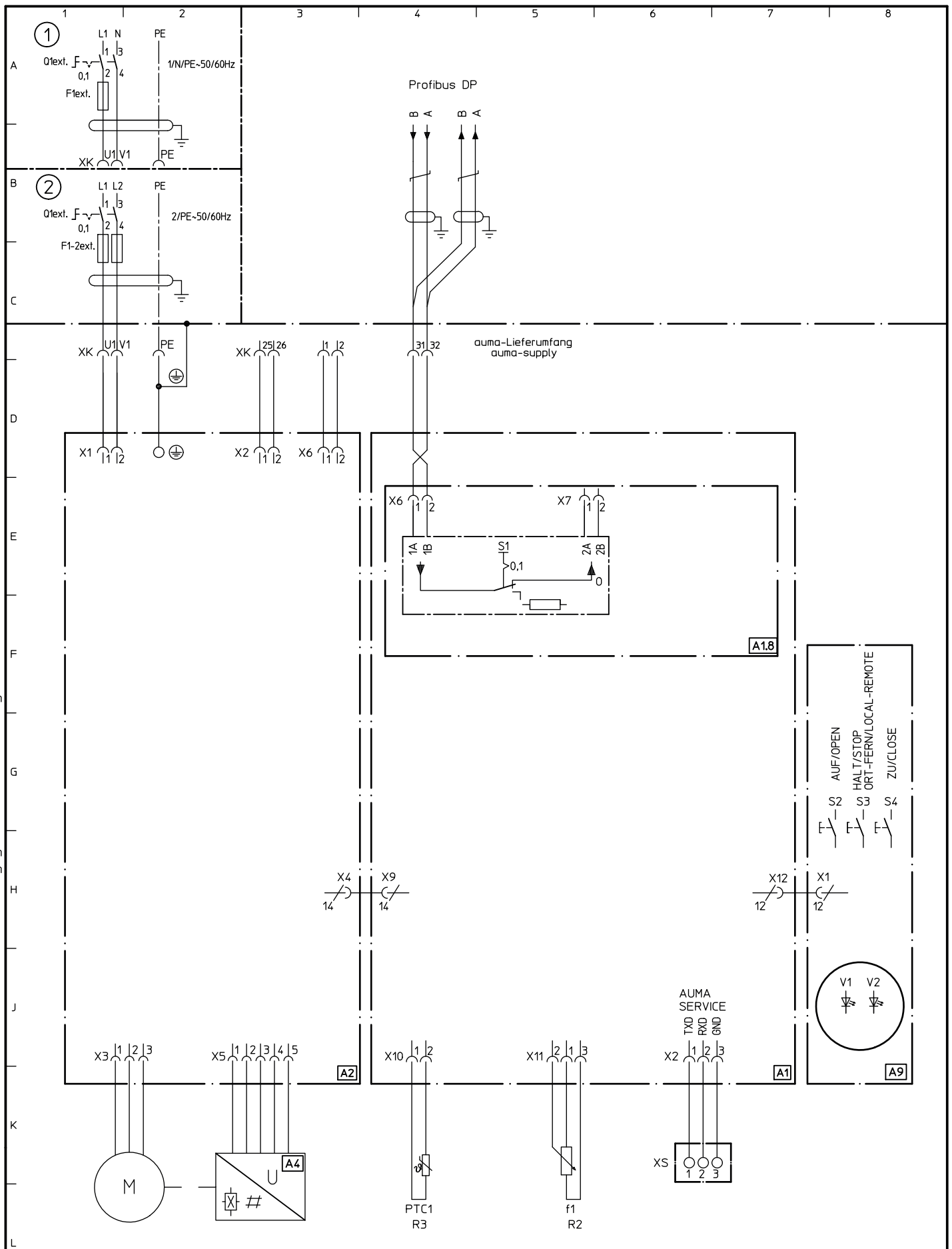
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02	2016-005	2016-06-07	Roe	Bearb. Roemer
01	2016-005	2016-01-20	Mey	Gepr. Meyer
Zust.	Änderung	Datum	Name	Norm Meyer

auma[®]
AUMA Riester GmbH & Co. KG

TPCBA000-2A7-0540 TPA50R200-0A0-000

Legende	Auftragsnummer	Bestellnummer
		Projekt

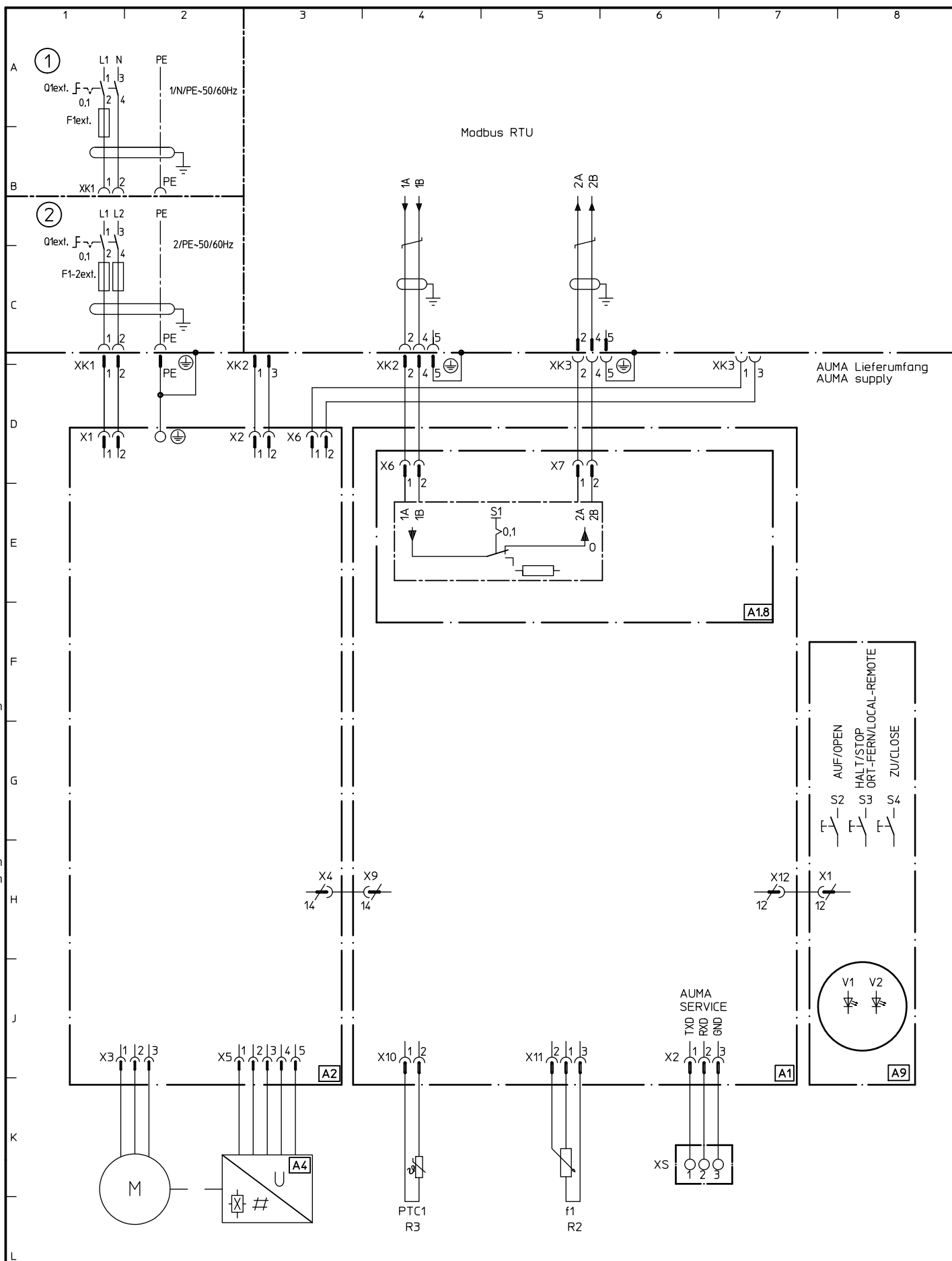
Für diese Zeichnung gelten die Bestimmungen über den Schutz für Urheberrecht.



Code: E3

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04	2016-005	2016-01-20	Mey	Bearb.	Roemer		Legende	Auftragsnummer	Bestellnummer
03	2015-042	2015-02-10	Roe	Gepr.	Meyer				
Zust.	Änderung	Datum	Name	Norm	Meyer		Projekt		

Für diese Zeichnung gelten die Bestimmungen über den Schutz für Urheberrecht.



Code: E4

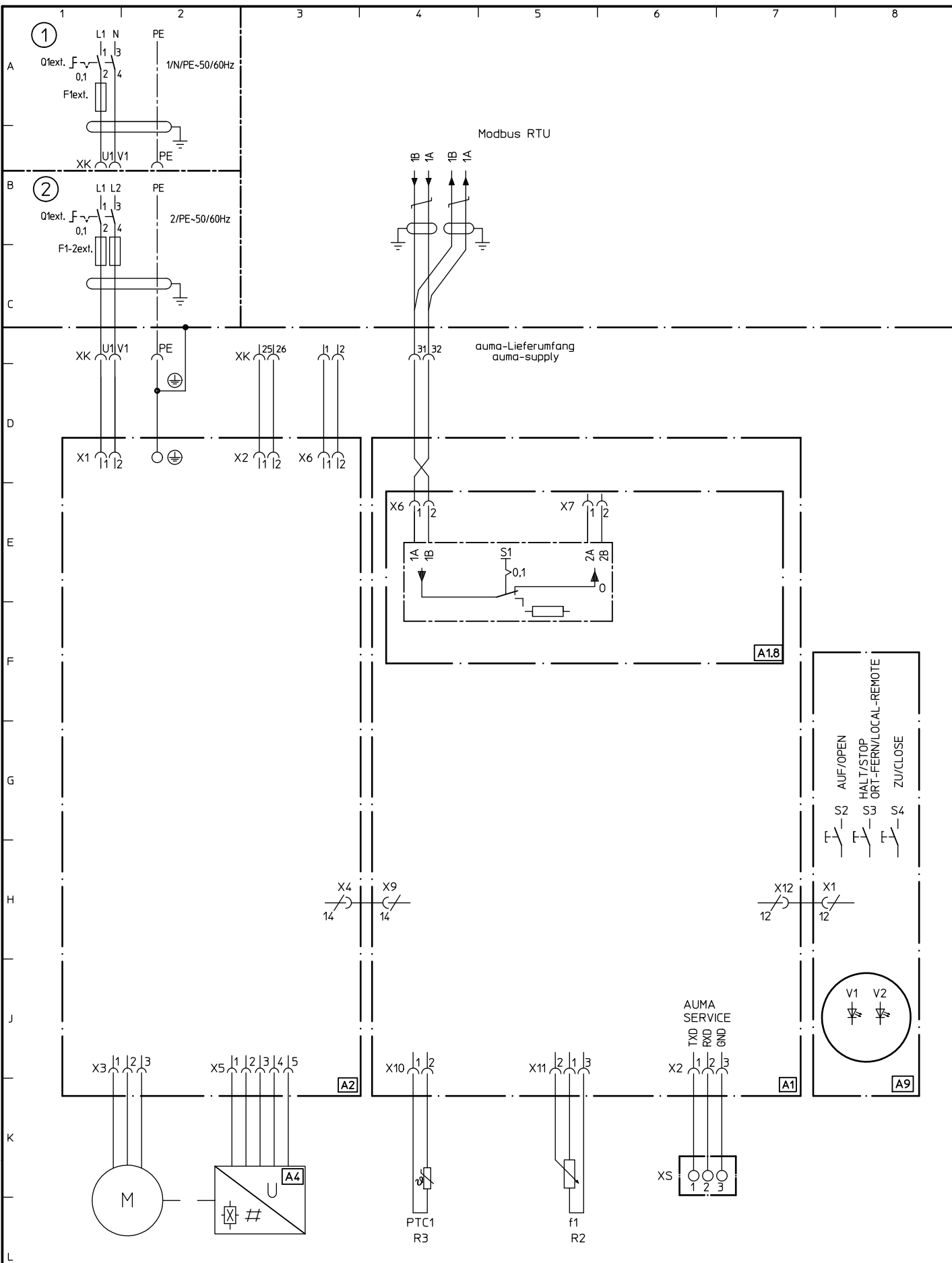
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Zust.	Änderung	Datum	Name	Norm Meyer

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TPCBC000-2A7-0540 TPA50R200-0A0-000

Legende	Auftragsnummer	Bestellnummer
		Projekt

Für diese Zeichnung gelten die Bestimmungen über den Schutz für Urheberrecht.

**Code: E4**

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04	2016-005	2016-01-26	Mey	Gepr.	Meyer
Zust.	Änderung	Datum	Name	Norm	Meyer

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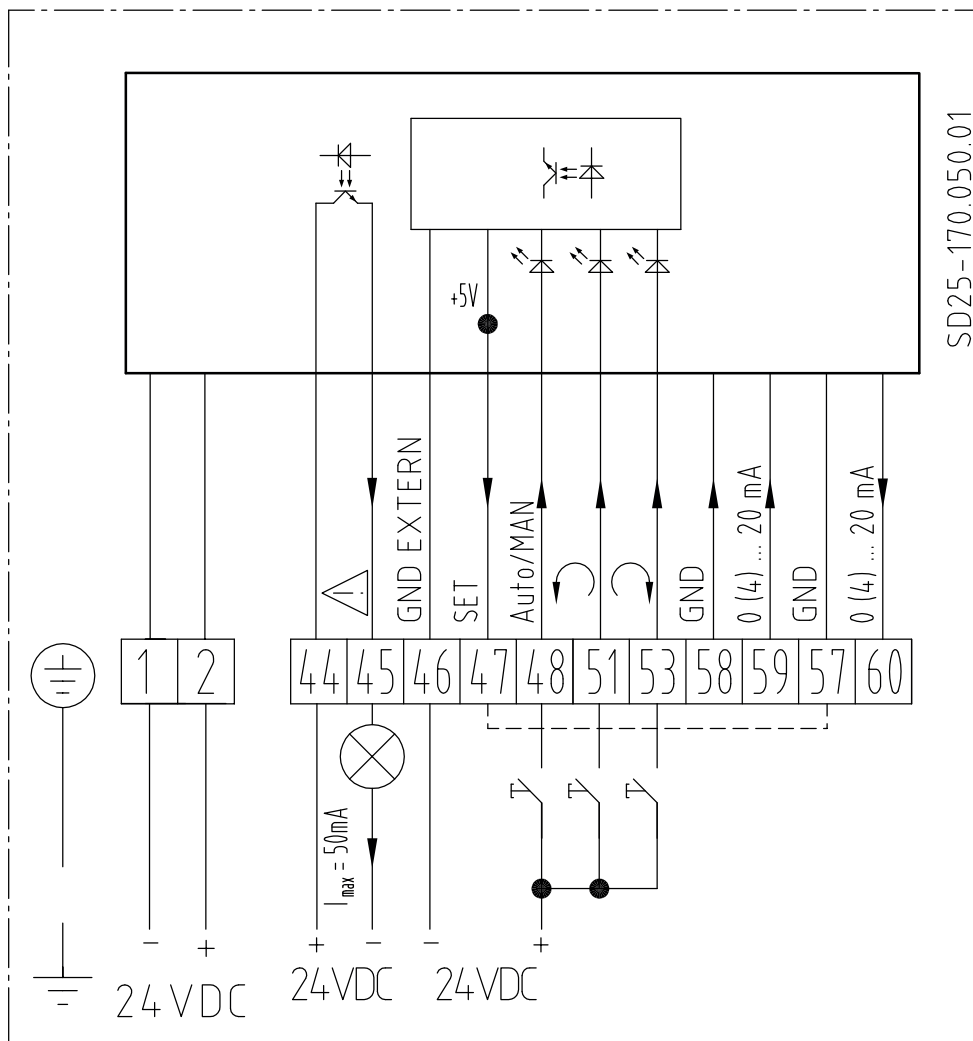
TPCBC000-2A7-0000 TPA50R200-0A0-000

Legende

Auftragsnummer

Bestellnummer

Projekt



SD25-170.050.01

Code: F1

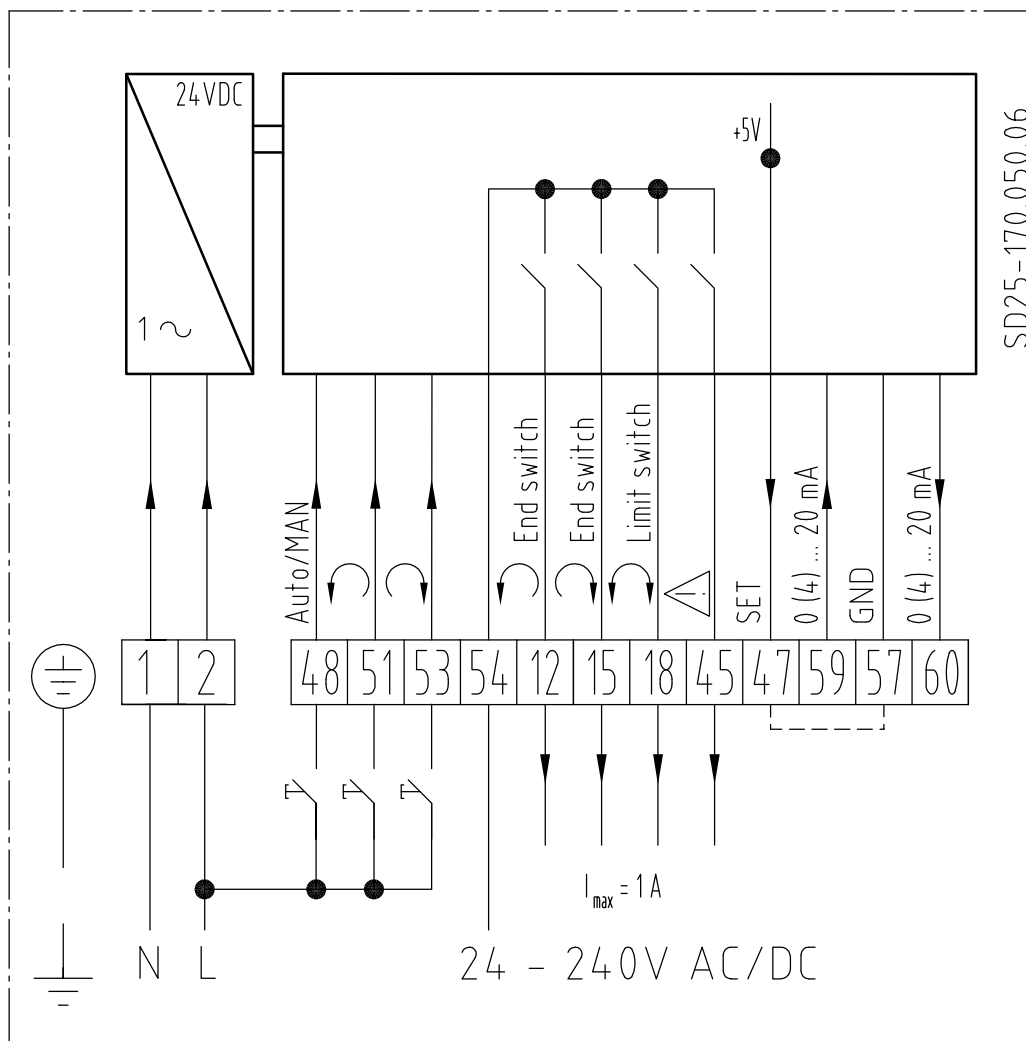
Schaltplan für SDM 25 (24VDC)

SD25-170.050.01

auma

	Datum	Name
Bearb.	25.11.2010	Opiela
Gepr.	25.11.2010	Opiela
Datei	SD25-170	050 01





Code: F3

Schaltplan für SDM 25

SD25-170.050.06

auma®

	Datum	Name
Bearb.	17.09.2013	Opiela
Gepr.	18.09.2013	Opiela
Datei	SD25-170	050 06

AUMA Riester GmbH & Co. KG

Aumastraße 1
D-79379 Muellheim, Germany
Tel +49 7631-809-0
info@auma.com

AUMA subsidiaries or representatives
are implanted in more than 70 countries. For
detailed contact information, please refer to
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