



ELECTRIC ACTUATORS

for valve automation in the oil & gas industry

TECHNICAL DOCUMENTATION 2018

- SAEx 07.2 – SAEx 16.2
- SAREx 07.2 – SAREx 16.2
- SAVEx 07.2 – SAVEx 16.2
- SARVEx 07.2 – SARVEx 16.2
- SQEx 05.2 – SQEx 14.2
- SQREx 05.2 – SQREx 14.2
- ACEXc 01.2 / ACVExc 01.2
- AMExc 01.1



Manual
Technical documentation
1st edition 2018

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

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AUMA NORM

Technical data Multi-turn actuators for open-close duty with 3-phase AC motors

Type	Output speed rpm		Torque range ¹⁾			Run torque ²⁾		Number of starts	Valve attachment ³⁾			Handwheel		Weight ⁴⁾
	50 Hz	60 Hz	Min. [Nm]	S2-15 min	S2-30 min	S2-15 min	S2-30 min	Max. [1/h]	Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduct. ratio	approx. [kg]
				Max. [Nm]	Max. [Nm]	Max. [Nm]	Max. [Nm]							
SAEx 07.2	4	4.8	10	30	20	11	6	60	F07 F10	– G0	26 34 ⁵⁾	160	11 : 1	22
	5.6	6.7											8 : 1	
	8	9.6											11 : 1	
	11	13											8 : 1	
	16	19											11 : 1	
	22	26											8 : 1	23
	32	38											11 : 1	
	45	54											8 : 1	
	63	75											11 : 1	
	90	108											8 : 1	
	125	150											5.5 : 1	
180	216	4 : 1												
SAEx 07.6	4	4.8	20	60	40	21	11	60	F07 F10	– G0	26 34 ⁵⁾	160	11 : 1	22
	5.6	6.7											8 : 1	
	8	9.6											11 : 1	
	11	13											8 : 1	
	16	19											11 : 1	
	22	26											8 : 1	24
	32	38											11 : 1	
	45	54				8 : 1								
	63	75				11 : 1								
	90	108				8 : 1								
	125	150				5.5 : 1								
180	216	4 : 1												
SAEx 10.2	4	4.8	40	120	90	42	21	60	F10	G0	40	200	11 : 1	26
	5.6	6.7											8 : 1	
	8	9.6											11 : 1	
	11	13											8 : 1	
	16	19											11 : 1	
	22	26											8 : 1	28
	32	38											11 : 1	
	45	54				8 : 1								
	63	75				11 : 1								
	90	108				8 : 1								
	125	150				5.5 : 1								
180	216	4 : 1												
SAEx 14.2	4	4.8	100	250	180	100	50	60	F14	G1/2	58	315	11 : 1	48
	5.6	6.7											8 : 1	
	8	9.6											11 : 1	
	11	13											8 : 1	
	16	19											11 : 1	
	22	26											8 : 1	52
	32	38											11 : 1	
	45	54				8 : 1								
	63	75				11 : 1								
	90	108				8 : 1								
	125	150				5.5 : 1								
180	216	4 : 1												
SAEx 14.6	4	4.8	200	500	360	175	90	60	F14	G1/2	58	400	11 : 1	50
	5.6	6.7											8 : 1	
	8	9.6											11 : 1	
	11	13											8 : 1	
	16	19				11 : 1	56							
	22	26				8 : 1								
	32	38				11 : 1								
	45	54				8 : 1								
	63	75				11 : 1								
	90	108				8 : 1								
	125	150				5.5 : 1								
180	216	4 : 1												

AUMA NORM

Technical data Multi-turn actuators for open-close duty with 3-phase AC motors

Type	Output speed rpm		Torque range ¹⁾			Run torque ²⁾		Number of starts	Valve attachment ³⁾			Handwheel		Weight ⁴⁾
	50 Hz	60 Hz	Min. [Nm]	S2-15 min Max. [Nm]	S2-30 min Max. [Nm]	S2-15 min Max. [Nm]	S2-30 min Max. [Nm]	Max. [1/h]	Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduct. ratio	approx. [kg]
SAEx 16.2	4	4.8	400	1 000	710	330	170	60	F16	G3	77	500	11 : 1	72
	5.6	6.7											8 : 1	
	8	9.6				11 : 1								
	11	13				8 : 1								
	16	19				11 : 1								
	22	26				8 : 1	83							
	32	38				11 : 1								
	45	54				8 : 1								
	63	75				11 : 1	88							
	90	108				8 : 1								
	125	150		800	570	150							75	5.5 : 1
	180	216												140

General information

AUMA NORM multi-turn actuators require electric controls.

For sizes SAEx 07.2 – SAEx 16.2, AUMA offers AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on tables on pages 1 + 2

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Run torque	Maximum permissible torque for 15 min. or 30 min. running time.
3) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
4) Weight	Indicated weight includes AUMA NORM multi-turn actuator with 3-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.
5) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Options:	II2G Ex d IIC T4 or T3 Gb II2G c IIC T4 or T3										
EC type test certificate	DEKRA 11 ATEX 0008 X											
Type of duty	Standard:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2										
	Option:	Short-time duty S2 - 30 min, classes A and B according to EN 15714-2										
	For nominal voltage and +40 °C ambient temperature and at run torque load.											
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6											
Mains voltage, mains frequency	Standard voltages:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages:											
	3-phase AC current Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
	Further voltages on request											
	Permissible variation of mains voltage: ±10 %											
Permissible variation of mains frequency: ±5 %												
Overvoltage category	Category III according to IEC 60364-4-443											

AUMA NORM

Technical data Multi-turn actuators for open-close duty with 3-phase AC motors

Insulation class	Standard:	F, tropicalized
	Option:	H, tropicalized
Motor protection	Standard:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.
	Option:	Thermoswitches (NC) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.
Self-locking	Self-locking: Output speeds up to 90 rpm (50 Hz) or 108 rpm (60 Hz) NOT self-locking: Output speeds from 125 rpm (50 Hz) or 150 rpm (60 Hz) Multi-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.	
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC
	Power depending on the size 12.5 – 25 W	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	A, B2, B3, B4, C, D according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem	

Electromechanical control unit

Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard:	Silver (Ag)
	Option:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)	
Mechanical position indicator (option)	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication	Blinker transmitter	
Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Options:	24 – 48 V AC/DC or 380 – 400 V AC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.	

AUMA NORM

Technical data Multi-turn actuators for open-close duty with 3-phase AC motors

Electronic control unit (option, only in combination with ACExC actuator controls)	
Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator (option)	Continuous self-adjusting indication with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C	
	Options:	−40 °C to +40 °C/+60 °C	
		−60 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor		
	Terminal compartment additionally sealed against interior of actuator (double sealed)		
	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		
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, 10 to 200 Hz (AUMA NORM), 1 g, 10 to 200 Hz (for actuators with AMExC or ACExC integral controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for multi-turn actuators in version AUMA NORM and in version with integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Sound pressure level	< 72 dB (A)		

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)

Reference documents

Brochure Electric actuators for the automation of valves in the oil and gas industry
Dimensions SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2
Electrical data SAEx 07.2 – SAEx 16.2 with 3-phase AC motors
Technical data for switches
Technical data Electronic position transmitter/potentiometer
Technical data Sizing of reduction gearings
Technical data Manual forces at handwheel at multi-turn actuators SA 07.2 – 16.2, SAR 07.2 – 16.2, SAEx 07.2 – 16.2, SAREx 07.2 – 16.2

Technical data Multi-turn actuators for open-close duty with 3-phase AC motors for continuous underwater use

Type	Output speed rpm		Torque range ¹⁾			Run torque ²⁾		Number of starts	Valve attachment ³⁾		Weight ⁴⁾
	50 Hz	60 Hz	Min. [Nm]	S2-15 min Max. [Nm]	S2-30 min Max. [Nm]	S2-15 min Max. [Nm]	S2-30 min Max. [Nm]	Max. [1/h]	Standard EN ISO 5210	Option DIN 3210	approx. [kg]
SAEx 07.2-UW	4	4.8	10	30	20	11	6	60	F07 F10	– G0	25
	5.6	6.7									
	8	9.6									
	11	13									
	16	19									
	22	26									
	32	38									
	45	54									26
	63	75									
	90	108									
125	150										
180	216	25	10	5							
SAEx 07.6-UW	4	4.8	20	60	40	21	11	60	F07 F10	– G0	25
	5.6	6.7									
	8	9.6									
	11	13									
	16	19									
	22	26									
	32	38									
	45	54				27					
	63	75									
	90	108									
125	150										
180	216	50	30								
SAEx 10.2-UW	4	4.8	40	120	90	42	21	60	F10	G0	31
	5.6	6.7									
	8	9.6									
	11	13									
	16	19									
	22	26									
	32	38									
	45	54				33					
	63	75									
	90	108									
125	150										
180	216	100	70	35	18						
SAEx 14.2-UW	4	4.8	100	250	180	100	50	60	F14	G1/2	54
	5.6	6.7									
	8	9.6									
	11	13									
	16	19									
	22	26									
	32	38									
	45	54				58					
	63	75									
	90	108									
125	150										
180	216	200	140	80	40						
SAEx 14.6-UW	4	4.8	200	500	360	175	90	60	F14	G1/2	56
	5.6	6.7									
	8	9.6									
	11	13									
	16	19									
	22	26									
	32	38									
	45	54				62					
	63	75									
	90	108									
125	150										
180	216	400	290	100	50						
SAEx 16.2-UW	4	4.8	400	1 000	710	330	170	60	F16	G3	77
	5.6	6.7									
	8	9.6									
	11	13									
	16	19									
	22	26									
	32	38									
	45	54				88					
	63	75									
	90	108									
125	150										
180	216	800	570	150	75						
				140	70	93					

1) – 4) Refer to notes on page 2.

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

General information	
Multi-turn actuators for continuous underwater use require ACExC actuator controls. The controls are mounted on a wall bracket and are not immersed. A special cable set for connection between actuator and actuator controls is required.	

Notes on tables on page 1	
1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Run torque	Maximum permissible torque for 15 min. or 30 min. running time.
3) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
4) Weight	Indicated weight includes multi-turn actuator with 3-phase AC motor, electrical connection with cable glands and output drive type B1.

Features and functions												
Explosion protection	Standard:		II2G Ex de IIC T4 or T3 Gb									
			II2G c IIC T4 or T3									
			II2D Ex tb IIIC T130 °C or T190 °C Db IP6x									
EC type test certificate	DEKRA 11 ATEX 0008 X											
Type of duty	Standard:		Short-time duty S2 - 15 min, classes A and B according to EN 15714-2									
	Option:		Short-time duty S2 - 30 min, classes A and B according to EN 15714-2									
	For nominal voltage and +40 °C ambient temperature and at run torque load.											
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6											
Mains voltage, mains frequency	Standard voltages:											
	3-phase AC current											
	Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages:											
	3-phase AC current											
	Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
Further voltages on request												
Permissible variation of mains voltage: ±10 %												
Permissible variation of mains frequency: ±5 %												
Overvoltage category	Category III according to IEC 60364-4-443											
Insulation class	Standard:		F, tropicalized									
	Option:		H, tropicalized									
Motor protection	Standard:		PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.									
	Option:		Thermoswitches (NC) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.									
Self-locking	Self-locking: Output speeds up to 90 rpm (50 Hz) or 108 rpm (60 Hz) NOT self-locking: Output speeds from 125 rpm (50 Hz) or 150 rpm (60 Hz) Multi-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.											
Motor heater (option)	Voltages:		110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC									
	Power depending on the size 12.5 – 25 W											
Electrical connection	The AUMA Ex plug/socket connector is part of the cable set with wall bracket which must be ordered separately and which is customised for connection. Terminal compartment additionally sealed against interior (double sealed)											

Technical data Multi-turn actuators for open-close duty with 3-phase AC motors for continuous underwater use

Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	B3, B4, D according to EN ISO 5210; B2 on request B, D, E according to DIN 3210
	Special valve attachments: B3D, DD	

Electronic control unit

Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions

Use	For continuous underwater use as well as indoor and outdoor use.	
Enclosure protection according to EN 60529	Increased enclosure protection IP68-C8. The maximum permissible head of water is 8 m.	
Mounting position	Any position	
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request	
Ambient temperature	–30 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
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, 10 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.	
Corrosion protection	KX-G	Suitable for use in freshwater (Im1), seawater (Im2) and on seafloor (Im3), aluminium-free version (outer parts)
Coating	Double layer powder coating	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request
Lifetime	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.	
Sound pressure level	< 72 dB (A)	

Further information

EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for continuous underwater use Dimensions SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2 with 3-phase AC motor for continuous underwater use Electrical data SAEx 07.2 – SAEx 16.2 with 3-phase AC motors

Technical data Multi-turn actuators for open-close duty with 1-phase AC motors

Type	Output speed rpm		Torque range ¹⁾		Number of starts ²⁾	Run torque ³⁾	Valve attachment ⁴⁾			Handwheel		Weight ⁵⁾
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [1/h]	Max. [Nm]	Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduct. ratio	approx. [kg]
SAEx 07.2	4	4.8	10	30	60	11	F07 F10	— G0	26 34 ⁶⁾	160	11 : 1	28
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	
	16	19									11 : 1	
	22	26									8 : 1	
	32	38		11 : 1	31							
	45	54		8 : 1								
	63	75		11 : 1								
	90	108		8 : 1								
	125	150		5.5 : 1								
180	216	4 : 1										
SAEx 07.6	4	4.8	20	60	60	21	F07 F10	— G0	26 34 ⁶⁾	160	11 : 1	28
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	
	16	19									11 : 1	
	22	26									8 : 1	
	32	38		11 : 1	31							
	45	54		8 : 1								
	63	75		11 : 1								
	90	108		8 : 1								
	125	150		5.5 : 1								
180	216	4 : 1										
SAEx 10.2	4	4.8	40	120	60	42	F10	G0	40	200	11 : 1	32
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	
	16	19									11 : 1	
	22	26									8 : 1	
	32	38		11 : 1	44							
	45	54		8 : 1								
	63	75		11 : 1								
	90	108		8 : 1								
	125	150		5.5 : 1								
180	216	4 : 1										
SAEx 14.2	4	4.8	100	250	60	100	F14	G1/2	58	315	11 : 1	63
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13			8 : 1							
	16	19			11 : 1							
	22	26			8 : 1							
32	38	11 : 1	65									
45	54	8 : 1										
SAEx 14.6	4	4.8		200	500	60	175	F14	G1/2	58	400	11 : 1
	5.6	6.7	8 : 1									
	8	9.6	11 : 1									
	11	13	8 : 1									
	16	19	11 : 1									
22	26	8 : 1	70									

General information

AUMA NORM multi-turn actuators require electric controls. For sizes SAEx 07.2 – SAEx 14.6, AUMA offers AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Number of starts	For actuators equipped 1-phase AC motors with integral permanent split capacitors (motor type VE/AE), an off-time (reversing prevention time) of 2.5 sec. is required prior to starting in opposite direction.
3) Run torque	Maximum permissible torque for 15 min. or 30 min. running time.
4) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
5) Weight	Indicated weight includes AUMA NORM multi-turn actuator with 1-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.
6) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

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

Features and functions					
Explosion protection	Standard:	II2G Ex de IIB T4 or T3 Gb II2G c IIB T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x			
	Options:	II2G Ex d IIB T4 oder T3 Gb II2G c IIB T4 or T3			
EC type test certificate	DEKRA 11 ATEX 0008 X				
Type of duty	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2				
	For nominal voltage and +40 °C ambient temperature and at average run torque load.				
Motors	1-phase AC motor with integral permanent split capacitor (PSC), type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6				
	1-phase AC motor with integral starting capacitor and solid state switch (CSIR), type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6				
	Motor type depending on actuator type/output speed. Refer also to Electrical data SAEx 07.2 – SAEx 14.6 with 1-phase AC motors.				
Mains voltage, mains frequency	Standard voltages:				
	1-phase AC current Voltages/frequencies				
	Volt	110 – 120	110 – 120	220 – 240	220 – 240
	Hz	50	60	50	60
	Further voltages on request				
	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %				
Overvoltage category	Category III according to IEC 60364-4-443				
Insulation class	F, tropicalized				
Motor protection	Standard:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.			
	Option:	Thermoswitches (NC) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.			
Self-locking	Self-locking: Output speeds up to 90 rpm (50 Hz) or 108 rpm (60 Hz) NOT self-locking: Output speeds from 125 rpm (50 Hz) or 150 rpm (60 Hz) Multi-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.				
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC			
	Power depending on the size 12.5 – 25 W				
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation				
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm			
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC			
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals			
Threads for cable entries	Standard:	Metric threads			
	Options:	Pg-threads, NPT-threads, G-threads			
Valve attachment	Standard:	B1 according to EN ISO 5210			
	Options:	A, B2, B3, B4, C, D according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338			
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem				

AUMA NORM

Technical data Multi-turn actuators for open-close duty with 1-phase AC motors

Electromechanical control unit		
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard:	Silver (Ag)
	Option:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)	
Mechanical position indicator (option)	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication	Blinker transmitter	
Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Option:	24 – 48 V DC/DC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.	

Electronic control unit (option, only in combination with ACExC actuator controls)		
Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)	
Position feedback signal	Via actuator controls	
Torque feedback signal	Via actuator controls	
Mechanical position indicator (option)	Continuous self-adjusting indication with symbols OPEN and CLOSED	
Running indication	Blinking signal via actuator controls	
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC	

Service conditions		
Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request	
Ambient temperature	Standard:	–30 °C to +40 °C/+60 °C
	Options:	–40 °C to +40 °C/+60 °C
		–50 °C to +40 °C/+60 °C –60 °C to +40 °C/+60 °C
Enclosure protection according to EN 60529	IP68 with AUMA 1-phase AC motors of types AE..., VE..., AC..., VC...	
	Terminal compartment additionally sealed against interior of actuator (double sealed)	
	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	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	

AUMA NORM

Technical data Multi-turn actuators for open-close duty with 1-phase AC motors

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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Sound pressure level	< 72 dB (A)		

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Electrical data SAEx 07.2 – SAEx 14.6 with 1-phase AC motors Technical data for switches Technical data Electronic position transmitter/potentiometer Technical data Sizing of reduction gearings Technical data Manual forces at handwheel at multi-turn actuators SA 07.2 – 16.2, SAR 07.2 – 16.2, SAEx 07.2 – 16.2, SAREx 07.2 – 16.2

Type	Output speed ¹⁾	Torque range ²⁾		Run torque ³⁾	Number of starts	Valve attachment ⁴⁾			Handwheel		Weight ⁵⁾
	rpm	Min. [Nm]	S2-15 min Max. [Nm]	S2-15 min Max. [Nm]		Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduct. ratio	approx. [kg]
SAEx 07.2	4 – 5.5	10	30	11	60	F07	–	26	160	11 : 1	22
	6 – 7.5									8 : 1	
	7.5 – 11									11 : 1	
	10 – 15.5									8 : 1	
	12.5 – 17									11 : 1	
	17 – 23.5									8 : 1	
SAEx 07.6	3.5 – 5.5	20	60	21	60	F07	–	26	160	11 : 1	22
	5 – 7.5									8 : 1	
	6 – 8									11 : 1	
	8 – 11									8 : 1	

General information

AUMA NORM multi-turn actuators require electric controls.

For sizes SAEx 07.2 – SAEx 07.6 with DC motors, AUMA offer ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Output speed	The higher the torque, the lower the output speed
2) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
3) Run torque	Maximum permissible torque for 15 min. running time.
4) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
5) Weight	Indicated weight includes AUMA NORM multi-turn actuator with 1-phase DC motor, electrical connection in standard version, output drive type B1 and handwheel.
6) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

Features and functions

Explosion protection	Standard	II2G Ex de IIB T4 oder T3 Gb
	Option:	II2G Ex d IIB T4 oder T3 Gb
EC type test certificate	DEKRA 11 ATEX 008 X	
Type of duty	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2	
	For nominal voltage and +40 °C ambient temperature and at run torque load.	
Motors	1-phase DC shunt motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	
Mains voltage	24 V DC current	
	Permissible variation of mains voltage: ±10 %	
Overvoltage category	Category III according to IEC 60364-4-443	
Insulation class	F, tropicalized	
Motor protection	Thermoswitches (NC)	
Self-locking	Yes, multi-turn actuators are self-locking, if the valve position cannot be changed from standstill while torque acts upon the output drive.	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
	Options:	Handwheel lockable
		Handwheel stem extension
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. power supply 525 V AC
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals

AUMA NORM

Technical data Multi-turn actuators for open-close duty with DC motors of type range VK

Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Terminal plan	TPA37R1AA-001-000	
Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	A, B2, B3, B4, C according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem	

Electromechanical control unit		
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated
		Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact material	Standard:	Silver (Ag)
	Options:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)	
Mechanical position indicator (option)	Continuous self-adjusting indication with symbols OPEN and CLOSED	
Running indication	Blinker transmitter	
Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Option:	24 – 48 V DC/DC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AC actuator controls.	

Electronic control unit (option, only in combination with AC actuator controls)		
Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)	
Position feedback signal	Via actuator controls	
Torque feedback signal	Via actuator controls	
Mechanical position indicator (option)	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication	Blinking signal via actuator controls	
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC	

Service conditions	
Use	Indoor and outdoor use permissible
Mounting position	Any position
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request
Ambient temperature	–20 °C to +40 °C/+60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range

AUMA NORM

Technical data Multi-turn actuators for open-close duty with DC motors of type range VK

Enclosure protection according to EN 60529	Standard:	IP68 with AUMA DC motor	
	Option:	Terminal compartment additionally sealed against interior of actuator (double sealed)	
	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		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Sound pressure level	< 72 dB (A)		

Further information

EU Directives	ATEX Directive: (2014/34/EU)		
	Electromagnetic Compatibility (EMC): (2014/30/EU)		
	Low Voltage Directive: (2014/35/EU)		
	Machinery Directive: (2006/42/EC)		
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry		
	Electrical data SAEx 07.2 – SAEx 07.6 with DC motors of type range VK		
	Technical data for switches		
	Technical data Electronic position transmitter/potentiometer		
	Technical data Sizing of reduction gearings		
	Technical data Manual force at handwheel at multi-turn actuators SA/SAR 07.2 – SA/SAR 16.2, SAEx/SAREx 07.2 – SAEx/SAREx 16.2		

AUMA NORM

Technical data Multi-turn actuators for modulating duty with 3-phase AC motors

Type	Output speed rpm		Torque range ¹⁾			Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Pulse duration on reversal ⁴⁾	Valve attachment ⁵⁾			Handwheel		Weight ⁶⁾	
	50 Hz	60 Hz	Min. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]				Max. [1/h]	Min. [ms]	Max. [ms]	Standard EN ISO 5210	Option DIN 3210		Max. Ø rising stem [mm]
SAREx 07.2	4	4.8	15	30	20	15	8	1,200	50	260	F07 F10	– G0	26 34 ⁷⁾	160	11 : 1	22	
	5.6	6.7								200					8 : 1		
	8	9.6								155					11 : 1		
	11	13								130					8 : 1		
	16	19								100					11 : 1		
	22	26								90					8 : 1	23	
	32	38								75					11 : 1		
	45	54								70					8 : 1		
	63	75						65		11 : 1							
	90	108						60		8 : 1							
SAREx 07.6	4	4.8	30	60	40	30	15	1,200	50	260	F07 F10	– G0	26 34 ⁷⁾	160	11 : 1	22	
	5.6	6.7								200					8 : 1		
	8	9.6								155					11 : 1		
	11	13								130					8 : 1		
	16	19								100					11 : 1		
	22	26								90					8 : 1	24	
	32	38								75					11 : 1		
	45	54								70					8 : 1		
	63	75				65	11 : 1										
	90	108				60	8 : 1										
SAREx 10.2	4	4.8	60	120	90	60	30	1,000	50	260	F10	G0	40	200	11 : 1	26	
	5.6	6.7								200					8 : 1		
	8	9.6								155					11 : 1		
	11	13								130					8 : 1		
	16	19								100					11 : 1	28	
	22	26								90					8 : 1		
	32	38								75					11 : 1		
	45	54								70					8 : 1		
	63	75				65	11 : 1										
	90	108				60	8 : 1										
SAREx 14.2	4	4.8	120	250	180	120	60	900	70	280	F14	G1/2	58	315	11 : 1	48	
	5.6	6.7								220					8 : 1		
	8	9.6								175					11 : 1		
	11	13								150					8 : 1		
	16	19						600		120					11 : 1	52	
	22	26								110					8 : 1		
	32	38						300		100					11 : 1		
	45	54								90					8 : 1		
	63	75				100	50	200		85					11 : 1		
	90	108								80					8 : 1		
SAREx 14.6	4	4.8	250	500	360	200	100	900	70	280	F14	G1/2	58	400	11 : 1	50	
	5.6	6.7								220					8 : 1		
	8	9.6								175					11 : 1		
	11	13								150					8 : 1		
	16	19						600		120					11 : 1	56	
	22	26								110					8 : 1		
	32	38				150	75	300		100					11 : 1		
	45	54								90					8 : 1		
	63	75				120	60	200		85					11 : 1		
	90	108								80					8 : 1		
SAREx 16.2	4	4.8	500	1,000	710	400	200	600	100	300	F16	G3	77	500	11 : 1	72	
	5.6	6.7								250					8 : 1		
	8	9.6								200					11 : 1		
	11	13						350		175							175
	16	19				150	11 : 1										83
	22	26				300	150	300		140					8 : 1		
	32	38								130					11 : 1		
	45	54				250	125	200		120					8 : 1		
	63	75								115					11 : 1	88	
	90	108				200	100	150		110					8 : 1		

1) – 7) Refer to notes on page 2.

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

General information

AUMA NORM multi-turn actuators require electric controls.

For sizes SAREx 07.2 – SAREx 16.2, AUMA offers AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on tables on page 1

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Modulating torque	Maximum permissible torque for modulating duty
3) Pulse duration	For identical direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
4) Pulse duration on reversal	For reversal of direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
5) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
6) Weight	Indicated weight includes AUMA NORM multi-turn actuator with 3-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.
7) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x											
	Options:	II2G Ex d IIC T4 or T3 Gb II2G c IIC T4 or T3											
EC type test certificate	DEKRA 11 ATEX 0008 X												
Type of duty	Standard:	Intermittent duty S4 - 25 %, class C according to EN 15714-2											
	Options:	Intermittent duty S4 - 50 %, class C according to EN 15714-2 Intermittent duty S5 - 25 % (insulation class H required), class C according to EN 15714-2											
	For nominal voltage and +40 °C ambient temperature and at modulating torque load.												
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6												
Mains voltage, mains frequency	Standard voltages:												
	3-phase AC current Voltages/frequencies												
	Volt	220	230	380	380	400	400	415	440	460	480	500	
	Hz	60	50	50	60	50	60	50	60	60	60	50	
	Special voltages:												
	3-phase AC current Voltages/frequencies												
	Volt	220	440	525	575	600	660	690					
	Hz	50	50	50	60	60	50	50					
	Further voltages on request												
	Permissible variation of mains voltage: ±10 %												
Permissible variation of mains frequency: ±5 %													
Overvoltage category	Category III according to IEC 60364-4-443												
Insulation class	Standard:	F, tropicalized											
	Option:	H, tropicalized											
Motor protection	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.												
Self-locking	Yes, multi-turn actuators are self-locking, if the valve position cannot be changed from standstill while torque acts upon the output drive.												
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC											
	Power depending on the size 12.5 – 25 W												

AUMA NORM

Technical data Multi-turn actuators for modulating duty with 3-phase AC motors

Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	A, B2, B3, B4, C, D according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem	

Electromechanical control unit

Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard:	Silver (Ag)
	Option:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)	
Mechanical position indicator (option)	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication (option)	Blinker transmitter	
Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Options:	24 – 48 V AC/DC or 380 – 400 V AC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.	

Electronic control unit (option, only in combination with ACExC actuator controls)

Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator (option)	Continuous self-adjusting indication with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C	
	Options:	−40 °C to +40 °C/+60 °C	
		−60 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor		
	Terminal compartment additionally sealed against interior of actuator (double sealed)		
	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, 10 to 200 Hz (AUMA NORM), 1 g, 10 to 200 Hz (for actuators with AMExC or ACExC integral controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for multi-turn actuators in version AUMA NORM and in version with integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Sound pressure level	< 72 dB (A)		

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2 Electrical data SAREx 07.2 – SAREx 16.2 with 3-phase AC motors Technical data for switches Technical data Electronic position transmitter/potentiometer Technical data Sizing of reduction gearings Technical data Manual forces at handwheel at multi-turn actuators SA 07.2 – 16.2, SAR 07.2 – 16.2, SAEx 07.2 – 16.2, SAREx 07.2 – 16.2

SAREx 07.2-UW – SAREx 16.2-UW

Technical data Multi-turn actuators for modulating duty with 3-phase AC motors for continuous underwater use

Type	Output speed rpm		Torque range ¹⁾			Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Pulse duration on reversal ⁴⁾	Valve attachment ⁵⁾		Weight ⁶⁾		
	50 Hz	60 Hz	Min. [Nm]	S4-25% S5-25% Max. [Nm]	S4-50% Max. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]	Max. [1/h]	Min. [ms]	Max. [ms]	Standard EN ISO 5210	Option DIN 3210	approx. [kg]		
SAREx 07.2-UW	4	4.8	15	30	20	15	8	1,200	50	260	F07 F10	– G0	25		
	5.6	6.7								200					
	8	9.6								155					
	11	13								130					
	16	19								100					
	22	26								90					
	32	38								75					
	45	54								70					
	63	75						900		50			65	26	
	90	108											60		
SAREx 07.6-UW	4	4.8	30	60	40	30	15	1,200	50	260	F07 F10	– G0	25		
	5.6	6.7								200					
	8	9.6								155					
	11	13								130					
	16	19								100					
	22	26								90					
	32	38								75					
	45	54								70					
	63	75				20	10	900		50			65	27	
	90	108											60		
SAREx 10.2-UW	4	4.8	60	120	90	60	30	1 000	50	260	F10	G0	31		
	5.6	6.7								200					
	8	9.6								155					
	11	13								130					
	16	19								100					
	22	26								90					
	32	38								75					
	45	54								70					
	63	75				50	25	800		50			65	33	
	90	108											60		
SAREx 14.2-UW	4	4.8	120	250	180	120	60	900	70	280	F14	G1/2	54		
	5.6	6.7								220					
	8	9.6								175					
	11	13								150					
	16	19						600		120			58		
	22	26								110					
	32	38						300		100					
	45	54								90					
	63	75				100	50	200		85					
	90	108								80					
SAREx 14.6-UW	4	4.8	250	500	360	200	100	900	70	280	F14	G1/2	56		
	5.6	6.7								220					
	8	9.6								175					
	11	13								150					
	16	19						600		120			62		
	22	26								110					
	32	38				150	75	300		100					
	45	54								90					
	63	75				120	60	200		85					
	90	108								80					
SAREx 16.2-UW	4	4.8	500	1 000	710	400	200	600	100	300	F16	G3	77		
	5.6	6.7								250					
	8	9.6								200					
	11	13								175					
	16	19				300	150	300		150			88		
	22	26								140					
	32	38				250	125	200		130					
	45	54								120					
	63	75				200	100	150		115				93	
	90	108								110					

1) – 6) Refer to notes on page 2.

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

General information	
Multi-turn actuators for continuous underwater use require ACExC actuator controls. The controls are mounted on a wall bracket and are not immersed. A special cable set for connection between actuator and actuator controls is required.	

Notes on tables on page 1	
1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Modulating torque	Maximum permissible torque for modulating duty
3) Pulse duration	For identical direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
4) Pulse duration on reversal	For reversal of direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
5) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
6) Weight	Indicated weight includes multi-turn actuator with 3-phase AC motor, electrical connection with cable glands and output drive type B1.

Features and functions												
Explosion protection	II2G Ex de IIC T4 or T3 Gb											
	II2G c IIC T4 or T3											
	II2D Ex tb IIIC T130 °C or T190 °C Db IP6x											
EC type test certificate	DEKRA 11 ATEX 0008 X											
Type of duty	Standard:	Intermittent duty S4 - 25 %, class C according to EN 15714-2										
	Options:	Intermittent duty S4 - 50 %, class C according to EN 15714-2										
		Intermittent duty S5 - 25% (insulation class H required), class C according to EN 15714-2										
	For nominal voltage and +40 °C ambient temperature and at modulating torque load.											
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6											
Mains voltage, mains frequency	Standard voltages:											
	3-phase AC current											
	Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages:											
	3-phase AC current											
	Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
	Further voltages on request											
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains frequency: ±5 %											
Overvoltage category	Category III according to IEC 60364-4-443											
Insulation class	Standard:	F, tropicalized										
	Option:	H, tropicalized										
Motor protection	PTC thermistors (according to DIN 44082)											
	PTC thermistors additionally require a suitable tripping device in the actuator controls.											
Self-locking	Yes, multi-turn actuators are self-locking, if the valve position cannot be changed from standstill while torque acts upon the output drive.											
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC										
	Power depending on the size 12.5 – 25 W											
Electrical connection	The AUMA Ex plug/socket connector is part of the cable set with wall bracket which must be ordered separately and which is customised for connection.											
	Terminal compartment additionally sealed against interior (double sealed)											

Technical data Multi-turn actuators for modulating duty with 3-phase AC motors for continuous underwater use

Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	B3, B4, D according to EN ISO 5210; B2 on request B, D, E according to DIN 3210
	Special valve attachments: B3D, DD	

Electronic control unit (option, only in combination with ACExC actuator controls)

Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions

Use	Indoor and outdoor use permissible	
Enclosure protection according to EN 60529	Increased enclosure protection IP68-C8. The maximum permissible head of water is 8 m.	
Mounting position	Any position	
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request	
Ambient temperature	−30 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
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, 10 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.	
Corrosion protection	KX-G	Suitable for use in freshwater (Im1), seawater (Im2) and on seafloor (Im3), aluminium-free version (outer parts)
Coating	Double layer powder coating	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request
Lifetime	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.	
Sound pressure level	< 72 dB (A)	

Further information

EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for continuous underwater use Dimensions SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2 with 3-phase AC motor for continuous underwater use Electrical data SAREx 07.2 – SAREx 16.2 with 3-phase AC motors

Type	Output speed rpm		Torque range ¹⁾		Modulating torque ²⁾	Number of starts ³⁾	Pulse duration ⁴⁾	Pulse duration on reversal ⁵⁾	Valve attachment ⁶⁾			Handwheel		Weight ⁷⁾
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Max. [1/h]	Min. [ms]	Max. [ms]	Standard EN ISO 5210	Option DIN 3210	Max. Ø steig. Spindel [mm]	Ø [mm]	Reduct. ratio	approx. [kg]
SAREx 07.2	4	4.8	15	30	15	600	50	275	F07 F10	– G0	26 34 ⁸⁾	160	11 : 1	28
	5.6	6.7						220					8 : 1	
	8	9.6						155					11 : 1	
	11	13						130					8 : 1	
	16	19						90					11 : 1	
	22	26						80					8 : 1	
	32	38						75					11 : 1	31
	45	54						70					8 : 1	
SAREx 07.6	4	4.8	30	60	30	600	50	260	F07 F10	– G0	26 34 ⁸⁾	160	11 : 1	28
	5.6	6.7						200					8 : 1	
	8	9.6						155					11 : 1	
	11	13						130					8 : 1	
	16	19						100					11 : 1	
	22	26						90					8 : 1	
	32	38						75					11 : 1	31
	45	54						70					8 : 1	
SAREx 10.2	4	4.8	60	120	60	600	50	260	F10	G0	40	200	11 : 1	32
	5.6	6.7						200					8 : 1	
	8	9.6						155					11 : 1	35
	11	13						130					8 : 1	
	16	19						100					11 : 1	
	22	26						90					8 : 1	
SAREx 14.2	4	4.8	120	250	120	600	70	280	F14	G1/2	58	315	11 : 1	63
	5.6	6.7						220					8 : 1	
	8	9.6						175					11 : 1	
	11	13						150					8 : 1	
SAREx 14.6	4	4.8	250	500	200	600	70	280	F14	G1/2	58	400	11 : 1	67
	5.6	6.7						220					8 : 1	

General information

AUMA NORM multi-turn actuators require electric controls. For sizes SAREx 07.2 – SAREx 14.6, AUMA offers AMExC or ACEXC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Modulating torque	Maximum permissible torque for modulating duty
3) Number of starts	Vor einer Fahrt in Gegenrichtung ist eine Pausenzeit (Reversiersperrzeit) von mind. 2,5 Sek erforderlich
4) Pulse duration	For identical direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
5) Pulse duration on reversal	For reversal of direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
6) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
7) Weight	Indicated weight includes AUMA NORM multi-turn actuator with 1-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.
8) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

Features and functions

Explosion protection	Standard: II2G Ex de IIB T4 or T3 Gb II2G c IIB T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x Options: II2G Ex d IIB T4 oder T3 Gb II2G c IIB T4 or T3
EC type test certificate	DEKRA 11ATEX0008 X
Type of duty	Intermittent duty S4 - 25 %, class C according to EN 15714-2 For nominal voltage and +40 °C ambient temperature and at modulating torque load.

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

AUMA NORM

Technical data Multi-turn actuators for modulating duty with 1-phase AC motors

Motors	1-phase AC motor with integral permanent split capacitor (PSC), type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6													
Mains voltage, mains frequency	Standard voltages: 1-phase AC current Voltages/frequencies <table> <tr> <td>Volt</td><td>110 – 120</td><td>110 – 120</td><td>220 – 240</td><td>220 – 240</td></tr> <tr> <td>Hz</td><td>50</td><td>60</td><td>50</td><td>60</td></tr> </table> Further voltages on request Permissible variation of mains voltage: $\pm 10\%$ Permissible variation of mains frequency: $\pm 5\%$				Volt	110 – 120	110 – 120	220 – 240	220 – 240	Hz	50	60	50	60
Volt	110 – 120	110 – 120	220 – 240	220 – 240										
Hz	50	60	50	60										
Overvoltage category	Category III according to IEC 60364-4-443													
Insulation class	F, tropicalized													
Motor protection	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.													
Self-locking	Yes, multi-turn actuators are self-locking, if the valve position cannot be changed from standstill while torque acts upon the output drive.													
Motor heater (option)	Voltages: 110 – 120 V AC, 220 – 240 V AC Power depending on the size 12.5 – 25 W													
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation Options: Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm													
Electrical connection	Standard: AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC Options: AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals													
Threads for cable entries	Standard: Metric threads Options: Pg-threads, NPT-threads, G-threads													
Valve attachment	Standard: B1 according to EN ISO 5210 Options: A, B2, B3, B4, C, D according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338 Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem													

Electromechanical control unit	
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option) Standard: Single switch (1 NC and 1 NO) for each end position, not galvanically isolated Options: Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE Standard: Single switch (1 NC and 1 NO) for each direction, not galvanically isolated Option: Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard: Silver (Ag) Option: Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)
Mechanical position indicator (option)	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED
Running indication (option)	Blinker transmitter

AUMA NORM

Technical data Multi-turn actuators for modulating duty with 1-phase AC motors

Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Option:	24 – 48 V DC/DC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.	

Electronic control unit (option, only in combination with ACExC actuator controls)

Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator	Continuous self-adjusting indication with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions

Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C	
	Options:	−40 °C to +40 °C/+60 °C −50 °C to +40 °C/+60 °C −60 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 with AUMA 1-phase AC motors of types AE..., VE... Terminal compartment additionally sealed against interior of actuator (double sealed) 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)		
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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Sound pressure level	< 72 dB (A)		

Technical data Multi-turn actuators for modulating duty with 1-phase AC motors

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Electrical data SAREx 07.2 – SAREx 14.6 with 1-phase AC motors Technical data for switches Technical data Electronic position transmitter/potentiometer Technical data Sizing of reduction gearings Technical data Manual forces at handwheel at multi-turn actuators SA 07.2 – 16.2, SAR 07.2 – 16.2, SAEx 07.2 – 16.2, SAREx 07.2 – 16.2

Technical data Torques at different voltages

Short-time duty S2 - 15 min, intermittent duty S4 - 25 %

Type	Output speed		Motor			Tripping torque adjustable		Torque at stall torque ¹⁾ of the motor (without considering inertia)							
								at nominal voltage, overvoltage and undervoltage (... % U _N)							
	50 Hz [rpm]	60 Hz [rpm]	Power [kW]	Speed at 50 Hz [rpm]	Size	Min. [Nm]	Max. [Nm]	100 %	105 %	110 %	95 %	90 %	85 %	80 %	75 %
SA 07.2	4	4.8	0.02	1,400	63	10	30	96	105	116	86	77	69	61	54
	5.6	6.7						84	93	102	76	68	61	54	47
	8	9.6	0.04	1,400	63			61	67	74	55	49	44	39	34
	11	13						53	59	64	48	43	38	34	30
	16	19	0.06	2,800	63			71	78	85	64	57	51	45	40
	22	26						61	67	74	55	49	44	39	34
	32	38	0.10	1,400	63			55	61	67	50	45	40	35	31
	45	54						48	53	58	43	39	35	31	27
	63	75	0.20	2,800	63			67	73	81	60	54	48	43	37
	90	108						57	63	69	51	46	41	36	32
	125	150	0.30	2,800	63			25	46	50	55	41	37	33	29
	180	216					36		40	44	33	29	26	23	20
SA 07.6	4	4.8	0.03	1,400	63	20	60	139	154	168	126	113	101	89	78
	5.6	6.7						120	133	145	109	97	87	77	68
	8	9.6	0.06	1,400	63			120	132	145	108	97	87	77	68
	11	13						106	117	128	96	86	77	68	60
	16	19	0.12	2,800	63			128	141	155	116	104	93	82	72
	22	26						112	123	135	101	91	81	72	63
	32	38	0.20	1,400	63			135	149	163	122	109	98	86	76
	45	54						115	127	139	104	93	83	74	65
	63	75	0.40	2,800	63			136	150	164	122	110	98	87	76
	90	108						114	125	137	103	92	82	73	64
	125	150	0.50	2,800	63			50	92	101	111	83	74	66	59
	180	216					73		80	88	66	59	53	47	41
SA 10.2	4	4.8	0.06	1,400	71	40	120	318	350	385	287	257	230	203	179
	5.6	6.7						245	270	296	221	198	177	157	138
	8	9.6	0.12	1,400	71			253	279	307	229	205	183	162	143
	11	13						195	215	235	176	158	141	125	109
	16	19	0.25	2,800	71			234	258	283	211	190	169	150	132
	22	26						179	198	217	162	145	129	115	101
	32	38	0.40	1,400	71			275	303	332	248	222	198	176	154
	45	54						212	234	257	191	172	153	136	119
	63	75	0.70	2,800	71			303	334	367	274	246	219	194	171
	90	108						233	257	282	210	189	168	149	131
	125	150	1.00	2,800	71			100	194	214	235	176	158	141	124
	180	216					146		161	176	131	118	105	93	82
SA 14.2	4	4.8	0.12	1,400	90	100	250	459	506	555	414	372	332	294	258
	5.6	6.7						415	458	502	375	336	300	266	234
	8	9.6	0.25	1,400	90			434	478	525	391	351	313	278	244
	11	13						385	425	466	348	312	278	247	217
	16	19	0.45	2,800	90			421	464	510	380	341	304	270	237
	22	26						369	407	446	333	299	267	236	208
	32	38	0.75	1,400	90			475	524	575	429	385	343	304	267
	45	54						412	454	498	372	334	298	264	232
	63	75	1.40	2,800	90			550	606	665	496	445	397	352	309
	90	108						472	520	571	426	382	341	302	265
	125	150	1.80	2,800	90			200	357	393	432	322	289	258	228
	180	216					287		317	348	259	233	208	184	162
SA 14.6	4	4.8	0.20	1,400	90	200	500	949	1,047	1,149	857	769	686	608	534
	5.6	6.7						840	926	1,016	758	680	607	537	472
	8	9.6	0.40	1,400	90			842	929	1,019	760	682	609	539	474
	11	13						755	832	914	681	612	546	483	425
	16	19	0.80	2,800	90			936	1,032	1,133	845	758	676	599	527
	22	26						824	908	997	743	667	595	527	463
	32	38	1.60	1,400	90			1,125	1,240	1,361	1,015	911	812	720	633
	45	54						959	1,058	1,161	866	777	693	614	540
	63	75	3.00	2,800	90			1,170	1,290	1,416	1,056	948	845	749	658
	90	108						1,007	1,110	1,218	908	815	727	644	566
	125	150	3.30	2,800	90			400	765	843	926	690	620	553	490
	180	216					611		673	739	551	495	441	391	343
SA 16.2	4	4.8	0.40	1,400	112	400	1,000	1,951	2,151	2,360	1,761	1,580	1,409	1,248	1,097
	5.6	6.7						1,809	1,995	2,189	1,633	1,465	1,307	1,158	1,018
	8	9.6	0.80	1,400	112			2,065	2,276	2,498	1,863	1,672	1,492	1,321	1,161
	11	13						1,882	2,075	2,278	1,699	1,525	1,360	1,205	1,059
	16	19	1.50	2,800	112			2,214	2,441	2,679	1,998	1,793	1,600	1,417	1,245
	22	26						1,940	2,139	2,348	1,751	1,572	1,402	1,242	1,091
	32	38	3.00	1,400	112			1,688	1,860	2,042	1,523	1,367	1,219	1,080	949
	45	54						1,460	1,610	1,767	1,318	1,183	1,055	935	821
	63	75	5.00	2,800	112			1,789	1,972	2,164	1,614	1,449	1,292	1,145	1,006
	90	108						1,535	1,692	1,857	1,385	1,243	1,109	982	863
	125	150	6.00	2,800	112			800	1,148	1,265	1,388	1,036	929	829	734
	180	216					928		1,023	1,123	838	752	671	594	522

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Technical data Torques at different voltages
Short-time duty S2 - 15 min, intermittent duty S4 - 25 %

Notes on table on page 1	
1) Stall torque	Stall torque indications are calculated nominal values. In practical applications, they might differ due to gear and motor tolerances.

Technical data Torques at different voltages

Short-time duty S2 - 30 min, intermittent duty S4 - 50 %

Type	Output speed		Motor			Tripping torque adjustable		Torque at stall torque ¹⁾ of the motor (without considering inertia)							
								at nominal voltage, overvoltage and undervoltage (... % U _N)							
	50 Hz [rpm]	60 Hz [rpm]	Power [kW]	Speed at 50 Hz [rpm]	Size	Min. [Nm]	Max. [Nm]	100 %	105 %	110 %	95 %	90 %	85 %	80 %	75 %
SA 07.2	4	4.8	0.01	1,400	63	10	20	96	105	116	86	77	69	61	54
	5.6	6.7						84	93	102	76	68	61	54	47
	8	9.6	0.03	1,400	63			50	55	61	45	41	36	32	28
	11	13						44	49	53	40	36	32	28	25
	16	19	0.04	2,800	63			58	64	71	53	47	42	37	33
	22	26						50	56	61	45	41	36	32	28
	32	38	0.07	1,400	63			46	50	55	41	37	33	29	26
	45	54						40	44	48	36	32	29	25	22
	63	75	0.14	2,800	63			55	61	67	50	45	40	35	31
	90	108						47	52	57	42	38	34	30	26
125	150	0.21	2,800	63	38			42	46	34	31	27	24	21	
180	216				30			33	36	27	24	22	19	17	
SA 07.6	4	4.8	0.02	1,400	63	20	40	115	127	139	104	93	83	74	65
	5.6	6.7						99	110	120	90	80	72	64	56
	8	9.6	0.04	1,400	63			99	109	120	90	80	72	64	56
	11	13						88	97	106	79	71	63	56	49
	16	19	0.08	2,800	63			106	117	128	96	86	77	68	60
	22	26						92	102	112	83	75	67	59	52
	32	38	0.14	1,400	63			112	123	135	101	90	81	71	63
	45	54						95	105	115	86	77	69	61	54
	63	75	0.28	2,800	63			112	124	136	101	91	81	72	63
	90	108						94	104	114	85	76	68	60	53
125	150	0.35	2,800	63	76		84	92	69	62	55	49	43		
180	216				30		60	66	73	54	49	44	39	34	
SA 10.2	4	4.8	0.04	1,400	71	40	90	263	290	318	237	213	190	168	148
	5.6	6.7						202	223	245	183	164	146	129	114
	8	9.6	0.08	1,400	71			209	231	253	189	170	151	134	118
	11	13						161	177	195	145	130	116	103	90
	16	19	0.17	2,800	71			193	213	234	175	157	140	124	109
	22	26						148	163	179	134	120	107	95	83
	32	38	0.28	1,400	71			209	231	253	189	170	151	134	118
	45	54						162	178	196	146	131	117	104	91
	63	75	0.50	2,800	71			231	255	280	209	187	167	148	130
	90	108						178	196	215	160	144	128	114	100
125	150	0.70	2,800	71	148		164	180	134	120	107	95	83		
180	216				70		111	122	134	100	122	134	100	90	
SA 14.2	4	4.8	0.08	1,400	90	100	180	379	418	459	342	307	274	243	213
	5.6	6.7						343	378	415	310	278	248	220	193
	8	9.6	0.18	1,400	90			358	395	434	323	290	259	229	202
	11	13						319	351	385	287	258	230	204	179
	16	19	0.30	2,800	90			356	393	431	322	289	257	228	200
	22	26						312	344	378	282	253	226	200	176
	32	38	0.50	1,400	90			393	433	475	354	318	284	251	221
	45	54						340	375	412	307	276	246	218	191
	63	75	1.00	2,800	90			454	501	550	410	368	328	291	256
	90	108						390	430	472	352	316	282	250	219
125	150	1.30	2,800	90	295		325	357	266	239	213	189	166		
180	216				140		238	262	287	214	192	172	152	134	
SA 14.6	4	4.8	0.14	1,400	90	200	360	785	865	949	708	636	567	502	441
	5.6	6.7						694	765	840	626	562	501	444	390
	8	9.6	0.30	1,400	90			696	768	842	628	564	503	446	392
	11	13						624	688	755	563	505	451	399	351
	16	19	0.60	2,800	90			774	853	936	698	627	559	495	435
	22	26						681	751	824	614	551	492	436	383
	32	38	1.00	1,400	90			929	1,025	1,125	839	753	671	595	523
	45	54						793	874	959	716	642	573	507	446
	63	75	2.00	2,800	90			967	1,066	1,170	873	783	699	619	544
	90	108						832	917	1,007	751	674	601	532	468
125	150	2.30	2,800	90	632		697	765	571	512	457	405	356		
180	216				290		505	556	611	455	409	365	323	284	
SA 16.2	4	4.8	0.30	1,400	112	400	710	1,612	1,777	1,951	1,455	1,306	1,165	1,032	907
	5.6	6.7						1,495	1,648	1,809	1,349	1,211	1,080	957	841
	8	9.6	0.60	1,400	112			1,706	1,881	2,065	1,540	1,382	1,233	1,092	960
	11	13						1,556	1,715	1,882	1,404	1,260	1,124	996	875
	16	19	1.00	2,800	112			1,830	2,017	2,214	1,651	1,482	1,322	1,171	1,029
	22	26						1,604	1,768	1,940	1,447	1,299	1,159	1,026	902
	32	38	2.00	1,400	112			1,395	1,538	1,688	1,259	1,130	1,008	893	784
	45	54						1,207	1,331	1,460	1,089	978	872	772	679
	63	75	3.50	2,800	112			1,478	1,630	1,789	1,334	1,197	1,068	946	832
	90	108						1,268	1,398	1,535	1,145	1,027	916	812	713
125	150	4.00	2,800	112	948		1,046	1,148	856	768	685	607	533		
180	216				570		767	846	928	692	621	554	491	431	

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Technical data Torques at different voltages
Short-time duty S2 - 30 min, intermittent duty S4 - 50 %

Notes on table on page 1	
1) Stall torque	Stall torque indications are calculated nominal values. In practical applications, they might differ due to gear and motor tolerances.

AUMA NORM

Technical data Manual force at handwheel at multi-turn actuators

Standard										
Type	Output speed	Torque			Input torque at handwheel ²⁾	Permissible input torque at handwheel	Hand-wheel standard Ø	Standard required manual force ³⁾	Hand-wheel option Ø	Option required manual force ³⁾
	50 Hz	Max. [Nm]	Reduct. ratio	Factor ¹⁾	approx. [Nm]	Max. [Nm]	[mm]	approx. [N]	[mm]	approx. [N]
SA 07.2	4; 8; 16; 32; 63	30	11 : 1	4.5	7	40	160	83	200	67
	5.6; 11; 22; 45; 90		8 : 1	3.2	9			117		94
	125	25	5.6 : 1	3.4	9			111		89
	180		4 : 1	2.4	10			130		104
SA 07.6	4; 8; 16; 32; 63	60	11 : 1	4.5	13	40	160	167	200	133
	5.6; 11; 22; 45; 90		8 : 1	3.2	19			234		188
	125	50	5.6 : 1	3.4	18			222		178
	180		4 : 1	2.4	21			260		208
SA 10.2	4; 8; 16; 32; 63	120	11 : 1	4.4	27	80	200	273	250	218
	5.6; 11; 22; 45; 90		8 : 1	3.2	38			375		300
	125	100	5.6 : 1	3.3	36			364		291
	180		4 : 1	2.4	42			417		333
SA 14.2	4; 8; 16; 32; 63	250	11 : 1	4.5	56	300	315	353	400	278
	5.6; 11; 22; 45; 90		8 : 1	3.3	76			481		379
	125	200	5.6 : 1	3.4	74			470		370
	180		4 : 1	2.5	81			513		404
SA 14.6	4; 8; 16; 32; 63	500	11 : 1	4.5	111	300	400	556	500	444
	5.6; 11; 22; 45; 90		8 : 1	3.3	152			758		606
	125	400	5.6 : 1	3.4	148			741		593
	180		4 : 1	2.5	162			808		646
SA 16.2	4; 8; 16; 32; 63	1,000	11 : 1	4.5	222	600	500	889	630	705
	5.6; 11; 22; 45; 90		8 : 1	3.3	303			1,212		962
	125	800	5.6 : 1	3.4	237			948		752
	180		4 : 1	2.5	323			1,293		1,026

Option for reduction of manual force ⁴⁾										
Type	Output speed	Torque			Input torque at handwheel ²⁾	Permissible input torque at handwheel	Hand-wheel standard Ø	Standard required manual force ³⁾	Hand-wheel option Ø	Option required manual force ³⁾
	50 Hz	Max. [Nm]	Reduct. ratio	Factor ¹⁾	approx. [Nm]	Max. [Nm]	[mm]	approx. [N]	[mm]	approx. [N]
SA 07.2	4; 8; 16; 32; 63	30	45 : 1	18	2	10	160	21	200	17
	5.6; 11; 22; 45; 90		32 : 1	13	2			29		23
	125	25	22.5 : 1	14	2			28		22
	180		16 : 1	10	3			33		26
SA 07.6	4; 8; 16; 32; 63	60	45 : 1	18	3	10	160	42	200	33
	5.6; 11; 22; 45; 90		32 : 1	13	5			59		47
	125	50	22.5 : 1	14	4			56		44
	180		16 : 1	10	5			65		52
SA 10.2	4; 8; 16; 32; 63	120	45 : 1	18	7	20	200	68	250	55
	5.6; 11; 22; 45; 90		32 : 1	13	9			94		75
	125	100	22 : 1	13	9			91		73
	180		16 : 1	10	10			104		83
SA 14.2	4; 8; 16; 32; 63	250	45 : 1	18	14	75	315	88	400	69
	5.6; 11; 22; 45; 90		32 : 1	13	19			120		95
	125	200	22.5 : 1	14	19			118		93
	180		16 : 1	10	20			128		101
SA 14.6	4; 8; 16; 32; 63	500	45 : 1	18	28	75	400	139	500	111
	5.6; 11; 22; 45; 90		32 : 1	13	38			189		152
	125	400	22.5 : 1	14	37			185		148
	180		16 : 1	10	40			202		162
SA 16.2	4; 8; 16; 32; 63	1,000	45 : 1	18	56	150	500	222	630	176
	5.6; 11; 22; 45; 90		32 : 1	13	76			303		241
	125	800	22.5 : 1	14	59			237		188
	180		16 : 1	10	81			323		257

Notes on tables

1) Factor	Ratio of output torque to handwheel input torque, $f = T_{\text{output}} / T_{\text{manual}}$
2) Handwheel input torque	For maximum output torque
3) Required manual force	Required manual force at handwheel (rim pull) at max. output torque. The actually required manual force depends on the required output torque and the operating conditions.
4) Order code	Handwheel options characteristic: 000-000-000-1

Technical data Variable speed multi-turn actuators for open-close duty

Type of duty S2 - 15 min									
Type	Output speed rpm	Torque range ¹⁾		Run torque ³⁾	Number of starts	Available mains voltage/mains frequency			
		Min. [Nm]	Max. ²⁾ [Nm]	Max. [Nm]	Max. [1/h]	1-phase AC		3-phase AC	
						110 V – 120 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	380 V – 480 V / 50 – 60 Hz
SAVEx 07.2	6 – 60	10	30	11	60	■	■	■	■
	12 – 108					■	■	■	■
	24 – 216		25	9		■	■	■	■
SAVEx 07.6	6 – 60	20	60	21	60	■	■	■	■
	12 – 108					■	■	■	■
	24 – 216		50	15		■	■	■	■
SAVEx 10.2	6 – 60	40	120	42	60	●	■	■	■
	12 – 108					–	■	■	■
	24 – 216		100	35		–	■	■	■
SAVEx 14.2	6 – 60	100	250	88	60	–	■	■	■
	12 – 108					–	●	●	■
	24 – 216		200	70		–	–	▲	■
SAVEx 14.6	6 – 60	200	500	125	60	–	–	▲	■
	12 – 108					–	–	–	●
	24 – 216		400	100		–	–	–	●
SAVEx 16.2	6 – 60	400	1,000	200	60	–	–	–	●

Type of duty S2 - 30 min									
Type	Output speed rpm	Torque range ¹⁾		Run torque ³⁾	Number of starts	Available mains voltage/mains frequency			
		Min. [Nm]	Max. ²⁾ [Nm]	Max. [Nm]	Max. [1/h]	1-phase AC		3-phase AC	
						110 V – 120 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	380 V – 480 V / 50 – 60 Hz
SAVEx 07.2	6 – 60	10	20	6	60	■	■	■	■
	12 – 108					■	■	■	■
	24 – 216			5		■	■	■	■
SAVEx 07.6	6 – 60	20	40	11	60	●	■	■	■
	12 – 108					●	■	■	■
	24 – 216		30	8		●	■	■	■
SAVEx 10.2	6 – 60	40	90	21	60	▲	■	■	■
	12 – 108					–	■	■	■
	24 – 216		70	18		–	■	■	■
SAVEx 14.2	6 – 60	100	180	50	60	–	■	■	■
	12 – 108					–	●	●	■
	24 – 216		140	40		–	–	▲	■
SAVEx 14.6	6 – 60	200	360	65	60	–	–	▲	■
	12 – 108					–	–	–	●
	24 – 216		290	50		–	–	–	●
SAVEx 16.2	6 – 60	400	710	100	60	–	–	–	●

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2)	Max. torque to approx. 50 % of maximum output speed.
3) Run torque	Maximum permissible average torque for 15 min or 30 min running time and at maximum output speed.
■	Without restrictions for temperature class T3 up to ambient temperature +60 °C and for temperature class T4 up to ambient temperature +40 °C
●	For ambient temperatures exceeding +40 °C, restrictions may occur for max. permissible run torque, mode of operation and running time. Detailed information on request
▲	Special sizing on request

Technical data Variable speed multi-turn actuators for open-close duty

Valve attachments and weight							
Type	Output speed rpm	Valve attachment ¹⁾			Handwheel		Weight ²⁾
		Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduction ratio	approx. [kg]
SAVEx 07.2	6 – 60	F07	–	26	160	8 : 1	20
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SAVEx 07.6	6 – 60	F07	–	26	160	8 : 1	21
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SAVEx 10.2	6 – 60	F10	G0	40	200	8 : 1	25
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SAVEx 14.2	6 – 60	F14	G1/2	58	315	8 : 1	48
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SAVEx 14.6	6 – 60	F14	G1/2	58	400	8 : 1	53
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SAVEx 16.2	6 – 60	F16	G3	77	500	8 : 1	79

Notes on tables on page 2	
1) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
2) Weight	Indicated weight includes multi-turn actuator with motor, electrical connection in standard version, output drive type B1 and handwheel.
3) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

General information
Multi-turn actuators of the SAVEx type range require ACVExC actuator controls.

Features and functions		
Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Options:	II2G Ex d IIC T4 or T3 Gb II2G c IIC T4 or T3
EC type test certificate	DEKRA 11 ATEX 008 X	
Type of duty	Standard:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2
	Option:	Short-time duty S2 - 30 min, classes A and B according to EN 15714-2
	For 100 % nominal voltage and +40 °C ambient temperature and at run torque load at maximum output speed	
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	
Mains voltages, mains frequency	For available mains voltages and mains frequency, refer to table on page 1. Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %	
Overvoltage category	Category III according to IEC 60364-4-443	
Insulation class	Standard:	F, tropicalized
	Option:	H, tropicalized
Motor protection	PTC thermistors (according to DIN 44082)	
Self-locking	Self-locking: Speed ranges 6 – 60 rpm and 12 – 108 rpm	
	NOT self-locking: Speed range variant 24 – 216 rpm	
	Multi-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.	
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC
	Power depending on the size 12.5 – 25 W	

Technical data Variable speed multi-turn actuators for open-close duty

Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Terminal plan	TPA00R200-0I1-000 (basic version)	
Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	A, B2, B3, B4, C according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem	

Electromechanical control unit

Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact material	Standard:	Silver (Ag)
	Options:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)	
Mechanical position indicator (option)	Continuous self-adjusting indication with symbols OPEN and CLOSED	
Running indication	Blinker transmitter	
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC	

Electronic control unit (option)

Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator (option)	Continuous indication, self-adjusting indicator disc with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Technical data Variable speed multi-turn actuators for open-close duty

Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	–30 °C to +40 °C/+60 °C	
	Options:	–40 °C to +40 °C/+60 °C	
		–60 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor		
	Terminal compartment additionally sealed against interior of actuator (double sealed)		
	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		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Noise level	< 72 dB (A)		

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SAVEx 07.2 – SAVEx 16.2/SARVEx 07.2 – SARVEx 16.2 mit ACVExC 01.2 Electrical data SAVEx 07.2 – SAVEx 16.2 Technical data for switches Technical data Electronic position transmitter/potentiometer Technical data Sizing of reduction gearings Technical data Manual forces at AUMA multi-turn actuators SA/SAR 07.2 – SA/SAR 16.2, SAEEx/SAREx 07.2 – SAEEx/SAREx 16.2

Technical data Variable speed multi-turn actuators for modulating duty

Type of duty S4 - 25 %									
Type	Output speed rpm	Torque range ¹⁾		Modulating torque ³⁾	Number of starts	Available mains voltage/mains frequency			
		Min. [Nm]	Max. ²⁾ [Nm]	Max. [Nm]	Max. [1/h]	1-phase AC		3-phase AC	
						110 V – 120 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	380 V – 480 V / 50 – 60 Hz
SARVEx 07.2	6 – 60	15	30	15	1 200	■	■	■	■
	12 – 108				900	■	■	■	■
	24 – 216		25			■	■	■	■
SARVEx 07.6	6 – 60	30	60	30	1 200	■	■	■	■
	12 – 108			20	900	■	■	■	■
	24 – 216		50			■	■	■	■
SARVEx 10.2	6 – 60	60	120	60	1 000	●	■	■	■
	12 – 108			50	800	–	■	■	■
	24 – 216		100	40		–	■	■	■
SARVEx 14.2	6 – 60	120	250	120	600	–	■	■	■
	12 – 108			100		–	●	●	■
	24 – 216		200	80	200	–	–	▲	■
SARVEx 14.6	6 – 60	250	500	150	600	–	–	▲	■
	12 – 108			120		–	–	–	●
	24 – 216		400	100	200	–	–	–	●
SARVEx 16.2	6 – 60	500	1,000	250	200	–	–	–	●

Type of duty S4 - 50 %									
Type	Output speed rpm	Torque range ¹⁾		Modulating torque ³⁾	Number of starts	Available mains voltage/mains frequency			
		Min. [Nm]	Max. ²⁾ [Nm]	Max. [Nm]	Max. [1/h]	1-phase AC		3-phase AC	
						110 V – 120 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	220 V – 240 V / 50 – 60 Hz	380 V – 480 V / 50 – 60 Hz
SARVEx 07.2	6 – 60	15	20	8	1 200	■	■	■	■
	12 – 108				900	■	■	■	■
SARVEx 07.6	6 – 60	30	40	15	1 200	●	■	■	■
	12 – 108			10	900	●	■	■	■
SARVEx 10.2	6 – 60	60	90	30	1 000	▲	■	■	■
	12 – 108			25	800	–	■	■	■
SARVEx 14.2	6 – 60	120	180	60	600	–	■	■	■
	12 – 108			50		–	●	●	■
SARVEx 14.6	6 – 60	250	360	75	600	–	–	▲	■
	12 – 108			60		–	–	–	●
SARVEx 16.2	6 – 60	500	710	125	200	–	–	–	●

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2)	Max. torque to approx. 50 % of maximum output speed.
3) Modulating torque	Maximum torque for modulating duty
■	Without restrictions for temperature class T3 up to ambient temperature +60 °C and for temperature class T4 up to ambient temperature +40 °C
●	For ambient temperatures exceeding +40 °C, restrictions may occur for max. permissible modulating torque, on time and the number of starts. Detailed information on request
▲	Special sizing on request

Technical data Variable speed multi-turn actuators for modulating duty

Valve attachments and weight							
Type	Output speed rpm	Valve attachment ¹⁾			Handwheel		Weight ²⁾
		Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduction ratio	approx. [kg]
SARVEx 07.2	6 – 60	F07	–	26	160	8 : 1	20
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SARVEx 07.6	6 – 60	F07	–	26	160	8 : 1	21
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SARVEx 10.2	6 – 60	F10	G0	40	200	8 : 1	25
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SARVEx 14.2	6 – 60	F14	G1/2	58	315	8 : 1	48
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SARVEx 14.6	6 – 60	F14	G1/2	58	400	8 : 1	53
	12 – 108					8 : 1	
	24 – 216					4 : 1	
SARVEx 16.2	6 – 60	F16	G3	77	500	8 : 1	79

Notes on tables on page 2

1) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
2) Weight	Indicated weight includes multi-turn actuator with motor, electrical connection in standard version, output drive type B1 and handwheel.
3) Rising valve stem	Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm

General information

Multi-turn actuators of the SARVEx type range require ACVExC actuator controls.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Options:	II2G Ex d IIC T4 or T3 Gb II2G c IIC T4 or T3
EC type test certificate	DEKRA 11 ATEX 008 X	
Type of duty	Standard:	Intermittent duty S4 - 25 %, class C according to EN 15714-2
	Option:	Intermittent duty S4 - 50 %, class C according to EN 15714-2
	For 100 % nominal voltage and +40 °C ambient temperature and at modulating torque load.	
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	
Mains voltages, mains frequency	For available mains voltages and mains frequency, refer to table on page 1. Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %	
Overvoltage category	Category III according to IEC 60364-4-443	
Insulation class	Standard:	F, tropicalized
	Option:	H, tropicalized
Motor protection	PTC thermistors (according to DIN 44082)	
Self-locking	Self-locking: Speed ranges 6 – 60 rpm and 12 – 108 rpm NOT self-locking: Speed range variant 24 – 216 rpm	
	Multi-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.	

Technical data Variable speed multi-turn actuators for modulating duty

Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC
	Power depending on the size	12.5 – 25 W
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation	
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Terminal plan	TPA00R200-011-000 (basic version)	
Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	A, B2, B3, B4, C according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem	

Electromechanical control unit

Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact material	Standard:	Silver (Ag)
	Options:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (electronic position transmitter)	
Mechanical position indicator (option)	Continuous self-adjusting indication with symbols OPEN and CLOSED	
Running indication	Blinker transmitter	
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC	

Electronic control unit (option)

Non-Intrusive setting	MWG magnetic limit and torque transmitter Turns per stroke: 1 to 500 (standard) or 10 to 5,000 (option)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator (option)	Continuous indication, self-adjusting indicator disc with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Technical data Variable speed multi-turn actuators for modulating duty

Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C	
	Options:	−40 °C to +40 °C/+60 °C	
		−60 °C to +40 °C/+60 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor		
	Terminal compartment additionally sealed against interior of actuator (double sealed)		
	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)		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	AUMA multi-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		
Noise level	< 72 dB (A)		

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SAVEx 07.2 – SAVEx 16.2/SARVEx 07.2 – SARVEx 16.2 mit ACVExC 01.2 Electrical data SARVEx 07.2 – SARVEx 16.2 Technical data for switches Technical data Electronic position transmitter/potentiometer Technical data Sizing of reduction gearings Technical data Manual forces at AUMA multi-turn actuators SA/SAR 07.2 – SA/SAR 16.2, SAEEx/SAREx 07.2 – SAEEx/SAREx 16.2

Type	Operating time for 90° in seconds		Torque range ¹⁾		Run torque ²⁾	Valve attachment		Valve shaft			Handwheel		Weight
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Option EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø mm	Turns for 90°	approx. [kg]
SQEx 05.2	4	3	50	150	52.5	F05/F07	F10	25.4	22	22	160	11	29 ³⁾ 34 ⁴⁾
	5.6	4.5										16	
	8	6										11	
	11	9										16	
	16	12										11	
	22	17										16	
	32	25										11	
	63	50										11	
SQEx 07.2	4	3	100	300	105	F05/F07	F10	25.4	22	22	160	11	29 ³⁾ 34 ⁴⁾
	5.6	4.5										16	
	8	6										11	
	11	9										16	
	16	12										11	
	22	17										16	
	32	25										11	
	63	50										11	
SQEx 10.2	8	6	200	450	157.5	F10	F12	38	30	27	200	11	34 ³⁾ 38 ⁴⁾
	11	9		600	210							15	
	16	12										11	
	22	17										15	
	32	25										11	
	45	35										15	
	63	50										11	
SQEx 12.2	11	9	400	900	315	F12	F14	50	36	41	200	30	42 ³⁾ 50 ⁴⁾
	16	12		1200	420							22	
	22	17										30	
	32	25										22	
	45	35										30	
	63	50										22	
	90	75										30	
	125	108										22	
SQEx 14.2	24	20	800	1800	630	F14	F16	60	46	46	200	70	51 ³⁾ 62 ⁴⁾
	36	30		2,400	840							51	
	48	40										70	
	72	60										51	
	100	85										70	

General information

Part-turn actuators AUMA NORM require external controls.

For sizes SQEx 05.2 – SQEx 14.2, AUMA offers AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Run torque	Maximum permissible torque for 15 min. running time.
3) Weight	Indicated weight includes part-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, unbored coupling and handwheel
4) Weight with base and lever	Indicated weight includes part-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, and handwheel, including base and lever

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Option:	II2G Ex d IIC T4 or T3 Gb
EC type test certificate	DEKRA 13 ATEX 0016 X	
Type of duty	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2	
	For nominal voltage and +40 °C ambient temperature and at run torque load.	
Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	

Mains voltage, mains frequency	Standard voltages:											
	3-phase AC current											
	Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages:											
	3-phase AC current											
	Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
Further voltages on request												
Permissible variation of mains voltage: ±10 %												
Permissible variation of mains frequency: ±5 %												
Overvoltage category	Category III according to IEC 60364-4-443											
Insulation class	Standard:	F, tropicalized										
	Option:	H, tropicalized										
Motor protection	Standard:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.										
	Option:	Thermoswitches (NC) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.										
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC										
	Power:	12.5 W										
Swing angle	Standard:	Adjustable between 75° and < 105°										
	Options:	15° to < 45°, 45° bis < 75°, 105° to < 135°, 135° to < 165°, 165° to < 195°, 195° to < 225°										
Self-locking	Yes (Part-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.)											
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation											
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm										
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)											
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. power supply 525 V AC										
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals										
Threads for cable entries	Standard:	Metric threads										
	Options:	Pg-threads, NPT-threads, G-threads										
Terminal plan	TPA 00R2AA-101-000 (basic version in combination with PTC thermistors) TPA 00R1AA-101-000 (basic version in combination with thermoswitches)											
Splined coupling for connection to the valve shaft	Standard:	Coupling without bore										
	Options:	Machined coupling with bore and keyway, square bore or bore with two-flats according to EN ISO 5211										
Valve attachment	Dimensions according to EN ISO 5211 without spigot											

With base and lever (option)

Swing lever	Made of spheroidal cast iron with two or three bores for fixing a lever arrangement. Considering the installation conditions, the lever may be mounted to the output shaft in any desired position.
Ball joints (option)	Two ball joints matching the lever, including lock nuts and two welding nuts, suitable for pipe according to dimension sheet
Fixing	Base with four holes for fastening screws

Electromechanical control unit	
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)
	Standard: Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options: Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE
	Standard: Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option: Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard: Silver (Ag)
	Option: Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20mA (electronic position transmitter)
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED
Running indication	Blinker transmitter
Heater in switch compartment	Standard: Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Options: 24 – 48 V AC/DC or 380 – 400 V AC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.

Electronic control unit (option, only in combination with ACExC actuator controls)	
Non-Intrusive setting	Magnetic limit and torque transmitter (MWG)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions	
Use	Indoor and outdoor use permissible
Mounting position	Any position
Installation altitude	≤ 2,000 m above sea level
	> 2,000 m above sea level on request
Ambient temperature	Standard: –30 °C to +60 °C
	Options: –40 °C to +60 °C
	–60 °C to +60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range
Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor
	Terminal compartment additionally sealed against interior of actuator (double sealed)
	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
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, 10 to 200 Hz (AUMA NORM), 1g, 10 to 200 Hz (for actuators with AMExC or ACExC integral controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for part-turn actuators in version AUMA NORM and in version with integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.

Technical data Part-turn actuators for open-close duty with 3-phase AC motors

Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	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	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Electrical data Part-turn actuators SQEx 05.2 – SQEx 14.2 with 3-phase AC motors Dimensions Part-turn actuators SQEx 05.2 – SQEx 14.2 Technical data Electronic position transmitter/potentiometer Technical data for switches Technical data for sizing/setting the reduction gearings

Type	Operating time for 90° in seconds		Torque range ¹⁾		Run torque ²⁾	Valve attachment		Valve shaft			Handwheel		Weight
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Option EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø mm	Turns for 90°	approx. [kg]
SQEx 05.2	4	3	50	150	52.5	F05/F07	F10	25.4	22	22	160	11	33 ³⁾ 39 ⁴⁾
	5.6	4.5										16	
	8	6										11	
	11	9										16	
	16	12										11	
	22	17										16	
	32	25										11	
	63	50										11	
SQEx 07.2	4	3	100	300	105	F05/F07	F10	25.4	22	22	160	11	33 ³⁾ 39 ⁴⁾
	5.6	4.5										16	
	8	6										11	
	11	9										16	
	16	12										11	
	22	17										16	
	32	25										11	
	63	50										11	
SQEx 10.2	8	6	200	450	157.5	F10	F12	38	30	27	200	11	39 ³⁾ 43 ⁴⁾
	11	9		600	210							15	
	16	12										11	
	22	17										15	
	32	25										11	
	45	35										15	
	63	50										11	
SQEx 12.2	11	9	400	900	315	F12	F14	50	36	41	200	30	47 ³⁾ 55 ⁴⁾
	16	12		1,200	420							22	
	22	17										30	
	32	25										22	
	45	35										30	
	63	50										22	
	90	75										30	
	125	108										22	
SQEx 14.2	24	20	800	1 800	630	F14	F16	60	46	46	200	70	56 ³⁾ 67 ⁴⁾
	36	30		2,400	840							51	
	48	40										70	
	72	60										51	
	100	85										70	

General information

Part-turn actuators AUMA NORM require external controls.

For sizes SQEx 05.2 – SQEx 14.2, AUMA offers AMExC or ACEXC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Run torque	Maximum permissible torque for 10 min. running time.
3) Weight	Indicated weight includes part-turn actuator AUMA NORM with 1-phase AC motor, electrical connection in standard version, unbored coupling and handwheel
4) Weight with base and lever	Indicated weight includes AUMA NORM part-turn actuator with 1-phase AC motor, electrical connection in standard version, and handwheel, including base and lever

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Option:	II2G Ex d IIC T4 or T3 Gb
EC type test certificate	DEKRA 13 ATEX 0016 X	
Type of duty	Short-time duty S2 - 10 min, classes A and B according to EN 15714-2	
	For nominal voltage and +40 °C ambient temperature and at run torque load.	
Motors	1-phase AC motor with integral permanent split capacitor (PSC), type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	

Mains voltage, mains frequency	Standard voltages:				
	1-phase AC current				
	Voltages/frequencies				
	Volt	110 – 120	110 – 120	220 – 240	220 – 240
	Hz	50	60	50	60
	Further voltages on request				
Permissible variation of mains voltage: ±10 %					
Permissible variation of mains frequency: ±5 %					
Overvoltage category	Category III according to IEC 60364-4-443				
Insulation class	Standard:	F, tropicalized			
	Option:	H, tropicalized			
Motor protection	Standard:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.			
	Option:	Thermoswitches (NC) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.			
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC			
	Power:	12.5 W			
Swing angle	Standard:	Adjustable between 75° and < 105°			
	Options:	15° to < 45°, 45° bis < 75°, 105° to < 135°, 135° to < 165°, 165° to < 195°, 195° to < 225°			
Self-locking	Yes (Part-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.)				
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation				
	Options:	Handwheel lockable			
		Handwheel stem extension			
		Power tool for emergency operation with square 30 mm or 50 mm			
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)				
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. power supply 525 V AC			
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals			
Threads for cable entries	Standard:	Metric threads			
	Options:	Pg-threads, NPT-threads, G-threads			
Terminal plan	TPA01R2AA-101-000, 1-phase AC motor with permanent split capacitor (basic version in combination with PTC thermistors) TPA01R1AA-101-000, Einphasen Wechselstrommotor mit Betriebskondensator (Grundausführung in Verbindung mit Thermoschalter)				
Splined coupling for connection to the valve shaft	Standard:	Coupling without bore			
	Options:	Machined coupling with bore and keyway, square bore or bore with two-flats according to EN ISO 5211			
Valve attachment	Dimensions according to EN ISO 5211 without spigot				

With base and lever (option)

Swing lever	Made of spheroidal cast iron with two or three bores for fixing a lever arrangement. Considering the installation conditions, the lever may be mounted to the output shaft in any desired position.
Ball joints (option)	Two ball joints matching the lever, including lock nuts and two welding nuts, suitable for pipe according to dimension sheet
Fixing	Base with four holes for fastening screws

Electromechanical control unit	
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)
	Standard: Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options: Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE
	Standard: Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option: Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard: Silver (Ag)
	Option: Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20mA (electronic position transmitter)
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED
Running indication	Blinker transmitter
Heater in switch compartment	Standard: Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Option: 24 – 48 V DC/DC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.

Electronic control unit (option, only in combination with ACExC actuator controls)	
Non-Intrusive setting	Magnetic limit and torque transmitter (MWG)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions	
Use	Indoor and outdoor use permissible
Mounting position	Any position
Installation altitude	Standard: ≤ 2,000 m above sea level
	Option: > 2,000 m above sea level on request
Ambient temperature	Standard: –30 °C to +40 °C/+60 °C
	Options: –40 °C to +40 °C/+60 °C –60 °C to +40 °C/+60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range
Enclosure protection according to EN 60529	IP68 with AUMA 1-phase AC motor
	Terminal compartment additionally sealed against interior of actuator (double sealed)
	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
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, 10 to 200 Hz (AUMA NORM), 1g, 10 to 200 Hz (for actuators with AMExC or ACExC integral controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for part-turn actuators in version AUMA NORM and in version with integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.

Technical data Part-turn actuators for open-close duty with 1-phase AC motors

Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	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	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Electrical data Part-turn actuators SQEx 05.2 – SQEx 14.2 with 1-phase AC motors Dimensions Part-turn actuators SQEx 05.2 – SQEx 14.2 Technical data Electronic position transmitter/potentiometer Technical data for switches Technical data for sizing/setting the reduction gearings

Technical data Part-turn actuators for open-close duty with DC motors							SGExC 05.1 – SGExC 12.1 AUMA NORM													
Type	Operating time for 90° in seconds	Torque range ¹⁾		Running torque ²⁾	Valve attachment		Valve shaft			Handwheel		approx. kg ³⁾								
		min. Nm	max. Nm		max. Nm	Standard EN ISO 5211	Option EN ISO 5211	Cylindrical max. mm	Square max. mm	Two-flat max. mm	Ø mm		Turns for 90°							
SGExC 05.1	5 – 10	100	150	75	F05	F07	25.4	22	22	160	58	19								
SGExC 07.1	10 – 15	120	300	150	F07	F10	25.4	22	22	160	58	19								
SGExC 10.1	20 – 25	250	600	300	F10	F12	38	30	27	160	107	25								
SGExC 12.1	30 – 35	500	840	420	F12	F14	50	36	41	160	110	29								
General information																				
Part-turn actuators AUMA NORM require external controls. AUMA offers actuator controls AUMA MATIC or AUMATIC. These can also easily be mounted to the actuator at a later date.																				
Features and functions																				
Explosion protection		Standard: II2G Ex de IIC T4 II2G c IIC T4 Option: II2G Ex d IIC T4 II2G c IIC T4																		
EC type examination certificate		PTB 01 ATEX 1119																		
Types of explosion protection		Motor compartment: d flameproof enclosure Ex d Switch compartment: d flameproof enclosure Ex d Terminal compartment: e increased safety Ex e (optional d)																		
Type of duty ⁴⁾		Short-time duty S2 - 10 min																		
Motors		DC shunt motor, type IM B14 according to IEC 60034																		
Mains voltage		Standard voltages: <table><tr><td colspan="4">DC voltages</td></tr><tr><td>Volt</td><td>24</td><td>110</td><td>220</td></tr></table> Permissible variation of the mains voltage: ±10 %											DC voltages				Volt	24	110	220
DC voltages																				
Volt	24	110	220																	
Overvoltage category		Category III according to IEC 60364-4-443																		
Insulation class		F, tropicalized																		
Motor protection		Standard: Thermoswitches (NC)																		
Self-locking		Yes																		
Swing angle		Standard: 80° to 110° adjustable between min. and max. values Options: 30° – 40°, 40° – 55°, 55° – 80°, 110° – 160°, 160° – 230° or 230° – 320°																		
Limit switching		Counter gear mechanism for end positions CLOSED and OPEN Standard: Single switches (1 NC and 1 NO) for each end position, switches not galvanically isolated Options: Tandem switches (2 NC and 2 NO) for each end position, switches galvanically isolated Triple switches (3 NC and 3 NO) for each end position, switches galvanically isolated Intermediate position switch (DUO limit switching), adjustable for any position																		
Torque switching		Torque switching adjustable for directions OPEN and CLOSE Standard: Single switch (1 NC and 1 NO) for each direction, switches not galvanically isolated Options: Tandem switches (2 NC and 2 NO) for each direction, switches galvanically isolated																		
Non-intrusive setting (option)		Magnetic limit and torque transmitter MWG (only possible in combination with AUMATIC actuator controls)																		
Position feedback signal, analogue (options)		Potentiometer or 0/4 – 20 mA (RWG)																		
Torque feedback signal, analogue (option)		Only in combination with magnetic limit and torque transmitter MWG and AUMATIC actuator controls																		
Mechanical position indicator		Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED																		
Running indication		Blinker transmitter																		
1) Tripping torque adjustable for both directions 2) Permissible average torque for a travel of 90° 3) Weight for part-turn actuator AUMA NORM with DC motor, standard electrical connection, unbored coupling and handwheel 4) Based on 20 °C ambient temperature and at an average load with running torque. The type of duty must not be exceeded.																				
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.																				
auma®							Issue 1.11													
Y003.735/002/en																				

SGExC 05.1 – SGExC 12.1 AUMA NORM		Technical data Part-turn actuators for open-close duty with DC motors	
Heater in switch compartment	Standard: Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC Options: 24 – 48 V AC/DC or 380 – 400 V AC A resistance type heater (5 W, 24 V DC) is installed in the actuator in combination with the actuator controls AMExC or ACExC.		
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation. Option: Handwheel lockable		
Electrical connection	Standard: Plug/socket connector with screw-type terminals (KP) Options: Plug/socket connector with terminal blocks (KES)		
Threads for cable entries	Standard: Metric threads Options: Pg-threads, NPT-threads, G-threads		
Terminal plan	TPA17R1AA-101-000 (basic version)		
Splined coupling for connection to the valve shaft	Standard: Coupling without bore Options: Machined coupling with bore and keyway, square bore or bore with two-flats according to EN ISO 5211		
Valve attachment	Dimensions according to EN ISO 5211		
Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	Standard: ≤ 2,000 m above sea level Option: > 2,000 m above sea level, please contact AUMA		
Ambient temperature	–40 °C to +40 °C/+60 °C		
Enclosure protection according to EN 60529	Standard: IP 67 Options: IP 68 For both enclosure protection types (IP 67 and IP 68), the terminal compartment is additionally sealed against the interior – double sealed		
Pollution degree	Pollution degree 4		
Corrosion protection	Standard: KS Suitable for installation in occasionally or permanently aggressive atmosphere with a moderate pollutant concentration (e.g. in waste water treatment plants, chemical industry) Options: KX Suitable for installation in extremely aggressive atmospheres with high humidity and high pollutant concentration KG Same as KX, however aluminium-free version (outer parts)		
Finish coating	Powder coating		
Colour	Standard: AUMA silver-grey (similar to RAL 7037) Option: Other colours are possible on request.		
Lifetime	Operating cycles (OPEN-CLOSE-OPEN) for 90° SGExC 05.1 – SGExC 07.1: 20,000 SGExC 10.1: 15,000 SGExC 12.1: 10,000		
Further information			
EU Directives	ATEX Directive: (94/9/EC) Electromagnetic Compatibility (EMC): (2004/108/EC) Low Voltage Directive: (2006/95/EC) Machinery Directive: (2006/42/EC)		
Reference documents	Product description “Electric part-turn actuators SG” Dimension sheets SGExC 05.1 – SGExC 12.1 Information “Electric actuators and valve gearboxes according to ATEX directive 94/9/EC for the use in potentially explosive atmospheres” Electrical data SGExC 05.1 – SGExC 12.1 Technical data for switches Technical data Electronic position transmitter/potentiometer		
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.			
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Y003.735/002/en			

Type	Operating time for 90° in seconds		Torque range ¹⁾			Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Pulse dur. on revers. ⁴⁾	Valve attachment		Valve shaft			Handwheel		Weight
	50 Hz	60 Hz	Min. [Nm]	S4 - 25% Max. [Nm]	S4 - 50% Max. [Nm]	S4 - 25% Max. [Nm]	S4 - 50% Max. [Nm]				Standard EN ISO 5211	Option EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø [mm]	Turns for 90°	
SQREx 05.2	8	6	75	150	110	75	55	1,200	50	160	F05/F07	F10	25.4	22	22	160	11	29 ⁵⁾ 34 ⁶⁾
	11	9								200							16	
	16	12								265							11	
	22	17								350							16	
	32	25								480							11	
	63	50								900							11	
SQREx 07.2	8	6	150	300	220	150	110	1,200	50	160	F05/F07	F10	25.4	22	22	160	11	29 ⁵⁾ 34 ⁶⁾
	11	9								200							16	
	16	12								265							11	
	22	17								350							16	
	32	25								480							11	
	63	50								900							11	
SQREx 10.2	11	9	300	600	420	300	210	1,200	50	200	F10	F12	38	30	27	200	11	34 ⁵⁾ 38 ⁶⁾
	16	12								265							15	
	22	17								350							11	
	32	25								480							15	
	45	35								650							11	
	63	50								900							15	
SQREx 12.2	16	12	600	900	630	450	315	1,200	50	180	F12	F14	50	36	41	200	22	42 ⁵⁾ 50 ⁶⁾
	22	17								230							30	
	32	25								320							22	
	45	35								430							30	
	63	50								580							22	
	90	75								805							30	
SQREx 14.2	125	108	1,200	1,800	1,260	900	630	1,200	50	1,000	F14	F16	60	46	46	200	22	51 ⁵⁾ 62 ⁶⁾
	36	30								250							51	
	48	40								315							70	
	72	60								450							51	
	100	85								600							70	

General information

Part-turn actuators AUMA NORM require external controls.

For sizes SQREx 05.2 – SQREx 14.2, AUMA offers AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Modulating torque	Maximum permissible torque for modulating duty
3) Pulse duration	For identical direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
4) Pulse duration on reversal	For reversal of direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
5) Weight	Indicated weight includes AUMA NORM part-turn actuator with 3-phase AC motor, electrical connection in standard version, unbored coupling and handwheel
6) Weight with base and lever	Indicated weight includes AUMA NORM part-turn actuator with 3-phase AC motor, electrical connection in standard version, and handwheel, including base and lever

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Option:	II2G Ex d IIC T4 or T3 Gb
EC type test certificate	DEKRA 13 ATEX 0016 X	
Type of duty	Standard:	Intermittent duty S4 - 25 %, class C according to EN 15714-2
	Option:	Intermittent duty S4 - 50 %, class C according to EN 15714-2
	For nominal voltage and +40 °C ambient temperature and at modulating torque load.	

Motors	3-phase AC asynchronous motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6																																		
Mains voltage, mains frequency	Standard voltages:																																		
	3-phase AC current Voltages/frequencies <table><tr><td>Volt</td><td>220</td><td>230</td><td>380</td><td>380</td><td>400</td><td>400</td><td>415</td><td>440</td><td>460</td><td>480</td><td>500</td></tr><tr><td>Hz</td><td>60</td><td>50</td><td>50</td><td>60</td><td>50</td><td>60</td><td>50</td><td>60</td><td>60</td><td>60</td><td>50</td></tr></table>											Volt	220	230	380	380	400	400	415	440	460	480	500	Hz	60	50	50	60	50	60	50	60	60	60	50
	Volt	220	230	380	380	400	400	415	440	460	480	500																							
	Hz	60	50	50	60	50	60	50	60	60	60	50																							
	Special voltages:																																		
	3-phase AC current Voltages/frequencies <table><tr><td>Volt</td><td>220</td><td>440</td><td>525</td><td>575</td><td>600</td><td>660</td><td>690</td></tr><tr><td>Hz</td><td>50</td><td>50</td><td>50</td><td>60</td><td>60</td><td>50</td><td>50</td></tr></table>											Volt	220	440	525	575	600	660	690	Hz	50	50	50	60	60	50	50								
	Volt	220	440	525	575	600	660	690																											
	Hz	50	50	50	60	60	50	50																											
	Further voltages on request																																		
	Permissible variation of mains voltage: ±10 %																																		
Permissible variation of mains frequency: ±5 %																																			
Overvoltage category	Category III according to IEC 60364-4-443																																		
Insulation class	Standard:	F, tropicalized																																	
	Option:	H, tropicalized																																	
Motor protection	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.																																		
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC																																	
	Power:	12.5 W																																	
Swing angle	Standard:	Adjustable between 75° and < 105°																																	
	Options:	15° to < 45°, 45° bis < 75°, 105° to < 135°, 135° to < 165°, 165° to < 195°, 195° to < 225°																																	
Self-locking	Yes (Part-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.)																																		
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation																																		
	Options:	Handwheel lockable Handwheel stem extension Power tool for emergency operation with square 30 mm or 50 mm																																	
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)																																		
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. power supply 525 V AC																																	
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals																																	
Threads for cable entries	Standard:	Metric threads																																	
	Options:	Pg-threads, NPT-threads, G-threads																																	
Terminal plan	TPA 00R2AA-001-000 (basic version)																																		
Splined coupling for connection to the valve shaft	Standard:	Coupling without bore																																	
	Options:	Machined coupling with bore and keyway, square bore or bore with two-flats according to EN ISO 5211																																	
Valve attachment	Dimensions according to EN ISO 5211 without spigot																																		

With base and lever (option)

Swing lever	Made of spheroidal cast iron with two or three bores for fixing a lever arrangement. Considering the installation conditions, the lever may be mounted to the output shaft in any desired position.										
Ball joints (option)	Two ball joints matching the lever, including lock nuts and two welding nuts, suitable for pipe according to dimension sheet										
Fixing	Base with four holes for fastening screws										

Electromechanical control unit		
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard:	Silver (Ag)
	Option:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20mA (electronic position transmitter)	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication (option)	Blinker transmitter	
Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Options:	24 – 48 V AC/DC or 380 – 400 V AC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.	

Electronic control unit (option, only in combination with ACExC actuator controls)		
Non-Intrusive setting	Magnetic limit and torque transmitter (MWG)	
Position feedback signal	Via actuator controls	
Torque feedback signal	Via actuator controls	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication	Blinking signal via actuator controls	
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC	

Service conditions		
Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	Standard:	≤ 2,000 m above sea level
	Option:	> 2,000 m above sea level on request
Ambient temperature	Standard:	–30 °C to +60 °C
	Options:	–40 °C to +60 °C
		–60 °C to +60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor	
	Terminal compartment additionally sealed against interior of actuator (double sealed)	
	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, 10 to 200 Hz (AUMA NORM), 1g, 10 to 200 Hz (for actuators with AMExC or ACExC integral controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for part-turn actuators in version AUMA NORM and in version with integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.	

Technical data Part-turn actuators for modulating duty with 3-phase AC motors

Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
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	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	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Part-turn actuators SQREx 05.2 – SQREx 14.2 Electrical data Part-turn actuators SQREx 05.2 – SQREx 14.2 with 3-phase AC motors Technical data Electronic position transmitter/potentiometer Technical data for switches Technical data for sizing/setting the reduction gearings

AUMA NORM

Technical data Part-turn actuators for modulating duty with 1-phase AC motors

Type	Operating time for 90° in seconds		Torque range ¹⁾		Modulating torque ²⁾	Number of starts	Pulse duration ³⁾	Pulse duration on reversal ⁴⁾	Valve attachment		Valve shaft			Handwheel		Weight
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Max. [1/h]	[ms]	[ms]	Standard EN ISO 5211	Option EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø mm	Turns for 90°	approx. [kg]
SQREx 05.2	8	6	75	150	75	1,200	50	160	F05/F07	F10	25.4	22	22	160	11	33 ⁵⁾
	11	9						200							16	
	16	12						265							11	
	22	17						350							16	39 ⁶⁾
	32	25						480							11	
	63	50						800							11	
SQREx 07.2	8	6	150	300	150	1,200	50	160	F05/F07	F10	25.4	22	22	160	11	33 ⁵⁾
	11	9						200							16	
	16	12						265							11	
	22	17						350							16	39 ⁶⁾
	32	25						480							11	
	63	50						800							11	
SQREx 10.2	11	9	300	600	300	1,200	50	200	F10	F12	38	30	27	200	11	39 ⁵⁾
	16	12						265							15	
	22	17						350							11	
	32	25						480							15	43 ⁶⁾
	45	35						650							11	
	63	50						900							15	
SQREx 12.2	16	12	600	900	450	1,200	50	180	F12	F14	50	36	41	200	22	47 ⁵⁾
	22	17						230							30	
	32	25						320							22	
	45	35						430							30	55 ⁶⁾
	63	50						580							22	
	90	75						800							30	
SQREx 14.2	125	108						1,000							22	
	36	30	1,200	1,800	900	1,200	50	250	F14	F16	60	46	46	200	51	56 ⁵⁾
	48	40						315							70	
	72	60						450							51	67 ⁶⁾
	100	85						600							70	

General information

Part-turn actuators AUMA NORM require external controls.

For sizes SQREx 05.2 – SQREx 14.2, AUMA offers AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table

1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Modulating torque	Maximum permissible torque for modulating duty
3) Pulse duration	For identical direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
4) Pulse duration on reversal	For reversal of direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
5) Weight	Indicated weight includes part-turn actuator AUMA NORM with 1-phase AC motor, electrical connection in standard version, unbored coupling and handwheel
6) Weight with base and lever	Indicated weight includes AUMA NORM part-turn actuator with 1-phase AC motor, electrical connection in standard version, and handwheel, including base and lever

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Option:	II2G Ex d IIC T4 or T3 Gb
EC type test certificate	DEKRA 13 ATEX 0016 X	
Type of duty	Intermittent duty S4 - 20 %, class C according to EN 15714-2	
	For nominal voltage and +40 °C ambient temperature and at modulating torque load.	

Motors	1-phase AC motor with integral permanent split capacitor (PSC), type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6				
Mains voltage, mains frequency	Standard voltages:				
	1-phase AC current				
	Voltages/frequencies				
	Volt	110 – 120	110 – 120	220 – 240	220 – 240
	Hz	50	60	50	60
	Further voltages on request				
	Permissible variation of mains voltage: ±10 %				
	Permissible variation of mains frequency: ±5 %				
Overvoltage category	Category III according to IEC 60364-4-443				
Insulation class	Standard:	F, tropicalized			
	Option:	H, tropicalized			
Motor protection	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.				
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC			
	Power:	12.5 W			
Swing angle	Standard:	Adjustable between 75° and < 105°			
	Options:	15° to < 45°, 45° bis < 75°, 105° to < 135°, 135° to < 165°, 165° to < 195°, 195° to < 225°			
Self-locking	Yes (Part-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.)				
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation				
	Options:	Handwheel lockable			
		Handwheel stem extension			
		Power tool for emergency operation with square 30 mm or 50 mm			
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)				
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. power supply 525 V AC			
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals			
Threads for cable entries	Standard:	Metric threads			
	Options:	Pg-threads, NPT-threads, G-threads			
Terminal plan	TPA 01R2AA-001-000 (basic version)				
Splined coupling for connection to the valve shaft	Standard:	Coupling without bore			
	Options:	Machined coupling with bore and keyway, square bore or bore with two-flats according to EN ISO 5211			
Valve attachment	Dimensions according to EN ISO 5211 without spigot				

With base and lever (option)

Swing lever	Made of spheroidal cast iron with two or three bores for fixing a lever arrangement. Considering the installation conditions, the lever may be mounted to the output shaft in any desired position.
Ball joints (option)	Two ball joints matching the lever, including lock nuts and two welding nuts, suitable for pipe according to dimension sheet
Fixing	Base with four holes for fastening screws

Electromechanical control unit

Limit switching	Counter gear mechanism for end positions OPEN and CLOSED			
	Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)			
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated		
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation		

Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard:	Silver (Ag)
	Option:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20mA (electronic position transmitter)	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Running indication (option)	Blinker transmitter	
Heater in switch compartment	Standard:	Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC
	Option:	24 – 48 V DC/DC
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AMExC or ACExC actuator controls.	

Electronic control unit (option, only in combination with ACExC actuator controls)

Non-Intrusive setting	Magnetic limit and torque transmitter (MWG)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED
Running indication (option)	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions

Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	Standard:	≤ 2,000 m above sea level
	Option:	> 2,000 m above sea level on request
Ambient temperature	Standard:	–30 °C to +40 °C/+60 °C
	Options:	–40 °C to +40 °C/+60 °C
		–60 °C to +40 °C/+60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection according to EN 60529	IP68 with AUMA 1-phase AC motor	
	Terminal compartment additionally sealed against interior of actuator (double sealed)	
	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, 10 to 200 Hz (AUMA NORM), 1 g, 10 to 200 Hz (for actuators with AMExC or ACExC integral controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for part-turn actuators in version AUMA NORM and in version with integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.	
Corrosion protection	Standard:	KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G Same as KX, however aluminium-free version (outer parts)
Coating	Double layer powder coating Two-component iron-mica combination	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request

Technical data Part-turn actuators for modulating duty with 1-phase AC motors

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	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Electrical data Part-turn actuators SQREx 05.2 – SQREx 14.2 with 1-phase AC motors Dimensions Part-turn actuators SQREx 05.2 – SQREx 14.2 Technical data Electronic position transmitter/potentiometer Technical data for switches Technical data for sizing/setting the reduction gearings

SQ/SQR 05.2 – SQ/SQR 14.2, SQEx/SQREx 05.2 – SQEx/SQREx 14.2

Technical data Torques at different voltages for 3-phase AC motors

Short-time duty S2 - 15 min, intermittent duty S4 - 25 %

Type	Operating time for 90° in seconds		Motor			Tripping torque adjustable		Torque at stall torque of the motor (without considering inertia) at nominal voltage, overvoltage and undervoltage (... % U _N)								
	50 Hz	60 Hz	Power [kW]	Speed at 50 Hz [rpm]	Size	Min. [Nm]	Max. [Nm]	100 %	105 %	110 %	95 %	90 %	85 %	80 %	75 %	
SQ 05.2	4 ²⁾	3 ²⁾	0.06	2,800	63	50	150	302	333	365	272	244	218	193	170	
	5.6 ²⁾	4.5 ²⁾						349	385	423	315	283	252	224	196	
	8	6	0.04	1,400	63			264	291	319	238	213	190	169	148	
	11	9						301	332	364	272	244	218	193	169	
	16	12	0.02	1,400	63			417	460	505	377	338	302	267	235	
	22	17						473	522	573	427	383	342	303	266	
	32	25	0.01	1,400	63			507	559	613	457	411	366	324	285	
	63	50						507	559	613	457	411	366	324	285	
SQ 07.2	4 ²⁾	3 ²⁾	0.12	2,800	63	100	300	554	611	670	500	449	400	354	311	
	5.6 ²⁾	4.5 ²⁾						635	700	769	573	515	459	407	357	
	8	6	0.06	1,400	63			525	578	635	473	425	379	336	295	
	11	9						594	655	719	536	481	429	380	334	
	16	12	0.03	1,400	63			595	656	720	537	482	430	381	335	
	22	17						689	760	834	622	558	498	441	388	
	32	25	0.01	1,400	63			568	626	687	512	460	410	363	319	
	63	50						568	626	687	512	460	410	363	319	
SQ 10.2	8 ²⁾	6 ²⁾	0.10	1,400	63	200	450	650	717	787	587	527	470	416	366	
	11	9						847	934	1,025	764	686	612	542	476	
	16	12	0.06	1,400	63		600	1,115	1,229	1,349	1,006	903	805	713	627	
	22	17						1,448	1,596	1,752	1,307	1,173	1,046	927	814	
	32	25	0.04	1,400	63			882	972	1,067	796	714	637	564	496	
	45	35						1,171	1,291	1,417	1,057	948	846	749	659	
	63	50	0.02	1,400	63			1,249	1,378	1,512	1,128	1,012	903	800	703	
	11 ²⁾	9 ²⁾						1,788	1,971	2,163	1,613	1,448	1,292	1,144	1,006	
SQ 12.2	16	12	0.10	1,400	63	400	900	1,300	1,433	1,573	1,173	1,053	939	832	731	
	22	17						1,694	1,867	2,049	1,528	1,372	1,224	1,084	953	
	32	25	0.06	1,400	63		1,200	2,230	2,458	2,698	2,012	1,806	1,611	1,427	1,254	
	45	35						2,895	3,192	3,503	2,613	2,345	2,092	1,853	1,629	
	63	50	0.04	1,400	63			1,764	1,945	2,134	1,592	1,429	1,274	1,129	992	
	24 ²⁾	20 ²⁾						3,701	4,080	4,478	3,340	2,997	2,674	2,368	2,082	
	36	30	0.10	1,400	63		800	1,800	2,691	2,967	3,256	2,429	2,180	1,944	1,722	1,514
	48	40							3,506	3,865	4,242	3,164	2,840	2,533	2,244	1,972
SQ 14.2	72	60	0.06	1,400	63	800	2,400	4,615	5,088	5,585	4,165	3,738	3,335	2,954	2,596	
	100	85						5,994	6,608	7,252	5,409	4,855	4,330	3,836	3,371	

Notes on table on page 1

1) Stall torque	Stall torque indications are calculated nominal values. In practical applications, they might differ due to gear and motor tolerances.
2) Short operating times	These operating times are not available for intermittent duty S4 – 25%.

AUMA NORM

Technical data Manual force at handwheel at part-turn actuators

Standard										
Type	Operating time for 90° in seconds 50 Hz	Torque Max. [Nm]	Reduction ratio ¹⁾	Factor ²⁾	Input torque at handwheel ³⁾ approx. [Nm]	Permissible input torque at handwheel Max. [Nm]	Hand-wheel standard Ø [mm]	Standard required manual force ⁴⁾ approx. [N]	Hand-wheel option Ø [mm]	Option required manual force ⁴⁾ approx. [N]
SQ 05.2	4; 8; 16; 32; 63	150	44 : 1	16	9	40	160	117	200	94
	5,6; 11; 22		62 : 1	23	7			83		67
SQ 07.2	4; 8; 16; 32; 63	300	44 : 1	16	19	40	160	234	200	188
	5,6; 11; 22		62 : 1	23	13			167		133
SQ 10.2	8	450	44 : 1	16	28	80	200	282	250	225
	11; 22; 45	600	61 : 1	22	27			273		218
SQ 12.2	16; 32; 63	900	44 : 1	16	37	80	200	375	250	300
	11		121 : 1	44	21			205		164
SQ 12.2	16	1,200	88 : 1	32	28	80	200	282	250	225
	22; 45; 90		121 : 1	44	27			273		218
SQ 14.2	32; 63; 125	1,800	88 : 1	32	37	80	200	375	250	300
	24		278 : 1	91	20			205		164
SQ 14.2	36	2,400	202 : 1	66	27	80	200	282	250	225
	48; 100		278 : 1	91	26			273		218
SQ 14.2	72		202 : 1	66	36			375		300

Option for reduction of manual force ⁵⁾										
Type	Operating time for 90° in seconds 50 Hz	Torque Max. [Nm]	Reduction ratio ¹⁾	Factor ²⁾	Input torque at handwheel ³⁾ approx. [Nm]	Permissible input torque at handwheel Max. [Nm]	Hand-wheel standard Ø [mm]	Standard required manual force ⁴⁾ approx. [N]	Hand-wheel option Ø [mm]	Option required manual force ⁴⁾ approx. [N]
SQ 05.2	4; 8; 16; 32; 63	150	167 : 1	64	2	10	160	29	200	23
	5,6; 11; 22		248 : 1	90	2			21		17
SQ 07.2	4; 8; 16; 32; 63	300	167 : 1	64	5	10	160	59	200	47
	5,6; 11; 22		248 : 1	90	3			42		33
SQ 10.2	8	450	167 : 1	64	7	20	200	71	250	57
	11; 22; 45	600	248 : 1	90	7			68		55
SQ 12.2	16; 32; 63	900	167 : 1	64	9	20	200	94	250	75
	11		495 : 1	180	5			51		42
SQ 12.2	16	1,200	352 : 1	128	7	20	200	71	250	57
	22; 45; 90		495 : 1	180	7			68		55
SQ 14.2	32; 63; 125	1,800	352 : 1	128	9	20	200	94	250	75
	24		1,139 : 1	373	5			51		42
SQ 14.2	36	2,400	810 : 1	266	7	20	200	71	250	57
	48; 100		1,139 : 1	373	6			64		50
SQ 14.2	72		810 : 1	266	9			94		75

Notes on tables

1) Reduction ratio	From handwheel to actuator output drive
2) Factor	Ratio of handwheel input torque to output torque (including efficiency)
3) Handwheel input torque	For maximum output torque
4) Required manual force	Required manual force at handwheel (rim pull) at max. output torque. The actually required manual force depends on the required output torque and the operating conditions.
5) Order code	Handwheel option characteristics: 000-000-000-1

2 Technical data Actuator controls

Actuator controls AMExC	
AMExC 01.1	66
Actuator controls ACExC	
ACExC 01.2	69
ACExC 01.2 Profibus DP	74
ACExC 01.2 Modbus RTU	80
ACExC 01.2 Modbus TCP/IP	87
ACExC 01.2 Foundation Fieldbus	93
ACExC 01.2 HART	100
ACExC 01.2 SIL	107
ACExC 01.2 Profibus DP SIL	112
ACExC 01.2 Modbus RTU SIL	117
ACExC 01.2 Foundation Fieldbus SIL	123
Actuator controls ACVExC	
ACVExC 01.2	130
ACVExC 01.2 Profibus DP	135

Technical data Actuator controls

General information

AMExC 01.1 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3 Gb										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	1-phase AC current Voltages/frequencies											
	Volt	110 – 120		110 – 120		220 – 240		220 – 240				
	Hz	50		60		50		60				
	Special voltages AC:											
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies			
	Volt	220	440	525	575	600	660	690	Volt	208		
	Hz	50	50	50	60	60	50	50	Hz	60		
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains frequency: ±5 %											
Permissible variation of mains voltage: > ±10 % on request												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %:											
	100 to 120 V AC = max. 575 mA 208 to 240 V AC = max. 275 mA 380 to 690 V AC = max. 160 mA											
	Current consumption for mains voltage variation: > ±10 % on request											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											
Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2										
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2 with additional contacts, 1 NC + 1 NO each										
		Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3										
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1,B2										
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.											
Control inputs	3 digital inputs: OPEN, STOP, CLOSE (via opto-isolator with one common), respect minimum pulse duration for modulating actuators											
Control voltage/current consumption for control inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input										
	Option:	115 V AC, current consumption: approx. 15 mA per input										

Technical data Actuator controls

Status signals (output signals)	Standard:	5 output contacts: 4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load), Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, selector switch LOCAL 1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load) for collective fault signal: Torque fault, phase failure, motor protection tripped
	Option:	5 output contacts with integrated running indication (blinking) for directions OPEN and CLOSE in combination with blinker transmitter 4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load), Default configuration: End position and running indication CLOSED, end position OPEN, selector switch REMOTE, selector switch LOCAL 1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load) for collective fault signal: Torque fault, phase failure, motor protection tripped
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 50 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE 3 indication lights: End position CLOSED (yellow), collective fault signal (red), end position OPEN (green)
	Option:	Protection cover: lockable
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Overload protection against excessive torques across the whole travel - Excessive torque (torque fault) can be excluded from collective fault signal. - Phase failure monitoring with automatic phase correction - Push-to-run operation or self-retaining in REMOTE - Push-to-run operation or self-retaining in LOCAL - Blinker signal from actuator (option) for running indication via indication lights of local controls can be activated/deactivated.
	Option:	Positioner for Split Range operation (requires position transmitter in actuator)
Motor protection evaluation	Standard:	Monitoring the motor temperature in combination with thermoswitches within actuator motor
	Options:	- Additional thermal overload relay in controls combined with thermoswitches within actuator - PTC tripping device in combination with PTC thermistors within actuator motor
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d - AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	MSPE310KC3--FF8EC TPA00R2AA-101-000	

Further options for version with electronic position transmitter in actuator

Position feedback signal (option)	Analogue output E2 = 0/4 – 20 mA (load max. 500 Ω)
Wiring diagram (basic version)	MSPE310KC3--FF8EC TPA00R2AA-1E1-000

Service conditions

Use	Indoor and outdoor use permissible
Mounting position	Any position
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request

Technical data Actuator controls

Ambient temperature	Standard:	–40 °C to +40 °C/+60 °C	
	Options:	–60 °C to +40 °C/+60 °C, extreme low temperature version	
		Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC	
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator controls (double sealed)		
	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	1 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)		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G	Same as KX, however aluminium-free version (outer parts)
Coating	Double layer powder coating Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	

Accessories

Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter.

Further information

Weight	approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with integral controls AUMA MATIC Dimensions Part-turn actuators with integral controls AUMA MATIC

Technical data Actuator controls

General information

ACExC 01.2 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3 Gb										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	1-phase AC current Voltages/frequencies											
	Volt	110 – 120		110 – 120		220 – 240		220 – 240				
	Hz	50		60		50		60				
	Special voltages AC:											
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies			
	Volt	220	440	525	575	600	660	690	Volt	208		
	Hz	50	50	50	60	60	50	50	Hz	60		
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains voltage: ±30 % (option)											
	Permissible variation of mains frequency: ±5 %											
	Special voltages DC: (on request)											
	DC current Voltages											
	Volt	24	48	60	110	125	220					
	Permissible voltage deviation: (on request)											
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %:											
	100 to 120 V AC = max. 740 mA 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA											
	For permissible variation of mains voltage of ±30 %:											
	100 to 120 V AC = max. 1,200 mA 208 to 240 V AC = max. 750 mA 380 to 500 V AC = max. 400 mA 515 to 690 V AC = max. 400 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											

Technical data Actuator controls

Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.	
Control inputs	6 digital inputs: OPEN, STOP, CLOSE, EMERGENCY (via opto-isolator, thereof OPEN, STOP, CLOSE with one common and EMERGENCY without common, respect minimum pulse duration for modulating actuators).	
Control voltage/current consumption for control inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Options:	48 V DC, current consumption: approx. 7 mA per input 60 V DC, current consumption: approx. 9 mA per input 115 V DC, current consumption: approx. 15 mA per input 100 – 120 V AC, current consumption : approx. 15 mA per input
	All input signals must be supplied with the same potential.	
Status signals (output signals)	Standard:	6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) - Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)
	Options:	6 programmable output contacts: 5 change-over contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 12 programmable output contacts: 10 potential-free NO contacts, 5 with one common each, max. 250 V AC, 1 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 6 potential-free change-over contacts without one common, per contact max. 250 V AC, 5 A (resistive load) 10 programmable output contacts: 10 potential-free change-over contacts without one common, per contact max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), 12 programmable output contacts: 8 mains failure proof potential-free NO contacts, max. 250 V AC, 1 A (resistive load), 2 potential-free NO contacts, max. 250 V AC, 1 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load) 12 programmable output contacts: 8 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 4 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All output signals must be supplied with the same potential.
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply (Not possible in combination with PTC tripping device)
Analogue output (option)	2 analogue outputs: With position transmitter option: Output of travel and torque as continuous values between 0/4 and 20 mA	

Technical data Actuator controls

Analogue input (option)	2 analogue inputs: With positioner/process controller option: Input of actual position value/actual process value as continuous values between 0/4 and 20 mA	
Local controls	Standard:	• Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) • Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) • 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) • Graphic LC display: illuminated
	Option:	• Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: • AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) • AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	• Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED • Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) • Start and end of stepping mode as well as ON and OFF times can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds • Any 8 intermediate positions: can be set between 0 and 100 %, reaction and signal behaviour programmable • Running indication blinking: can be set
	Options:	• Positioner: - Position setpoint via analogue inputs 0/4 – 20 mA - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Split range operation - MODE input for selecting between OPEN-CLOSE and setpoint control • PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs for process setpoint and actual process value • Multiport valve: Up to 16 positions, signals (pulse or edge) • Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set
Safety functions	Standard:	• EMERGENCY operation (programmable behaviour) - Digital input: Low active - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN, run to intermediate position - Torque monitoring can be by-passed during EMERGENCY operation - Thermal protection can be by-passed during EMERGENCY operation (only in combination with thermoswitch within actuator, not with PTC thermistor).
	Options:	• Enabling local controls via Enable LOCAL digital input: Thus, actuator operation can be enabled or disabled via push buttons on local controls. • Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via two digital inputs • PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function	• Valve overload protection: adjustable, results in switching off and generates fault signal • Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication • Monitoring the heater within actuator: generates warning signal • Monitoring of permissible on-time and number of starts: adjustable, generates warning signal • Operation time monitoring: adjustable, generates warning signal • Phase failure monitoring: results in switching off and generates fault signal • Automatic correction of rotation direction upon wrong phase sequence (3-ph AC current)	

Technical data Actuator controls

Diagnostic function	• Electronic device ID with order and product data • Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings • Time-stamped event report with history for setting, operation and faults • Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" • Torque characteristics (for version with MWG in actuator): - 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	• AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e • AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d • AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCA-0A1-1C1-AA20 TPA00R2AA-0A1-000	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω)

Wiring diagram (basic version) TPCA-0A1-1C1-AA20 TPA00R200-0I1-000

Service conditions

Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	-30 °C to +40 °C/+60 °C	
	Options:	-40 °C to +40 °C/+60 °C, extreme low temperature version	
		Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator controls (double sealed)		
	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	1 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)		
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.

Technical data Actuator controls

Coating	Double layer powder coating Two-component iron-mica combination	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request

Accessories

Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information

Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls

General information

ACExC 01.2 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Profibus DP interface.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3 Gb										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	1-phase AC current Voltages/frequencies											
	Volt	110 – 120		110 – 120		220 – 240		220 – 240				
	Hz	50		60		50		60				
	Special voltages AC:											
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies			
	Volt	220	440	525	575	600	660	690	Volt	208		
	Hz	50	50	50	60	60	50	50	Hz	60		
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains voltage: ±30 % (option)											
	Permissible variation of mains frequency: ±5 %											
	Special voltages DC: (on request)											
DC current Voltages												
Volt	24	48	60	110	125	220						
Permissible voltage deviation: (on request)												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %:											
	100 to 120 V AC = max. 740 mA 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA											
	For permissible variation of mains voltage of ±30 %:											
	100 to 120 V AC = max. 1,200 mA 208 to 240 V AC = max. 750 mA 380 to 500 V AC = max. 400 mA 515 to 690 V AC = max. 400 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											

Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.	
Control and feedback signals	Via Profibus DP interface	
Fieldbus interface with additional input signals (options)	2 free analogue inputs (0/4 – 20 mA), 4 free digital inputs - Signal transmission is made via fieldbus interface - Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for position setpoint - Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for setpoint position and 1 analogue input (0/4 – 20 mA) for actual process value	
Control voltage and current consumption of optional, digital additional inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Options:	48 V DC, current consumption: approx. 7 mA per input
		60 V DC, current consumption: approx. 9 mA per input
		115 V DC, current consumption: approx. 15 mA per input
	100 – 120 V AC, current consumption : approx. 15 mA per input	
	All input signals must be supplied with the same potential.	
Status signals	Via Profibus DP interface	
Fieldbus interface with additional output signals (options)	Additional, binary output signals (only available in combination with additional input signals (option)) 6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) 6 programmable output contacts: 5 potential-free change-over contacts with one common, max. 250 V AC, 1 A (resistive load) 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 6 potential-free change-over contacts without one common, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All binary output signals must be supplied with the same potential. - Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)	
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply (Not possible in combination with PTC tripping device)

Profibus DP-V1 (option)	Access to parameters, the electronic name plate and the operating and diagnostic data with acyclic write/read services	
Profibus DP-V2 (option)	Redundancy behaviour according to Profibus DP-V2 specification no. 2.212 (Primary and Backup with RedCom) Synchronisation of time between actuator controls and Profibus master with subsequent time stamp of the most important events such as malfunctions, end position and torque signals from actuator controls	
Redundancy (option)	Requires Profibus DP-V2 (option) Redundant line topology with universal redundancy behaviour according to AUMA redundancy I or II Redundant line topology and redundancy behaviour according to Profibus DP-V2 specification no. 2.212 (Primary and Backup with RedCom)	
FO cable connection (option)	- Connector types: FSMA connector - FO cables - Multi-mode: 62,5(50)/125 µm, range approx. 2.6 km (max. 3.0 dB/km) - Topologies: Line and star and redundant loop (with single-channel Profibus DP interface) - Baud rate: up to 1.5 Mbit/s - Optical budget: - Multi-mode: 8.0 dB for 62.5 µm/4.0 dB for 50 µm - Wave length: 850 nm - FO coupler by Bartec required at DCS, reference addresses: AUMA or www.bartec.de	
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End positions and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set - Positioner: - Position setpoint via fieldbus interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Options:	- PID process controller: With adaptive positioner, via 0/4 – 20 mA analogue inputs and Profibus for process setpoint and actual process value - Multipoint valve: Up to 16 positions, signals (pulse or edge) - Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set

Technical data Actuator controls

Safety functions	Standard:	- EMERGENCY operation (programmable behaviour) - Via additional input (option, low active) or via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN, run to intermediate position - Torque monitoring can be by-passed during EMERGENCY operation - Thermal protection can be by-passed during EMERGENCY operation (only in combination with thermoswitch within actuator, not with PTC thermistor).
	Options:	- Release of local controls via fieldbus interface: Thus, actuator operation can be enabled or disabled via push buttons on local controls. - Local STOP: - The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) - Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via fieldbus interface - PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal - Automatic correction of rotation direction upon wrong phase sequence (3-ph AC current)	
Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Overvoltage protection (option)	Protection of the actuator and control electronics against overvoltages on the fieldbus cables of up to 4 kV	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d - AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCAA000-1A1-A410 TPA00R2AA-0A1-000	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Via fieldbus interface Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω) Option, only possible in combination with output contacts.
Wiring diagram (basic version)	TPCAA000-1A1-A410 TPA00R200-0I1-000

Setting/programming the Profibus DP interf

Baud rate setting	Automatic baud rate recognition
Setting the fieldbus address	The Profibus DP address is set via the actuator controls display.
Configurable process representation via GSD file	For optimum adaptation to the process control system, the process representation input (feedback) can be freely configured.

General Profibus DP interface dat

Communication protocol	Profibus DP according to IEC 61158 and IEC 61784		
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.		
Transmission medium	Twisted, screened copper cable according to IEC 61158		
Profibus DP interface	EIA-485 (RS-485)		
Transmission rate/cable length	Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length)
	9.6 – 93.75	1,200 m	Approx. 10 km
	187.5	1,000 m	Approx. 10 km
	500	400 m	Approx. 4 km
	1,500	200 m	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 Profibus DP functions	Cyclic data exchange, sync mode, freeze mode, fail safe mode		
Profibus DP ident no.	0x0C4F:	Standard applications with Profibus DP-V0 and DP-V1	
	0x0CBD:	Applications with Profibus DP-V2	

Commands and signals of the Profibus DP interf

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, EMERGENCY operation command, enable local controls, Interlock OPEN/CLOSE
Process representation input (feedback signals)	• End positions OPEN, CLOSED • Actual position value • Actual torque value, requires MWG in actuator • Selector switch in position LOCAL/REMOTE • Running indication (directional) • Torque switches OPEN, CLOSED • Limit switches OPEN, CLOSED • Manual operation by handwheel or via local controls • Analogue (2) and digital (4) customer inputs
Process representation input (fault signals)	• Motor protection tripped • Torque switch tripped in mid-travel • One phase missing • Failure of analogue customer inputs

Technical data Actuator controls

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			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C (with internal FO coupler: −25 °C)	
	Options:	-40 °C to +40 °C/+60 °C, extreme low temperature version	
		Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator controls (double sealed)		
	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	1 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)		
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	

Accessories	
Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls

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

General information

ACExC 01.2 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Modbus RTU interface.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3 Gb										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	1-phase AC current Voltages/frequencies											
	Volt	110 – 120		110 – 120		220 – 240		220 – 240				
	Hz	50		60		50		60				
	Special voltages AC:											
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies			
	Volt	220	440	525	575	600	660	690	Volt	208		
	Hz	50	50	50	60	60	50	50	Hz	60		
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains voltage: ±30 % (option)											
	Permissible variation of mains frequency: ±5 %											
	Special voltages DC: (on request)											
DC current Voltages												
Volt	24	48	60	110	125	220						
Permissible voltage deviation: (on request)												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 100 to 120 V AC = max. 740 mA 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA For permissible variation of mains voltage of ±30 %: 100 to 120 V AC = max. 1,200 mA 208 to 240 V AC = max. 750 mA 380 to 500 V AC = max. 400 mA 515 to 690 V AC = max. 400 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											

Technical data Actuator controls

Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.	
Control and feedback signals	Via Modbus RTU interface	
Fieldbus interface with additional input signals (options)	2 free analogue inputs (0/4 – 20 mA), 4 free digital inputs - Signal transmission is made via fieldbus interface - Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for position setpoint - Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for setpoint position and 1 analogue input (0/4 – 20 mA) for actual process value	
Control voltage and current consumption of optional, digital additional inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Options:	48 V DC, current consumption: approx. 7 mA per input 60 V DC, current consumption: approx. 9 mA per input 115 V DC, current consumption: approx. 15 mA per input 100 – 120 V AC, current consumption : approx. 15 mA per input
		All input signals must be supplied with the same potential.
Status signals	Via Modbus RTU interface	
Fieldbus interface with additional output signals (options)	Additional, binary output signals (only available in combination with additional input signals (option)) 6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) 6 programmable output contacts: 5 potential-free change-over contacts with one common, max. 250 V AC, 1 A (resistive load) 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 6 potential-free change-over contacts without one common, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All binary output signals must be supplied with the same potential. - Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)	
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply (Not possible in combination with PTC tripping device)

Technical data Actuator controls

Redundancy (option)	Redundant line topology with universal redundancy behaviour according to AUMA redundancy I or II Redundant loop topology in combination with SIMA Master Station • Max. number of actuators with actuator controls per redundant loop: 247 units • Max. possible cable length between the actuators equipped with controls without external repeater: 1,200 m • Max. possible total length per redundant ring: approx. 290 km • Automatic commissioning of the redundant ring by means of the SIMA Master Station	
FO cable connection (option)	• Connector types: FSMA connector • FO cables - Multi-mode: 62,5(50)/125 µm, range approx. 2.6 km (max. 3.0 dB/km) • Topologies: Line and star • Baud rate: up to 115.2 kbit/s • Optical budget: - Multi-mode: 8.0 dB for 62.5 µm/4.0 dB for 50 µm • Wave length: 850 nm • FO coupler by Bartec required at DCS, reference addresses: AUMA or www.bartec.de	
Local controls	Standard:	• Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) • Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) • 6 indication lights: - End positions and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) • Graphic LC display: illuminated
	Option:	• Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: • AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) • AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	• Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED • Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) • Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds • Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable • Running indication blinking: can be set • Positioner: - Position setpoint via fieldbus interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Options:	• PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs and Modbus for process setpoint and actual process value • Multiport valve: Up to 16 positions, signals (pulse or edge) • Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set

Technical data Actuator controls

Safety functions	Standard:	- EMERGENCY operation (programmable behaviour) - Via additional input (option, low active) or via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN, run to intermediate position - Torque monitoring can be by-passed during EMERGENCY operation - Thermal protection can be by-passed during EMERGENCY operation (only in combination with thermoswitch within actuator, not with PTC thermistor).
	Options:	- Release of local controls via fieldbus interface: Thus, actuator operation can be enabled or disabled via push buttons on local controls. - Local STOP: - The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) - Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via fieldbus interface - PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal - Automatic correction of rotation direction upon wrong phase sequence (3-ph AC current)	
Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Overvoltage protection (option)	Protection of the actuator and control electronics against overvoltages on the fieldbus cables of up to 4 kV	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d - AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCAC000-1A1-A410 TPA00R2AA-0A1-000	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Via fieldbus interface Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω) Option, only possible in combination with output contacts.
Wiring diagram (basic version)	TPCAC000-1A1-A410 TPA00R200-0I1-000

Setting/programming the Modbus RTU interface

Setting the Modbus RTU interface	Baud rate, parity and Modbus address are set via the display of actuator controls

General data of the Modbus RTU interface														
Communication protocol	Modbus RTU according to IEC 61158 and IEC 61784													
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.													
Transmission medium	Twisted, screened copper cable according to IEC 61158													
Modbus RTU interface	EIA-485 (RS-485)													
Transmission rate/cable length	Redundant line topology: <table> <tr> <th>Baud rate (kbit/s)</th><th>Max. cable length (segment length) without repeater</th><th>Possible cable length with repeater (total network cable length)</th></tr> <tr> <td>9.6 – 115.2</td><td>1,200 m</td><td>Approx. 10 km</td></tr> </table> Redundant loop topology: <table> <tr> <th>Baud rate (kbit/s)</th><th>Max. cable length between actuators (without repeater)</th><th>Max. possible cable length of redundant loop</th></tr> <tr> <td>9.6 – 115.2</td><td>1,200 m</td><td>Approx. 290 km</td></tr> </table>		Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length)	9.6 – 115.2	1,200 m	Approx. 10 km	Baud rate (kbit/s)	Max. cable length between actuators (without repeater)	Max. possible cable length of redundant loop	9.6 – 115.2	1,200 m	Approx. 290 km
Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length)												
9.6 – 115.2	1,200 m	Approx. 10 km												
Baud rate (kbit/s)	Max. cable length between actuators (without repeater)	Max. possible cable length of redundant loop												
9.6 – 115.2	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, enable local controls, Interlock OPEN/CLOSE													
Process representation input (feedback signals)	- End positions OPEN, CLOSED - Actual position value - Actual torque value, requires MWG in actuator - Selector switch in position LOCAL/REMOTE - Running indication (directional) - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED - Manual operation by handwheel or via local controls - Analogue (2) and digital (4) customer inputs													

Technical data Actuator controls

Process representation input (fault signals)	• Motor protection tripped • Torque switch tripped in mid-travel • One phase missing • Failure of analogue customer inputs
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			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C (with internal FO coupler: −25 °C)	
	Options:	-40 °C to +40 °C/+60 °C, extreme low temperature version	
		Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator controls (double sealed)		
	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	1 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)		
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	

Accessories	
Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls

General information

ACExC 01.2 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Modbus TCP/IP interface.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3 Gb										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	1-phase AC current Voltages/frequencies											
	Volt	110 – 120		110 – 120		220 – 240		220 – 240				
	Hz	50		60		50		60				
	Special voltages AC:											
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies			
	Volt	220	440	525	575	600	660	690	Volt	208		
	Hz	50	50	50	60	60	50	50	Hz	60		
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains voltage: ±30 % (option)											
	Permissible variation of mains frequency: ±5 %											
	Special voltages DC: (on request)											
	DC current Voltages											
Volt	24	48	60	110	125	220						
Permissible voltage deviation: (on request)												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 100 to 120 V AC = max. 740 mA 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA For permissible variation of mains voltage of ±30 %: 100 to 120 V AC = max. 1,200 mA 208 to 240 V AC = max. 750 mA 380 to 500 V AC = max. 400 mA 515 to 690 V AC = max. 400 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											

Technical data Actuator controls

Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.	
Control and feedback signals	Via Modbus TCP/IP interface	
Modbus TCP/IP interface with additional input signals (option)	• 2 free analogue inputs (0/4 – 20 mA), 4 free digital inputs - Signal transmission is made via fieldbus interface • Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for position setpoint • Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for setpoint position and 1 analogue input (0/4 – 20 mA) for actual process value	
Control voltage and current consumption of optional, digital additional inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Options:	48 V DC, current consumption: approx. 7 mA per input 60 V DC, current consumption: approx. 9 mA per input 115 V DC, current consumption: approx. 15 mA per input 100 – 120 V AC, current consumption : approx. 15 mA per input
		All input signals must be supplied with the same potential.
Status signals	Via Modbus TCP/IP interface	
Modbus TCP/IP interface with additional output signals (option)	Additional, binary output signals (only available in combination with additional input signals (option)) • 6 programmable output contacts: - 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN - 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) • 6 programmable output contacts: - 5 potential-free change-over contacts with one common, max. 250 V AC, 1 A (resistive load) - 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) • 6 programmable output contacts: - 6 potential-free change-over contacts without one common, max. 250 V AC, 5 A (resistive load) • 6 programmable output contacts: - 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) • 6 programmable output contacts: - 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All binary output signals must be supplied with the same potential. • Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)	

Technical data Actuator controls

Local controls	Standard:	• Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) • Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) • 6 indication lights: - End positions and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) • Graphic LC display: illuminated
	Option:	• Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: • AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) • AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	• Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED • Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) • Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds • Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable • Running indication blinking: can be set • Positioner: - Setpoint position via Modbus TCP/IP interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Options:	• PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs and Modbus TCP/IP for process setpoint and actual process value • Multiport valve: Up to 16 positions, signals (pulse or edge) • Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set
Safety functions	Standard:	• EMERGENCY operation (programmable behaviour) - Via additional input (option, low active) or via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN, run to intermediate position - Torque monitoring can be by-passed during EMERGENCY operation - Thermal protection can be by-passed during EMERGENCY operation (only in combination with thermoswitch within actuator, not with PTC thermistor).
	Options:	• Release of local controls via fieldbus interface: Thus, actuator operation can be enabled or disabled via push buttons on local controls. • Local STOP: - The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) • Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via fieldbus interface • PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function	• Valve overload protection: adjustable, results in switching off and generates fault signal • Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication • Monitoring the heater within actuator: generates warning signal • Monitoring of permissible on-time and number of starts: adjustable, generates warning signal • Operation time monitoring: adjustable, generates warning signal • Phase failure monitoring: results in switching off and generates fault signal • Automatic correction of rotation direction upon wrong phase sequence (3-ph AC current)	

Technical data Actuator controls

Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Electrical connection	Standard:	AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d
	Option:	AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCAC000-1A1-A0F0 TPA00R2AA-0A1-000	

Further options for Non-intrusive version with MWG in the actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Via Modbus TCP/IP interface Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω) Option, only possible in combination with output contacts.
Wiring diagram (basic version)	TPCAC000-1A1-A5F0 TPA00R200-0I1-000

Settings/programming the Modbus TCP/IP interface

Setting the fieldbus address	Baud rate, parity and Modbus address are set via the display of actuator controls	
Setting the Modbus gateway	Settings are made via web server	
	Default settings of the IP interface:	
	IP Address Selection	
	Address Type	Static IP
	Static IP Address	192.168.255.1
	Subnet Mask	255.255.0.0
	Default gateway	192.168.0.1

General data of the Modbus TCP/IP interface

Communication protocol	Modbus TCP/IP according to IEC 61158 and IEC 61784
Network topology	Star structure, point-to-point wiring
Transmission medium	IEC IEEE 802.3, cable recommendation: Cat. 6 _A
Transmission rate/cable length	- Baud rate of 10/100 Mbits/s - Maximum cable length: 100 m

Technical data Actuator controls

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 TCP/IP interface

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, EMERGENCY operation command, enable local controls, Interlock OPEN/CLOSE
Process representation input (feedback signals)	• End positions OPEN, CLOSED • Actual position value • Actual torque value, requires magnetic limit and torque transmitter (MWG) in actuator • Selector switch in position LOCAL/REMOTE • Running indication (directional) • Torque switches OPEN, CLOSED • Limit switches OPEN, CLOSED • Manual operation by handwheel or via local controls • Analogue (2) and digital (4) customer inputs
Process representation input (fault signals)	• Motor protection tripped • Torque switch tripped in mid-travel • One phase missing • Failure of analogue customer inputs
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

Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request	
Ambient temperature	Standard:	−25 °C to +40 °C/+60 °C

Technical data Actuator controls

Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator controls (double sealed)		
	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	Resistance against vibration can be given on request		
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	

Accessories	
Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls

General information

ACExC 01.2 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Foundation Fieldbus interface.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x											
	Option:	II2G Ex d IIC T4 or T3 Gb											
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X											
	In combination with SQEx:	DEKRA 13ATEX00016 X											
Power supply	Standard voltages AC:												
	3-phase AC current Voltages/frequencies												
	Volt	220	230	380	380	400	400	415	440	460	480	500	
	Hz	60	50	50	60	50	60	50	60	60	60	50	
	1-phase AC current Voltages/frequencies												
	Volt	110 – 120		110 – 120		220 – 240		220 – 240					
	Hz	50		60		50		60					
	Special voltages AC:												
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies				
	Volt	220	440	525	575	600	660	690	Volt	208			
	Hz	50	50	50	60	60	50	50	Hz	60			
	Permissible variation of mains voltage: ±10 %												
	Permissible variation of mains voltage: ±30 % (option)												
	Permissible variation of mains frequency: ±5 %												
	Special voltages DC: (on request)												
	DC current Voltages												
	Volt	24	48	60	110	125	220						
	Permissible voltage deviation: (on request)												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.												
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %:												
	• 100 to 120 V AC = max. 740 mA												
	• 208 to 240 V AC = max. 400 mA												
	• 380 to 500 V AC = max. 250 mA												
	• 515 to 690 V AC = max. 200 mA												
	For permissible variation of mains voltage of ±30 %:												
	• 100 to 120 V AC = max. 1,200 mA												
• 208 to 240 V AC = max. 750 mA													
• 380 to 500 V AC = max. 400 mA													
• 515 to 690 V AC = max. 400 mA													
Overvoltage category	Category III according to IEC 60364-4-443												
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator												

Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.	
Control and feedback signals	Via Foundation Fieldbus H1 interface	
Fieldbus interface with additional input signals (options)	• 2 free analogue inputs (0/4 – 20 mA), 4 free digital inputs - Signal transmission is made via fieldbus interface • Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for position setpoint • Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus interface or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for setpoint position and 1 analogue input (0/4 – 20 mA) for actual process value	
Control voltage and current consumption of optional, digital additional inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Options:	48 V DC, current consumption: approx. 7 mA per input 60 V DC, current consumption: approx. 9 mA per input 115 V DC, current consumption: approx. 15 mA per input 100 – 120 V AC, current consumption : approx. 15 mA per input
		All input signals must be supplied with the same potential.
Status signals	Via Foundation Fieldbus H1 interface	
Fieldbus interface with additional output signals (options)	Additional, binary output signals (only available in combination with additional input signals (option)) • 6 programmable output contacts: - 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN - 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) • 6 programmable output contacts: - 5 potential-free change-over contacts with one common, max. 250 V AC, 1 A (resistive load) - 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) • 6 programmable output contacts: - 6 potential-free change-over contacts without one common, max. 250 V AC, 5 A (resistive load) • 6 programmable output contacts: - 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) • 6 programmable output contacts: - 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All binary output signals must be supplied with the same potential. • Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)	
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply (Not possible in combination with PTC tripping device)

Redundancy (option)	Redundant FF H1 interface in accordance with AUMA redundancy I	
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End positions and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the 5 indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set - Positioner: - Position setpoint via fieldbus interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Options:	- PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs for process setpoint and actual process value - Multiport valve: Up to 16 positions, signals (pulse or edge) - Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set
Safety functions	Standard:	- EMERGENCY operation (programmable behaviour) - Via additional input (option, low active) or via fieldbus interface - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN, run to intermediate position - Torque monitoring can be by-passed during EMERGENCY operation - Thermal protection can be by-passed during EMERGENCY operation (only in combination with thermoswitch within actuator, not with PTC thermistor).
	Options:	- Release of local controls via fieldbus interface: Thus, actuator operation can be enabled or disabled via push buttons on local controls. - Local STOP: - The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) - Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via fieldbus interface - PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal - Automatic correction of rotation direction upon wrong phase sequence (3-ph AC current)	

Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults: - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Overvoltage protection (option)	Protection of the actuator and control electronics against overvoltages on the fieldbus cables of up to 4 kV	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d - AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCAF000-1A1-A410 TPA00R2AA-0A1-000	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Via fieldbus interface Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω) Option, only possible in combination with output contacts.
Wiring diagram (basic version)	TPCAF000-1A1-A410 TPA00R200-0I1-000

Setting/programming the Foundation Fieldbus interface

Setting the fieldbus address	The address is set via Foundation Fieldbus while using the provided system management services and a configuration software for Foundation Fieldbus (e.g. NI-FBUS).
Configurable feedback signals	The feedback signals of the "Analog Input" (AI) and "Discrete Input" (DI) function blocks may be configured according to the requirements using channels and the appropriate transducer blocks. Configuration is made via Foundation Fieldbus while using the device description and a configuration software for Foundation Fieldbus (e.g. NI-FBUS).
Programming of user functions	User functions (e.g. stepping mode, intermediate positions, ...) may either be programmed via display or via Foundation Fieldbus using the device description and a configuration software for Foundation Fieldbus (e.g. NI-FBUS).

General data of the Foundation Fieldbus interface

Communication protocol	Foundation Fieldbus H1 (31.25 kbit/s) in accordance with IEC 61158 and IEC 61784-1
Physical Layer	Separate supply, standard data transmission
Network topology	Line, star and tree structures (trunks combined with spurs) are supported. Internal drop line length of ACExC 01.2 is 0.27 m.
Transmission medium	Two-wire copper cable with data transmission and voltage supply on the same wire pair in accordance with: - ISA S50.02-1992 ISA Physical Layer Standard or - IEC 61158-2:2000 (ed. 2.0), Fieldbus standard for use in industrial control systems, Part 2: Physical Layer specification and service definition - Recommendation: Use cable type A (screened and twisted)
Current consumption	Approx. 13 mA at +24 V DC
Transmission rate	31.25 kbit/s
Cable length	Max. 1,900 m (only when using the recommended A type cable); with repeaters (4 units max.) expandable up to a max. of 9.5 km

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

Number of devices	• Max. 32 devices per segment; all in all max. 240 devices can be addressed • Typical number of devices: approx. 6 – 15 devices per segment
Communication services	• Publisher/subscriber communication for the transmission of process data • Client/server communication for programming and configuration • Report distribution for transmission of alarm signals
Supported Foundation Fieldbus functions	ACExC 01.2 is a Link Master device. Link Master devices can take over the Link Active Scheduler (LAS) function for bus communication coordination.
Permissive connection	ACExC 01.2 controls offer an automatic polarity detection and polarity correction of the Foundation Fieldbus cable.

Function blocks of the AUMATIC Foundation Fieldbus interface

Function blocks of the output signals	• 8 Discrete Output (DO) function blocks for discrete output signals, e.g.: - OPEN, STOP, CLOSE - RESET - EMERGENCY - Interlock OPEN/CLOSE - Enable Local - Intermediate positions - Digital customer outputs • 2 Analog Output (AO) function blocks for analogue output signals, e.g.: - Setpoint position - Analogue customer outputs
Function blocks for input signals	• 10 Discrete Input (DI) function blocks for discrete feedback signals, e.g.: - End positions OPEN/CLOSED - Selector switch in position LOCAL/REMOTE - Running indication (directional) - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED - Manual operation by handwheel or via local controls - Intermediate positions - Digital customer inputs • 4 Analog Input (AI) function blocks for analogue feedback signals, e.g.: - Actual position - Torque - Analogue 0 – 20 mA customer inputs
Further function blocks	• 1 Signal Characterizer function block (SC) for conversion of analogue signals • 1 Input Selector (IS) function block for the selection of analogue input signals • 1 Process controller (PID) block as function block for modulating applications • Resource Block (RB) for defining characteristic Foundation Fieldbus device data • 4 Transducer Blocks (AOTB, DOTB, AITB, DITB) as connection blocks for discrete and analogue input and output signals • 1 Transducer Block (PTB) as connection block for control • 1 Transducer Block (AUMACTB) for configuration and programming • 1 Transducer Block (AUMACTB) for monitoring and diagnostics

Special features of the AUMATIC Foundation Fieldbus interface

Manufacturer ID	0x0A01FF
Device type	0x0001
Device revision	0x01 or 0x02
Device ID	0A01FF0001-(serial number of ACExC 01.2-x)-(serial number FF module)
Baud rate	31.25 kbit/s
Polarity	No polarity (automatic polarity detection and correction)
Segment information	
Standard	FF H1
Link master (LAS) function	Yes

Technical data Actuator controls

Current consumption	13 mA
FF connection current	< 20 mA
Device voltage min/max	9 – 32 V DC
FISCO ic characteristics	FF capacity: Ci < 5 nF, FF inductivity: Li < 10 µH, Minimum input current: Ii = 380 mA, Minimum input voltage: Ui = 17.5 V, Minimum input power: Pi = 5.32 W
Jitter tolerance range	< ±8 µs
Min. transmission level (Vp-t-p)	> 0.75 V
Available server VCRs	23
Available source VCRs	23
Available publisher VCRs	23
Available subscriber VCRs	23
DD revision	0x01
CFF revision	020101
ITK revision	6.1.2
Available channels	
Analog Output (AO) function blocks	0, 1, 3, 20, 21
Discrete Output (DO) function blocks	0, 2, 4 – 19
Analog Input (AI) function blocks	0, 67, 68, 69, 70
Discrete Input (DI) function blocks	0, 22 – 66, 71
Number of function blocks with the respective execution times [ms]	
8 Discrete Output (DO) function blocks	30
2 Analog Output (AO) function blocks	30
10 Discrete Input (DI) function blocks	20
4 Analog Input (AI) function blocks	30
1 Signal Characterizer (SC) function block	40
1 Input Selector (IS) function block	30
1 Proportional/Integral/Differential (PID) function block	40

Service conditions	
Use	Indoor and outdoor use permissible
Mounting position	Any position
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request
Ambient temperature	Standard: –30 °C to +40 °C/+60 °C
	Options: –40 °C to +40 °C/+60 °C, extreme low temperature version
	Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC
Humidity	Up to 100 % relative humidity across the entire permissible temperature range
Enclosure protection according to EN 60529	IP68 Terminal compartment additionally sealed against interior of actuator controls (double sealed) 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)

Technical data Actuator controls

Vibration resistance according to IEC 60068-2-6	1 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)		
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	

Accessories

Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information

Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls

Technical data Actuator controls

General information

ACExC 01.2 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with HART interface.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3 Gb										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	1-phase AC current Voltages/frequencies											
	Volt	110 – 120		110 – 120		220 – 240		220 – 240				
	Hz	50		60		50		60				
	Special voltages AC:											
	3-phase AC current Voltages/frequencies								1-phase AC current Voltages/frequencies			
	Volt	220	440	525	575	600	660	690	Volt	208		
	Hz	50	50	50	60	60	50	50	Hz	60		
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains voltage: ±30 % (option)											
	Permissible variation of mains frequency: ±5 %											
	Special voltages DC: (on request)											
DC current Voltages												
Volt	24	48	60	110	125	220						
Permissible voltage deviation: (on request)												
External supply of the electronics (option)	24 V DC: + 20 %/– 15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 100 to 120 V AC = max. 740 mA 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA For permissible variation of mains voltage of ±30 %: 100 to 120 V AC = max. 1,200 mA 208 to 240 V AC = max. 750 mA 380 to 500 V AC = max. 400 mA 515 to 690 V AC = max. 400 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											

Technical data Actuator controls

Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.	
Control and feedback signals	Via HART interface Device category: Actuator: Analogue 4 – 20 mA setpoint with digital HART communication Device category: Current Output: Analogue 4 – 20 mA position feedback signal with digital HART communication	
HART interface with additional input signals (option)	Device category: "Actuator" - Inputs OPEN, STOP, CLOSE, EMERGENCY I/O interface, (via opto-isolator thereof OPEN, STOP, CLOSE, with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (HART or additional input signals) Device category: "Current Output": - Inputs OPEN, STOP, CLOSE, MODE, EMERGENCY I/O interface, (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (HART or additional input signals) - MODE: Control selection of additional input signals (0/4 – 20 mA setpoint or discrete control inputs OPEN, STOP, CLOSE)	
Control voltage and current consumption of optional, digital additional inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Options:	48 V DC, current consumption: approx. 7 mA per input
		60 V DC, current consumption: approx. 9 mA per input
		115 V DC, current consumption: approx. 15 mA per input
		100 – 120 V AC, current consumption : approx. 15 mA per input
	All input signals must be supplied with the same potential.	
Status signals	Via HART interface	
HART interface with additional output signals (option)	Additional, binary output signals (only available in combination with additional input signals (option)) 6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) 6 programmable output contacts: 5 potential-free change-over contacts with one common, max. 250 V AC, 1 A (resistive load) 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 6 potential-free change-over contacts without one common, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All binary output signals must be supplied with the same potential. In combination with device category: "Actuator" - Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)	
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply (Not possible in combination with PTC tripping device)

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

Technical data Actuator controls

Analogue output (option)	2 analogue outputs: With position transmitter option: Output of travel and torque as continuous values between 0/4 and 20 mA	
Analogue input (option)	2 analogue inputs: With positioner/process controller option: Input of actual position value/actual process value as continuous values between 0/4 and 20 mA	
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End positions and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set - Positioner: - Position setpoint via HART interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Optionen:	- PID process controller: with adaptive positioner, process setpoint via 0/4 – 20 mA analogue input or HART, actual process value via 0/4 – 20 mA analogue input - Multiport valve: Up to 16 positions, signals (pulse or edge) - Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set
Safety functions	Standard:	- EMERGENCY operation (programmable behaviour) - Digital input: Low active (option) - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN, run to intermediate position - Torque monitoring can be by-passed during EMERGENCY operation - Thermal protection can be by-passed during EMERGENCY operation (only in combination with thermoswitch within actuator, not with PTC thermistor).
	Options:	- Enabling local controls via Enable LOCAL digital input: Thus, actuator operation can be enabled or disabled via push buttons on local controls. - Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via two digital inputs - PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal - Automatic correction of rotation direction upon wrong phase sequence (3-ph AC current)	

Technical data Actuator controls

Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults: - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP), max. 38 control terminals / max. supply voltage 525 V AC
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d - AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	Device category: "Actuator" TPCAI000-1A1-AA20 TPA00R2AA-0A1-000	
	Device category: "Current Output": TPCAJ000-1A1-AA20 TPA00R2AA-0A1-000	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Via HART interface Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω) Option, only possible in combination with output contacts.
Wiring diagram (basic version)	Device category: "Actuator" TPCAI000-1A1-AA20 TPA00R200-0I1-000
	Device category: "Current Output": TPCAJ000-1A1-AA20 TPA00R200-0I1-000

Setting/programming the HART interface

Setting the HART address	The HART address is set via HART command 6 or alternatively via the display of ACExC 01.2 controls (default value: 0)

General HART interface data

Communication protocol	HART according to IEC 61158 and IEC 61784 (CPF 9)
Network topology	Point-to-point wiring
Communication signal	HART, baud rate 1.2 kbit/s Device category: "Actuator" - FSK (Frequency Shift Key) modulated to 4 – 20 mA setpoint signal - Input impedance: 250 Ω. The impedances of other HART devices connected (parallel or in series) must be within the HART specification - Point-to-point wiring - Signal range: 4 – 20 mA - Operating range: 2 – 22 mA - Minimum operating voltage: 7 V (at 22 mA) - Integrated reverse polarity protection Device category: "Current Output": - FSK (Frequency Shift Key) modulated to 4 – 20 mA position feedback signal - Input impedance: 40 kΩ. The impedances of other HART devices connected (parallel or in series) must be within the HART specification - Point-to-point or multidrop wiring - Current output active, short-circuit proof Nor further external power supply permitted
HART cable specification	Refer to HART specification

Technical data Actuator controls

Power supply	Internal power supply of HART interface via actuator controls (apart from HART supply voltage, no other supply required)
Device identification	Manufacturer Name: AUMA Manufacturer ID: 0x607C HART protocol revision: 7.4 Number of device variables: 12 Model Name: AC 01.2/ACExC 01.2 AUMATIC Device Type Code: 0xE1FD
Supported HART commands	• Universal Commands • Common Practice Commands: - Command 33 (Read Device Variables) - Command 40 (Enter/Exit Fixed Current Mode) - Command 42 (Perform Device Reset) - Command 45 (Trim Loop Current Zero) - Command 46 (Trim Loop Current Gain) - Command 50 (Read Dynamic Variable Assignments) - Command 79 (Write Device Variable) - Command 95 (Read Device Communication Statistics) • Device Specific Commands: - Command 128 (Write Operation Command) - Command 131 (Read Software Version) - Command 132 (Reset to Factory Default) - Command 133 (Reset Operational Data) - Command 134 (Reset HART Configuration) - Command 160 (Read Parameter) - Command 161 (Write Parameter) - Command 162 (Read Process Data)

Commands and signals of the HART interface

Output data	Device category: "Actuator" Supported control types: • Loop Current Mode activated: Analogue 4 – 20 mA control signal for position setpoint • Loop Current Mode deactivated: Digital HART commands for position setpoint (0 – 100.0 %) or for discrete operation in directions OPEN and CLOSE Device category: "Current Output": • Loop Current Mode activated: Analogue 4 – 20 mA output signal for position feedback signal (point-to-point wiring) Digital HART commands for position setpoint (0 – 100.0 %) or for discrete operation in directions OPEN and CLOSE • Loop Current Mode deactivated: Analogue output signal for position feedback fixed to 4 mA (multidrop wiring) Digital HART commands for position setpoint (0 – 100.0 %) or for discrete operation in directions OPEN and CLOSE

Technical data Actuator controls

Feedback signals	End positions OPEN, CLOSED Actual position value Actual torque value, requires magnetic limit and torque transmitter (MWG) in actuator Selector switch in position LOCAL/REMOTE Running indication (directional) Torque switches OPEN, CLOSED Limit switches OPEN, CLOSED Manual operation by handwheel or via local controls Analogue (2) and digital (4) customer inputs Device Status information • Field Device Status • Device Specific Status • Extended Device Status Information • Standardized Status • Analog Channel Saturated • Analog Channel Fixed
Fault indications	Motor protection tripped Torque switch tripped in mid-travel One phase missing Failure of analogue customer inputs

Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	–30 °C to +40 °C/+60 °C	
	Options:	–40 °C to +40 °C/+60 °C, extreme low temperature version	
		Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator controls (double sealed)		
	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	1 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)		
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	

Technical data Actuator controls

Accessories	
Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)
Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls

Technical data Actuator controls in SIL version

General information

ACExC 01.2 actuator controls in SIL version for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range.

Information on SIL features of ACExC 01.2 – SIL actuator controls

Features and functions

SIL control	Via digital inputs Safe ESD a,b and/or Safe STOP OPEN/CLOSE	
Control voltage/current consumption for inputs of the SIL functions	24 V DC, current consumption: approx. 10 mA per input	
SIL status signal	1 potential-free change-over contact (max. 24 V DC/1 A) for SIL collective failure signal	
SIL functions - safety functions	Standard:	• Safe ESD - Digital inputs (redundant inputs) low active - Reaction can be selected: Run to end position CLOSED (Safe ESD CLOSE, CLOSE), run to end position OPEN (Safe ESD OPEN, OPEN) - Torque monitoring and forced limit seating (OPEN and CLOSE) for Safe ESD can be by-passed - Thermal protection for Safe ESD can be by-passed • Seating types can be set - Forced limit seating in end position (Actuator only stops once end positions OPEN or CLOSED are reached irrespective of the torque applied.) - Limit seating with overload protection (Once the set tripping point in end positions OPEN or CLOSED has been reached, the actuator will be switched off. If excessive torque is applied during travel, the actuator is already switched off prior to reaching the end position.) - Forced torque seating (Actuator only stops when reaching the set end position torque.)
	Options:	• Safe STOP - 2 digital inputs (OPEN and CLOSE) low active - Reaction can be selected: STOP in direction OPEN (Safe STOP OPEN) and/or STOP in direction CLOSE (Safe STOP CLOSE) • Combination of Safe ESD and Safe STOP (in this case, Safe ESD has priority)
Local controls	Safety functions are executed irrespective of selector switch position LOCAL - OFF - REMOTE.	
SIL monitoring functions	Standard:	• Actuator operation monitoring, generates SIL fault signal • Monitoring of redundant wiring Safe ESD: In case of incorrect wiring, a SIL fault signal is generated • Internal monitoring of the SIL components of the controls. In case of a fault, a SIL fault signal is generated.
	Option:	• Safe end position feedback
Configuration	Due to the requirements on functional safety, other restrictions with regard to configuration options of the actuator and the actuator controls not listed here do apply.	
Actuator version in combination with ACExC .2-SIL	• The actuator must be equipped with a blinker transmitter • The actuator is supplied with the motor locked in disengaged position. Motor operation will only be possible once the lock is disabled	

Further options for version with MWG in actuator

SIL limit switches	Forced seating type in end position
Actuator version in combination with ACExC .2-SIL	Only actuators in clockwise closing version may be used.

Technical data Actuator controls in SIL version

Information on general features of ACExC 01.2-SIL actuator controls

Features and functions												
Explosion protection	Standard:	II2G Ex de IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains frequency: ±5 %											
	660 V and 690 V not permissible in combination with thyristors											
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1. The "external supply of electronics" option refers to the components of the standard actuator controls. However, the SIL components of the actuators controls are not supplied.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											
Switchgear	Open-close duty:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2										
	Modulating duty:	Thyristor unit for mains voltage up to 600 V AC (required to meet the safety figures for modulating actuators) for AUMA power classes B1 and B2										
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units.											
	For the assignment of AUMA power classes, please refer to electrical data on actuator.											
Control	6 digital inputs: OPEN, STOP, CLOSE, EMERGENCY (via opto-isolator, thereof OPEN, STOP, CLOSE with one common and EMERGENCY without common, respect minimum pulse duration for modulating actuators).											
Control voltage/current consumption for control inputs (standard controls)	Standard:	24 V DC, current consumption: approx. 10 mA per input										
	Options:	48 V DC, current consumption: approx. 7 mA per input										
		60 V DC, current consumption: approx. 9 mA per input										
		115 V DC, current consumption: approx. 15 mA per input										
		100 – 120 V AC, current consumption : approx. 15 mA per input										
	All input signals must be supplied with the same potential.											

Technical data Actuator controls in SIL version

Status signals (output signals)	Standard:	6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, SIL function active, SIL fault 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) - Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)
	Options:	6 programmable output contacts: 5 change-over contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 6 potential-free change-over contacts without one common, per contact max. 250 V AC, 5 A (resistive load) All output signals must be supplied with the same potential.
Analogue output	Option:	2 analogue outputs: With position transmitter option: Output of travel and torque as continuous values between 0/4 and 20 mA
Analogue input	Option:	2 analogue inputs: With positioner/process controller option: Input of actual position value/actual process value as continuous values between 0/4 and 20 mA
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions: can be set between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set
	Options:	- Positioner: - Position setpoint via analogue inputs 0/4 – 20 mA - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Split range operation - MODE input for selecting between OPEN-CLOSE and setpoint control - PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs for process setpoint and actual process value

Technical data Actuator controls in SIL version

Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal	
Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required"	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCC-0A1-1A1-AA20 TPA00R2AA-1A1-AB0	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω)
Diagnostic function	- Torque characteristics 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. Torque characteristics stored can be shown on the display.
Wiring diagram (basic version)	TPCC-0A1-1A1-AA20 TPA00R20A-111-AB0

Service conditions

Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	≤ 2,000 m above sea level	
	> 2,000 m above sea level on request	
Ambient temperature	Standard:	–25 °C to +60 °C
	Options:	–60 °C to +40 °C/+60 °C, extreme low temperature version
		Low temperature versions with heating system only.
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	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	
Vibration resistance according to IEC 60068-2-6	1 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)	
Corrosion protection	Standard:	KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	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

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

Technical data Actuator controls in SIL version

Accessories	
Wall bracket	Actuator controls separately mounted from the actuator, including plug/socket connector. Connecting cable on request. Recommended for high ambient temperatures, difficult access, or in case of heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)
Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
Directives	Functional safety of electrical/electronic/programmable electronic safety-related systems: (IEC 61508) ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls Manual Functional Safety Actuators SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2/SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2, SQ 05.2 – SQ 14.2/ SQR 05.2 – SQR 14.2/ SQEx 05.2 – SQEx 14.2/ SQREx 05.2 – SQREx 14.2 with actuator controls AC 01.2/ACExC 01.2 in SIL version

General information

ACExC 01.2 actuator controls in SIL version for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Profibus DP interface.

Information on SIL features of ACExC 01.2 – SIL actuator controls**Features and functions**

SIL control	Via digital inputs Safe ESD a,b and/or Safe STOP OPEN/CLOSE	
Control voltage/current consumption for inputs of the SIL functions	24 V DC, current consumption: approx. 10 mA per input	
SIL status signal	1 potentialfreier Wechsler (max. 24 V DC, 1 A) für SIL Sammelstörung	
SIL functions - safety functions	Standard:	• Safe ESD - Digital inputs (redundant inputs) low active - Reaction can be selected: Run to end position CLOSED (Safe ESD CLOSE, CLOSE), run to end position OPEN (Safe ESD OPEN, OPEN) - Torque monitoring and forced limit seating (OPEN and CLOSE) for Safe ESD can be by-passed - Thermal protection for Safe ESD can be by-passed • Seating types can be set - Forced limit seating in end position (Actuator only stops once end positions OPEN or CLOSED are reached irrespective of the torque applied.) - Limit seating with overload protection (Once the set tripping point in end positions OPEN or CLOSED has been reached, the actuator will be switched off. If excessive torque is applied during travel, the actuator is already switched off prior to reaching the end position.) - Forced torque seating (Actuator only stops when reaching the set end position torque.)
	Options:	• Safe STOP - 2 digital inputs (OPEN and CLOSE) low active - Reaction can be selected: STOP in direction OPEN (Safe STOP OPEN) and/or STOP in direction CLOSE (Safe STOP CLOSE) • Combination of Safe ESD and Safe STOP (in this case, Safe ESD has priority)
Local controls	Safety functions are executed irrespective of selector switch position LOCAL - OFF - REMOTE.	
SIL monitoring functions	Standard:	• Actuator operation monitoring, generates SIL fault signal • Monitoring of redundant wiring Safe ESD: In case of incorrect wiring, a SIL fault signal is generated • Internal monitoring of the SIL components of the controls. In case of a fault, a SIL fault signal is generated.
	Option:	• Safe end position feedback
Configuration	Due to the requirements on functional safety, other restrictions with regard to configuration options of the actuator and the actuator controls not listed here do apply.	
Actuator version in combination with ACExC .2-SIL	• The actuator must be equipped with a blinker transmitter • The actuator is supplied with the motor locked in disengaged position. Motor operation will only be possible once the lock is disabled	

Further options for version with MWG in actuator

SIL limit switches	Forced seating type in end position
Actuator version in combination with ACExC .2-SIL	Only actuators in clockwise closing version may be used.

Information on general features of ACExC 01.2-SIL actuator controls

Features and functions												
Explosion protection	Standard:	II2G Ex de IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %											
	660 V and 690 V not permissible in combination with thyristors											
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1. The "external supply of electronics" option refers to the components of the standard actuator controls. However, the SIL components of the actuators controls are not supplied.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											
Switchgear	Open-close duty:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2										
	Modulating duty:	Thyristor unit for mains voltage up to 600 V AC (required to meet the safety figures for modulating actuators) for AUMA power classes B1 and B2										
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.											
Control and feedback signals	Via Profibus DP interface											
Profibus DP-V1 (option)	Access to parameters, the electronic name plate and the operating and diagnostic data with acyclic write/read services											
Profibus DP-V2 (option)	Redundancy behaviour according to Profibus DP-V2 specification no. 2.212 (Primary and Backup with RedCom) Synchronisation of time between actuator controls and Profibus master with subsequent time stamp of the most important events such as malfunctions, end position and torque signals from actuator controls											
Redundancy (option)	Requires Profibus DP-V2 (option) Redundant line topology with universal redundancy behaviour according to AUMA redundancy I or II Redundant line topology and redundancy behaviour according to Profibus DP-V2 specification no. 2.212 (Primary and Backup with RedCom)											

Technical data Actuator controls in SIL version

Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set - Positioner: - Position setpoint via fieldbus interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Options:	PID process controller: With adaptive positioner, via 0/4 – 20 mA analogue inputs and Profibus for process setpoint and actual process value
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal	
Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required"	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Overvoltage protection (option)	Protection of the actuator and control electronics against overvoltages on the fieldbus cables of up to 4 kV	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCCA0G4-1A1-A410 TPA00R2AA-1A1-AB0	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls

Torque feedback signal Via fieldbus interface

Profibus D

Technical data Actuator controls in SIL version

Diagnostic function	- Torque characteristics 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. Torque characteristics stored can be shown on the display.
Wiring diagram (basic version)	TPCCA0G4-1A1-A410 TPA00R20A-111-AB0

Setting/programming the Profibus DP interface

Baud rate setting	Automatic baud rate recognition
Setting the fieldbus address	The Profibus DP address is set via the actuator controls display.
Configurable process representation via GSD file	For an optimum adaptation to the process control system, the process representation (feedback signals) can be configured as desired.

General data Profibus D

Communication protocol	Profibus DP according to IEC 61158 and IEC 61784		
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.		
Transmission medium	Twisted, screened copper cable according to IEC 61158		
Profibus DP interface	EIA-485 (RS-485)		
Transmission rate/cable length	Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length)
	9.6 – 93.75	1,200 m	Approx. 10 km
	187.5	1,000 m	Approx. 10 km
	500	400 m	Approx. 4 km
	1,500	200 m	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 Profibus DP functions	Cyclic data exchange, sync mode, freeze mode, fail safe mode		
Profibus DP ident no.	0x0C4F:	Standard applications with Profibus DP-V0 and DP-V1	
	0x0CBD:	Applications with Profibus DP-V2	

Commands and signals of the Profibus DP interface

Process representation output (command signals)	OPEN, STOP, CLOSE, position setpoint, RESET, enable LOCAL
Process representation input (feedback signals)	- End positions OPEN, CLOSED - Actual position value - Actual torque value, requires MWG in actuator - Selector switch in position LOCAL/REMOTE - Running indication (directional) - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED - Manual operation by handwheel or via local controls - SIL function active (must not be used in SIS)
Process representation input (fault signals)	- Motor protection tripped - Torque switch tripped in mid-travel - One phase missing - SIL fault (must not be used in SIS)
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

Technical data Actuator controls in SIL version

Service conditions		
Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	$\leq 2,000$ m above sea level $> 2,000$ m above sea level on request	
Ambient temperature	Standard:	-25 °C to $+60$ °C
	Options:	-60 °C to $+40$ °C/ $+60$ °C, extreme low temperature version
		Low temperature versions with heating system only.
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	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	
Vibration resistance according to IEC 60068-2-6	1 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)	
Corrosion protection	Standard:	KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	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

Accessories	
Wall bracket	Actuator controls separately mounted from the actuator, including plug/socket connector. Connecting cable on request. Recommended for high ambient temperatures, difficult access, or in case of heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
Directives	Functional safety of electrical/electronic/programmable electronic safety-related systems: (IEC 61508) ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls Manual Functional Safety Actuators SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2/SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2, SQ 05.2 – SQ 14.2/ SQR 05.2 – SQR 14.2/ SQEx 05.2 – SQEx 14.2/ SQREx 05.2 – SQREx 14.2 with actuator controls AC 01.2/ACExC 01.2 in SIL version

General information

ACExC 01.2 actuator controls in SIL version for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Modbus RTU interface.

Information on SIL features of ACExC 01.2 – SIL actuator controls**Features and functions**

SIL control	Via digital inputs Safe ESD a,b and/or Safe STOP OPEN/CLOSE	
Control voltage/current consumption for inputs of the SIL functions	24 V DC, current consumption: approx. 10 mA per input	
SIL status signal	1 potential-free change-over contact (max. 24 V DC/1 A) for SIL collective failure signal	
SIL functions - safety functions	Standard:	• Safe ESD - Digital inputs (redundant inputs) low active - Reaction can be selected: Run to end position CLOSED (Safe ESD CLOSE, CLOSE), run to end position OPEN (Safe ESD OPEN, OPEN) - Torque monitoring and forced limit seating (OPEN and CLOSE) for Safe ESD can be by-passed - Thermal protection for Safe ESD can be by-passed • Seating types can be set - Forced limit seating in end position (Actuator only stops once end positions OPEN or CLOSED are reached irrespective of the torque applied.) - Limit seating with overload protection (Once the set tripping point in end positions OPEN or CLOSED has been reached, the actuator will be switched off. If excessive torque is applied during travel, the actuator is already switched off prior to reaching the end position.) - Forced torque seating (Actuator only stops when reaching the set end position torque.)
	Options:	• Safe STOP - 2 digital inputs (OPEN and CLOSE) low active - Reaction can be selected: STOP in direction OPEN (Safe STOP OPEN) and/or STOP in direction CLOSE (Safe STOP CLOSE) • Combination of Safe ESD and Safe STOP (in this case, Safe ESD has priority)
Local controls	Safety functions are executed irrespective of selector switch position LOCAL - OFF - REMOTE.	
SIL monitoring functions	Standard:	• Actuator operation monitoring, generates SIL fault signal • Monitoring of redundant wiring Safe ESD: In case of incorrect wiring, a SIL fault signal is generated • Internal monitoring of the SIL components of the controls. In case of a fault, a SIL fault signal is generated.
	Option:	• Safe end position feedback
Configuration	Due to the requirements on functional safety, other restrictions with regard to configuration options of the actuator and the actuator controls not listed here do apply.	
Actuator version in combination with ACExC .2-SIL	• The actuator must be equipped with a blinker transmitter • The actuator is supplied with the motor locked in disengaged position. Motor operation will only be possible once the lock is disabled	

Further options for version with MWG in actuator

SIL limit switches	Forced seating type in end position
Actuator version in combination with ACExC .2-SIL	Only actuators in clockwise closing version may be used.

Information on general features of ACExC 01.2-SIL actuator controls

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains frequency: ±5 %											
660 V and 690 V not permissible in combination with thyristors												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1. The "external supply of electronics" option refers to the components of the standard actuator controls. However, the SIL components of the actuators controls are not supplied.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											
Switchgear	Open-close duty:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2										
	Modulating duty:	Thyristor unit for mains voltage up to 600 V AC (required to meet the safety figures for modulating actuators) for AUMA power classes B1 and B2										
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.											
Control and feedback signals	Via Modbus RTU interface											
Redundancy (option)	Redundant line topology with universal redundancy behaviour according to AUMA redundancy I or II Redundant loop topology in combination with SIMA Master Station - Max. number of actuators with actuator controls per redundant loop: 247 units - Max. possible cable length between the actuators equipped with controls without external repeater: 1,200 m - Max. possible total length per redundant ring: approx. 290 km - Automatic commissioning of the redundant ring by means of the SIMA Master Station											

Technical data Actuator controls in SIL version

Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions: can be set between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set - Positioner: - Position setpoint via fieldbus interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Options:	PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs for process setpoint and actual process value
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal	
Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required"	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermoswitches within actuator
Overvoltage protection (option)	Protection of the actuator and control electronics against overvoltages on the fieldbus cables of up to 4 kV	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCC0G4-1A1-A410 TPA00R2AA-1A1-AB0	

Further options for version with MWG in actuator	
Setting of limit and torque switching via local controls	
Torque feedback signal	Via fieldbus interface
Diagnostic function	- Torque characteristics 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. Torque characteristics stored can be shown on the display.
Wiring diagram (basic version)	TPCCC0G4-1A1-A410 TPA00R20A-111-AB0

Setting/programming the Modbus RTU interface	
Setting the fieldbus address	Baud rate, parity and Modbus address are set via the display of the ACExC 01.2-SIL

General Modbus RTU data		
Communication protocol	Modbus RTU according to IEC 61158 and IEC 61784	
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.	
Transmission medium	Twisted, screened copper cable according to IEC 61158	
Modbus RTU interface	EIA-485 (RS-485)	
Transmission rate/cable length	Redundant line topology:	
	Baud rate (kbit/s)	Max. cable length (segment length) without repeater
	9.6 – 115.2	1,200 m
	Possible cable length with repeater (total network cable length)	
	Approx. 10 km	
	Redundant loop topology:	
	Baud rate (kbit/s)	Max. cable length between actuators (without repeater)
	9.6 – 115.2	1,200 m
	Max. possible cable length of redundant loop	
	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
Supported Modbus functions (services)	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, enable local controls, Interlock OPEN/CLOSE
Process representation input (feedback signals)	• End positions OPEN, CLOSED • Actual position value • Actual torque value, requires MWG in actuator • Selector switch in position LOCAL/REMOTE • Running indication (directional) • Torque switches OPEN, CLOSED • Limit switches OPEN, CLOSED • Manual operation by handwheel or via local controls • SIL function active (must not be used in SIS)
Process representation input (fault signals)	• Motor protection tripped • Torque switch tripped in mid-travel • One phase missing • SIL fault (must not be used in SIS)
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	
Use	Indoor and outdoor use permissible
Mounting position	Any position
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request
Ambient temperature	Standard: -25 °C to +60 °C
	Options: -60 °C to +40 °C/+60 °C, extreme low temperature version
	Low temperature versions with heating system only.
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
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)
Vibration resistance according to IEC 60068-2-6	1 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)
Corrosion protection	Standard: KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options: 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

Accessories	
Wall bracket	For actuator controls mounting separately from the actuator, including plug/socket connector, connecting cable on request Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
Directives	Functional safety of electrical/electronic/programmable electronic safety-related systems: (IEC 61508) ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Brochure Electric actuators for the automation of valves in the oil and gas industry Dimensions Multi-turn actuators with AUMATIC integral controls Dimensions Part-turn actuators with AUMATIC integral controls Manual Functional Safety Actuators SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2/SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2, SQ 05.2 – SQ 14.2/ SQR 05.2 – SQR 14.2/ SQEx 05.2 – SQEx 14.2/ SQREx 05.2 – SQREx 14.2 with actuator controls AC 01.2/ACExC 01.2 in SIL version

General information

ACExC 01.2 actuator controls in SIL version for controlling multi-turn actuators of the SAEx/SAREx .2 type range and part-turn actuators of the SQEx/SQREx .2 type range with Modbus RTU interface.

Information on SIL features of ACExC 01.2 – SIL actuator controls

Features and functions		
SIL control	Via digital inputs Safe ESD a,b and/or Safe STOP OPEN/CLOSE	
Control voltage/current consumption for inputs of the SIL functions	24 V DC, current consumption: approx. 10 mA per input	
SIL status signal	1 potential-free change-over contact (max. 24 V DC/1 A) for SIL collective failure signal	
SIL functions - safety functions	Standard:	• Safe ESD - Digital inputs (redundant inputs) low active - Reaction can be selected: Run to end position CLOSED (Safe ESD CLOSE, CLOSE), run to end position OPEN (Safe ESD OPEN, OPEN) - Torque monitoring and forced limit seating (OPEN and CLOSE) for Safe ESD can be by-passed - Thermal protection for Safe ESD can be by-passed • Seating types can be set - Forced limit seating in end position (Actuator only stops once end positions OPEN or CLOSED are reached irrespective of the torque applied.) - Limit seating with overload protection (Once the set tripping point in end positions OPEN or CLOSED has been reached, the actuator will be switched off. If excessive torque is applied during travel, the actuator is already switched off prior to reaching the end position.) - Forced torque seating (Actuator only stops when reaching the set end position torque.)
	Options:	• Safe STOP - 2 digital inputs (OPEN and CLOSE) low active - Reaction can be selected: STOP in direction OPEN (Safe STOP OPEN) and/or STOP in direction CLOSE (Safe STOP CLOSE) • Combination of Safe ESD and Safe STOP (in this case, Safe ESD has priority)
Local controls	Safety functions are executed irrespective of selector switch position LOCAL - OFF - REMOTE.	
SIL monitoring functions	Standard:	• Actuator operation monitoring, generates SIL fault signal • Monitoring of redundant wiring Safe ESD: In case of incorrect wiring, a SIL fault signal is generated • Internal monitoring of the SIL components of the controls. In case of a fault, a SIL fault signal is generated.
	Option:	• Safe end position feedback
Configuration	Due to the requirements on functional safety, other restrictions with regard to configuration options of the actuator and the actuator controls not listed here do apply.	
Actuator version in combination with ACExC .2-SIL	• The actuator must be equipped with a blinker transmitter • The actuator is supplied with the motor locked in disengaged position. Motor operation will only be possible once the lock is disabled	

Further options for version with MWG in actuator

SIL limit switches	Forced seating type in end position
Actuator version in combination with ACExC .2-SIL	Only actuators in clockwise closing version may be used.

Information on general features of ACExC 01.2-SIL actuator controls

Features and functions												
Explosion protection	Standard:	II2G Ex de IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x										
	Option:	II2G Ex d IIC T4 or T3										
EC type test certificate	In combination with SAEx:	DEKRA 11ATEX0008 X										
	In combination with SQEx:	DEKRA 13ATEX00016 X										
Power supply	Standard voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	230	380	380	400	400	415	440	460	480	500
	Hz	60	50	50	60	50	60	50	60	60	60	50
	Special voltages AC:											
	3-phase AC current Voltages/frequencies											
	Volt	220	440	525	575	600	660	690				
	Hz	50	50	50	60	60	50	50				
	Permissible variation of mains voltage: ±10 %											
	Permissible variation of mains frequency: ±5 %											
660 V and 690 V not permissible in combination with thyristors												
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1. The "external supply of electronics" option refers to the components of the standard actuator controls. However, the SIL components of the actuators controls are not supplied.											
Current consumption	Current consumption of controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: 208 to 240 V AC = max. 400 mA 380 to 500 V AC = max. 250 mA 515 to 690 V AC = max. 200 mA											
Overvoltage category	Category III according to IEC 60364-4-443											
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator											
Switchgear	Open-close duty:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2										
	Modulating duty:	Thyristor unit for mains voltage up to 600 V AC (required to meet the safety figures for modulating actuators) for AUMA power classes B1 and B2										
	The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units. For the assignment of AUMA power classes, please refer to electrical data on actuator.											
Control and feedback signals	Via Foundation Fieldbus H1 interface											
Redundancy (option)	Redundant FF H1 interface in accordance with AUMA redundancy I											
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated										
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)										

Technical data Actuator controls in SIL version

Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	
Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times: can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Any 8 intermediate positions between 0 and 100 %, reaction and signal behaviour programmable - Running indication blinking: can be set - Positioner: - Position setpoint via fieldbus interface - Automatic adaptation of dead band (adaptive behaviour selectable) - Change-over between OPEN-CLOSE control and setpoint control via fieldbus
	Option:	PID process controller: With adaptive positioner, via 0/4 – 20 mA analogue inputs and Profibus for process setpoint and actual process value
Monitoring function	- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal	
Diagnostic function	- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each - Time-stamped event report with history for setting, operation and faults - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required"	
Motor protection evaluation	Standard:	PTC tripping device in combination with PTC thermistors within actuator motor
	Option:	Thermal overload relay in controls combined with thermostats within actuator
Overvoltage protection (option)	Protection of the actuator and control electronics against overvoltages on the fieldbus cables of up to 4 kV	
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	- AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e - AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	TPCCF0G4-1A1-A410 TPA00R2AA-1A1-AB0	

Further options for version with MWG in actuator

Setting of limit and torque switching via local controls	
Torque feedback signal	Via fieldbus interface
Diagnostic functions	- Torque characteristics 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. Torque characteristics stored can be shown on the display.
Wiring diagram (basic version)	TPCCF0G4-1A1-A410 TPA00R20A-1I1-AB0

Setting/programming the Foundation Fieldbus interface

Setting the fieldbus address	The address is set via Foundation Fieldbus while using the provided system management services and a configuration software for Foundation Fieldbus (e.g. NI-FBUS).
Configurable feedback signals	The feedback signals of the "Analog Input" (AI) and "Discrete Input" (DI) function blocks may be configured according to the requirements using channels and the appropriate transducer blocks. Configuration is made via Foundation Fieldbus while using the device description and a configuration software for Foundation Fieldbus (e.g. NI-FBUS)

Programming of user functions	User functions (e.g. stepping mode, intermediate positions, ...) may either be programmed via display or via Foundation Fieldbus using the device description and a configuration software for Foundation Fieldbus (e.g. NI-FBUS).

General data of the Foundation Fieldbus interface	
Communication protocol	Foundation Fieldbus H1 (31.25 kbit/s) in accordance with IEC 61158 and IEC 61784-1
Physical Layer	Separate supply, standard data transmission
Network topology	Line, star and tree structures (trunks combined with spurs) are supported. Internal drop line length of ACExC 01.2-SIL is 0.27 m.
Transmission medium	Two-wire copper cable with data transmission and voltage supply on the same wire pair in accordance with: - ISA S50.02-1992 ISA Physical Layer Standard or - IEC 61158-2:2000 (ed. 2.0), Fieldbus standard for use in industrial control systems, Part 2: Physical Layer specification and service definition - Recommendation: Use cable type A (screened and twisted)
Current consumption	Approx. 13 mA at +24 V DC
Transmission rate	31.25 kbit/s
Cable length	Max. 1,900 m (only when using the recommended A type cable); with repeaters (4 units max.) expandable up to a max. of 9.5 km
Number of devices	- Max. 32 devices per segment; all in all max. 240 devices can be addressed - Typical number of devices: approx. 6 – 15 devices per segment
Communication services	- Publisher/subscriber communication for the transmission of process data - Client/server communication for programming and configuration - Report distribution for transmission of alarm signals
Supported Foundation Fieldbus functions	ACExC 01.2-SIL is a Link Master device. Link Master devices can take over the Link Active Scheduler (LAS) function for bus communication coordination.
Permissive connection	ACExC 01.2-SIL controls offer an automatic polarity detection and polarity correction of the Foundation Fieldbus cable.

Function blocks of the AUMATIC Foundation Fieldbus interface	
Function blocks of the output signals	8 Discrete Output (DO) function blocks for discrete output signals, e.g.: - OPEN, STOP, CLOSE - RESET - EMERGENCY - Interlock OPEN/CLOSE - Enable Local - Intermediate positions - Digital customer outputs 2 Analog Output (AO) function blocks for analogue output signals, e.g.: - Setpoint position - Analogue customer outputs
Function blocks for input signals	10 Discrete Input (DI) function blocks for discrete feedback signals, e.g.: - End positions OPEN/CLOSED - Selector switch in position LOCAL/REMOTE - Running indication (directional) - Torque switches OPEN, CLOSED - Limit switches OPEN, CLOSED - Manual operation by handwheel or via local controls - Intermediate positions - Digital customer inputs 4 Analog Input (AI) function blocks for analogue feedback signals, e.g.: - Actual position - Torque - Analogue 0 – 20 mA customer inputs

Further function blocks	• 1 Signal Characterizer function block (SC) for conversion of analogue signals • 1 Input Selector (IS) function block for the selection of analogue input signals • 1 Process controller (PID) block as function block for modulating applications • Resource Block (RB) for defining characteristic Foundation Fieldbus device data • 4 Transducer Blocks (AOTB, DOTB, AITB, DITB) as connection blocks for discrete and analogue input and output signals • 1 Transducer Block (PTB) as connection block for control • 1 Transducer Block (AUMACTB) for configuration and programming • 1 Transducer Block (AUMACTB) for monitoring and diagnostics

Special features of the AUMATIC Foundation Fieldbus interface

Manufacturer ID	0x0A01FF
Device type	0x0001
Device revision	0x01 or 0x02
Device ID	0A01FF0001-(serial number of ACExC 01.2-SIL-x)-(serial number FF module)
Baud rate	31.25 kbit/s
Polarity	No polarity (automatic polarity detection and correction)

Segment information

Standard	FF H1
Link master (LAS) function	Yes
Current consumption	13 mA
FF connection current	< 20 mA
Device voltage min/max	9 – 32 V DC
FISCO ic characteristics	FF capacity: $C_i < 5 \text{ nF}$, FF inductivity: $L_i < 10 \text{ } \mu\text{H}$, Minimum input current: $I_i = 380 \text{ mA}$, Minimum input voltage: $U_i = 17.5 \text{ V}$, Minimum input power: $P_i = 5.32 \text{ W}$
Jitter tolerance range	< $\pm 8 \text{ } \mu\text{s}$
Min. transmission level (Vp-t-p)	> 0.75 V
Available server VCRs	23
Available source VCRs	23
Available publisher VCRs	23
Available subscriber VCRs	23
DD revision	0x01
CFF revision	020101
ITK revision	6.1.2

Available channels

Analog Output (AO) function blocks	0, 1, 3, 20, 21
Discrete Output (DO) function blocks	0, 2, 4 – 19
Analog Input (AI) function blocks	0, 67, 68, 69, 70
Discrete Input (DI) function blocks	0, 22 – 66, 71

Number of function blocks with the respective execution times [ms]

8 Discrete Output (DO) function blocks	30
2 Analog Output (AO) function blocks	30
10 Discrete Input (DI) function blocks	20
4 Analog Input (AI) function blocks	30

Technical data Actuator controls in SIL version

1 Signal Characterizer (SC) function block	40
1 Input Selector (IS) function block	30
1 Proportional/Integral/Differential (PID) function block	40
1 Proportional/Integral/Differential (PID) function block	40

Service conditions			
Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−25 °C to +60 °C	
	Options:	−60 °C to +40 °C/+60 °C, extreme low temperature version	
		Low temperature versions with heating system only.	
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		
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)		
Vibration resistance according to IEC 60068-2-6	1 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)		
Corrosion protection	Standard:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	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	

Accessories	
Wall bracket	Actuator controls separately mounted from the actuator, including plug/socket connector. Connecting cable on request. Recommended for high ambient temperatures, difficult access, or in case of heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (Not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter. (MWG requires a separate data cable.)
Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)

Further information	
Weight	Approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
Directives	Functional safety of electrical/electronic/programmable electronic safety-related systems: (IEC 61508) ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)

Reference documents

Brochure Electric actuators for the automation of valves in the oil and gas industry
Dimensions Multi-turn actuators with AUMATIC integral controls
Dimensions Part-turn actuators with AUMATIC integral controls
Manual Functional Safety Actuators SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2/SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2, SQ 05.2 – SQ 14.2/ SQR 05.2 – SQR 14.2/ SQEx 05.2 – SQEx 14.2/ SQREx 05.2 – SQREx 14.2 with actuator controls AC 01.2/ACExC 01.2 in SIL version

Technical data Actuator controls for variable speed multi-turn actuators

General information

ACVExC 01.2 actuator controls for controlling variable speed multi-turn actuators of the SAVEx/SARVEx .2 type range.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x																																				
	Options:	II2G Ex d IIC T4 or T3 Gb II2G c IIC T4 or T3																																				
EC type test certificate	DEKRA 11 ATEX 008 X																																					
Power supply	Standard voltages AC: <table><tr><th colspan="5">3-phase AC current Voltages/frequencies</th><th colspan="4">1-phase AC current Voltages/frequencies</th></tr><tr><td>Volt</td><td colspan="2">220 – 240</td><td colspan="2">380 – 480</td><td>Volt</td><td colspan="2">110 – 120</td><td colspan="2">220 – 240</td></tr><tr><td>Hz</td><td>50</td><td>60</td><td>50</td><td>60</td><td>Hz</td><td>50</td><td>60</td><td>50</td><td>60</td></tr></table> Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %									3-phase AC current Voltages/frequencies					1-phase AC current Voltages/frequencies				Volt	220 – 240		380 – 480		Volt	110 – 120		220 – 240		Hz	50	60	50	60	Hz	50	60	50	60
3-phase AC current Voltages/frequencies					1-phase AC current Voltages/frequencies																																	
Volt	220 – 240		380 – 480		Volt	110 – 120		220 – 240																														
Hz	50	60	50	60	Hz	50	60	50	60																													
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.																																					
Rated power	Controls are designed for nominal motor power, refer to Electrical data SAVEx/SARVEx.																																					
Control inputs	6 digital inputs: OPEN, STOP, CLOSE, EMERGENCY (via opto-isolator, thereof OPEN, STOP, CLOSE with one common and EMERGENCY without common, respect minimum pulse duration for modulating actuators.																																					
Control voltage/current consumption for control inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input																																				
	Options:	48 V DC, current consumption: approx. 7 mA per input 60 V DC, current consumption: approx. 9 mA per input 115 V DC, current consumption: approx. 15 mA per input 100 – 120 V AC, current consumption : approx. 15 mA per input																																				
	All input signals must be supplied with the same potential.																																					
Status signals (output signals)	Standard:	6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) Default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) - Analogue output signal for position feedback - Galvanically isolated position feedback 0/4 – 20 mA (load max. 500 Ω)																																				

Technical data Actuator controls for variable speed multi-turn actuators

Status signals (output signals)	Options:	6 programmable output contacts: 5 change-over contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 12 programmable output contacts: 10 potential-free NO contacts, 5 with one common each, max. 250 V AC, 1 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 6 potential-free change-over contacts without one common, per contact max. 250 V AC, 5 A (resistive load) 10 programmable output contacts: 10 potential-free change-over contacts without one common, per contact max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), 1 potential-free NO contact, max. 250 V AC, 1 A (resistive load), 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load) 6 programmable output contacts: 4 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), 12 programmable output contacts: 8 mains failure proof potential-free NO contacts, max. 250 V AC, 1 A (resistive load), 2 potential-free NO contacts, max. 250 V AC, 1 A (resistive load), 2 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load) 12 programmable output contacts: 8 mains failure proof potential-free NO contacts, max. 250 V AC, 5 A (resistive load), 4 potential-free change-over contacts, max. 250 V AC, 5 A (resistive load), All output signals must be supplied with the same potential.
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply
Analogue output (option)	2 analogue outputs: With position transmitter option: Output of travel, torque or output speed as continuous values between 0/4 and 20 mA	
Analogue input (option)	2 analogue inputs: With positioner/process controller option: Input of actual position value/actual process value as continuous values between 0/4 and 20 mA	
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
ACVExC 01.2 heating system (option)	Temperature versions below -30 °C incl. heating system for connection to external power supply 230 V AC or 115 V AC.	
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	

Technical data Actuator controls for variable speed multi-turn actuators

Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Operation profile with any 8 intermediate positions: Position can be set between 0 and 100 %, reaction and signal behaviour programmable, positioning accuracy < 0.2 % - Speed profile with up to 10 ranges, speed can be individually adjusted for positions OPEN and CLOSED for each range - Running indication blinking: can be set - Speed source can be selected (REMOTE, LOCAL) 4 internal nominal speeds can be programmed (and selected in LOCAL) - Nominal speed source can be selected for REMOTE (binary, analogue) - Soft start, soft stop (0.1 s – 10 s can be selected) - Synchronous link (synchronous operation of two actuators)
	Options:	- Positioner: - Position setpoint via analogue inputs 0/4 – 20 mA - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Split range operation - MODE input for selecting between open-close and setpoint control - Modulating duty with proportional operation (2 % – 20 %) - PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs for process setpoint and actual process value - Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set - Static and dynamic torque recording for both rotation directions with torque measurement flange as additional accessory
Safety functions	Standard:	- EMERGENCY operation (programmable behaviour) - Digital input: Low active - Reaction can be selected: STOP, run to end position (OPEN, CLOSED) or intermediate position at defined speed - Torque monitoring can be by-passed during EMERGENCY operation
	Options:	- Enabling local controls via Enable LOCAL digital input: Thus, actuator operation can be enabled or disabled via push buttons on local controls. - Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via two digital inputs - PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function		- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal
Diagnostic function		- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults: - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.
Motor protection evaluation		PTC tripping device (TMS module) in combination with PTC thermistors within actuator motor

Technical data Actuator controls for variable speed multi-turn actuators

Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads

For version with MWG within actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω)
Wiring diagram (basic version)	TPCH-0A1-1CF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCH-0A1-1CE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

Service conditions

Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C	
	Options:	−40 °C to +40 °C/+60 °C	
		−60 °C to +40 °C/+60 °C	
	Low temperatures versions including heating system for connection to external 230 V AC or 115 V AC voltage supply, or internal 400 V AC version		
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator (double sealed)		
	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	1 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)		
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	

Accessories

Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)
Torque measurement flange DMF	Accessory for torque measurement for SAVEx/SARVEx 07.2 to SAVEx/SARVEx 16.2

Technical data Actuator controls for variable speed multi-turn actuators

Further information	
Weight	Approx. 7 kg (with AUMA plug/socket connector)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SAVEx 07.2 – SAVEx 16.2/SARVEx 07.2 – SARVEx 16.2 with ACVExC 01.2

Technical data Actuator controls for variable speed multi-turn actuators

General information

ACVEx 01.2 actuator controls for controlling variable speed multi-turn actuators of the SAVEx/SARVEx .2 type range with Profibus DP interface.

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 or T3 Gb II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x																																													
	Options:	II2G Ex d IIC T4 or T3 Gb II2G c IIC T4 or T3																																													
EC type test certificate	DEKRA 11 ATEX 008 X																																														
Power supply	Standard voltages AC: <table><tr><th colspan="5">3-phase AC current</th><th colspan="4">1-phase AC current</th></tr><tr><th colspan="5">Voltages/frequencies</th><th colspan="4">Voltages/frequencies</th></tr><tr><td>Volt</td><td colspan="2">220 – 240</td><td colspan="2">380 – 480</td><td>Volt</td><td colspan="2">110 – 120</td><td colspan="2">220 – 240</td></tr><tr><td>Hz</td><td>50</td><td>60</td><td>50</td><td>60</td><td>Hz</td><td>50</td><td>60</td><td>50</td><td>60</td></tr></table> Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %									3-phase AC current					1-phase AC current				Voltages/frequencies					Voltages/frequencies				Volt	220 – 240		380 – 480		Volt	110 – 120		220 – 240		Hz	50	60	50	60	Hz	50	60	50	60
3-phase AC current					1-phase AC current																																										
Voltages/frequencies					Voltages/frequencies																																										
Volt	220 – 240		380 – 480		Volt	110 – 120		220 – 240																																							
Hz	50	60	50	60	Hz	50	60	50	60																																						
External supply of the electronics (option)	24 V DC: +20 %/–15 %, Current consumption: Basic version approx. 250 mA, with options up to 500 mA External power supply must have reinforced insulation against mains voltage in accordance with IEC 61010-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61010-1.																																														
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data SAVEx/SARVEx.																																														
Control and feedback signals	Via Profibus DP interface																																														
Fieldbus interface with additional input signals (options)	2 free analogue inputs (0/4 – 20 mA), 4 free digital inputs - Signal transmission is made via fieldbus interface - Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for position setpoint - Inputs OPEN, STOP, CLOSE, EMERGENCY, I/O interface, MODE (via opto-isolator thereof OPEN, STOP, CLOSE, MODE with one common and EMERGENCY, I/O interface respectively without common) - Control inputs: OPEN, STOP, CLOSE, EMERGENCY - I/O interface: Selection of control type (fieldbus or additional input signals) - MODE: Selection between open-close duty (OPEN, STOP, CLOSE) or modulating duty (0/4 – 20 mA position setpoint) - Additionally 1 analogue input (0/4 – 20 mA) for setpoint position and 1 analogue input (0/4 – 20 mA) for actual process value																																														
Control voltage/current consumption for control inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input																																													
	Options:	48 V DC, current consumption: approx. 7 mA per input 60 V DC, current consumption: approx. 9 mA per input 115 V DC, current consumption: approx. 15 mA per input 100 – 120 V AC, current consumption : approx. 15 mA per input																																													
	All input signals must be supplied with the same potential.																																														
Status signals	Via Profibus DP interface																																														
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 100 mA for supply of control inputs, galvanically isolated from internal voltage supply.																																													
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply																																													
Profibus DP-V1 (option)	Access to parameters, the electronic name plate and the operating and diagnostic data with acyclic write/read services																																														

Technical data Actuator controls for variable speed multi-turn actuators

Profibus DP-V2 (option)	Redundancy behaviour according to Profibus DP-V2 specification no. 2.212 (Primary and Backup with RedCom) Synchronisation of time between ACVExC 01.2 and Profibus master with subsequent time stamp of the most important events such as faults, end position and torque signals from the ACVExC 01.2	
Redundancy (option)	Requires Profibus DP-V2 (option) Redundant line topology with universal redundancy behaviour according to AUMA redundancy I or II Redundant line topology and redundancy behaviour according to Profibus DP-V2 specification no. 2.212 (Primary and Backup with RedCom)	
FO cable connection (option)	- Connector types: ST or SC connector - FO cables - Multi-mode: 62,5(50)/125 µm, range approx. 2.5 km (max. 2.0 dB/km) - Single-mode: 9/125 µm, range approx. 15 km (max. 0.4 dB/km) - Topologies: Line, star and redundant loop (with single-channel Profibus interface) - Baud rate: up to 1.5 Mbit/s - Optical budget: - Multi-mode: 13 dB - Single-mode: 17 dB - Wave length: 1,310 nm - FO coupler by EKS required at DCS, reference addresses: AUMA or www.eks-engel.com	
Local controls	Standard:	- Selector switch: LOCAL - OFF - REMOTE (lockable in all three positions) - Push buttons: OPEN, STOP, CLOSE, RESET - Local STOP The actuator can be stopped via push button STOP of local controls if the selector switch is in position REMOTE. (Not activated when leaving the factory.) 6 indication lights: - End position and running indication CLOSED (yellow), torque fault CLOSE (red), motor protection tripped (red), torque fault OPEN (red), end position and running indication OPEN (green), Bluetooth (blue) - Graphic LC display: illuminated
	Option:	- Special colours for the indication lights: - End position CLOSED (green), torque fault CLOSE (blue), torque fault OPEN (yellow), motor protection tripped (violet), end position OPEN (red)
ACVExC 01.2 heating system (option)	Temperature versions below –30 °C incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC	
Bluetooth communication interface	Bluetooth class II chip, version 2.1: With a range up to 10 m in industrial environments, supports the SPP Bluetooth profile (Serial Port Profile). Required accessories: - AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) - AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)	

Technical data Actuator controls for variable speed multi-turn actuators

Application functions	Standard:	- Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED - Torque by-pass: Adjustable duration (with adjustable peak torque during start-up time) - Start and end of stepping mode as well as ON and OFF times can be set individually for directions OPEN and CLOSE, 1 to 1,800 seconds - Operation profile with any 8 intermediate positions: Position can be set between 0 and 100 %, reaction and signal behaviour programmable, positioning accuracy < 0.2 % - Speed profile with up to 10 ranges, speed can be individually adjusted for positions OPEN and CLOSED for each range - Running indication blinking: can be set - Speed source can be selected (REMOTE, LOCAL) 4 internal nominal speeds can be programmed (and selected in LOCAL) - Nominal speed source can be selected for REMOTE (binary, analogue, fieldbus) - Soft start, soft stop (0.1 s – 10 s can be selected) - Synchronous link (synchronous operation of two actuators) - Positioner - Position setpoint via fieldbus interface - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - MODE input for selecting between OPEN-CLOSE and setpoint control via fieldbus - Modulating duty with proportional operation (2 % – 20 %)
	Options:	- PID process controller: with adaptive positioner, via 0/4 – 20 mA analogue inputs for process setpoint and actual process value - Automatic deblocking: Up to 5 operation trials, travel time in opposite direction can be set - Static and dynamic torque recording for both rotation directions with torque measurement flange as additional accessory
Safety functions	Standard:	- EMERGENCY operation (programmable behaviour) - Via additional input (option, low active) or via fieldbus interface - Reaction can be selected: STOP, run to end position (OPEN, CLOSED) or intermediate position at defined speed - Torque monitoring can be by-passed during EMERGENCY operation
	Options:	- Enabling local controls via Enable LOCAL digital input: Thus, actuator operation can be enabled or disabled via push buttons on local controls. - Interlock for main/by-pass valve: Enabling the operation commands OPEN or CLOSE via two digital inputs - PVST (Partial Valve Stroke Test): programmable to check the function of both actuator and actuator controls: Direction, stroke, operation time, reversing time
Monitoring function		- Valve overload protection: adjustable, results in switching off and generates fault signal - Motor temperature monitoring (thermal monitoring): results in switching off and generates fault indication - Monitoring the heater within actuator: generates warning signal - Monitoring of permissible on-time and number of starts: adjustable, generates warning signal - Operation time monitoring: adjustable, generates warning signal - Phase failure monitoring: results in switching off and generates fault signal
Diagnostic function		- Electronic device ID with order and product data - Logging of operating data: A resettable counter and a lifetime counter each for: - Motor running time, number of starts, torque switch trippings in end position CLOSED, limit switch trippings in end position CLOSED, torque switch trippings in end position OPEN, limit switch trippings in end position OPEN, torque faults CLOSE, torque faults OPEN, motor protection trippings - Time-stamped event report with history for setting, operation and faults: - Status signals according to NAMUR recommendation NE 107: "Failure", "Function check", "Out of specification", "Maintenance required" - Torque characteristics (for version with MWG in actuator): 3 torque characteristics (torque-travel characteristic) for opening and closing directions can be saved separately. - Torque characteristics stored can be shown on the display.
Motor protection evaluation		PTC tripping device (TMS module) in combination with PTC thermistors within actuator motor

Profibus D

Technical data Actuator controls for variable speed multi-turn actuators

Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	AUMA Ex plug/socket connector with terminal blocks (KES) AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads

For version with MWG within actuator

Setting of limit and torque switching via local controls

Torque feedback signal	Via fieldbus interface
	Galvanically isolated analogue output 0/4 – 20 mA (load max. 500 Ω)
Wiring diagram (basic version)	TPCHA000-1AF-A410 TPA00R200-0I1-000, 3-ph; 380 V – 480 V
	TPCHA000-1AE-A410 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

Setting/programming the Profibus DP interface

Baud rate setting	Automatic baud rate recognition
Setting the fieldbus address	The Profibus DP address is set via the actuator controls display.
Configurable process representation via GSD file	For optimum adaptation to the process control system, the process representation input (feedback) can be freely configured.

General Profibus DP interface data

Communication protocol	Profibus DP according to IEC 61158 and IEC 61784		
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.		
Transmission medium	Twisted, screened copper cable according to IEC 61158		
Profibus DP interface	EIA-485 (RS-485)		
Transmission rate/cable length	Baud rate (kbit/s)	Max. cable length (segment length) without repeater	Possible cable length with repeater (total network cable length)
	9.6 – 93.75	1,200 m	Approx. 10 km
	187.5	1,000 m	Approx. 10 km
	500	400 m	Approx. 4 km
	1,500	200 m	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 Profibus DP functions	Cyclic data exchange, sync mode, freeze mode, fail safe mode		
Profibus DP ident no.	0x0C4F:	Standard applications with Profibus DP-V0 and DP-V1	
	0x0CBD:	Applications with Profibus DP-V2	

Commands and signals of the Profibus DP interface

Process representation output (command signals)	OPEN, STOP, CLOSE, speed, position setpoint, RESET, EMERGENCY operation command, enable local controls, Interlock OPEN/CLOSE
Process representation input (feedback signals)	End positions OPEN, CLOSED Actual position value Actual torque value, requires MWG in actuator Selector switch in position LOCAL/REMOTE Running indication (directional) Torque switches OPEN, CLOSED Limit switches OPEN, CLOSED Manual operation by handwheel or via local controls Analogue (2) and digital (4) customer inputs

Technical data Actuator controls for variable speed multi-turn actuators

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

Use	Indoor and outdoor use permissible		
Mounting position	Any position		
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request		
Ambient temperature	Standard:	−30 °C to +40 °C/+60 °C	
	Options:	−40 °C to +40 °C/+60 °C −60 °C to +40 °C/+60 °C	
	Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC		
Humidity	Up to 100 % relative humidity across the entire permissible temperature range		
Enclosure protection according to EN 60529	IP68		
	Terminal compartment additionally sealed against interior of actuator (double sealed)		
	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	1 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)		
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	

Accessories

Programming software	AUMA CDT (Commissioning and Diagnostic Tool for Windows-based PC) AUMA Assistant App (Commissioning and Diagnostic Tool for Android devices)
Torque measurement flange DMF	Accessory for torque measurement for SAVEx/SARVEx 07.2 – SAVEx/SARVEx 16.2

Further information

Weight	Approx. 7 kg (with AUMA plug/socket connector)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SAVEx 07.2 – SAVEx 16.2/SARVEx 07.2 – SARVEx 16.2 with ACVExC 01.2

3 Technical data Miscellaneous

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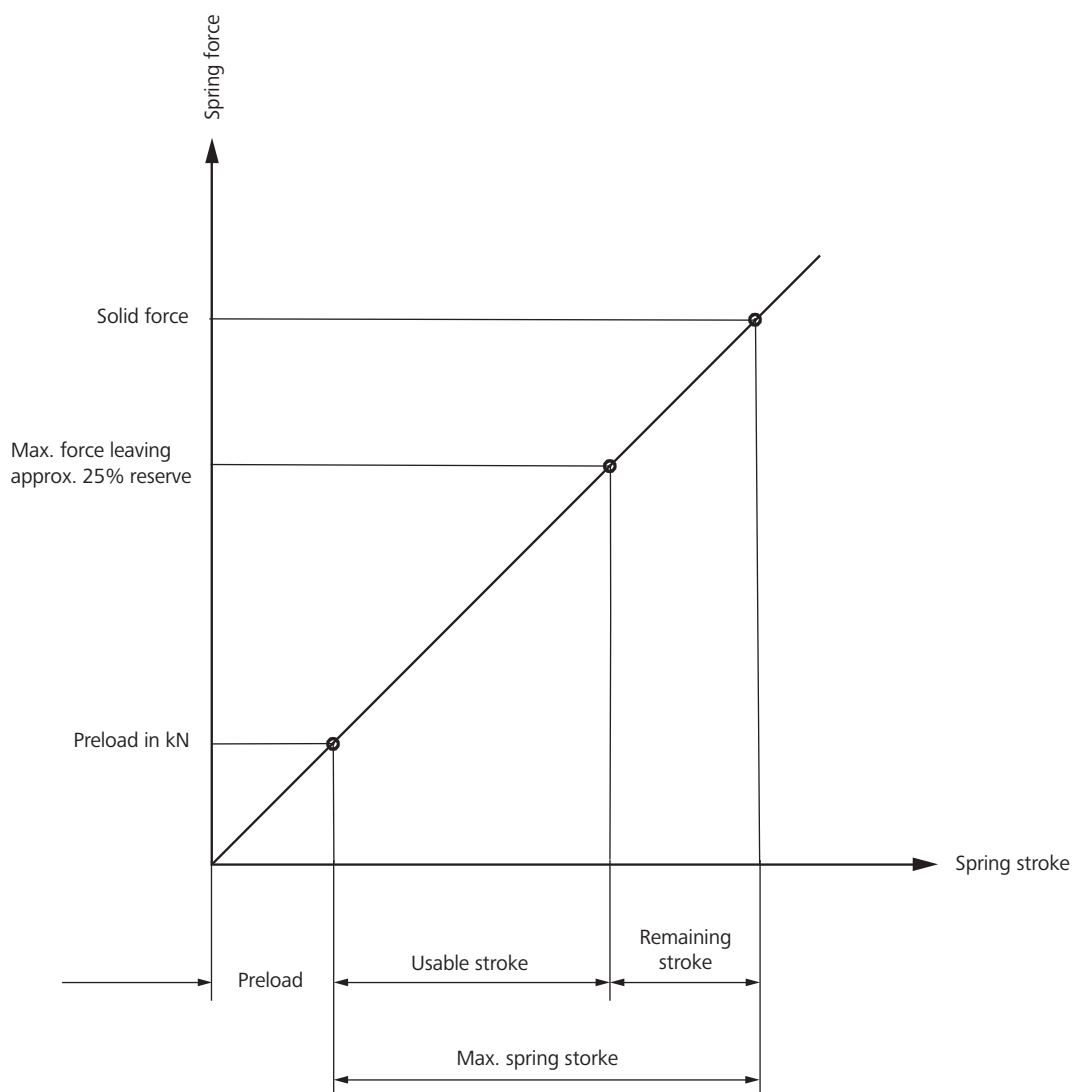
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Technical data Spring loaded stem nut

Type	Spring constant	Spring stroke	Solid force	Preload		Usable stroke	Force usable leaving sufficient reserve	Remaining stroke	Stem diameter $\varnothing$ d6
	[kN/mm]	Max. [mm]	[kN]	[mm]	[kN]	[mm]	Max. [kN]	[mm]	Max. [mm]
AF 07.2	3.1	5.9	20	0.5	1.5	4.7	16	1.2	32
AF 07.6	6.8	5.6	41	0.4	2.7	4.5	33	1.1	32
AF 10.2	10.2	6.0	65	0.4	4.3	4.7	52	1.3	32
AF 14.2	14.2	8.1	125	0.7	9.6	6.3	100	1.8	51
AF 16.2	19.2	9.6	200	0.8	14.9	7.5	160	2.1	65
AF 25.2	23.7	12.3	315	0.9	21.3	10	260	2.3	85
AF 30.2	32.7	14.0	510	1.6	52.0	11	410	3.0	102
AF 35.2	44.8	17.5	860	1.7	76.0	14	700	3.5	150
AF 40.2	43.1	21.4	1,000	1.8	76.5	17	800	4.4	175
AF 48.2	84.2	30.4	3000	2.4	438	24	2630	4.0	180
AF 60.2	84.2	30.4	3,000	2.4	438	24	2,630	4.0	180

Suitable for modulating duty to a limited extent only. Please contact AUMA.



Technical description Spring loaded stem nut

1. Function

The output drive type AF, spring-loaded stem nut, allows for limited axial stem nut offset within the output mounting flange. This helps to prevent valve damage and protects the axial bearings of the output drive against excessive load.

2. Use

The use of spring-loaded stem nuts type AF is recommended for the following applications:

- 2.1 Globe valves:
 - Operating speed ≥ 250 mm/min.
 - Output speed of the multi-turn actuator: ≥ 45.1 rpm
- 2.2 Gate valves: Operating speed ≥ 500 mm/min.
- 2.3 The mentioned limit values are based on experience. When exceeding these values, please check thoroughly whether and problems or damage may occur when operating the valve without a spring-loaded stem nut.
- 2.4 The use of a spring-loaded stem nut is also recommended if high temperature fluctuations of the medium in the pipes are to be expected for globe valves and gate valves.
- 2.5 If extended delay times occur between torque switch tripping and the ensuing motor power cut-out for actuator control, the spring-loaded stem nut can significantly reduce excess torque.

3. Version

- 3.1 Output drive type AF is available in two versions:
 - Spring-loaded version in both directions, e.g. type AF 10.2 (is acknowledged if the valve type is unknown)
 - Spring-loaded version in direction CLOSE, e.g. type AF 10.2-Z
- 3.2 The spring-loaded version for "direction CLOSE only" must be implemented, if it is to be expected that short-term peak torques are required during unseating from the end position CLOSED. These torques will drop immediately after unseating (typical for wedge gate valves).
- 3.3 In practical use, this means that the spring-loaded version in "direction CLOSE only" must be used for all conventional wedge gate valves.
The spring-loaded version for both directions can be used for back seal valves e.g. globe valves.

4. Special features

If the output drive type AF is requested for special wedge gate valves when back seal control is required, please contact AUMA.

5. Ambient temperature range

-40 °C to +80 °C

6. Documentation

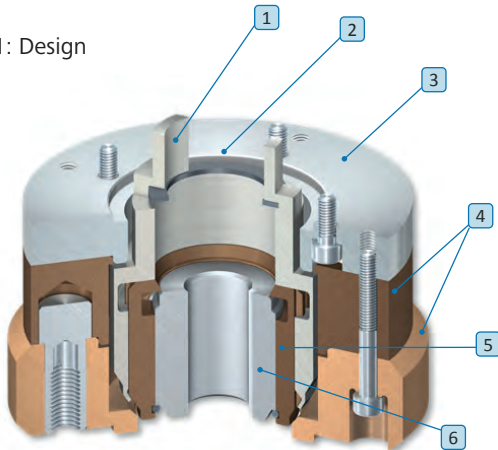
- Technical data AF 07.2 – AF 60.2
- Dimensions Output drive types AF 07.2 – AF 16.2
- Dimensions Output drive types AF 25.2 – AF 60.2

7. Safety instructions

The spring stack is subject to high pre-tension. For this reason, the spring stack may only be disassembled from the output mounting flange by authorised staff using the appropriate tools.

Technical description Output drive type IB/IE - insulated output drive

Figure 1: Design



- 1 Coupling sleeve
- 2 Circlip
- 3 Actuator mounting flange (stainless steel)
(only for mounting to actuator sizes
SA 07.1/07.2/07.5/07.6)
- 4 Top and bottom made of cloth reinforced
laminate
- 5 Output drive plug sleeve made of cloth reinforced
laminate
- 6 Output drive sleeve

1. Function

Corrosion is generated by a natural process: Oxidation of metals in combination with water and oxygen.

The insulated output drive IB/IE avoids corrosion by applying cathodic protection (CS):

Cathodic corrosion protection considerably reduces the corrosion rate on metal structures by permanently lowering the electrical potential. This results in a sufficient decrease in the ion mobility between metal and electrolyte. Consequently, the metal to be protected is made virtually resistant against corrosion.

2. Use/application

The use of an insulated output drive is recommended for the following applications:

- 2.1 For metal constructions in electro conductive environments such as soil or water.
e.g. corrosion protection for buried gas pipes.

2.2 Note:

Isolating spark gaps for lightning conditions between multi-turn actuator and pipe are not part of the AUMA delivery. A potential supplier is the company Dehn, with the product TFS (isolating spark gaps - ISG).

3. Sizes/versions/related documents

- 3.1 Insulated output drives are available in the following sizes and version:

- IB 07.2, IB 10.2, IB 14.2, IB 16.2: Bore diameter for valve shaft attachment according to DIN 3210
- IB1 07.2, IB1 10.2, IB1 14.2, IB1 16.2: Bore diameter for valve shaft attachment according to EN ISO 5210
- IB3 07.2, IB3 10.2, IB3 14.2, IB3 16.2: Bore diameter for valve shaft attachment according to EN ISO 5210
- IE 07.2, IE 10.2, IE 14.2, IE 16.2: Bore diameter for valve shaft attachment according to DIN 3210

- 3.2 Related documents:

- Dimensions Output drive types IB/IE - Insulated output drive for SA .2 multi-turn actuators (Y006.244)
- Dimensions Output drive types IB1/IB - Insulated output drive for SA .1 multi-turn actuators and GK/GST gearboxes (Y001.230)
- Dimensions Output drive types IB3/IB - Insulated output drive for SA .1 multi-turn actuators and GK/GST gearboxes (Y001.231)

4. Mounting options for SA 07.2 – SA 16.2, SA 07.1 – SA 25.1

SA-IB-valve

SA-IB-GK-valve

SA-IB-GST-valve

Note:

To adapt the SA .2 actuators to available insulated output drive with flanges F10 and F14 (year of manufacture: 2009 and earlier), an adapter is required. The adapter can be ordered from AUMA.

5. Ambient temperature

–30°C to +70 °C

–40°C to +80 °C

–60°C to +60 °C

6. Special features

Test performed according to internal specification KV 1.2.16.2

The high voltage test is performed at 5,000 V (10 seconds). Certified by test stamp.

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

Technical data for switches

Limit and torque switches		
Application/description	Standard:	Single switches (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switches (2 NC and 2 NO) for each end position, switches galvanically isolated
		Switches with forced opening (1 NC contact)
Type designation/order code	Limit switches:	8, 8.2, 8.3, 8-S, 8.2-S
	Torque switches:	6, 6.2, 6-S, 6.2-S
Mechanical lifetime	2 x 10 ⁶ starts	
Enclosure protection according to EN 60529	IP66	
Contact element	Snap-action contact (double break)	
Operation	Via lever	
Ambient temperature ¹⁾	−60 °C to +120 °C	
Contact material: Silver		
U min.	24 V AC/DC	
U max.	250 V AC/DC	
I min.	20 mA	
I max. AC current	5 A at 250 V (resistive load)	
	3 A at 250 V (inductive load, cos phi = 0.6)	
I max. DC current	0.4 A at 250 V (resistive load)	
	0.03 A at 250 V (inductive load, L/R = 3 µs)	
	7 A at 30 V (resistive load)	
	5 A at 30 V (inductive load, L/R = 3 µs)	
Contact material: Gold		
U min.	5 V	
U max.	50 V	
I min.	4 mA	
I max.	400 mA	
Wiring diagram		
I Single switches II Tandem switches Signalling Switching off TSC 1/TSO 1 LSC 1/LSO 1 TSC 2/TSO 2 LSC 2/LSO 2 Only the same potential can be switched on the two circuits of each microswitch. If different potentials are to be switched simultaneously, this is only possible when using tandem switches (two galvanically separate microswitches in one housing). To ensure reliable signalling, the leading contacts (LSC 1/LSO 1 or TSC 1/TSO 1) must be used for this purpose and the lagging contacts (LSC/LSO or TSC/TSO) for switching off. [LSC = WSR; LSO = WOEL; TSC = DSR; TSO = DOEL]		
Colour of wires: RD - red (NC), BK - black (NO)		
Safety related assessment of limit and torque switches		
The end position signalisation of the AUMA limit and torque switches with order codes 6-S, 6.2-S, 8-S, 8.2-S were subjected to a safety-related assessment in cooperation with exida GmbH.		
The determined failure rate can be used for the assessment of a safety function to determine the usability in safety instrumented systems (SIS). Compared to the PFD values of IEC 61508, the failure rate is within the SIL 2 range.		
Upon request, the test report can be provided.		
Test according to EN 60947		
For switches with order codes 6-S, 6.2-S, 8-S, 8.2-S, a test certificate in accordance with EN 60947 is available. Upon request, the certificate can also be provided.		

1) Refer to notes on page 2.

Technical data for switches

Blinker transmitter for running indication		
Mechanical lifetime	10 ⁷ starts	
Operation	Segment washer	
Contact element	Snap action contact	
Contact material	Standard:	Silver
	Option:	Gold
Type of contact	Change-over contact	
Contact material: Silver		
U min.	10 V AC/DC	
U max.	250 V AC/DC	
I max. AC current	3 A at 250 V (resistive load) 2 A at 250 V (inductive load, cos phi ≈ 0.8)	
I max. DC current	0.25 A at 250 V (resistive load)	
Ambient temperature ¹⁾	−60 °C to +120 °C	

Handwheel activation switch		
Mechanical lifetime	10 ⁶ starts	
Operation	Lever	
Contact element	Snap action contact	
Contact material	Standard:	Silver
	Option:	Gold
Type of contact	Change-over contact	
Contact material: Silver		
U min.	12 V DC	
U max.	250 V AC	
I max. AC current	3 A at 250 V (inductive load, cos phi = 0.8)	
I max. DC current	3 A at 12 V (resistive load)	
Ambient temperature ¹⁾	-60 °C to +80 °C	

Notes on tables on pages 1 and 2	
1) Ambient temperature	Ambient temperature range depends on temperature range of the actuator (refer to name plate)

Technical data Electronic position transmitter/potentiometer

This data applies to:

Multi-turn actuators:	SA 25.1 – SA 48.1	SAR 25.1 – SAR 30.1	Part-turn actuators:	SQ 05.2 – SQ 14.2	SQR 05.2 – SQR 14.2
	SA 07.2 – SA 16.2	SAR 07.2 – SAR 16.2		SQEx 05.2 – SQEx 14.2	SQREx 05.2 – SQREx 14.2
	SAV 07.2 – SAV 16.2	SARV 07.2 – SARV 16.2			
	SAEx 07.2 – SAEx16.2	SAREx 07.2 – SAREx 16.2			
	SAVEx 07.2 – SAVEx 16.2	SARVEx 07.2 – SARVEx 16.2			

Limit switching device for manual operation: WSH

EWG 01.1

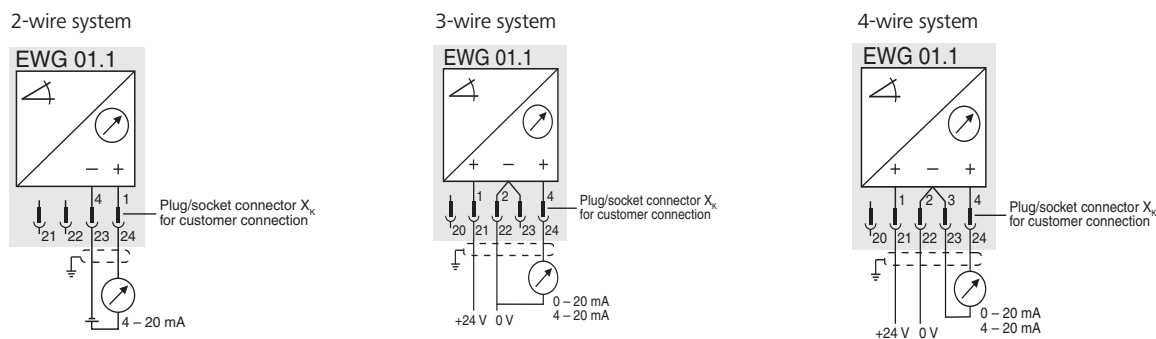
Contactless and wear-free sensing of the valve position by means of Hall sensors for signalling the valve position.

Data	3-wire and 4-wire systems	2-wire system
Output current I_A	0 – 20 mA, 4 – 20 mA	4 – 20 mA
Supply voltage $U_V^{1)}$	24 V DC (18 – 32 V)	24 V DC (18 – 32 V)
Max. current consumption	LED off = 26 mA, LED on = 27 mA	20 mA
Max. load R_B	600 Ω	$(U_V - 12 \text{ V})/20 \text{ mA}$
Impact of power supply		0,1 %
Load influence		0,1 %
Temperature impact		< 0.1 %/K
Ambient temperature		– 60 °C ²⁾ /–40 °C to +80 °C ³⁾ /+90 °C ³⁾

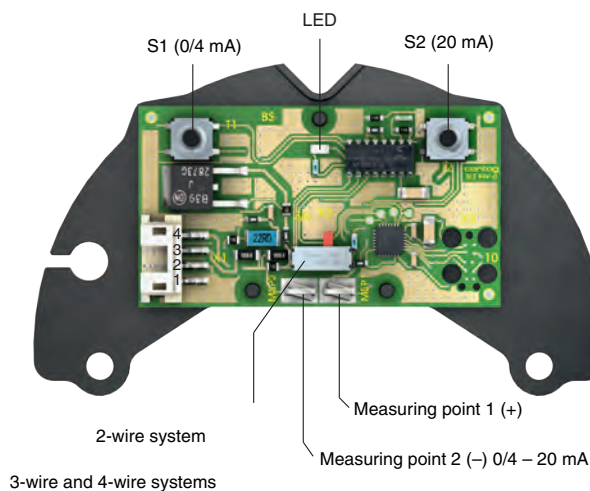
Notes on table

1) Power supply	Power supply possible via: AC, AM actuator controls or external power supply
2)	–60 °C for heater in switch compartment
3) Ambient temperature	Depending on temperature range of the actuator: Refer to name plate

Wiring



1 – 4 pin contacts on the PCB



Setting: Setting is performed via push buttons S1 (0/4 mA) and S2 (20 mA). Refer to operation instructions relating to actuator.

Inverse operation: Observe inverted assignment of push buttons S1 and S2 during setting.

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

Technical data Electronic position transmitter/potentiometer

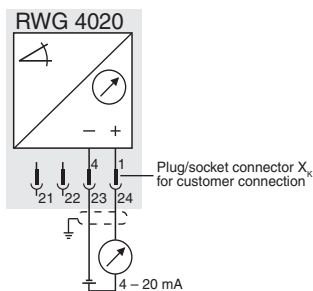
RWG 4020	
On the basis of the actual potentiometer value, the RWG generates a current signal for signalling the valve position.	

Data	3-wire and 4-wire systems	2-wire system
Output current I_A	0 – 20 mA, 4 – 20 mA	4 – 20 mA
Supply voltage U_V ¹⁾	24 V DC (18 – 32 V)	14 V DC + $(I \times R_B)$, max. 30 V
Max. current consumption	24 mA at 20 mA output current	20 mA
Max. load R_B	600 Ω	$(U_V - 14 \text{ V})/20 \text{ mA}$
Impact of power supply	0.1 %/V	0.1 %/V
Load influence	0.1 %/(0 – 600 Ω)	0.1 %/100 Ω
Temperature impact	< 0.3 %/K	
Ambient temperature	– 60 °C ²⁾ /–40 °C to +80 °C ³⁾ /+90 °C ³⁾	
Transmitter potentiometer	5 k Ω	

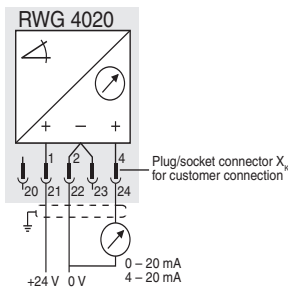
Notes on table	
1) Power supply	Power supply possible via: AC, AM actuator controls or external power supply
2)	–60 °C for heater in switch compartment
3) Ambient temperature	Depending on temperature range of the actuator: Refer to name plate

Wiring

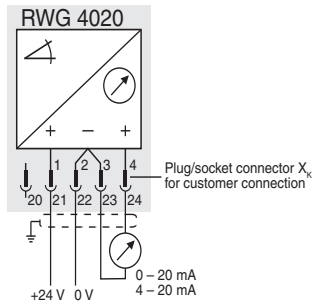
2-wire system



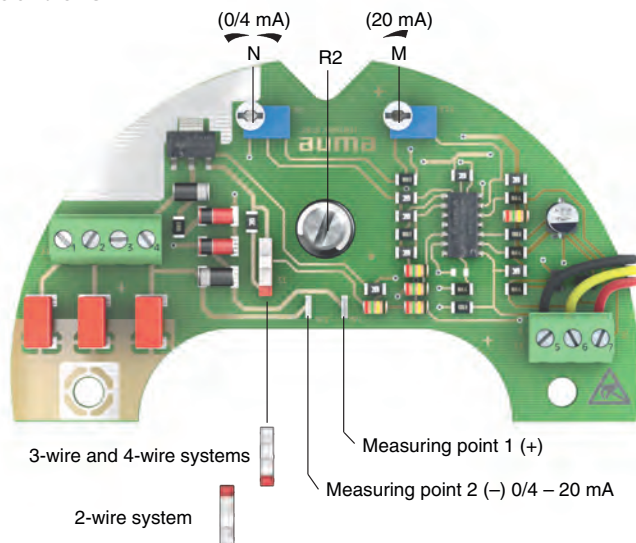
3-wire system



4-wire system



1 – 4 connecting terminals on the PCB



Setting: Refer to the operation instructions relating to actuator.

Inverse operation: For inverse operation, exchange terminals 7 (red/RD) and 5 (black/BK) on position transmitter board.

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

Technical data Electronic position transmitter/potentiometer

Potentiometer

Travel sensor for recording the valve position.

Data	Wire potentiometer	Film potentiometer	Wire potentiometer in tandem version	Film potentiometer in tandem version
Recommended for	OPEN-CLOSE duty	Modulating duty	OPEN-CLOSE duty	Modulating duty
Independent linearity	$\leq 1\%$			
Resistance (standard)	0.2 k Ω	5 k Ω	02/0.2 k Ω	1 k Ω /5 k Ω
Resistance (option) ¹⁾	0.1 k Ω 0.5 k Ω 1.0 k Ω 2.0 k Ω 5.0 k Ω	1 k Ω	0.5/0.5 k Ω 1.0/1.0 k Ω 0.1/5.0 k Ω 0.2/5.0 k Ω 1.0/5.0 k Ω 5.0/5.0 k Ω	1 k Ω /1 k Ω 5 k Ω /5 k Ω
Resistance tolerance	+/- 5 %	+/- 10 %	+/- 5 %	+/- 10 %
Rated power	1.5 W	0.5 W	1.5 W	0.5 W
Max. wiper current	30 mA	0.1 mA	30 mA	0.1 mA
Lifetime	100,000 cycles	5 • 10 ⁶ cycles	100,000 cycles	5 • 10 ⁶ cycles
Synchronous operation	–	–	+/- 1.5 %	+/- 2.0 %
Ambient temperature ²⁾	– 60 to +120 °C	– 60 °C ³⁾ /–40 °C to +90 °C	– 60 to +120 °C	– 60 °C ³⁾ /–40 °C to +90 °C

Notes on table

1) Resistance (option)	Further variants on request
2) Ambient temperature	Depending on temperature range of the actuator: Refer to name plate
3)	–60 °C for heater in switch compartment

The position of the valve can be transmitted as a continuous signal by a potentiometer. The potentiometer is installed in the control unit of the actuator.

We recommend:

Using the potentiometer as voltage divider. Depending on the supply voltage, suitable series resistors are to be provided. Please observe max. rated power.

For the tandem version, two signals can be evaluated by two potentiometers, e.g., one signal for external controls or one signal for AUMA AC integral controls.

Technical data Sizing of reduction gearings

for mechanical position indication, potentiometers, EWG, RWG and IWG

This data applies to:

Multi-turn actuators:	SA 25.1 – SA 48.1; SAR 25.1 – SAR 30.1
	SA 07.2 – SA 16.2; SAR 07.2 – SAR 16.2
	SAV 07.2 – SAV 16.2; SARV 07.2 – SARV 16.2
	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 – SAVEx 16.2; SARVEx 07.2 – SARVEx 16.2
Limit switching device for manual operation:	WSH
	WSHEx

The sizing must be made to ensure that the max. possible swing angle can be utilised as far as possible with the installed position transmitter. Therefore calculations must be made with the multipliers according to the table below:

Designation	Order code	Electric rotation angle	Multiplier M
Precision wire potentiometer ¹⁾	12.1	310° +20°/-10°	1.55
Tandem version	12.2		
Precision film potentiometer ¹⁾	12.3	310° +20°/-10°	1.55
Tandem version	12.4		
Ex precision wire potentiometer ²⁾	12.1 EMC	250° +20°/-10°	1.85
Ex precision film potentiometer ²⁾	12.1 PX	310° +20°/-10°	1.55
EWG ¹⁾	2-wire	310° +20°/-10°	1.55
	3-wire		
	4-wire		
RWG (4020) ¹⁾	2-wire	310° +20°/-10°	1.55
	3-wire		
	4-wire		
RGW Ex (5020 Ex) ²⁾	21.2 Ex	310° +20°/-10°	1.55
IWG (4020) ¹⁾	2-wire	310° +20°/-10°	1.55
	3-wire		
	4-wire		

General information

For potentiometer, RWG or IWG operation, the control unit provides a transmission ratio of 1:1.29.

Determination of the optimum reduction ratio: $I_0 = \text{turns/stroke} \times M$

Either the reduction gearing with the calculated reduction ratio or the next higher reduction ratio must be used

Reduction gearing 10.1 – xx

Standard reduction ratios (I_0)				
2.0:1	13.5:1	91:1	608:1	4,096:1
2.4:1	16.0:1	108:1	729:1	4,870:1
2.8:1	19.0:1	128:1	867:1	5,833:1
3.4:1	22.5:1	152:1	1024:1	6,937:1
4.0:1	27.0:1	182:1	1,217:1	8,308:1
4.8:1	32.0:1	216:1	1,458:1	9,741:1
5.6:1	38.0:1	256:1	1,734:1	16,384:1
6.7:1	45.0:1	304:1	2,048:1	–
8.0:1	54.0:1	364:1	2,435:1	–
9.5:1	64.0:1	433:1	2,916:1	–
11:1	76.0:1	512:1	3,468:1	–

1) – 2) Refer to notes on page 2.

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

Adjustable reduction gearing³⁾

With the table and the positions of the gear wheels, identification of the selected reduction ratio is possible:



Reduction ratio	Position					
	A (turns/stroke)	B (turns/stroke)	C (turns/stroke)	D (turns/stroke)	D (turns/stroke)	E (turns/stroke)
1	1.00 (0.5–0.7)	1.26 (0.7-0.8)	1.55 (0.8-1.0)	2.00 (1.0-1.3)	2.50 (1.3-1.6)	3.10 (1.6-2.0)
2	4.00 (2.0-2.6)	5.00 (2.6-3.2)	6.30 (3.2-4.1)	8.00 (4.1-5.2)	10.0 (5.2-6.5)	12.6 (6.5-8.1)
3	16.0 (8.1-10.3)	20.1 (10.3-13.0)	25.3 (13.0-16.3)	31.8 (16.3-20.5)	40.0 (20.5-25.8)	50.4 (25.8-32.5)
4	64.0 (32.5-41.3)	80.5 (41.3-51.9)	101 (51.9-65.2)	127 (65.2-81.9)	160 (81.9-103.2)	201 (103-130)
5	256 (130-165)	322 (165-208)	405 (208-261)	509 (261-328)	641 (328-411)	806 (414-520)

Calculations

Covered angle	Mech. position indicator α_p $\alpha_p = \frac{\text{Turns/stroke} \times 360^\circ}{i_s}$ Potentiometers, RWG, IWG, EWG α_p $\alpha_p = \frac{\text{Turns/stroke} \times 360^\circ \times 1.29}{i_s}$
Covered Ohm value	$R_E = \frac{R_N \cdot \alpha_p}{\alpha_N}$
	i_s = standard reduction ratio i_o = optimum reduction ratio (calculated) α_N = max. perm. electric angle (see above) α_p = covered angle at potentiometer α_s = covered angle at mechanical position indicator R_N = Nominal resistance R_E = actually covered resistance

Blinker transmitter⁴⁾

Output speed	50 Hz	4	5.6	8	11	16	22	32	45	63	90	125	180
rpm	60 Hz	4.8	6.7	9.6	13	19	26	38	54	75	108	150	216
Blinker transmitter pulses per revolution		4	4	2	2	2	1	1	1	1	1	1	1

Notes on tables on pages 1 and 2

1)	Not valid for SAEx 25.1 – 40.1, SAREx 25.1 – 30.1, WSHEx
2)	Valid for SAEx 25.1 – 40.1, SAREx 25.1 – 30.1, WSHEx only
3)	Only applicable for multi-turn actuators with mechanical position indication e and temperature –40 °C to +80°C.
4)	For WSH, WSHEx, 4 pulses per handwheel rotation

This data applies to:

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

Reduction gearing

With the table and the positions of the gear wheels, identification of the selected reduction ratio is possible:

Type	Preliminary reduction ratio (from the output drive to control unit)	Swing angle	Electromechanical control unit			Electronic control unit	
			Gearing with fixed reduction ratio made of brass	Adjustable reduction gearing made of plastics		MWG versions made of metal or plastics	
							
			Standard reduction ratio	Item	Reduction ratio	Step	Reduction ratio
SQ 05.2/ SQ 07.2	20.8	30° ±15°	4.8	2B	5.0	2	5.0
		60° ±15°	6.7	2D	8.0	3	10.5
		90° ±15°	9.5	2E	10	3	10.5
		120° ±15°	13.5	2F	12.6	3	10.5
		150° ±15°	16	3 A	16	4	20
		180° ±15°	19	3B	20.1	4	20
		210° ±15°	22.5	3C	25.3	4	20
SQ 10.2	26.6	30° ±15°	5.6	2C	6.3	2	5.0
		60° ±15°	9.5	2E	10	3	10.5
		90° ±15°	13.5	2F	12.6	3	10.5
		120° ±15°	16	3 A	16	4	20
		150° ±15°	19	3B	20.1	4	20
		180° ±15°	22.5	3C	25.3	4	20
		210° ±15°	27	3C	25.3	5	42
SQ 12.2	53.2	30° ±15°	11	2F	12.6	3	10.5
		60° ±15°	19	3B	20.1	4	20
		90° ±15°	27	3C	25.3	4	20
		120° ±15°	32	3D	31.8	5	42
		150° ±15°	38	3E	40	5	42
		180° ±15°	45	3F	50.4	5	42
		210° ±15°	54	4 A	64	6	80
SQ 14.2	122.5	30° ±15°	27	3C	25.3	4	20
		60° ±15°	45	3E	40	5	42
		90° ±15°	64	4 A	64	6	80
		120° ±15°	76	4B	80.5	6	80
		150° ±15°	91	4C	101	6	80
		180° ±15°	108	4D	127	7	168
		210° ±15°	152	4E	152	7	168

SQ part-turn actuators

Technical data for sizing/setting the reduction gearings



Blinker transmitter			
Type	Operating time for 90° in seconds		Blinker transmitter pulses per 90°
	50 Hz	60 Hz	
SQ 05.2	4	3	5
	5.6	4.5	5
	8	6	11
	11	9	11
	16	12	11
	22	17	21
	32	25	21
	63	50	21
SQ 07.2	4	3	5
	5.6	4.5	5
	8	6	11
	11	9	11
	16	12	11
	22	17	21
	32	25	21
	63	50	21
SQ 10.2	8	6	14
	11	9	14
	16	12	14
	22	17	14
	32	25	27
	45	35	27
	63	50	27
SQ 12.2	11	9	13
	16	12	13
	22	17	27
	32	25	27
	45	35	27
	63	50	27
	90	75	53
	125	108	53
SQ 14.2	24	20	31
	36	30	31
	48	40	31
	72	60	31
	100	85	31

Technical description Types of corrosion protection

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

Corrosivity categories in accordance with ISO 12944-2 and EN 15714-2 Classification of environments	Corrosion protection	AUMA	
		Painting specification (total film thickness)	
		Powder coating	Liquid paint
C1 (very low): Heated buildings with clean atmospheres	KN	P1.001 (140 µm)	N1.001 (60 µm)
C2 (low): Unheated buildings and rural areas with low level of pollution			
C3 (medium): Production rooms with humidity and moderate pollution. Urban and industrial areas with moderate pollution	KS		N1.003 (140 µm)
C4 (high): Chemical plants and areas with moderate salinity			
C5-M (very high, marine): Coastal and offshore areas with high salinity, almost permanent condensation and high pollution			
C5-I (very high, industrial): Industrial areas with almost permanent condensation and aggressive atmosphere	KX	P1.002 (200 µm)	N1.008 (220 µm)
Extreme (cooling tower): Areas with extremely high salinity, permanent condensation and aggressive atmosphere	KX KX-G (KX-aluminium-free)		

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.

Technical description KX corrosion protection 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.

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.

Technical description KX corrosion protection 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 extremely high salinity, 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 (except for internal GS coupling compartment) or are made of stainless steel.
- 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: 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). 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.

1. General information

- 1.1 Fireproof characteristics are achieved by the patented K-MASS™ coating by Thermal Designs Inc. In the event of a fire, the coating will expand and absorb the externally supplied thermal energy of the fire.

2. Characteristics

- Chemically inert
- Fixed passive fire protection
- Segment-moulded coating
- Test in accordance with strict standards
- Protection of electronic elements for 30 minutes at 1,100 °C/2,000 °F

3. Advantages

- Does not fan the fire
- Device remains fully operational
- Full access to any component part, without removal of fire protection
- Local operation not impaired
- Minimum space requirement
- No additional installation cost
- Good heat dissipation characteristics
- Ambient temperature –50 °C to +85.6 °C
- Permanent corrosion protection
- Always ready for use
- Meets the requirements of ANSI/API607 and UL 1709

4. In case of fire

- 4.1 Actuators, actuator controls and gearboxes remain completely operational during minimum 30 minutes at a temperature up to 1 100 °C/2 000 °F. Within this period of time, the corresponding fireproof valve can be operated.

5. Qualifications

- 5.1 K-Mass™ is hydrocarbon jet and pool fire tested by:

- Bureau Veritas
- Faverdale Technology Centre
- Sintef of Norway
- Southwest Research Institute

6. Finish painting

The finish painting depends on the desired colour.

- 6.1 The intermediate painting is applied to the housing parts:

Product:	SikaCor EG 1
Manufacturer:	Sika Deutschland GmbH
Structure:	2-component painting based on epoxy resin with micaceous iron oxide
Colour:	Green (DB 601)
Film thickness:	80 µm (dry)

- 6.2 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)

6.3 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)

6.4 Mounting face to the valve is without surface treatment, covered with a metallic surface protection or 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.

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

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

Technical data Anti-backdrive device

Type	Output torque	Valve attachment		Factor ¹⁾	Flange ²⁾ for mounting multi-turn actuator	Input shaft			Handwheel	Weight ⁴⁾
	Max. [Nm]	Standard EN ISO 5210	Option DIN 3210			Hollow shaft ³⁾ with dog coupling (for rising valve stem) Valve stem Ø Max.[mm]	Shaft journal		Max. Ø [mm]	approx. [kg]
LMS 07.1	60	F10	G0	0.95 0.95	F10	40	20	30	200 250	9.7
LMS 10.1	120	F14	G1/2	0.95 0.95	F10	40	20	30	250 315	9.7
LMS 14.1	500	F14	G1/2	0.95 0.95	F14	57	30	40	315 400	30
LMS 16.1	1,000	F16	G3	0.95 0.95	F16	75	40	50	400 500	55

Use

Ensuring both static and dynamic self-locking (self-braking) of motor-operated and manually operated valves. Applications subjected to strong loads (like protective weirs, fishbelly flap gates and sluice gates, etc.) are not permitted.

Exceptions are:

- Applications for which LMS are mounted to worm gearboxes.
- Applications for conventional industrial valves, such as butterfly valves and ball valves.
- Applications with self-locking trapezoidal threads.

Notes on table

1) Factor	Corresponds to the efficiency
2) Flange for mounting to multi-turn actuator	For the dimensions of the fixing holes, refer to dimension sheet
3) Hollow shaft	Suitable for mounting to multi-turn actuator with output drive type B1 (standard version)
4) Weight	Weight includes output drive type B1

Features and functions

Type of duty	Standard:	Short-time duty S2 - 15 min
	Option:	Short-time duty S2 - 30 min
	The type of duty must not be exceeded.	
Input shaft	Input shafts made of stainless steel as a standard	
	Standard:	Flange connection for multi-turn actuator with output drive type B1
	Option:	Input shaft with parallel key according to DIN 6885-1

Operation

Motor operation	Directly via multi-turn actuator
Manual operation	Directly via handwheel

Valve attachment

Valve attachment	A, B1, B3, B4 according to EN 5210 A, B according to DIN 3210

Service conditions

Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Ambient temperature	Standard:	–25 °C to +80 °C
	Option:	–40 °C to +60 °C
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	

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Technical data Anti-backdrive device

Corrosion protection	Standard:	KN	Suitable for installation in industrial units, in water or power plants with a low pollutant concentration.
	Options:	KS	Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
		KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Available colours on request	
Lifetime	AUMA anti-backdrive devices meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		

Special features for use in potentially explosive atmospheres

Explosion protection	II2G c IIC T4 according to ATEX 94/9/EC		
Ambient temperatures	Standard:	−20 °C to +40 °C	
	Options:	−40 °C to +40 °C	
		−20 °C to +60 °C	
		−40 °C to +60 °C	
	Combinations with SAEx actuators at ambient temperatures > 40 °C with special sizing		

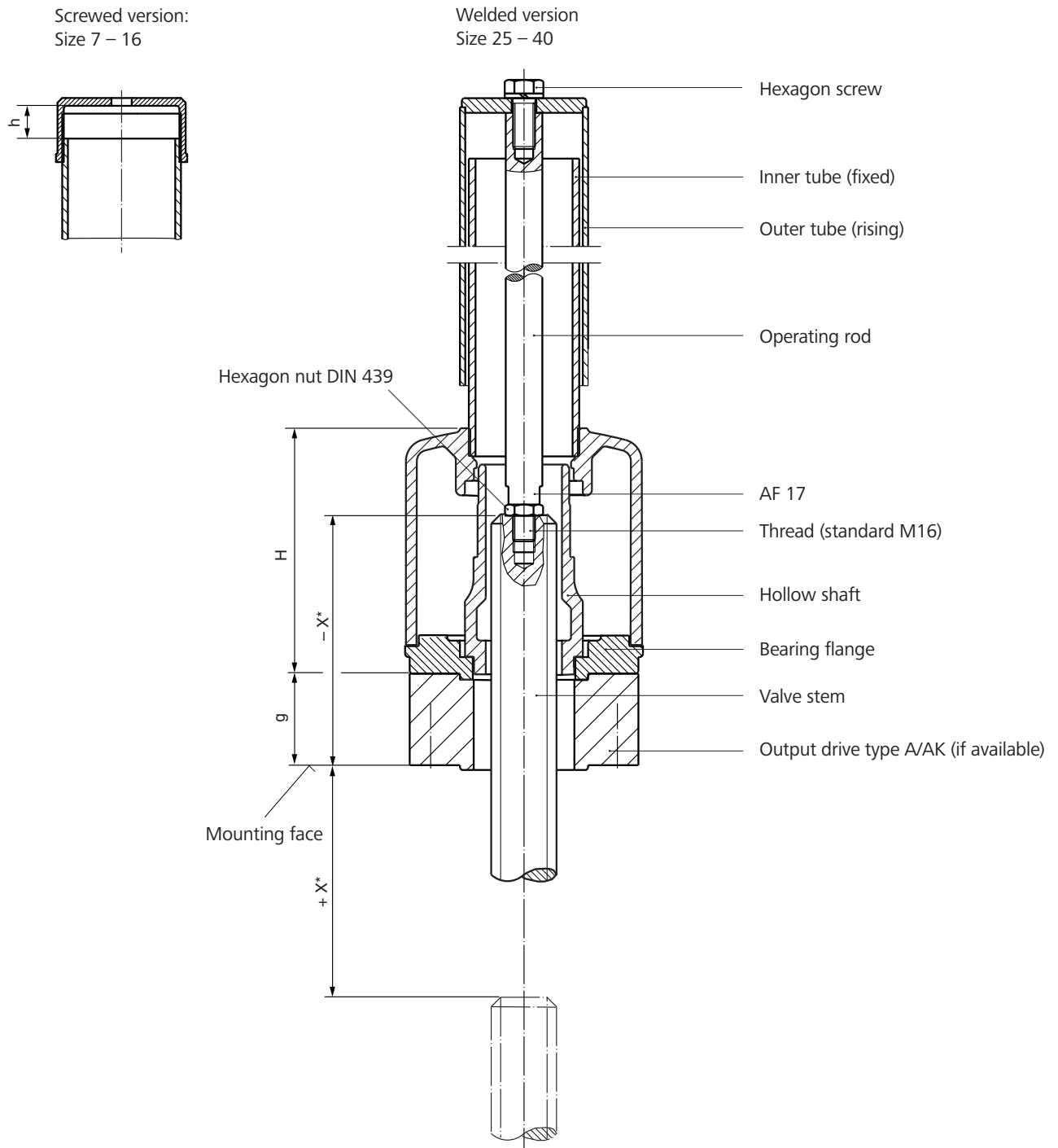
Further information

Reference documents	Information LMS 07.1 – LMS 16.1		
	Dimensions LMS 07.1 – LMS 16.1		

Technical description Position indication with telescopic protection tube

The schematic representation applies to:

Multi-turn actuators	SA 07.2 – SA 16.2; SAR 07.2 – SAR 16.2; SAEx 07.2 – SAEx 16.2; SAREx 07.2 – SAREx 16.2 SA 25.1 – SA 48.1; SAR 25.1 – SAR 30.1; SAEx 25.1 – SAEx 40.1; SAREx 25.1 – SAREx 30.1
Spur gearboxes	GST 10.1 – GST 40.1
Bevel gearboxes	GK 10.2 – GK 40.2



X* = Distance between mounting face and upper edge of stem while valve is closed
 –X, if stem protrudes into output drive or hollow shaft
 –X, if stem is outside output drive or hollow shaft

Note: Tube length will be adapted to the valve stroke.

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Technical description Position indication with telescopic protection tube

Calculation and sizing of the telescopic protection tube

1. Housing height for different products

Type	Housing of output drive type B H	Protective cap h	Output drive type A g		Output drive type AK g
SA 07.2/SA 07.6	153	25	40 (F07)	50 (F10/G0)	105
SA 10.2	162	25	50		105
SA 14.2/SA 14.6	188	32	65		135
SA 16.2	227	32	80		165
SA 25.1	292	–	130		216
SA 30.1	330	–	160		252
SA 35.1	388	–	185		315
SA 40.1	393	–	225		400
SA 48.1	430	–	270		–
GK 10.2	162	25	50		105
GK 14.2/GK 14.6	180	32	65		135
GK 16.2	194	32	80		165
GK 25.2	218	–	130		216
GK 30.1	258	–	160		252
GK 35.2	310	–	185		315
GK 40.2	325	–	225		400
GST 10.1	111	25	50		105
GST 14.1/GST 14.5	140	32	65		135
GST 16.1	175	32	80		165
GST 25.1	193	–	130		216
GST 30.1	226	–	160		252
GST 35.1	303	–	185		315
GST 40.1	318	–	225		400

2. Calculation of outer tube length and rod length

Determination of inner tube length (identical to outer tube length)

Stroke			mm
Safety factor	+	50	mm
Sum = Inner tube length	=		mm
Inner tube length rounded to full 100 mm	=		mm

Determining the rod length:

Housing height	H		mm
Height of protective cap	h	+	mm
Height of output drive type A/AK (if output drive type A/ AK is ordered)	g	+	mm
Outer tube length (=inner tube length)		+	mm
Safety factor		+	30
Sum 1		=	mm
Stem position according to drawing	+X/–X	+/-	mm
Rod length		=	mm
Rod length rounded to full 10 mm		=	mm

Determination of the thread:

Unless specified otherwise by the customer, the M16 thread will be used. If desired, an M12 thread can be used.

Purchase requirement:

Outer tube length/thread/rod length (e.g. 200/M16/275)

Technical description Stem protection tube for rising stem

The schematic representations apply to:

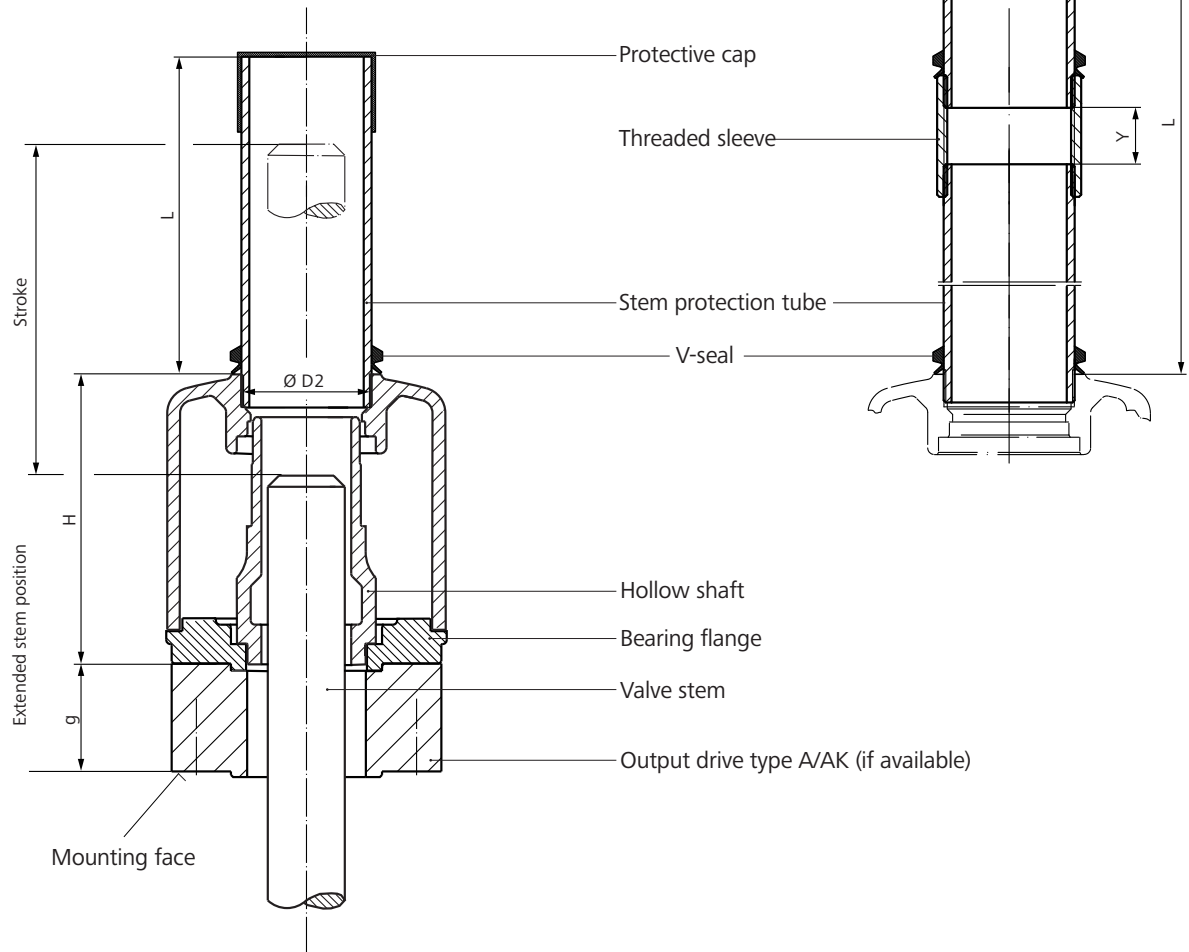
Multi-turn actuators	SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2; SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2 SA 25.1 – SA 48.1/SAR 25.1 – SAR 30.1; SAEx 25.1 – SAEx 40.1/SAREx 25.1 – SAREx 30.1
Multi-turn gearboxes	GK 10.2 – GK 40.2/GST 10.1 – GST 40.1

Without threaded sleeve:

Sizes 07 – 30
Protection tube up to 900 mm
Sizes 35 – 48
Protection tube up to 5000 mm

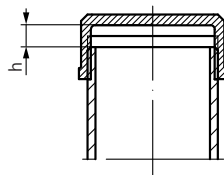
With threaded sleeve:

Sizes 07 – 30
Protection tube > 900 mm



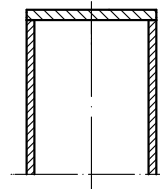
Option:

Sizes 07 – 25
screwed version



Option:

Sizes 30 – 48
welded version



Multi-turn actuator	SA 07.2 SA 07.6	SA 10.2	SA 14.2 SA 14.6	SA 16.2	SA 25.1	SA 30.1	SA 35.1	SA 40.1 SA 48.1
Gearbox		GST 10.1 GK 10.2	GST 14.1 GST 14.5 GK 14.2 GK 14.6	GST 16.1 GK 16.2	GST 25.1 GK 25.2	GST 30.1 GK 30.2	GST 35.1 GK 35.2	GST 40.1 GK 40.2
Ø D2	G 1 1/4"	G 2"	G 2 1/2"	G 3"	G 4"	G 5"	M190 x 3	M220 x 3
Y min.	18	26	32	37	49	58	— ¹⁾	— ¹⁾
Y max.	24	32	39	44	56	65	— ¹⁾	— ¹⁾

1) Sizes 35 – 48 are supplied without threaded sleeves

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Technical description Stem protection tube for rising stem

Calculation and sizing of the stem protection tube

1. Dimensions for different products

Type	Housing of output drive type B	Screwed on protective cap	Output drive type A		Output drive type AK
Dimensions	H	h	g		g
SA 07.2/SA 07.6	153	25	40 (F07)	50 (F10/G0)	105
SA 10.2	162	25		50	105
SA 14.2/SA 14.6	188	32		65	135
SA 16.2	227	32		80	165
SA 25.1	292	–		130	216
SA 30.1	330	–		160	252
SA 35.1	388	–		185	315
SA 40.1	393	–		225	400
SA 48.1	430	–		270	–
GK 10.2	162	25		50	105
GK 14.2/GK 14.6	180	32		65	135
GK 16.2	194	32		80	165
GK 25.2	218	–		130	216
GK 30.1	258	–		160	252
GK 35.2	310	–		185	315
GK 40.2	325	–		225	400
GST 10.1	111	25		50	105
GST 14.1/GST 14.5	140	32		65	135
GST 16.1	175	32		80	165
GST 25.1	193	–		130	216
GST 30.1	226	–		160	252
GST 35.1	303	–		185	315
GST 40.1	318	–		225	400

2. Calculation of stem protection tube length

Stroke			mm
Extended stem position	+		mm
Housing height H	–		mm
Output drive height g	–		mm
Stem protection tube length	=		mm

3. Available stem protection tube versions

Stem protection tube	Number of thread. sleeves	Lower stem prot. tube	Middle stem prot. tube	Middle stem prot. tube	Middle stem prot. tube	Middle stem prot. tube	Upper stem prot. tube
100	0	100	–	–	–	–	–
200	0	200	–	–	–	–	–
300	0	300	–	–	–	–	–
400	0	400	–	–	–	–	–
500	0	500	–	–	–	–	–
600	0	600	–	–	–	–	–
700	0	700	–	–	–	–	–
800	0	800	–	–	–	–	–
900	0	900	–	–	–	–	–
1000	1	900	–	–	–	–	100
1200	1	900	–	–	–	–	300
1400	1	900	–	–	–	–	500
1,600	1	900	–	–	–	–	700
1800	1	900	–	–	–	–	900
2,000	2	900	900	–	–	–	200
2,200	2	900	900	–	–	–	400
2400	2	900	900	–	–	–	600
2,600	2	900	900	–	–	–	800
2800	3	900	900	900	–	–	100
3,000	3	900	900	900	–	–	300
3,500	3	900	900	900	–	–	800
4,000	4	900	900	900	900	–	400
4,500	4	900	900	900	900	–	900
5,000	5	900	900	900	900	900	500

4. Useful stem protection tube length

		Y min.	Y max. ²⁾	
Available stem protection tube length				mm
Threaded sleeve (number x Y)	+			mm
Screwed on protective cap (option)	+			mm
Useful stem protection tube length L	=		²⁾	mm

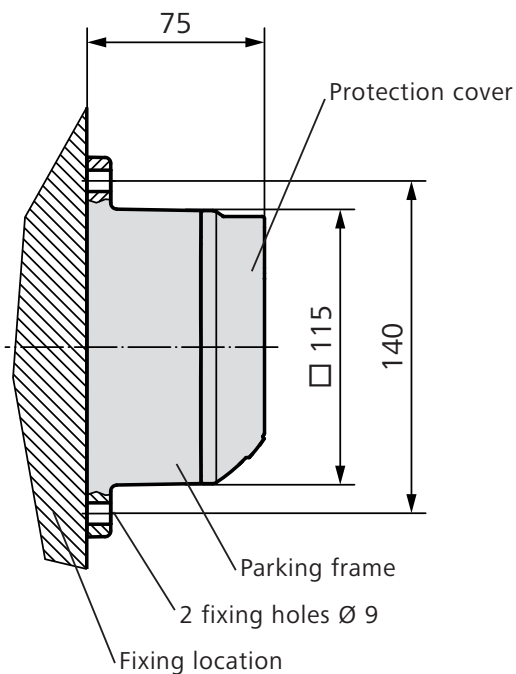
2) For max. space requirement for stem protection tube

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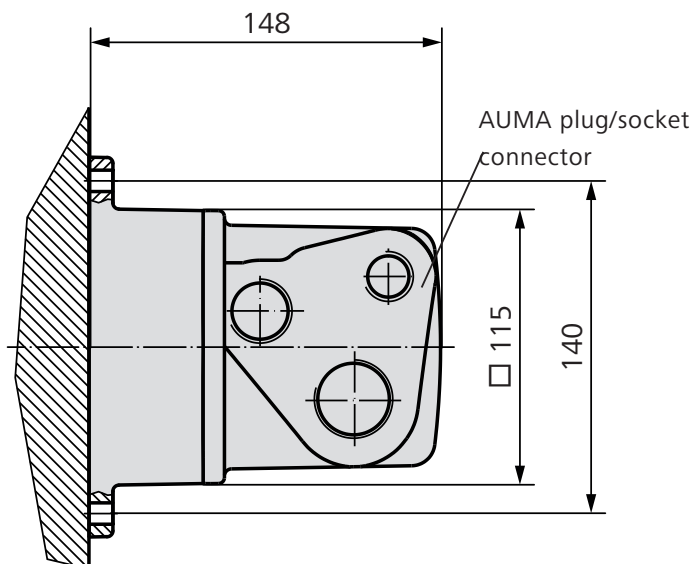
Technical description Parking frame and protection cover (also for Ex version)

SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2
SQ 05.2 – SQ 14.2/SQR 05.2 – SQR 14.2
AM 01.1 – AM 02.1/AC 01.2

AUMA device ready for operation
 Parking frame with protection cover

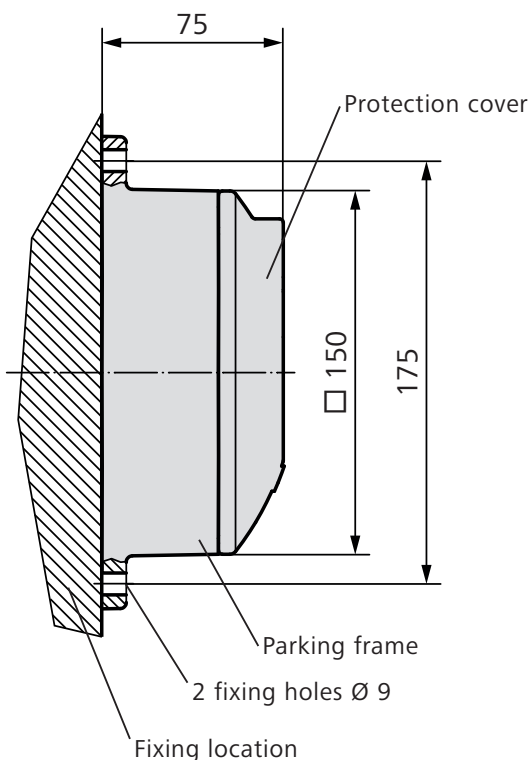


AUMA device out of service
 Parking frame with AUMA plug/socket connector

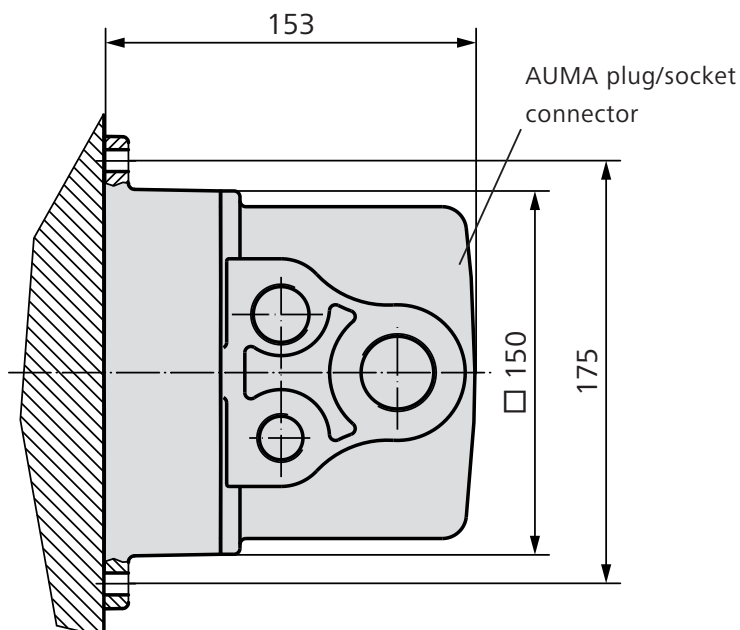


SA 25.1 – SA 48.1/SAR 25.1 – SAR 30.1

Multi-turn actuator ready for operation
 Parking frame with protection cover



Multi-turn actuator out of service
 Parking frame with AUMA plug/socket connector



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

4 Electrical data Actuators

Multi-turn actuators SAEx / SAREx		180
3-phase AC current (standard voltages)	Notes on electrical data	180
SAEx 07.2 – SAEx 16.2, short-time duty S2-15 min.	220 V/60 Hz	182
	230 V/50 Hz	183
	380 V/50 Hz	184
	380 V/60 Hz	185
	400 V/50 Hz	186
	400 V/60 Hz	187
	415 V/50 Hz	188
	440 V/60 Hz	189
	460 V/60 Hz	190
	480 V/60 Hz	191
	500 V/50 Hz	192
SAEx 07.2 – SAEx 16.2, short-time duty S2-30 min.	220 V/60 Hz	193
	230 V/50 Hz	194
	380 V/50 Hz	195
	380 V/60 Hz	196
	400 V/50 Hz	197
	400 V/60 Hz	198
	415 V/50 Hz	199
	440 V/60 Hz	200
	460 V/60 Hz	201
	480 V/60 Hz	202
	500 V/50 Hz	203
SAREx 07.2 – SAREx 16.2, intermittent duty S4-25%	220 V/60 Hz	204
	230 V/50 Hz	205
	380 V/50 Hz	206
	380 V/60 Hz	207
	400 V/50 Hz	208
	400 V/60 Hz	209
	415 V/50 Hz	210
	440 V/60 Hz	211
	460 V/60 Hz	212
	480 V/60 Hz	213
	500 V/50 Hz	214
SAREx 07.2 – SAREx 16.2, intermittent duty S4-50%	220 V/60 Hz	215
	230 V/50 Hz	216
	380 V/50 Hz	217
	380 V/60 Hz	218
	400 V/50 Hz	219
	400 V/60 Hz	220
	415 V/50 Hz	221
	440 V/60 Hz	222
	460 V/60 Hz	223
	480 V/60 Hz	224
	500 V/50 Hz	225
1-phase AC current (standard voltages)	Notes on electrical data	226
SAEx 07.2 – SAEx 14.6, short-time duty S2-15 min.	110 - 120 V/60 Hz	228
	220 - 240 V/50 Hz	229
	220 - 240 V/60 Hz	230
SAREx 07.2 – SAREx 14.6, intermittent duty S4-25%	110 - 120 V/60 Hz	231
	220 - 240 V/50 Hz	232
	220 - 240 V/60 Hz	233
Direct current (standard voltages)		
SAEx 07.2 – SAEx 14.6, short-time duty S2-15 min.	24 V DC VK	234

Multi-turn actuators SAVEx / SARVEx		235
3-phase AC current (standard voltages)		
SAVEx 07.2 – SAVEx 14.6, short-time duty S2-15 min.	220 - 240 V/50 - 60 Hz	235
SAVEx 07.2 – SAVEx 16.2	380 - 480 V/50 - 60 Hz	236
SAVEx 07.2 – SAVEx 14.6, short-time duty S2-30 min.	220 - 240 V/50 - 60 Hz	237
SAVEx 07.2 – SAVEx 16.2	380 - 480 V/50 - 60 Hz	238
SARVEx 07.2 – SARVEx 14.6, intermittent duty S4-25%	220 - 240 V/50 - 60 Hz	239
SARVEx 07.2 – SARVEx 16.2	380 - 480 V/50 - 60 Hz	240
SARVEx 07.2 – SARVEx 14.6, intermittent duty S4-50%	220 - 240 V/50 - 60 Hz	241
SARVEx 07.2 – SARVEx 16.2	380 - 480 V/50 - 60 Hz	242
1-phase AC current (standard voltages)		
SAVEx 07.2 – SAVEx 10.2, short-time duty S2-15 min.	110 - 120 V/50 - 60 Hz	243
SAVEx 07.2 – SAVEx 14.2	220 - 240 V/50 - 60 Hz	244
SAVEx 07.2 – SAVEx 10.2, short-time duty S2-30 min.	110 - 120 V/50 - 60 Hz	245
SAVEx 07.2 – SAVEx 14.2	220 - 240 V/50 - 60 Hz	246
SARVEx 07.2 – SARVEx 10.2, intermittent duty S4-25%	110 - 120 V/50 - 60 Hz	247
SARVEx 07.2 – SARVEx 14.2	220 - 240 V/50 - 60 Hz	248
SARVEx 07.2 – SARVEx 07.6, intermittent duty S4-50%	110 - 120 V/50 - 60 Hz	249
SARVEx 07.2 – SARVEx 14.2	220 - 240 V/50 - 60 Hz	250

4 Electrical data Actuators

Part-turn actuators SQEx / SQREx		251
3-phase AC current (standard voltages)	Notes on electrical data	251
SQEx 05.2 – SQEx 14.2, short-time duty S2-15 min.	220 V/60 Hz	252
	230 V/50 Hz	253
	380 V/50 Hz	254
	380 V/60 Hz	255
	400 V/50 Hz	256
	400 V/60 Hz	257
	415 V/50 Hz	258
	440 V/60 Hz	259
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	110 V DC	284
	220 V DC	285

Installation and sizing																																										
Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																																									
Motor protection	To protect against overheating, thermoswitches or PTC thermistors are embedded in the motor windings. Actuators without integral actuator controls (AUMA NORM): Thermoswitches or PTC thermistors have to be considered within the external controls (refer to terminal plan). Note: Failure to connect thermoswitches or PTC thermistors shall void the warranty for the motor. According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches. PTC thermistors additionally require a suitable tripping device in the actuator controls. Rating of the thermoswitches <table><tr><th colspan="2">AC current</th><th colspan="2">DC current</th></tr><tr><td colspan="2">250 V, 50 – 60 Hz</td><td>60 V</td><td>1.0 A</td></tr><tr><td>cos φ = 1</td><td>2.5 A</td><td>42 V</td><td>1.2 A</td></tr><tr><td>cos φ = 0.6</td><td>1.6 A</td><td>24 V</td><td>1.5 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Thermal motor protection is already integrated.			AC current		DC current		250 V, 50 – 60 Hz		60 V	1.0 A	cos φ = 1	2.5 A	42 V	1.2 A	cos φ = 0.6	1.6 A	24 V	1.5 A																							
AC current		DC current																																								
250 V, 50 – 60 Hz		60 V	1.0 A																																							
cos φ = 1	2.5 A	42 V	1.2 A																																							
cos φ = 0.6	1.6 A	24 V	1.5 A																																							
Mains voltage, mains frequency	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %																																									
Terminal plan	<table><tr><th>Multi-turn actuators</th><th>Terminal plan</th></tr><tr><td>SAEx 07.2 – SAEx 16.2</td><td>TPA00R2AA-101-000 (basic version in combination with PTC thermistors)</td></tr><tr><td>SAEx 07.2 – SAEx 16.2</td><td>TPA00R1AA-101-000 (basic version in combination with thermoswitches)</td></tr><tr><td>SAREx 07.2 – SAREx 16.2</td><td>TPA00R2AA-001-000 (basic version)</td></tr></table>			Multi-turn actuators	Terminal plan	SAEx 07.2 – SAEx 16.2	TPA00R2AA-101-000 (basic version in combination with PTC thermistors)	SAEx 07.2 – SAEx 16.2	TPA00R1AA-101-000 (basic version in combination with thermoswitches)	SAREx 07.2 – SAREx 16.2	TPA00R2AA-001-000 (basic version)																															
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SAREx 07.2 – SAREx 16.2	TPA00R2AA-001-000 (basic version)																																									
Switchgear sizing	For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (electronically locked) can be used. Actuators without integral actuator controls (AUMA NORM): Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating power/motor power in compliance with the assigned AUMA power class. Switchgear assignment to AUMA power classes: <table><tr><th rowspan="2">AUMA power class</th><th rowspan="2">Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3</th><th colspan="2">Reversing contactor Motor power according to UL/CSA at</th></tr><tr><th>480 V AC</th><th>600 V AC</th></tr><tr><td>A1</td><td>4.0 kW</td><td>5.0 hp</td><td>5.0 hp</td></tr><tr><td>A2</td><td>7.5 kW</td><td>10 hp</td><td>10 hp</td></tr><tr><td>A3</td><td>15 kW</td><td>20 hp</td><td>25 hp</td></tr><tr><td>A4</td><td>30 kW</td><td>60 hp</td><td>60 hp</td></tr><tr><td>A5</td><td>55 kW</td><td>75 hp</td><td>100 hp</td></tr><tr><td>A6</td><td>75 kW</td><td>100 hp</td><td>125 hp</td></tr></table> <table><tr><th rowspan="2">AUMA power class</th><th rowspan="2">Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th></tr><tr><th>400 V AC</th></tr><tr><td>B1</td><td>6 A</td></tr><tr><td>B2</td><td>8.5 A</td></tr><tr><td>B3</td><td>16 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Required switchgear in power classes A1 to A3 or B1 to B2 are already integrated in AMExC controls. For actuators with ACExC integral actuator controls, required switchgear in power classes A1 to A3 or B1 to B3 are already integrated. For switchgear of power classes A4 – A6, a control box is additionally required. For actuators with AMExC or ACExC integral actuator controls and installed switchgear in AUMA power class A3, an optional thermal overcurrent protection device cannot be directly integrated within the actuator controls. A control box is additionally required.			AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at		480 V AC	600 V AC	A1	4.0 kW	5.0 hp	5.0 hp	A2	7.5 kW	10 hp	10 hp	A3	15 kW	20 hp	25 hp	A4	30 kW	60 hp	60 hp	A5	55 kW	75 hp	100 hp	A6	75 kW	100 hp	125 hp	AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a	400 V AC	B1	6 A	B2	8.5 A	B3	16 A
AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at																																								
		480 V AC	600 V AC																																							
A1	4.0 kW	5.0 hp	5.0 hp																																							
A2	7.5 kW	10 hp	10 hp																																							
A3	15 kW	20 hp	25 hp																																							
A4	30 kW	60 hp	60 hp																																							
A5	55 kW	75 hp	100 hp																																							
A6	75 kW	100 hp	125 hp																																							
AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a																																									
		400 V AC																																								
B1	6 A																																									
B2	8.5 A																																									
B3	16 A																																									

Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors	
1) Nominal power P _N	Mechanical power output at motor shaft at run torque of multi-turn actuator (corresponds to approx. 35 % of maximum torque). The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi \times \sqrt{3}$
2) Nominal current I _N	Current at run torque with approx. 35 % of the maximum torque
3) Max. current I _{max}	Current at maximum torque

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	30	VDX0063-4-0,02	0.02	1,680	0.9	0.9	2.2	0.40	0.9	A1	B1
	6.7					0.9	0.9	2.2	0.40	0.9	A1	B1
	9.6		VDX0063-4-0,04	0.04	1,680	0.9	0.9	2.2	0.50	0.9	A1	B1
	13					0.9	1.1	2.2	0.50	1.1	A1	B1
	19		VDX0063-2-0,06	0.06	3,360	1.3	1.3	4.1	0.42	1.3	A1	B1
	26					1.3	1.4	4.1	0.42	1.4	A1	B1
	38		ADX0063-4-0,10	0.10	1,680	2.1	2.1	5.2	0.42	2.1	A1	B1
	54					2.1	2.2	5.2	0.42	2.2	A1	B1
	75		ADX0063-2-0,20	0.20	3,360	1.7	2.6	9.6	0.60	2.6	A1	B1
	108					1.7	2.8	9.6	0.60	2.8	A1	B1
SAEx 07.6	150	25	ADX0063-2-0,30	0.30	3,360	2.0	3.5	9.6	0.70	3.5	A1	B1
	216					2.0	3.7	9.6	0.70	3.7	A1	B1
	4.8		VDX0063-4-0,03	0.03	1,680	0.9	1.1	2.2	0.43	1.1	A1	B1
	6.7					0.9	1.1	2.2	0.43	1.1	A1	B1
	9.6		VDX0063-4-0,06	0.06	1,680	1.3	1.4	3.5	0.38	1.4	A1	B1
	13					1.3	1.5	3.5	0.38	1.5	A1	B1
	19		VDX0063-2-0,12	0.12	3,360	1.5	2.0	6.5	0.52	2.0	A1	B1
	26					1.5	2.2	6.5	0.52	2.2	A1	B1
	38		ADX0063-4-0,20	0.20	1,680	3.5	4.1	10	0.42	4.1	A1	B1
	54					3.5	4.4	10	0.42	4.4	A1	B1
SAEx 10.2	75	60	ADX0063-2-0,40	0.40	3,360	3.9	5.0	20	0.53	5.0	A1	B2
	108					3.9	5.5	20	0.53	5.5	A1	B2
	150		ADX0063-2-0,50	0.50	3,360	4.1	6.5	20	0.62	6.5	A1	B2
	216					4.1	7.0	20	0.62	7.0	A1	B2
	4.8		VDX0071-4-0,06	0.06	1,680	1.1	1.3	4.4	0.40	1.3	A1	B1
	6.7					1.1	1.3	4.4	0.40	1.3	A1	B1
	9.6		VDX0071-4-0,12	0.12	1,680	2.2	2.4	6.5	0.40	2.4	A1	B1
	13					2.2	2.6	6.5	0.40	2.6	A1	B1
	19		VDX0071-2-0,25	0.25	3,360	2.8	3.3	9.8	0.52	3.3	A1	B1
	26					2.8	3.9	9.8	0.52	3.9	A1	B1
SAEx 14.2	38	120	ADX0071-4-0,40	0.40	1,680	5.5	5.7	19	0.42	5.7	A1	B2
	54					5.5	6.5	19	0.42	6.5	A1	B2
	75		ADX0071-2-0,70	0.70	3,360	6.5	8.7	35	0.54	8.7	A2	B2
	108					6.5	9.8	35	0.54	9.8	A2	B2
	150		ADX0071-2-1,00	1.00	3,360	7.6	12	35	0.64	12	A2	B2
	216					7.6	13	35	0.64	13	A2	B2
	4.8		VDX0090-4-0,12	0.12	1,680	1.1	1.7	6.1	0.60	1.7	A1	B1
	6.7					1.1	2.2	6.1	0.60	2.2	A1	B1
	9.6		VDX0090-4-0,25	0.25	1,680	2.2	3.5	11	0.60	3.5	A1	B1
	13					2.2	3.7	11	0.60	3.7	A1	B1
SAEx 14.6	19	250	VDX0090-2-0,45	0.45	3,360	3.3	6.5	20	0.64	6.5	A1	B2
	26					3.3	7.6	20	0.64	7.6	A1	B2
	38		ADX0090-4-0,75	0.75	1,680	5.7	9.4	35	0.62	9.4	A2	B2
	54					5.7	11	35	0.62	11	A2	B2
	75		ADX0090-2-1,40	1.40	3,360	11	17	83	0.60	17	A2	–
	108					11	20	83	0.60	20	A2	–
	150		ADX0090-2-1,80	1.80	3,360	12	26	83	0.65	24	A2	–
	216					12	26	83	0.65	24	A2	–
	4.8	500	VDX0090-4-0,20	0.20	1,680	2.0	3.3	11	0.54	3.3	A1	B1
	6.7					2.0	3.7	11	0.54	3.7	A1	B1
	9.6		VDX0090-4-0,40	0.40	1,680	3.9	6.5	20	0.56	6.5	A1	B2
	13					3.9	7.6	20	0.56	7.6	A1	B2
	19		VDX0090-2-0,80	0.80	3,360	7.9	11	39	0.51	11	A2	B2
	26					7.9	12	39	0.51	12	A2	B2
	38		ADX0090-4-1,60	1.60	1,680	12	16	83	0.57	16	A2	–
	54					12	20	83	0.57	20	A2	–
	75		ADX0090-2-3,00	3.00	3,360	20	31	148	0.60	31	A3	–
	108					20	35	148	0.60	35	A3	–
SAEx 16.2	150	800	ADX0090-2-3,30	3.30	3,360	21	46	148	0.65	46	A3	–
	216					21	48	148	0.65	46	A3	–
	4.8		VDX0112-4-0,40	0.40	1,680	3.1	5.9	22	0.65	5.9	A1	B2
	6.7					3.1	6.3	22	0.65	6.3	A1	B2
	9.6		VDX0112-4-0,80	0.80	1,680	6.5	11	48	0.57	11	A2	B3
	13					6.5	12	48	0.57	12	A2	B3
	19		VDX0112-2-1,50	1.50	3,360	12	20	87	0.60	20	A2	–
	26					12	23	87	0.60	23	A2	–
	38		ADX0112-4-3,00	3.00	1,680	19	33	131	0.71	33	A3	–
	54					19	37	131	0.71	37	A3	–
	75		ADX0112-2-5,00	5.00	3,360	26	55	249	0.80	54	A4	–
	108					26	65	249	0.80	54	A4	–
SAEx 16.2	150		ADX0112-2-6,00	6.00	3,360	31	76	249	0.83	54	A4	–
	216					31	98	249	0.83	54	A4	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREX .2 multi-turn actuators with 3-phase AC motors

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

SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 230 V/50 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4	30	VDX0063-4-0,02	0.02	1,400	0.7	0.7	1.7	0.40	0.7	A1	B1
	5.6					0.7	0.7	1.7	0.40	0.7	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.7	0.7	1.7	0.50	0.7	A1	B1
	11					0.7	0.9	1.7	0.50	0.9	A1	B1
	16		VDX0063-2-0,06	0.06	2,800	1.0	1.0	3.3	0.42	1.0	A1	B1
	22					1.0	1.1	3.3	0.42	1.1	A1	B1
	32		ADX0063-4-0,10	0.10	1,400	1.7	1.7	4.2	0.42	1.7	A1	B1
	45					1.7	1.7	4.2	0.42	1.7	A1	B1
	63		ADX0063-2-0,20	0.20	2,800	1.4	2.1	7.7	0.60	2.1	A1	B1
	90					1.4	2.3	7.7	0.60	2.3	A1	B1
SAEx 07.6	125	25	ADX0063-2-0,30	0.30	2,800	1.6	2.8	7.7	0.70	2.8	A1	B1
	180					1.6	3.0	7.7	0.70	3.0	A1	B1
	4	60	VDX0063-4-0,03	0.03	1,400	0.7	0.9	1.7	0.43	0.9	A1	B1
	5.6					0.7	0.9	1.7	0.43	0.9	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	1.0	1.1	2.8	0.38	1.1	A1	B1
	11					1.0	1.2	2.8	0.38	1.2	A1	B1
	16		VDX0063-2-0,12	0.12	2,800	1.2	1.6	5.2	0.52	1.6	A1	B1
	22					1.2	1.7	5.2	0.52	1.7	A1	B1
	32		ADX0063-4-0,20	0.20	1,400	2.8	3.3	8.0	0.42	3.3	A1	B1
	45					2.8	3.5	8.0	0.42	3.5	A1	B1
	63		ADX0063-2-0,40	0.40	2,800	3.1	4.0	16	0.53	4.0	A1	B1
	90					3.1	4.3	16	0.53	4.3	A1	B1
SAEx 10.2	125	50	ADX0063-2-0,50	0.50	2,800	3.3	5.2	16	0.62	5.2	A1	B1
	180					3.3	5.6	16	0.62	5.6	A1	B1
	4	120	VDX0071-4-0,06	0.06	1,400	0.9	1.0	3.5	0.40	1.0	A1	B1
	5.6					0.9	1.0	3.5	0.40	1.0	A1	B1
	8		VDX0071-4-0,12	0.12	1,400	1.7	1.9	5.2	0.40	1.9	A1	B1
	11					1.7	2.1	5.2	0.40	2.1	A1	B1
	16		VDX0071-2-0,25	0.25	2,800	2.3	2.6	7.8	0.52	2.6	A1	B1
	22					2.3	3.1	7.8	0.52	3.1	A1	B1
	32		ADX0071-4-0,40	0.40	1,400	4.3	4.5	15	0.42	4.5	A1	B1
	45					4.3	5.2	15	0.42	5.2	A1	B1
	63		ADX0071-2-0,70	0.70	2,800	5.2	7.0	28	0.54	7.0	A1	B2
	90					5.2	7.8	28	0.54	7.8	A1	B2
SAEx 14.2	125	100	ADX0071-2-1,00	1.00	2,800	6.1	9.4	28	0.64	9.4	A2	B2
	180					6.1	10	28	0.64	10	A2	B2
	4	250	VDX0090-4-0,12	0.12	1,400	0.9	1.4	4.9	0.60	1.4	A1	B1
	5.6					0.9	1.7	4.9	0.60	1.7	A1	B1
	8		VDX0090-4-0,25	0.25	1,400	1.7	2.8	9.0	0.60	2.8	A1	B1
	11					1.7	3.0	9.0	0.60	3.0	A1	B1
	16		VDX0090-2-0,45	0.45	2,800	2.6	5.2	16	0.64	5.2	A1	B1
	22					2.6	6.1	16	0.64	6.1	A1	B1
	32		ADX0090-4-0,75	0.75	1,400	4.5	7.5	28	0.62	7.5	A1	B2
	45					4.5	8.7	28	0.62	8.7	A1	B2
	63		ADX0090-2-1,40	1.40	2,800	8.2	13	66	0.60	13	A2	–
	90					8.2	16	66	0.60	16	A2	–
SAEx 14.6	125	200	ADX0090-2-1,80	1.80	2,800	9.2	21	66	0.65	19	A2	–
	180					9.2	21	66	0.65	19	A2	–
	4	500	VDX0090-4-0,20	0.20	1,400	1.6	2.6	9.0	0.54	2.6	A1	B1
	5.6					1.6	3.0	9.0	0.54	3.0	A1	B1
	8		VDX0090-4-0,40	0.40	1,400	3.1	5.2	16	0.56	5.2	A1	B1
	11					3.1	6.1	16	0.56	6.1	A1	B1
	16		VDX0090-2-0,80	0.80	2,800	6.3	8.7	31	0.51	8.7	A2	B2
	22					6.3	9.6	31	0.51	9.6	A2	B2
	32		ADX0090-4-1,60	1.60	1,400	9.2	13	66	0.57	13	A2	–
	45					9.2	16	66	0.57	16	A2	–
	63		ADX0090-2-3,00	3.00	2,800	16	24	118	0.60	24	A2	–
	90					16	28	118	0.60	28	A2	–
SAEx 16.2	125	400	ADX0090-2-3,30	3.30	2,800	17	37	118	0.65	37	A2	–
	180					17	38	118	0.65	37	A2	–
	4	1,000	VDX0112-4-0,40	0.40	1,400	2.4	4.7	17	0.65	4.7	A1	B1
	5.6					2.4	5.0	17	0.65	5.0	A1	B1
	8		VDX0112-4-0,80	0.80	1,400	5.2	9.0	38	0.57	9.0	A2	B2
	11					5.2	9.6	38	0.57	9.6	A2	B2
	16		VDX0112-2-1,50	1.50	2,800	9.7	16	70	0.60	16	A2	–
	22					9.7	18	70	0.60	18	A2	–
	32		ADX0112-4-3,00	3.00	1,400	15	26	104	0.71	26	A2	–
	45					15	30	104	0.71	29	A2	–
	63		ADX0112-2-5,00	5.00	2,800	21	43	198	0.80	43	A4	–
	90					21	52	198	0.80	43	A4	–
SAEx 16.2	125	800	ADX0112-2-6,00	6.00	2,800	24	61	198	0.83	43	A4	–
	180					24	78	198	0.83	43	A4	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 380 V/50 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contacteur	Thyristor
SAEx 07.2	4	30	VDX0063-4-0,02	0.02	1,400	0.4	0.4	1.1	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.1	0.40	0.4	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.4	0.4	1.1	0.50	0.4	A1	B1
	11					0.4	0.5	1.1	0.50	0.5	A1	B1
	16		VDX0063-2-0,06	0.06	2,800	0.6	0.6	2.0	0.42	0.6	A1	B1
	22					0.6	0.7	2.0	0.42	0.7	A1	B1
	32	25	ADX0063-4-0,10	0.10	1,400	1.0	1.0	2.5	0.42	1.0	A1	B1
	45					1.0	1.1	2.5	0.42	1.1	A1	B1
	63		ADX0063-2-0,20	0.20	2,800	0.8	1.3	4.6	0.60	1.3	A1	B1
	90					0.8	1.4	4.6	0.60	1.4	A1	B1
SAEx 07.6	125	60	ADX0063-2-0,30	0.30	2,800	0.9	1.7	4.6	0.70	1.7	A1	B1
	180					0.9	1.8	4.6	0.70	1.8	A1	B1
	4		VDX0063-4-0,03	0.03	1,400	0.4	0.5	1.1	0.43	0.5	A1	B1
	5.6					0.4	0.5	1.1	0.43	0.5	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	11					0.6	0.7	1.7	0.38	0.7	A1	B1
	16	50	VDX0063-2-0,12	0.12	2,800	0.7	0.9	3.2	0.52	0.9	A1	B1
	22					0.7	1.1	3.2	0.52	1.1	A1	B1
	32		ADX0063-4-0,20	0.20	1,400	1.7	2.0	4.8	0.42	2.0	A1	B1
	45					1.7	2.1	4.8	0.42	2.1	A1	B1
SAEx 10.2	63	120	ADX0063-2-0,40	0.40	2,800	1.9	2.4	9.5	0.53	2.4	A1	B1
	90					1.9	2.6	9.5	0.53	2.6	A1	B1
	125		ADX0063-2-0,50	0.50	2,800	2.0	3.2	9.5	0.62	3.2	A1	B1
	180					2.0	3.4	9.5	0.62	3.4	A1	B1
	4	100	VDX0071-4-0,06	0.06	1,400	0.5	0.6	2.1	0.40	0.6	A1	B1
	5.6					0.5	0.6	2.1	0.40	0.6	A1	B1
	8		VDX0071-4-0,12	0.12	1,400	1.1	1.2	3.2	0.40	1.2	A1	B1
	11					1.1	1.3	3.2	0.40	1.3	A1	B1
	16		VDX0071-2-0,25	0.25	2,800	1.4	1.6	4.7	0.52	1.6	A1	B1
	22					1.4	1.9	4.7	0.52	1.9	A1	B1
SAEx 14.2	32	250	ADX0071-4-0,40	0.40	1,400	2.6	2.7	8.9	0.42	2.7	A1	B1
	45					2.6	3.2	8.9	0.42	3.2	A1	B1
	63		ADX0071-2-0,70	0.70	2,800	3.2	4.2	17	0.54	4.2	A1	B1
	90					3.2	4.7	17	0.54	4.7	A1	B1
	125	100	ADX0071-2-1,00	1.00	2,800	3.7	5.7	17	0.64	5.7	A1	B1
	180					3.7	6.3	17	0.64	6.3	A1	B1
	4	200	VDX0090-4-0,12	0.12	1,400	0.5	0.8	2.9	0.60	0.8	A1	B1
	5.6					0.5	1.1	2.9	0.60	1.1	A1	B1
	8		VDX0090-4-0,25	0.25	1,400	1.1	1.7	5.5	0.60	1.7	A1	B1
	11					1.1	1.8	5.5	0.60	1.8	A1	B1
	16		VDX0090-2-0,45	0.45	2,800	1.6	3.2	9.5	0.64	3.2	A1	B1
	22					1.6	3.7	9.5	0.64	3.7	A1	B1
SAEx 14.6	32	250	ADX0090-4-0,75	0.75	1,400	2.7	4.5	17	0.62	4.5	A1	B1
	45					2.7	5.3	17	0.62	5.3	A1	B1
	63		ADX0090-2-1,40	1.40	2,800	4.9	8.0	40	0.60	8.0	A2	B2
	90					4.9	9.5	40	0.60	9.5	A2	B2
	125	200	ADX0090-2-1,80	1.80	2,800	5.6	13	40	0.65	12	A2	B2
	180					5.6	13	40	0.65	12	A2	B2
	4	500	VDX0090-4-0,20	0.20	1,400	0.9	1.6	5.5	0.54	1.6	A1	B1
	5.6					0.9	1.8	5.5	0.54	1.8	A1	B1
	8		VDX0090-4-0,40	0.40	1,400	1.9	3.2	9.8	0.56	3.2	A1	B1
	11					1.9	3.7	9.8	0.56	3.7	A1	B1
	16		VDX0090-2-0,80	0.80	2,800	3.8	5.3	19	0.51	5.3	A1	B2
	22					3.8	5.8	19	0.51	5.8	A1	B2
SAEx 16.2	32	400	ADX0090-4-1,60	1.60	1,400	5.6	7.9	40	0.57	7.9	A2	B2
	45					5.6	9.5	40	0.57	9.5	A2	B2
	63		ADX0090-2-3,00	3.00	2,800	9.5	15	72	0.60	15	A2	–
	90					9.5	17	72	0.60	17	A2	–
	125	800	ADX0090-2-3,30	3.30	2,800	10	22	72	0.65	22	A2	–
	180					10	23	72	0.65	23	A2	–
	4	1 000	VDX0112-4-0,40	0.40	1,400	1.5	2.8	11	0.65	2.8	A1	B1
	5.6					1.5	3.1	11	0.65	3.1	A1	B1
	8		VDX0112-4-0,80	0.80	1,400	3.2	5.5	23	0.57	5.5	A1	B2
	11					3.2	5.8	23	0.57	5.8	A1	B2
	16		VDX0112-2-1,50	1.50	2,800	5.9	9.5	42	0.60	9.5	A2	B2
	22					5.9	11	42	0.60	11	A2	B2
SAEx 16.2	32	800	ADX0112-4-3,00	3.00	1,400	8.9	16	63	0.71	16	A2	B3
	45					8.9	18	63	0.71	18	A2	B3
	63		ADX0112-2-5,00	5.00	2,800	13	26	120	0.80	26	A2	–
	90					13	32	120	0.80	26	A2	–
	125		ADX0112-2-6,00	6.00	2,800	15	37	120	0.83	26	A2	–
	180					15	47	120	0.83	26	A2	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	30	VDX0063-4-0,02	0.02	1,680	0.5	0.5	1.3	0.40	0.5	A1	B1
	6.7					0.5	0.5	1.3	0.40	0.5	A1	B1
	9.6		VDX0063-4-0,04	0.04	1,680	0.5	0.5	1.3	0.50	0.5	A1	B1
	13					0.5	0.6	1.3	0.50	0.6	A1	B1
	19		VDX0063-2-0,06	0.06	3,360	0.8	0.8	2.4	0.42	0.8	A1	B1
	26					0.8	0.8	2.4	0.42	0.8	A1	B1
	38		ADX0063-4-0,10	0.10	1,680	1.2	1.2	3.0	0.42	1.2	A1	B1
	54					1.2	1.3	3.0	0.42	1.3	A1	B1
	75		ADX0063-2-0,20	0.20	3,360	1.0	1.5	5.6	0.60	1.5	A1	B1
	108					1.0	1.6	5.6	0.60	1.6	A1	B1
SAEx 07.6	150	25	ADX0063-2-0,30	0.30	3,360	1.1	2.0	5.6	0.70	2.0	A1	B1
	216					1.1	2.1	5.6	0.70	2.1	A1	B1
	4.8		VDX0063-4-0,03	0.03	1,680	0.5	0.6	1.3	0.43	0.6	A1	B1
	6.7					0.5	0.6	1.3	0.43	0.6	A1	B1
	9.6		VDX0063-4-0,06	0.06	1,680	0.8	0.8	2.0	0.38	0.8	A1	B1
	13					0.8	0.9	2.0	0.38	0.9	A1	B1
	19		VDX0063-2-0,12	0.12	3,360	0.9	1.1	3.8	0.52	1.1	A1	B1
	26					0.9	1.3	3.8	0.52	1.3	A1	B1
	38		ADX0063-4-0,20	0.20	1,680	2.0	2.4	5.8	0.42	2.4	A1	B1
	54					2.0	2.5	5.8	0.42	2.5	A1	B1
SAEx 10.2	75	60	ADX0063-2-0,40	0.40	3,360	2.3	2.9	11	0.53	2.9	A1	B1
	108					2.3	3.2	11	0.53	3.2	A1	B1
	150		ADX0063-2-0,50	0.50	3,360	2.4	3.8	11	0.62	3.8	A1	B1
	216					2.4	4.0	11	0.62	4.0	A1	B1
	4.8		VDX0071-4-0,06	0.06	1,680	0.6	0.8	2.5	0.40	0.8	A1	B1
	6.7					0.6	0.8	2.5	0.40	0.8	A1	B1
	9.6		VDX0071-4-0,12	0.12	1,680	1.3	1.4	3.8	0.40	1.4	A1	B1
	13					1.3	1.5	3.8	0.40	1.5	A1	B1
	19		VDX0071-2-0,25	0.25	3,360	1.6	1.9	5.7	0.52	1.9	A1	B1
	26					1.6	2.3	5.7	0.52	2.3	A1	B1
SAEx 14.2	38	120	ADX0071-4-0,40	0.40	1,680	3.2	3.3	11	0.42	3.3	A1	B1
	54					3.2	3.8	11	0.42	3.8	A1	B1
	75		ADX0071-2-0,70	0.70	3,360	3.8	5.1	20	0.54	5.1	A1	B2
	108					3.8	5.7	20	0.54	5.7	A1	B2
	150		ADX0071-2-1,00	1.00	3,360	4.4	6.8	20	0.64	6.8	A2	B2
	216					4.4	7.6	20	0.64	7.6	A2	B2
	4.8	250	VDX0090-4-0,12	0.12	1,680	0.6	1.0	3.5	0.60	1.0	A1	B1
	6.7					0.6	1.3	3.5	0.60	1.3	A1	B1
	9.6		VDX0090-4-0,25	0.25	1,680	1.3	2.0	6.6	0.60	2.0	A1	B1
	13					1.3	2.1	6.6	0.60	2.1	A1	B1
	19		VDX0090-2-0,45	0.45	3,360	1.9	3.8	11	0.64	3.8	A1	B1
	26					1.9	4.4	11	0.64	4.4	A1	B1
	38		ADX0090-4-0,75	0.75	1,680	3.3	5.4	20	0.62	5.4	A1	B2
	54					3.3	6.3	20	0.62	6.3	A1	B2
SAEx 14.6	75	200	ADX0090-2-1,40	1.40	3,360	5.9	9.6	48	0.60	9.6	A2	B3
	108					5.9	11	48	0.60	11	A2	B3
	150		ADX0090-2-1,80	1.80	3,360	6.7	15	48	0.65	14	A2	B3
	216					6.7	15	48	0.65	14	A2	B3
	4.8		VDX0090-4-0,20	0.20	1,680	1.1	1.9	6.6	0.54	1.9	A1	B1
	6.7					1.1	2.1	6.6	0.54	2.1	A1	B1
	9.6		VDX0090-4-0,40	0.40	1,680	2.3	3.8	12	0.56	3.8	A1	B1
	13					2.3	4.4	12	0.56	4.4	A1	B1
	19		VDX0090-2-0,80	0.80	3,360	4.5	6.3	23	0.51	6.3	A2	B2
	26					4.5	6.9	23	0.51	6.9	A2	B2
SAEx 16.2	38	500	ADX0090-4-1,60	1.60	1,680	6.7	9.5	48	0.57	9.5	A2	B3
	54					6.7	11	48	0.57	11	A2	B3
	75		ADX0090-2-3,00	3.00	3,360	11	18	86	0.60	18	A2	–
	108					11	20	86	0.60	20	A2	–
	150		ADX0090-2-3,30	3.30	3,360	12	27	86	0.65	27	A2	–
	216					12	28	86	0.65	27	A2	–
	4.8	1,000	VDX0112-4-0,40	0.40	1,680	1.8	3.4	13	0.65	3.4	A1	B1
	6.7					1.8	3.7	13	0.65	3.7	A1	B1
	9.6		VDX0112-4-0,80	0.80	1,680	3.8	6.6	28	0.57	6.6	A2	B2
	13					3.8	6.9	28	0.57	6.9	A2	B2
	19		VDX0112-2-1,50	1.50	3,360	7.1	11	51	0.60	11	A2	B3
	26					7.1	13	51	0.60	13	A2	B3
	38		ADX0112-4-3,00	3.00	1,680	11	19	76	0.71	19	A2	–
	54					11	21	76	0.71	21	A2	–
SAEx 16.2	75	800	ADX0112-2-5,00	5.00	3,360	15	32	144	0.80	31	A3	–
	108					15	38	144	0.80	31	A3	–
	150		ADX0112-2-6,00	6.00	3,360	18	44	144	0.83	31	A3	–
	216					18	57	144	0.83	31	A3	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contactors	Thyristor
SAEx 07.2	4	30	VDX0063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.40	0.4	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.5	1.0	0.50	0.5	A1	B1
	16		VDX0063-2-0,06	0.06	2,800	0.6	0.6	1.9	0.42	0.6	A1	B1
	22					0.6	0.7	1.9	0.42	0.7	A1	B1
	32		ADX0063-4-0,10	0.10	1,400	1.0	1.0	2.4	0.42	1.0	A1	B1
	45					1.0	1.0	2.4	0.42	1.0	A1	B1
	63		ADX0063-2-0,20	0.20	2,800	0.8	1.2	4.4	0.60	1.2	A1	B1
	90					0.8	1.3	4.4	0.60	1.3	A1	B1
SAEx 07.6	125	25	ADX0063-2-0,30	0.30	2,800	0.9	1.6	4.4	0.70	1.6	A1	B1
	180					0.9	1.7	4.4	0.70	1.7	A1	B1
	4		VDX0063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	5.6					0.4	0.5	1.0	0.43	0.5	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	11					0.6	0.7	1.6	0.38	0.7	A1	B1
	16		VDX0063-2-0,12	0.12	2,800	0.7	0.9	3.0	0.52	0.9	A1	B1
	22					0.7	1.0	3.0	0.52	1.0	A1	B1
	32		ADX0063-4-0,20	0.20	1,400	1.6	1.9	4.6	0.42	1.9	A1	B1
	45					1.6	2.0	4.6	0.42	2.0	A1	B1
SAEx 10.2	63	60	ADX0063-2-0,40	0.40	2,800	1.8	2.3	9.0	0.53	2.3	A1	B1
	90					1.8	2.5	9.0	0.53	2.5	A1	B1
	125		ADX0063-2-0,50	0.50	2,800	1.9	3.0	9.0	0.62	3.0	A1	B1
	180					1.9	3.2	9.0	0.62	3.2	A1	B1
	4		VDX0071-4-0,06	0.06	1,400	0.5	0.6	2.0	0.40	0.6	A1	B1
	5.6					0.5	0.6	2.0	0.40	0.6	A1	B1
	8		VDX0071-4-0,12	0.12	1,400	1.0	1.1	3.0	0.40	1.1	A1	B1
	11					1.0	1.2	3.0	0.40	1.2	A1	B1
	16		VDX0071-2-0,25	0.25	2,800	1.3	1.5	4.5	0.52	1.5	A1	B1
	22					1.3	1.8	4.5	0.52	1.8	A1	B1
SAEx 14.2	32	120	ADX0071-4-0,40	0.40	1,400	2.5	2.6	8.5	0.42	2.6	A1	B1
	45					2.5	3.0	8.5	0.42	3.0	A1	B1
	63		ADX0071-2-0,70	0.70	2,800	3.0	4.0	16	0.54	4.0	A1	B1
	90					3.0	4.5	16	0.54	4.5	A1	B1
	125		ADX0071-2-1,00	1.00	2,800	3.5	5.4	16	0.64	5.4	A1	B1
	180					3.5	6.0	16	0.64	6.0	A1	B1
	4	100	VDX0090-4-0,12	0.12	1,400	0.5	0.8	2.8	0.60	0.8	A1	B1
	5.6					0.5	1.0	2.8	0.60	1.0	A1	B1
	8		VDX0090-4-0,25	0.25	1,400	1.0	1.6	5.2	0.60	1.6	A1	B1
	11					1.0	1.7	5.2	0.60	1.7	A1	B1
	16		VDX0090-2-0,45	0.45	2,800	1.5	3.0	9.0	0.64	3.0	A1	B1
	22					1.5	3.5	9.0	0.64	3.5	A1	B1
	32		ADX0090-4-0,75	0.75	1,400	2.6	4.3	16	0.62	4.3	A1	B1
	45					2.6	5.0	16	0.62	5.0	A1	B1
SAEx 16.2	63	250	ADX0090-2-1,40	1.40	2,800	4.7	7.6	38	0.60	7.6	A2	B2
	90					4.7	9.0	38	0.60	9.0	A2	B2
	125		ADX0090-2-1,80	1.80	2,800	5.3	12	38	0.65	11	A2	B2
	180					5.3	12	38	0.65	11	A2	B2
	4	200	VDX0090-4-0,20	0.20	1,400	0.9	1.5	5.2	0.54	1.5	A1	B1
	5.6					0.9	1.7	5.2	0.54	1.7	A1	B1
	8		VDX0090-4-0,40	0.40	1,400	1.8	3.0	9.3	0.56	3.0	A1	B1
	11					1.8	3.5	9.3	0.56	3.5	A1	B1
	16		VDX0090-2-0,80	0.80	2,800	3.6	5.0	18	0.51	5.0	A1	B1
	22					3.6	5.5	18	0.51	5.5	A1	B1
	32		ADX0090-4-1,60	1.60	1,400	5.3	7.5	38	0.57	7.5	A2	B2
	45					5.3	9.0	38	0.57	9.0	A2	B2
SAEx 16.2	63	500	ADX0090-2-3,00	3.00	2,800	9.0	14	68	0.60	14	A2	–
	90					9.0	16	68	0.60	16	A2	–
	125		ADX0090-2-3,30	3.30	2,800	9.5	21	68	0.65	21	A2	–
	180					9.5	22	68	0.65	22	A2	–
	4	400	VDX0112-4-0,40	0.40	1,400	1.4	2.7	10	0.65	2.7	A1	B1
	5.6					1.4	2.9	10	0.65	2.9	A1	B1
	8		VDX0112-4-0,80	0.80	1,400	3.0	5.2	22	0.57	5.2	A1	B2
	11					3.0	5.5	22	0.57	5.5	A1	B2
	16		VDX0112-2-1,50	1.50	2,800	5.6	9.0	40	0.60	9.0	A2	B2
	22					5.6	11	40	0.60	11	A2	B2
	32		ADX0112-4-3,00	3.00	1,400	8.5	15	60	0.71	15	A2	B3
	45					8.5	17	60	0.71	17	A2	B3
SAEx 16.2	63	1 000	ADX0112-2-5,00	5.00	2,800	12	25	114	0.80	25	A2	–
	90					12	30	114	0.80	25	A2	–
	125		ADX0112-2-6,00	6.00	2,800	14	35	114	0.83	25	A2	–
	180					14	45	114	0.83	25	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 400 V/60 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	30	VDX0063-4-0,02	0.02	1,680	0.5	0.5	1.2	0.40	0.5	A1	B1
	6.7					0.5	0.5	1.2	0.40	0.5	A1	B1
	9.6		VDX0063-4-0,04	0.04	1,680	0.5	0.5	1.2	0.50	0.5	A1	B1
	13					0.5	0.6	1.2	0.50	0.6	A1	B1
	19		VDX0063-2-0,06	0.06	3,360	0.7	0.7	2.3	0.42	0.7	A1	B1
	26					0.7	0.8	2.3	0.42	0.8	A1	B1
	38		ADX0063-4-0,10	0.10	1,680	1.1	1.1	2.9	0.42	1.1	A1	B1
	54					1.1	1.2	2.9	0.42	1.2	A1	B1
	75		ADX0063-2-0,20	0.20	3,360	1.0	1.4	5.3	0.60	1.4	A1	B1
	108					1.0	1.6	5.3	0.60	1.6	A1	B1
SAEx 07.6	150	25	ADX0063-2-0,30	0.30	3,360	1.1	1.9	5.3	0.70	1.9	A1	B1
	216					1.1	2.0	5.3	0.70	2.0	A1	B1
	4.8		VDX0063-4-0,03	0.03	1,680	0.5	0.6	1.2	0.43	0.6	A1	B1
	6.7					0.5	0.6	1.2	0.43	0.6	A1	B1
	9.6		VDX0063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	13					0.7	0.8	1.9	0.38	0.8	A1	B1
	19		VDX0063-2-0,12	0.12	3,360	0.8	1.1	3.6	0.52	1.1	A1	B1
	26					0.8	1.2	3.6	0.52	1.2	A1	B1
	38		ADX0063-4-0,20	0.20	1,680	1.9	2.3	5.5	0.42	2.3	A1	B1
	54					1.9	2.4	5.5	0.42	2.4	A1	B1
SAEx 10.2	75	60	ADX0063-2-0,40	0.40	3,360	2.2	2.8	11	0.53	2.8	A1	B1
	108					2.2	3.0	11	0.53	3.0	A1	B1
	150		ADX0063-2-0,50	0.50	3,360	2.3	3.6	11	0.62	3.6	A1	B1
	216					2.3	3.8	11	0.62	3.8	A1	B1
	4.8		VDX0071-4-0,06	0.06	1,680	0.6	0.7	2.4	0.40	0.7	A1	B1
	6.7					0.6	0.7	2.4	0.40	0.7	A1	B1
	9.6		VDX0071-4-0,12	0.12	1,680	1.2	1.3	3.6	0.40	1.3	A1	B1
	13					1.2	1.4	3.6	0.40	1.4	A1	B1
	19		VDX0071-2-0,25	0.25	3,360	1.6	1.8	5.4	0.52	1.8	A1	B1
	26					1.6	2.2	5.4	0.52	2.2	A1	B1
SAEx 14.2	38	120	ADX0071-4-0,40	0.40	1,680	3.0	3.1	10	0.42	3.1	A1	B1
	54					3.0	3.6	10	0.42	3.6	A1	B1
	75		ADX0071-2-0,70	0.70	3,360	3.6	4.8	19	0.54	4.8	A1	B2
	108					3.6	5.4	19	0.54	5.4	A1	B2
	150		ADX0071-2-1,00	1.00	3,360	4.2	6.5	19	0.64	6.5	A2	B2
	216					4.2	7.2	19	0.64	7.2	A2	B2
	4.8	100	VDX0090-4-0,12	0.12	1,680	0.6	1.0	3.4	0.60	1.0	A1	B1
	6.7					0.6	1.2	3.4	0.60	1.2	A1	B1
	9.6		VDX0090-4-0,25	0.25	1,680	1.2	1.9	6.2	0.60	1.9	A1	B1
	13					1.2	2.0	6.2	0.60	2.0	A1	B1
	19		VDX0090-2-0,45	0.45	3,360	1.8	3.6	11	0.64	3.6	A1	B1
	26					1.8	4.2	11	0.64	4.2	A1	B1
	38		ADX0090-4-0,75	0.75	1,680	3.1	5.2	19	0.62	5.2	A1	B2
	54					3.1	6.0	19	0.62	6.0	A1	B2
SAEx 14.6	75	250	ADX0090-2-1,40	1.40	3,360	5.6	9.1	46	0.60	9.1	A2	B3
	108					5.6	11	46	0.60	11	A2	B3
	150		ADX0090-2-1,80	1.80	3,360	6.4	14	46	0.65	14	A2	B3
	216					6.4	14	46	0.65	14	A2	B3
	4.8		VDX0090-4-0,20	0.20	1,680	1.1	1.8	6.2	0.54	1.8	A1	B1
	6.7					1.1	2.0	6.2	0.54	2.0	A1	B1
	9.6		VDX0090-4-0,40	0.40	1,680	2.2	3.6	11	0.56	3.6	A1	B1
	13					2.2	4.2	11	0.56	4.2	A1	B1
	19		VDX0090-2-0,80	0.80	3,360	4.3	6.0	22	0.51	6.0	A2	B2
	26					4.3	6.6	22	0.51	6.6	A2	B2
SAEx 16.2	38	500	ADX0090-4-1,60	1.60	1,680	6.4	9.0	46	0.57	9.0	A2	B3
	54					6.4	11	46	0.57	11	A2	B3
	75		ADX0090-2-3,00	3.00	3,360	11	17	82	0.60	17	A2	–
	108					11	19	82	0.60	19	A2	–
	150		ADX0090-2-3,30	3.30	3,360	11	25	82	0.65	25	A2	–
	216					11	26	82	0.65	26	A2	–
	4.8		VDX0112-4-0,40	0.40	1,680	1.7	3.2	12	0.65	3.2	A1	B1
	6.7					1.7	3.5	12	0.65	3.5	A1	B1
	9.6		VDX0112-4-0,80	0.80	1,680	3.6	6.2	26	0.57	6.2	A2	B2
	13					3.6	6.6	26	0.57	6.6	A2	B2
SAEx 16.2	19	1 000	VDX0112-2-1,50	1.50	3,360	6.7	11	48	0.60	11	A2	B3
	26					6.7	13	48	0.60	13	A2	B3
	38		ADX0112-4-3,00	3.00	1,680	10	18	72	0.71	18	A2	–
	54					10	20	72	0.71	20	A2	–
	75		ADX0112-2-5,00	5.00	3,360	14	30	137	0.80	30	A3	–
	108					14	36	137	0.80	30	A3	–
	150		ADX0112-2-6,00	6.00	3,360	17	42	137	0.83	30	A3	–
	216					17	54	137	0.83	30	A3	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 415 V/50 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contactors	Thyristor
SAEx 07.2	4	30	VDX0063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.40	0.4	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.5	1.0	0.50	0.5	A1	B1
	16		VDX0063-2-0,06	0.06	2,800	0.6	0.6	1.8	0.42	0.6	A1	B1
	22					0.6	0.6	1.8	0.42	0.6	A1	B1
	32		ADX0063-4-0,10	0.10	1,400	0.9	0.9	2.3	0.42	0.9	A1	B1
	45					0.9	1.0	2.3	0.42	1.0	A1	B1
	63		ADX0063-2-0,20	0.20	2,800	0.8	1.2	4.2	0.60	1.2	A1	B1
	90					0.8	1.3	4.2	0.60	1.3	A1	B1
SAEx 07.6	125	25	ADX0063-2-0,30	0.30	2,800	0.9	1.5	4.2	0.70	1.5	A1	B1
	180					0.9	1.6	4.2	0.70	1.6	A1	B1
	4		VDX0063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	5.6					0.4	0.5	1.0	0.43	0.5	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.6	1.5	0.38	0.6	A1	B1
	11					0.6	0.7	1.5	0.38	0.7	A1	B1
	16		VDX0063-2-0,12	0.12	2,800	0.7	0.9	2.9	0.52	0.9	A1	B1
	22					0.7	1.0	2.9	0.52	1.0	A1	B1
	32		ADX0063-4-0,20	0.20	1,400	1.5	1.8	4.4	0.42	1.8	A1	B1
	45					1.5	1.9	4.4	0.42	1.9	A1	B1
SAEx 10.2	63	60	ADX0063-2-0,40	0.40	2,800	1.7	2.2	8.7	0.53	2.2	A1	B1
	90					1.7	2.4	8.7	0.53	2.4	A1	B1
	125		ADX0063-2-0,50	0.50	2,800	1.8	2.9	8.7	0.62	2.9	A1	B1
	180					1.8	3.1	8.7	0.62	3.1	A1	B1
	4		VDX0071-4-0,06	0.06	1,400	0.5	0.6	1.9	0.40	0.6	A1	B1
	5.6					0.5	0.6	1.9	0.40	0.6	A1	B1
	8		VDX0071-4-0,12	0.12	1,400	1.0	1.1	2.9	0.40	1.1	A1	B1
	11					1.0	1.2	2.9	0.40	1.2	A1	B1
	16		VDX0071-2-0,25	0.25	2,800	1.3	1.4	4.3	0.52	1.4	A1	B1
	22					1.3	1.7	4.3	0.52	1.7	A1	B1
SAEx 14.2	32	120	ADX0071-4-0,40	0.40	1,400	2.4	2.5	8.2	0.42	2.5	A1	B1
	45					2.4	2.9	8.2	0.42	2.9	A1	B1
	63		ADX0071-2-0,70	0.70	2,800	2.9	3.9	15	0.54	3.9	A1	B1
	90					2.9	4.3	15	0.54	4.3	A1	B1
	125		ADX0071-2-1,00	1.00	2,800	3.4	5.2	15	0.64	5.2	A1	B1
	180					3.4	5.8	15	0.64	5.8	A1	B1
	4	100	VDX0090-4-0,12	0.12	1,400	0.5	0.8	2.7	0.60	0.8	A1	B1
	5.6					0.5	1.0	2.7	0.60	1.0	A1	B1
	8		VDX0090-4-0,25	0.25	1,400	1.0	1.5	5.0	0.60	1.5	A1	B1
	11					1.0	1.6	5.0	0.60	1.6	A1	B1
	16		VDX0090-2-0,45	0.45	2,800	1.4	2.9	8.7	0.64	2.9	A1	B1
	22					1.4	3.4	8.7	0.64	3.4	A1	B1
	32		ADX0090-4-0,75	0.75	1,400	2.5	4.1	15	0.62	4.1	A1	B1
	45					2.5	4.8	15	0.62	4.8	A1	B1
SAEx 16.2	63	250	ADX0090-2-1,40	1.40	2,800	4.5	7.3	37	0.60	7.3	A2	B2
	90					4.5	8.7	37	0.60	8.7	A2	B2
	125		ADX0090-2-1,80	1.80	2,800	5.1	12	37	0.65	11	A2	B2
	180					5.1	12	37	0.65	11	A2	B2
	4	200	VDX0090-4-0,20	0.20	1,400	0.9	1.4	5.0	0.54	1.4	A1	B1
	5.6					0.9	1.6	5.0	0.54	1.6	A1	B1
	8		VDX0090-4-0,40	0.40	1,400	1.7	2.9	9.0	0.56	2.9	A1	B1
	11					1.7	3.4	9.0	0.56	3.4	A1	B1
	16		VDX0090-2-0,80	0.80	2,800	3.5	4.8	17	0.51	4.8	A1	B1
	22					3.5	5.3	17	0.51	5.3	A1	B1
	32		ADX0090-4-1,60	1.60	1,400	5.1	7.2	37	0.57	7.2	A2	B2
	45					5.1	8.7	37	0.57	8.7	A2	B2
SAEx 14.6	63	500	ADX0090-2-3,00	3.00	2,800	8.7	13	66	0.60	13	A2	–
	90					8.7	15	66	0.60	15	A2	–
	125		ADX0090-2-3,30	3.30	2,800	9.2	20	66	0.65	20	A2	–
	180					9.2	21	66	0.65	21	A2	–
	4	400	VDX0112-4-0,40	0.40	1,400	1.3	2.6	9.6	0.65	2.6	A1	B1
	5.6					1.3	2.8	9.6	0.65	2.8	A1	B1
	8		VDX0112-4-0,80	0.80	1,400	2.9	5.0	21	0.57	5.0	A1	B2
	11					2.9	5.3	21	0.57	5.3	A1	B2
	16		VDX0112-2-1,50	1.50	2,800	5.4	8.7	39	0.60	8.7	A2	B2
	22					5.4	10	39	0.60	10	A2	B2
	32		ADX0112-4-3,00	3.00	1,400	8.2	14	58	0.71	14	A2	B3
	45					8.2	16	58	0.71	16	A2	B3
SAEx 16.2	63	1,000	ADX0112-2-5,00	5.00	2,800	12	24	110	0.80	24	A2	–
	90					12	29	110	0.80	24	A2	–
	125		ADX0112-2-6,00	6.00	2,800	13	34	110	0.83	24	A2	–
	180					13	43	110	0.83	24	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contacteur	Thyristor
SAEx 07.2	4.8	30	VDX0063-4-0,02	0.02	1,680	0.4	0.4	1.1	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.1	0.40	0.4	A1	B1
	9.6		VDX0063-4-0,04	0.04	1,680	0.4	0.4	1.1	0.50	0.4	A1	B1
	13					0.4	0.5	1.1	0.50	0.5	A1	B1
	19		VDX0063-2-0,06	0.06	3,360	0.7	0.7	2.1	0.42	0.7	A1	B1
	26					0.7	0.7	2.1	0.42	0.7	A1	B1
	38	25	ADX0063-4-0,10	0.10	1,680	1.0	1.0	2.6	0.42	1.0	A1	B1
	54					1.0	1.1	2.6	0.42	1.1	A1	B1
	75		ADX0063-2-0,20	0.20	3,360	0.9	1.3	4.8	0.60	1.3	A1	B1
	108					0.9	1.4	4.8	0.60	1.4	A1	B1
SAEx 07.6	150	25	ADX0063-2-0,30	0.30	3,360	1.0	1.7	4.8	0.70	1.7	A1	B1
	216					1.0	1.9	4.8	0.70	1.9	A1	B1
	4.8	60	VDX0063-4-0,03	0.03	1,680	0.4	0.5	1.1	0.43	0.5	A1	B1
	6.7					0.4	0.5	1.1	0.43	0.5	A1	B1
	9.6		VDX0063-4-0,06	0.06	1,680	0.7	0.7	1.7	0.38	0.7	A1	B1
	13					0.7	0.8	1.7	0.38	0.8	A1	B1
	19		VDX0063-2-0,12	0.12	3,360	0.8	1.0	3.3	0.52	1.0	A1	B1
	26					0.8	1.1	3.3	0.52	1.1	A1	B1
	38	50	ADX0063-4-0,20	0.20	1,680	1.7	2.1	5.0	0.42	2.1	A1	B1
	54					1.7	2.2	5.0	0.42	2.2	A1	B1
	75		ADX0063-2-0,40	0.40	3,360	2.0	2.5	9.8	0.53	2.5	A1	B1
	108					2.0	2.7	9.8	0.53	2.7	A1	B1
SAEx 10.2	150	50	ADX0063-2-0,50	0.50	3,360	2.1	3.3	9.8	0.62	3.3	A1	B1
	216					2.1	3.5	9.8	0.62	3.5	A1	B1
	4.8	120	VDX0071-4-0,06	0.06	1,680	0.5	0.7	2.2	0.40	0.7	A1	B1
	6.7					0.5	0.7	2.2	0.40	0.7	A1	B1
	9.6		VDX0071-4-0,12	0.12	1,680	1.1	1.2	3.3	0.40	1.2	A1	B1
	13					1.1	1.3	3.3	0.40	1.3	A1	B1
	19		VDX0071-2-0,25	0.25	3,360	1.4	1.6	4.9	0.52	1.6	A1	B1
	26					1.4	2.0	4.9	0.52	2.0	A1	B1
	38	100	ADX0071-4-0,40	0.40	1,680	2.7	2.8	9.3	0.42	2.8	A1	B1
	54					2.7	3.3	9.3	0.42	3.3	A1	B1
	75		ADX0071-2-0,70	0.70	3,360	3.3	4.4	17	0.54	4.4	A1	B1
	108					3.3	4.9	17	0.54	4.9	A1	B1
SAEx 14.2	150	100	ADX0071-2-1,00	1.00	3,360	3.8	5.9	17	0.64	5.9	A1	B1
	216					3.8	6.5	17	0.64	6.5	A1	B1
	4.8	250	VDX0090-4-0,12	0.12	1,680	0.5	0.9	3.1	0.60	0.9	A1	B1
	6.7					0.5	1.1	3.1	0.60	1.1	A1	B1
	9.6		VDX0090-4-0,25	0.25	1,680	1.1	1.7	5.7	0.60	1.7	A1	B1
	13					1.1	1.9	5.7	0.60	1.9	A1	B1
	19		VDX0090-2-0,45	0.45	3,360	1.6	3.3	9.8	0.64	3.3	A1	B1
	26					1.6	3.8	9.8	0.64	3.8	A1	B1
	38	200	ADX0090-4-0,75	0.75	1,680	2.8	4.7	17	0.62	4.7	A1	B1
	54					2.8	5.5	17	0.62	5.5	A1	B1
	75		ADX0090-2-1,40	1.40	3,360	5.1	8.3	41	0.60	8.3	A2	B2
	108					5.1	9.8	41	0.60	9.8	A2	B2
SAEx 14.6	150	200	ADX0090-2-1,80	1.80	3,360	5.8	13	41	0.65	12	A2	B2
	216					5.8	13	41	0.65	12	A2	B2
	4.8	500	VDX0090-4-0,20	0.20	1,680	1.0	1.6	5.7	0.54	1.6	A1	B1
	6.7					1.0	1.9	5.7	0.54	1.9	A1	B1
	9.6		VDX0090-4-0,40	0.40	1,680	2.0	3.3	10	0.56	3.3	A1	B1
	13					2.0	3.8	10	0.56	3.8	A1	B1
	19		VDX0090-2-0,80	0.80	3,360	3.9	5.5	20	0.51	5.5	A1	B2
	26					3.9	6.0	20	0.51	6.0	A1	B2
	38	400	ADX0090-4-1,60	1.60	1,680	5.8	8.2	41	0.57	8.2	A2	B2
	54					5.8	9.8	41	0.57	9.8	A2	B2
	75		ADX0090-2-3,00	3.00	3,360	9.8	15	74	0.60	15	A2	–
	108					9.8	17	74	0.60	17	A2	–
SAEx 16.2	150	400	ADX0090-2-3,30	3.30	3,360	10	23	74	0.65	23	A2	–
	216					10	24	74	0.65	23	A2	–
	4.8	1,000	VDX0112-4-0,40	0.40	1,680	1.5	2.9	11	0.65	2.9	A1	B1
	6.7					1.5	3.2	11	0.65	3.2	A1	B1
	9.6		VDX0112-4-0,80	0.80	1,680	3.3	5.7	24	0.57	5.7	A1	B2
	13					3.3	6.0	24	0.57	6.0	A1	B2
	19		VDX0112-2-1,50	1.50	3,360	6.1	9.8	44	0.60	9.8	A2	B2
	26					6.1	12	44	0.60	12	A2	B2
	38	800	ADX0112-4-3,00	3.00	1,680	9.3	16	65	0.71	16	A2	B3
	54					9.3	19	65	0.71	19	A2	B3
	75		ADX0112-2-5,00	5.00	3,360	13	27	124	0.80	27	A3	–
	108					13	33	124	0.80	27	A3	–
	150		ADX0112-2-6,00	6.00	3,360	15	38	124	0.83	27	A3	–
	216					15	49	124	0.83	27	A3	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 460 V/60 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	30	VDX0063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDX0063-4-0,04	0.04	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	13					0.4	0.5	1.0	0.50	0.5	A1	B1
	19		VDX0063-2-0,06	0.06	3,360	0.6	0.6	2.0	0.42	0.6	A1	B1
	26					0.6	0.7	2.0	0.42	0.7	A1	B1
	38		ADX0063-4-0,10	0.10	1,680	1.0	1.0	2.5	0.42	1.0	A1	B1
	54					1.0	1.0	2.5	0.42	1.0	A1	B1
	75		ADX0063-2-0,20	0.20	3,360	0.8	1.3	4.6	0.60	1.3	A1	B1
	108					0.8	1.4	4.6	0.60	1.4	A1	B1
SAEx 07.6	150	25	ADX0063-2-0,30	0.30	3,360	0.9	1.7	4.6	0.70	1.7	A1	B1
	216					0.9	1.8	4.6	0.70	1.8	A1	B1
	4.8		VDX0063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.4	A1	B1
	6.7					0.4	0.5	1.0	0.43	0.5	A1	B1
	9.6		VDX0063-4-0,06	0.06	1,680	0.6	0.7	1.7	0.38	0.7	A1	B1
	13					0.6	0.7	1.7	0.38	0.7	A1	B1
	19		VDX0063-2-0,12	0.12	3,360	0.7	0.9	3.1	0.52	0.9	A1	B1
	26					0.7	1.0	3.1	0.52	1.0	A1	B1
	38	60	ADX0063-4-0,20	0.20	1,680	1.7	2.0	4.8	0.42	2.0	A1	B1
	54					1.7	2.1	4.8	0.42	2.1	A1	B1
SAEx 10.2	75		ADX0063-2-0,40	0.40	3,360	1.9	2.4	9.4	0.53	2.4	A1	B1
	108					1.9	2.6	9.4	0.53	2.6	A1	B1
	150		ADX0063-2-0,50	0.50	3,360	2.0	3.1	9.4	0.62	3.1	A1	B1
	216					2.0	3.3	9.4	0.62	3.3	A1	B1
	4.8	120	VDX0071-4-0,06	0.06	1,680	0.5	0.6	2.1	0.40	0.6	A1	B1
	6.7					0.5	0.6	2.1	0.40	0.6	A1	B1
	9.6		VDX0071-4-0,12	0.12	1,680	1.0	1.1	3.1	0.40	1.1	A1	B1
	13					1.0	1.3	3.1	0.40	1.3	A1	B1
	19		VDX0071-2-0,25	0.25	3,360	1.4	1.6	4.7	0.52	1.6	A1	B1
	26					1.4	1.9	4.7	0.52	1.9	A1	B1
	38		ADX0071-4-0,40	0.40	1,680	2.6	2.7	8.9	0.42	2.7	A1	B1
SAEx 14.2	54	100				2.6	3.1	8.9	0.42	3.1	A1	B1
	75		ADX0071-2-0,70	0.70	3,360	3.1	4.2	17	0.54	4.2	A1	B1
	108					3.1	4.7	17	0.54	4.7	A1	B1
	150		ADX0071-2-1,00	1.00	3,360	3.7	5.6	17	0.64	5.6	A1	B1
	216					3.7	6.3	17	0.64	6.3	A1	B1
	4.8	250	VDX0090-4-0,12	0.12	1,680	0.5	0.8	2.9	0.60	0.8	A1	B1
	6.7					0.5	1.0	2.9	0.60	1.0	A1	B1
	9.6		VDX0090-4-0,25	0.25	1,680	1.0	1.7	5.4	0.60	1.7	A1	B1
	13					1.0	1.8	5.4	0.60	1.8	A1	B1
	19		VDX0090-2-0,45	0.45	3,360	1.6	3.1	9.4	0.64	3.1	A1	B1
	26					1.6	3.7	9.4	0.64	3.7	A1	B1
	38		ADX0090-4-0,75	0.75	1,680	2.7	4.5	17	0.62	4.5	A1	B1
SAEx 14.6	54	200				2.7	5.2	17	0.62	5.2	A1	B1
	75		ADX0090-2-1,40	1.40	3,360	4.9	7.9	40	0.60	7.9	A2	B2
	108					4.9	9.4	40	0.60	9.4	A2	B2
	150		ADX0090-2-1,80	1.80	3,360	5.5	13	40	0.65	12	A2	B2
	216					5.5	13	40	0.65	12	A2	B2
	4.8	500	VDX0090-4-0,20	0.20	1,680	0.9	1.6	5.4	0.54	1.6	A1	B1
	6.7					0.9	1.8	5.4	0.54	1.8	A1	B1
	9.6		VDX0090-4-0,40	0.40	1,680	1.9	3.1	9.7	0.56	3.1	A1	B1
	13					1.9	3.7	9.7	0.56	3.7	A1	B1
	19		VDX0090-2-0,80	0.80	3,360	3.8	5.2	19	0.51	5.2	A1	B2
	26					3.8	5.7	19	0.51	5.7	A1	B2
	38		ADX0090-4-1,60	1.60	1,680	5.5	7.8	40	0.57	7.8	A2	B2
SAEx 16.2	54	1 000				5.5	9.4	40	0.57	9.4	A2	B2
	75		ADX0090-2-3,00	3.00	3,360	9.4	15	71	0.60	15	A2	–
	108					9.4	17	71	0.60	17	A2	–
	150		ADX0090-2-3,30	3.30	3,360	9.9	22	71	0.65	22	A2	–
	216					9.9	23	71	0.65	22	A2	–
	4.8	800	VDX0112-4-0,40	0.40	1,680	1.5	2.8	10	0.65	2.8	A1	B1
	6.7					1.5	3.0	10	0.65	3.0	A1	B1
	9.6		VDX0112-4-0,80	0.80	1,680	3.1	5.4	23	0.57	5.4	A1	B2
	13					3.1	5.7	23	0.57	5.7	A1	B2
	19		VDX0112-2-1,50	1.50	3,360	5.8	9.4	42	0.60	9.4	A2	B2
	26					5.8	11	42	0.60	11	A2	B2
	38		ADX0112-4-3,00	3.00	1,680	8.9	16	63	0.71	16	A2	B3
SAEx 16.2	54	800				8.9	18	63	0.71	18	A2	B3
	75		ADX0112-2-5,00	5.00	3,360	13	26	119	0.80	26	A2	–
	108					13	31	119	0.80	26	A2	–
	150		ADX0112-2-6,00	6.00	3,360	15	37	119	0.83	26	A2	–
	216					15	47	119	0.83	26	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 480 V/60 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	30	VDX0063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDX0063-4-0,04	0.04	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	13					0.4	0.5	1.0	0.50	0.5	A1	B1
	19		VDX0063-2-0,06	0.06	3,360	0.6	0.6	1.9	0.42	0.6	A1	B1
	26					0.6	0.7	1.9	0.42	0.7	A1	B1
	38		ADX0063-4-0,10	0.10	1,680	1.0	1.0	2.4	0.42	1.0	A1	B1
	54					1.0	1.0	2.4	0.42	1.0	A1	B1
	75		ADX0063-2-0,20	0.20	3,360	0.8	1.2	4.4	0.60	1.2	A1	B1
	108					0.8	1.3	4.4	0.60	1.3	A1	B1
SAEx 07.6	150	25	ADX0063-2-0,30	0.30	3,360	0.9	1.6	4.4	0.70	1.6	A1	B1
	216					0.9	1.7	4.4	0.70	1.7	A1	B1
	4.8		VDX0063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.5	A1	B1
	6.7					0.4	0.5	1.0	0.43	0.5	A1	B1
	9.6		VDX0063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	13					0.6	0.7	1.6	0.38	0.7	A1	B1
	19		VDX0063-2-0,12	0.12	3,360	0.7	0.9	3.0	0.52	0.9	A1	B1
	26					0.7	1.0	3.0	0.52	1.0	A1	B1
	38		ADX0063-4-0,20	0.20	1,680	1.6	1.9	4.6	0.42	1.9	A1	B1
	54					1.6	2.0	4.6	0.42	2.0	A1	B1
SAEx 10.2	75	60	ADX0063-2-0,40	0.40	3,360	1.8	2.3	9.0	0.53	2.3	A1	B1
	108					1.8	2.5	9.0	0.53	2.5	A1	B1
	150		ADX0063-2-0,50	0.50	3,360	1.9	3.0	9.0	0.62	3.0	A1	B1
	216					1.9	3.2	9.0	0.62	3.2	A1	B1
	4.8		VDX0071-4-0,06	0.06	1,680	0.5	0.6	2.0	0.40	0.6	A1	B1
	6.7					0.5	0.6	2.0	0.40	0.6	A1	B1
	9.6		VDX0071-4-0,12	0.12	1,680	1.0	1.1	3.0	0.40	1.1	A1	B1
	13					1.0	1.2	3.0	0.40	1.2	A1	B1
	19		VDX0071-2-0,25	0.25	3,360	1.3	1.5	4.5	0.52	1.5	A1	B1
	26					1.3	1.8	4.5	0.52	1.8	A1	B1
SAEx 14.2	38	120	ADX0071-4-0,40	0.40	1,680	2.5	2.6	8.5	0.42	2.6	A1	B1
	54					2.5	3.0	8.5	0.42	3.0	A1	B1
	75		ADX0071-2-0,70	0.70	3,360	3.0	4.0	16	0.54	4.0	A1	B1
	108					3.0	4.5	16	0.54	4.5	A1	B1
	150		ADX0071-2-1,00	1.00	3,360	3.5	5.4	16	0.64	5.4	A1	B1
	216					3.5	6.0	16	0.64	6.0	A1	B1
	4.8	100	VDX0090-4-0,12	0.12	1,680	0.5	0.8	2.8	0.60	0.8	A1	B1
	6.7					0.5	1.0	2.8	0.60	1.0	A1	B1
	9.6		VDX0090-4-0,25	0.25	1,680	1.0	1.6	5.2	0.60	1.6	A1	B1
	13					1.0	1.7	5.2	0.60	1.7	A1	B1
	19		VDX0090-2-0,45	0.45	3,360	1.5	3.0	9.0	0.64	3.0	A1	B1
	26					1.5	3.5	9.0	0.64	3.5	A1	B1
	38		ADX0090-4-0,75	0.75	1,680	2.6	4.3	16	0.62	4.3	A1	B1
	54					2.6	5.0	16	0.62	5.0	A1	B1
SAEx 14.6	75	250	ADX0090-2-1,40	1.40	3,360	4.7	7.6	38	0.60	7.6	A2	B2
	108					4.7	9.0	38	0.60	9.0	A2	B2
	150		ADX0090-2-1,80	1.80	3,360	5.3	12	38	0.65	11	A2	B2
	216					5.3	12	38	0.65	11	A2	B2
	4.8	500	VDX0090-4-0,20	0.20	1,680	0.9	1.5	5.2	0.54	1.5	A1	B1
	6.7					0.9	1.7	5.2	0.54	1.7	A1	B1
	9.6		VDX0090-4-0,40	0.40	1,680	1.8	3.0	9.3	0.56	3.0	A1	B1
	13					1.8	3.5	9.3	0.56	3.5	A1	B1
	19		VDX0090-2-0,80	0.80	3,360	3.6	5.0	18	0.51	5.0	A1	B1
	26					3.6	5.5	18	0.51	5.5	A1	B1
	38		ADX0090-4-1,60	1.60	1,680	5.3	7.5	38	0.57	7.5	A2	B2
	54					5.3	9.0	38	0.57	9.0	A2	B2
SAEx 16.2	75	1,000	ADX0090-2-3,00	3.00	3,360	9.0	14	68	0.60	14	A2	–
	108					9.0	16	68	0.60	16	A2	–
	150		ADX0090-2-3,30	3.30	3,360	9.5	21	68	0.65	22	A2	–
	216					9.5	22	68	0.65	22	A2	–
	4.8	800	VDX0112-4-0,40	0.40	1,680	1.4	2.7	10	0.65	2.7	A1	B1
	6.7					1.4	2.9	10	0.65	2.9	A1	B1
	9.6		VDX0112-4-0,80	0.80	1,680	3.0	5.2	22	0.57	5.2	A1	B2
	13					3.0	5.5	22	0.57	5.5	A1	B2
	19		VDX0112-2-1,50	1.50	3,360	5.6	9.0	40	0.60	9.0	A2	B2
	26					5.6	11	40	0.60	11	A2	B2
	38		ADX0112-4-3,00	3.00	1,680	8.5	15	60	0.71	15	A2	B3
	54					8.5	17	60	0.71	17	A2	B3
SAEx 16.2	75	800	ADX0112-2-5,00	5.00	3,360	12	25	114	0.80	25	A2	–
	108					12	30	114	0.80	25	A2	–
	150		ADX0112-2-6,00	6.00	3,360	14	35	114	0.83	25	A2	–
	216					14	45	114	0.83	25	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 15 min, 500 V/50 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contactors	Thyristor
SAEx 07.2	4	30	VDX0063-4-0,02	0.02	1,400	0.3	0.3	0.8	0.40	0.3	A1	B1
	5.6					0.3	0.3	0.8	0.40	0.3	A1	B1
	8					0.3	0.3	0.8	0.50	0.3	A1	B1
	11		VDX0063-4-0,04	0.04	1,400	0.3	0.4	0.8	0.50	0.4	A1	B1
	16					0.5	0.5	1.5	0.42	0.5	A1	B1
	22		VDX0063-2-0,06	0.06	2,800	0.5	0.5	1.5	0.42	0.5	A1	B1
	32					0.8	0.8	1.9	0.42	0.8	A1	B1
	45		ADX0063-4-0,10	0.10	1,400	0.8	0.8	1.9	0.42	0.8	A1	B1
	63					0.6	1.0	3.5	0.60	1.0	A1	B1
	90		ADX0063-2-0,20	0.20	2,800	0.6	1.0	3.5	0.60	1.0	A1	B1
SAEx 07.6	4	60	VDX0063-4-0,03	0.03	1,400	0.3	0.4	0.8	0.43	0.4	A1	B1
	5.6					0.3	0.4	0.8	0.43	0.4	A1	B1
	8					0.5	0.5	1.3	0.38	0.5	A1	B1
	11		VDX0063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1
	16					0.6	0.7	2.4	0.52	0.7	A1	B1
	22		VDX0063-2-0,12	0.12	2,800	0.6	0.8	2.4	0.52	0.8	A1	B1
	32					1.3	1.5	3.7	0.42	1.5	A1	B1
	45		ADX0063-4-0,20	0.20	1,400	1.3	1.6	3.7	0.42	1.6	A1	B1
	63					1.4	1.8	7.2	0.53	1.8	A1	B1
	90		ADX0063-2-0,40	0.40	2,800	1.4	2.0	7.2	0.53	2.0	A1	B1
SAEx 10.2	4	120	VDX0071-4-0,06	0.06	1,400	0.4	0.5	1.6	0.40	0.5	A1	B1
	5.6					0.4	0.5	1.6	0.40	0.5	A1	B1
	8					0.8	0.9	2.4	0.40	0.9	A1	B1
	11		VDX0071-4-0,12	0.12	1,400	0.8	1.0	2.4	0.40	1.0	A1	B1
	16					1.0	1.2	3.6	0.52	1.2	A1	B1
	22		VDX0071-2-0,25	0.25	2,800	1.0	1.4	3.6	0.52	1.4	A1	B1
	32					2.0	2.1	6.8	0.42	2.1	A1	B1
	45		ADX0071-4-0,40	0.40	1,400	2.0	2.4	6.8	0.42	2.4	A1	B1
	63					2.4	3.2	13	0.54	3.2	A1	B1
	90		ADX0071-2-0,70	0.70	2,800	2.4	3.6	13	0.54	3.6	A1	B1
SAEx 14.2	4	200	VDX0090-4-0,12	0.12	1,400	0.4	0.6	2.2	0.60	0.6	A1	B1
	5.6					0.4	0.8	2.2	0.60	0.8	A1	B1
	8					0.8	1.3	4.2	0.60	1.3	A1	B1
	11		VDX0090-4-0,25	0.25	1,400	0.8	1.4	4.2	0.60	1.4	A1	B1
	16					1.2	2.4	7.2	0.64	2.4	A1	B1
	22		VDX0090-2-0,45	0.45	2,800	1.2	2.8	7.2	0.64	2.8	A1	B1
	32					2.1	3.4	13	0.62	3.4	A1	B1
	45		ADX0090-4-0,75	0.75	1,400	2.1	4.0	13	0.62	4.0	A1	B1
	63					3.8	6.1	30	0.60	6.1	A2	B2
	90		ADX0090-2-1,40	1.40	2,800	3.8	7.2	30	0.60	7.2	A2	B2
SAEx 16.2	4	500	VDX0090-2-1,80	1.80	2,800	4.2	9.6	30	0.65	8.6	A2	B2
	5.6					4.2	9.6	30	0.65	8.6	A2	B2
	8					0.7	1.2	4.2	0.54	1.2	A1	B1
	11		VDX0090-4-0,20	0.20	1,400	0.7	1.4	4.2	0.54	1.4	A1	B1
	16					1.4	2.4	7.4	0.56	2.4	A1	B1
	22		VDX0090-4-0,40	0.40	1,400	1.4	2.8	7.4	0.56	2.8	A1	B1
	32					2.9	4.0	14	0.51	4.0	A1	B1
	45		VDX0090-2-0,80	0.80	2,800	2.9	4.4	14	0.51	4.4	A1	B1
	63					4.2	6.0	30	0.57	6.0	A2	B2
	90		ADX0090-4-1,60	1.60	1,400	4.2	7.2	30	0.57	7.2	A2	B2
SAEx 16.2	4	800				7.2	11	54	0.60	11	A2	B3
	5.6					7.2	13	54	0.60	13	A2	B3
	8					7.6	17	54	0.65	17	A2	B3
	11		VDX0112-4-0,80	0.80	1,400	7.6	18	54	0.65	17	A2	B3
	16					1.1	2.2	8.0	0.65	2.2	A1	B1
	22					1.1	2.3	8.0	0.65	2.3	A1	B1
	32		VDX0112-2-1,50	1.50	2,800	2.4	4.2	18	0.57	4.2	A1	B1
	45					2.4	4.4	18	0.57	4.4	A1	B1
	63		ADX0112-2-3,00	3.00	1,400	4.5	7.2	32	0.60	7.2	A2	B2
	90					4.5	8.4	32	0.60	8.4	A2	B2

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	20	VDXL063-4-0,01	0.01	1,680	0.8	0.9	2.2	0.40	0.9	A1	B1
	6.7					0.8	0.9	2.2	0.40	0.9	A1	B1
	9.6		VDXL063-4-0,03	0.03	1,680	0.9	0.9	2.0	0.50	0.9	A1	B1
	13					0.9	0.9	2.0	0.50	0.9	A1	B1
	19		VDXL063-2-0,04	0.04	3,360	1.1	1.3	3.7	0.43	1.3	A1	B1
	26					1.1	1.3	3.7	0.43	1.3	A1	B1
	38		ADXL063-4-0,07	0.07	1,680	1.7	2.0	4.4	0.40	2.0	A1	B1
	54					1.7	2.0	4.4	0.40	2.0	A1	B1
	75		ADXL063-2-0,14	0.14	3,360	1.5	2.0	7.9	0.55	2.0	A1	B1
	108					1.5	2.2	7.9	0.55	2.2	A1	B1
	150		ADXL063-2-0,21	0.21	3,360	1.5	2.6	7.9	0.70	2.6	A1	B1
	216					1.5	3.1	7.9	0.70	3.1	A1	B1
SAEx 07.6	4.8	40	VDXL063-4-0,02	0.02	1,680	0.9	0.9	2.2	0.50	0.9	A1	B1
	6.7					0.9	0.9	2.2	0.50	0.9	A1	B1
	9.6		VDXL063-4-0,04	0.04	1,680	1.1	1.1	3.1	0.45	1.1	A1	B1
	13					1.1	1.1	3.1	0.45	1.1	A1	B1
	19		VDXL063-2-0,08	0.08	3,360	1.1	1.7	5.5	0.52	1.7	A1	B1
	26					1.1	1.7	5.5	0.52	1.7	A1	B1
	38		ADXL063-4-0,14	0.14	1,680	2.6	3.3	7.6	0.40	3.3	A1	B1
	54					2.6	3.3	7.6	0.40	3.3	A1	B1
	75		ADXL063-2-0,28	0.28	3,360	2.4	3.5	12	0.53	3.5	A1	B1
	108					2.4	3.7	12	0.53	3.7	A1	B1
	150		ADXL063-2-0,35	0.35	3,360	2.6	4.4	12	0.60	4.4	A1	B1
	216					2.6	4.4	12	0.60	4.4	A1	B1
SAEx 10.2	4.8	90	VDXL071-4-0,04	0.04	1,680	0.8	1.1	3.3	0.40	1.1	A1	B1
	6.7					0.8	1.1	3.3	0.40	1.1	A1	B1
	9.6		VDXL071-4-0,08	0.08	1,680	1.7	2.0	5.7	0.40	2.0	A1	B1
	13					1.7	2.2	5.7	0.40	2.2	A1	B1
	19		VDXL071-2-0,17	0.17	3,360	2.2	2.4	8.7	0.52	2.4	A1	B1
	26					2.2	2.8	8.7	0.52	2.8	A1	B1
	38		ADXL071-4-0,28	0.28	1,680	3.5	4.4	16	0.43	4.4	A1	B1
	54					3.5	4.8	16	0.43	4.8	A1	B1
	75		ADXL071-2-0,50	0.50	3,360	3.9	5.5	26	0.56	5.5	A1	B2
	108					3.9	7.0	26	0.56	7.0	A1	B2
	150		ADXL071-2-0,70	0.70	3,360	4.4	8.3	26	0.67	8.3	A1	B2
	216					4.4	8.7	26	0.67	8.7	A1	B2
SAEx 14.2	4.8	180	VDXL090-4-0,08	0.08	1,680	0.9	1.3	5.7	0.60	1.3	A1	B1
	6.7					0.9	1.5	5.7	0.60	1.5	A1	B1
	9.6		VDXL090-4-0,18	0.18	1,680	2.0	3.1	9.2	0.60	3.1	A1	B1
	13					2.0	3.3	9.2	0.60	3.3	A1	B1
	19		VDXL090-2-0,30	0.30	3,360	2.0	4.4	16	0.68	4.4	A1	B1
	26					2.0	5.0	16	0.68	5.0	A1	B1
	38		ADXL090-4-0,50	0.50	1,680	4.4	6.5	26	0.56	6.5	A1	B2
	54					4.4	7.6	26	0.56	7.6	A1	B2
	75		ADXL090-2-1,00	1.00	3,360	6.8	12	61	0.65	12	A2	B3
	108					6.8	13	61	0.65	13	A2	B3
	150	140	ADXL090-2-1,30	1.30	3,360	7.6	18	61	0.73	18	A2	–
	216					7.6	18	61	0.73	18	A2	–
SAEx 14.6	4.8	360	VDXL090-4-0,14	0.14	1,680	1.5	2.4	8.5	0.55	2.4	A1	B1
	6.7					1.5	2.6	8.5	0.55	2.6	A1	B1
	9.6		VDXL090-4-0,30	0.30	1,680	3.5	5.5	19	0.52	5.5	A1	B2
	13					3.5	6.1	19	0.52	6.1	A1	B2
	19		VDXL090-2-0,60	0.60	3,360	5.0	7.9	33	0.61	7.9	A2	B2
	26					5.0	8.3	33	0.61	8.3	A2	B2
	38		ADXL090-4-1,00	1.00	1,680	7.9	13	65	0.60	13	A2	B3
	54					7.9	14	65	0.60	14	A2	B3
	75		ADXL090-2-2,00	2.00	3,360	12	21	120	0.69	21	A2	–
	108					12	24	120	0.69	24	A2	–
	150	290	ADXL090-2-2,30	2.30	3,360	13	31	120	0.72	31	A2	–
	216					13	33	120	0.72	33	A2	–
SAEx 16.2	4.8	710	VDXL112-4-0,30	0.30	1,680	2.6	5.0	17	0.60	5.0	A1	B1
	6.7					2.6	5.5	17	0.60	5.5	A1	B1
	9.6		VDXL112-4-0,60	0.60	1,680	5.0	8.7	37	0.53	8.7	A2	B2
	13					5.0	9.8	37	0.53	9.8	A2	B2
	19		VDXL112-2-1,00	1.00	3,360	7.0	13	72	0.68	13	A2	–
	26					7.0	15	72	0.68	15	A2	–
	38		ADXL112-4-2,00	2.00	1,680	13	22	87	0.65	22	A2	–
	54					13	26	87	0.65	24	A2	–
	75		ADXL112-2-3,50	3.50	3,360	19	39	196	0.78	39	A4	–
	108					19	46	196	0.78	42	A4	–
	150	570	ADXL112-2-4,00	4.00	3,360	20	50	196	0.81	42	A4	–
	216					20	68	196	0.81	42	A4	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contactors	Thyristor
SAEx 07.2	4	20	VDXL063-4-0,01	0.01	1,400	0.6	0.7	1.7	0.40	0.7	A1	B1
	5.6					0.6	0.7	1.7	0.40	0.7	A1	B1
	8		VDXL063-4-0,03	0.03	1,400	0.7	0.7	1.6	0.50	0.7	A1	B1
	11					0.7	0.7	1.6	0.50	0.7	A1	B1
	16		VDXL063-2-0,04	0.04	2,800	0.9	1.0	3.0	0.43	1.0	A1	B1
	22					0.9	1.0	3.0	0.43	1.0	A1	B1
	32		ADXL063-4-0,07	0.07	1,400	1.4	1.6	3.5	0.40	1.6	A1	B1
	45					1.4	1.6	3.5	0.40	1.6	A1	B1
	63		ADXL063-2-0,14	0.14	2,800	1.2	1.6	6.3	0.55	1.6	A1	B1
	90					1.2	1.7	6.3	0.55	1.7	A1	B1
SAEx 07.6	4	40	VDXL063-4-0,02	0.02	1,400	0.7	0.7	1.7	0.50	0.7	A1	B1
	5.6					0.7	0.7	1.7	0.50	0.7	A1	B1
	8		VDXL063-4-0,04	0.04	1,400	0.9	0.9	2.4	0.45	0.9	A1	B1
	11					0.9	0.9	2.4	0.45	0.9	A1	B1
	16		VDXL063-2-0,08	0.08	2,800	0.9	1.4	4.3	0.52	1.4	A1	B1
	22					0.9	1.4	4.3	0.52	1.4	A1	B1
	32		ADXL063-4-0,14	0.14	1,400	2.1	2.6	6.1	0.40	2.6	A1	B1
	45					2.1	2.6	6.1	0.40	2.6	A1	B1
	63		ADXL063-2-0,28	0.28	2,800	1.9	2.8	9.9	0.53	2.8	A1	B1
	90					1.9	3.0	9.9	0.53	3.0	A1	B1
SAEx 10.2	4	90	VDXL071-4-0,04	0.04	1,400	0.6	0.9	2.6	0.40	0.9	A1	B1
	5.6					0.6	0.9	2.6	0.40	0.9	A1	B1
	8		VDXL071-4-0,08	0.08	1,400	1.4	1.6	4.5	0.40	1.6	A1	B1
	11					1.4	1.7	4.5	0.40	1.7	A1	B1
	16		VDXL071-2-0,17	0.17	2,800	1.7	1.9	7.0	0.52	1.9	A1	B1
	22					1.7	2.3	7.0	0.52	2.3	A1	B1
	32		ADXL071-4-0,28	0.28	1,400	2.8	3.5	13	0.43	3.5	A1	B1
	45					2.8	3.8	13	0.43	3.8	A1	B1
	63		ADXL071-2-0,50	0.50	2,800	3.1	4.3	21	0.56	4.3	A1	B2
	90					3.1	5.6	21	0.56	5.6	A1	B2
SAEx 14.2	4	180	VDXL090-4-0,08	0.08	1,400	0.7	1.0	4.5	0.60	1.0	A1	B1
	5.6					0.7	1.2	4.5	0.60	1.2	A1	B1
	8		VDXL090-4-0,18	0.18	1,400	1.6	2.4	7.3	0.60	2.4	A1	B1
	11					1.6	2.6	7.3	0.60	2.6	A1	B1
	16		VDXL090-2-0,30	0.30	2,800	1.6	3.5	13	0.68	3.5	A1	B1
	22					1.6	4.0	13	0.68	4.0	A1	B1
	32		ADXL090-4-0,50	0.50	1,400	3.5	5.2	21	0.56	5.2	A1	B2
	45					3.5	6.1	21	0.56	6.1	A1	B2
	63		ADXL090-2-1,00	1.00	2,800	5.4	9.6	49	0.65	9.6	A2	B3
	90					5.4	10	49	0.65	10	A2	B3
SAEx 14.6	4	360	VDXL090-2-1,30	1.30	2,800	6.1	14	49	0.73	14	A2	B3
	5.6					6.1	14	49	0.73	14	A2	B3
	8		VDXL090-4-0,14	0.14	1,400	1.2	1.9	6.8	0.55	1.9	A1	B1
	11					1.2	2.1	6.8	0.55	2.1	A1	B1
	16		VDXL090-4-0,30	0.30	1,400	2.8	4.3	15	0.52	4.3	A1	B1
	22					2.8	4.9	15	0.52	4.9	A1	B1
	32		VDXL090-2-0,60	0.60	2,800	4.0	6.3	26	0.61	6.3	A1	B2
	45					4.0	6.6	26	0.61	6.6	A1	B2
	63		ADXL090-4-1,00	1.00	1,400	6.3	10	52	0.60	10	A2	B3
	90					6.3	11	52	0.60	11	A2	B3
SAEx 16.2	4	710	ADXL090-2-2,00	2.00	2,800	9.9	17	96	0.69	17	A2	–
	5.6					9.9	19	96	0.69	19	A2	–
	8		ADXL090-2-2,30	2.30	2,800	10	24	96	0.72	24	A2	–
	11					10	26	96	0.72	26	A2	–
	16		VDXL112-4-0,30	0.30	1,400	2.1	4.0	14	0.60	4.0	A1	B1
	22					2.1	4.3	14	0.60	4.3	A1	B1
	32		VDXL112-4-0,60	0.60	1,400	4.0	7.0	30	0.53	7.0	A2	B2
	45					4.0	7.8	30	0.53	7.8	A2	B2
	63		VDXL112-2-1,00	1.00	2,800	5.6	11	57	0.68	11	A2	B3
	90					5.6	12	57	0.68	12	A2	B3
SAEx 16.2	4	570	ADXL112-4-2,00	2.00	1,400	10	17	70	0.65	17	A2	–
	5.6					10	21	70	0.65	20	A2	–
	8		ADXL112-2-3,50	3.50	2,800	15	31	157	0.78	31	A3	–
	11					15	37	157	0.78	34	A3	–
	16		ADXL112-2-4,00	4.00	2,800	16	40	157	0.81	34	A3	–
	22					16	54	157	0.81	34	A3	–
	32											
	45											
	63											
	90											
	125											

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4	20	VDXL063-4-0,01	0.01	1,400	0.4	0.4	1.1	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.1	0.40	0.4	A1	B1
	8		VDXL063-4-0,03	0.03	1,400	0.4	0.4	0.9	0.50	0.4	A1	B1
	11					0.4	0.4	0.9	0.50	0.4	A1	B1
	16		VDXL063-2-0,04	0.04	2,800	0.5	0.6	1.8	0.43	0.6	A1	B1
	22					0.5	0.6	1.8	0.43	0.6	A1	B1
	32		ADXL063-4-0,07	0.07	1,400	0.8	0.9	2.1	0.40	0.9	A1	B1
	45					0.8	0.9	2.1	0.40	0.9	A1	B1
	63		ADXL063-2-0,14	0.14	2,800	0.7	0.9	3.8	0.55	0.9	A1	B1
	90					0.7	1.1	3.8	0.55	1.1	A1	B1
SAEx 07.6	4	40	VDXL063-4-0,02	0.02	1,400	0.4	0.4	1.1	0.50	0.4	A1	B1
	5.6					0.4	0.4	1.1	0.50	0.4	A1	B1
	8		VDXL063-4-0,04	0.04	1,400	0.5	0.5	1.5	0.45	0.5	A1	B1
	11					0.5	0.5	1.5	0.45	0.5	A1	B1
	16		VDXL063-2-0,08	0.08	2,800	0.5	0.8	2.6	0.52	0.8	A1	B1
	22					0.5	0.8	2.6	0.52	0.8	A1	B1
	32		ADXL063-4-0,14	0.14	1,400	1.3	1.6	3.7	0.40	1.6	A1	B1
	45					1.3	1.6	3.7	0.40	1.6	A1	B1
	63		ADXL063-2-0,28	0.28	2,800	1.2	1.7	6.0	0.53	1.7	A1	B1
	90					1.2	1.8	6.0	0.53	1.8	A1	B1
SAEx 10.2	4	90	VDXL071-4-0,04	0.04	1,400	0.4	0.5	1.6	0.40	0.5	A1	B1
	5.6					0.4	0.5	1.6	0.40	0.5	A1	B1
	8		VDXL071-4-0,08	0.08	1,400	0.8	0.9	2.7	0.40	0.9	A1	B1
	11					0.8	1.1	2.7	0.40	1.1	A1	B1
	16		VDXL071-2-0,17	0.17	2,800	1.1	1.2	4.2	0.52	1.2	A1	B1
	22					1.1	1.4	4.2	0.52	1.4	A1	B1
	32		ADXL071-4-0,28	0.28	1,400	1.7	2.1	7.6	0.43	2.1	A1	B1
	45					1.7	2.3	7.6	0.43	2.3	A1	B1
	63		ADXL071-2-0,50	0.50	2,800	1.9	2.6	13	0.56	2.6	A1	B1
	90					1.9	3.4	13	0.56	3.4	A1	B1
SAEx 14.2	4	180	VDXL090-4-0,08	0.08	1,400	0.4	0.6	2.7	0.60	0.6	A1	B1
	5.6					0.4	0.7	2.7	0.60	0.7	A1	B1
	8		VDXL090-4-0,18	0.18	1,400	0.9	1.5	4.4	0.60	1.5	A1	B1
	11					0.9	1.6	4.4	0.60	1.6	A1	B1
	16		VDXL090-2-0,30	0.30	2,800	0.9	2.1	7.6	0.68	2.1	A1	B1
	22					0.9	2.4	7.6	0.68	2.4	A1	B1
	32		ADXL090-4-0,50	0.50	1,400	2.1	3.2	13	0.56	3.2	A1	B1
	45					2.1	3.7	13	0.56	3.7	A1	B1
	63		ADXL090-2-1,00	1.00	2,800	3.3	5.8	29	0.65	5.8	A2	B2
	90					3.3	6.3	29	0.65	6.3	A2	B2
SAEx 14.6	4	360	VDXL090-2-1,30	1.30	2,800	3.7	8.6	29	0.73	8.3	A2	B2
	5.6					3.7	8.6	29	0.73	8.3	A2	B2
	8		VDXL090-4-0,14	0.14	1,400	0.7	1.2	4.1	0.55	1.2	A1	B1
	11					0.7	1.3	4.1	0.55	1.3	A1	B1
	16		VDXL090-4-0,30	0.30	1,400	1.7	2.6	8.9	0.52	2.6	A1	B1
	22					1.7	2.9	8.9	0.52	2.9	A1	B1
	32		VDXL090-2-0,60	0.60	2,800	2.4	3.8	16	0.61	3.8	A1	B1
	45					2.4	4.0	16	0.61	4.0	A1	B1
	63		ADXL090-4-1,00	1.00	1,400	3.8	6.3	32	0.60	6.3	A2	B2
	90					3.8	6.8	32	0.60	6.8	A2	B2
SAEx 16.2	4	710	ADXL090-2-2,00	2.00	2,800	6.0	10	58	0.69	10	A2	B3
	5.6					6.0	12	58	0.69	12	A2	B3
	8		ADXL090-2-2,30	2.30	2,800	6.3	15	58	0.72	15	A2	B3
	11					6.3	16	58	0.72	16	A2	B3
	16		VDXL112-4-0,30	0.30	1,400	1.3	2.4	8.4	0.60	2.4	A1	B1
	22					1.3	2.6	8.4	0.60	2.6	A1	B1
	32		VDXL112-4-0,60	0.60	1,400	2.4	4.2	18	0.53	4.2	A1	B1
	45					2.4	4.7	18	0.53	4.7	A1	B1
	63		VDXL112-2-1,00	1.00	2,800	3.4	6.4	35	0.68	6.4	A2	B2
	90					3.4	7.2	35	0.68	7.2	A2	B2
SAEx 16.2	4	570	ADXL112-4-2,00	2.00	1,400	6.3	11	42	0.65	11	A2	B3
	5.6					6.3	13	42	0.65	12	A2	B3
	8		ADXL112-2-3,50	3.50	2,800	8.9	19	95	0.78	19	A2	–
	11					8.9	22	95	0.78	21	A2	–
	16		ADXL112-2-4,00	4.00	2,800	9.5	24	95	0.81	21	A2	–
	22					9.5	33	95	0.81	21	A2	–
	32											
	45											
	63											
	90											
	125											

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREX .2 multi-turn actuators with 3-phase AC motors

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SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 30 min, 380 V/60 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	20	VDXL063-4-0,01	0.01	1,680	0.4	0.5	1.3	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.3	0.40	0.5	A1	B1
	9.6		VDXL063-4-0,03	0.03	1,680	0.5	0.5	1.1	0.50	0.5	A1	B1
	13					0.5	0.5	1.1	0.50	0.5	A1	B1
	19		VDXL063-2-0,04	0.04	3,360	0.6	0.8	2.1	0.43	0.8	A1	B1
	26					0.6	0.8	2.1	0.43	0.8	A1	B1
	38		ADXL063-4-0,07	0.07	1,680	1.0	1.1	2.5	0.40	1.1	A1	B1
	54					1.0	1.1	2.5	0.40	1.1	A1	B1
	75		ADXL063-2-0,14	0.14	3,360	0.9	1.1	4.5	0.55	1.1	A1	B1
	108					0.9	1.3	4.5	0.55	1.3	A1	B1
	150		ADXL063-2-0,21	0.21	3,360	0.9	1.5	4.5	0.70	1.5	A1	B1
SAEx 07.6	4.8	40	VDXL063-4-0,02	0.02	1,680	0.5	0.5	1.3	0.50	0.5	A1	B1
	6.7					0.5	0.5	1.3	0.50	0.5	A1	B1
	9.6		VDXL063-4-0,04	0.04	1,680	0.6	0.6	1.8	0.45	0.6	A1	B1
	13					0.6	0.6	1.8	0.45	0.6	A1	B1
	19		VDXL063-2-0,08	0.08	3,360	0.6	1.0	3.2	0.52	1.0	A1	B1
	26					0.6	1.0	3.2	0.52	1.0	A1	B1
	38		ADXL063-4-0,14	0.14	1,680	1.5	1.9	4.4	0.40	1.9	A1	B1
	54					1.5	1.9	4.4	0.40	1.9	A1	B1
	75		ADXL063-2-0,28	0.28	3,360	1.4	2.0	7.2	0.53	2.0	A1	B1
	108					1.4	2.1	7.2	0.53	2.1	A1	B1
	150		ADXL063-2-0,35	0.35	3,360	1.5	2.5	7.2	0.60	2.5	A1	B1
SAEx 10.2	4.8	90	VDXL071-4-0,04	0.04	1,680	0.4	0.6	1.9	0.40	0.6	A1	B1
	6.7					0.4	0.6	1.9	0.40	0.6	A1	B1
	9.6		VDXL071-4-0,08	0.08	1,680	1.0	1.1	3.3	0.40	1.1	A1	B1
	13					1.0	1.3	3.3	0.40	1.3	A1	B1
	19		VDXL071-2-0,17	0.17	3,360	1.3	1.4	5.1	0.52	1.4	A1	B1
	26					1.3	1.6	5.1	0.52	1.6	A1	B1
	38		ADXL071-4-0,28	0.28	1,680	2.0	2.5	9.1	0.43	2.5	A1	B1
	54					2.0	2.8	9.1	0.43	2.8	A1	B1
	75		ADXL071-2-0,50	0.50	3,360	2.3	3.2	15	0.56	3.2	A1	B1
	108					2.3	4.0	15	0.56	4.0	A1	B1
	150		ADXL071-2-0,70	0.70	3,360	2.5	4.8	15	0.67	4.8	A1	B1
SAEx 14.2	4.8	180	VDXL090-4-0,08	0.08	1,680	0.5	0.8	3.3	0.60	0.8	A1	B1
	6.7					0.5	0.9	3.3	0.60	0.9	A1	B1
	9.6		VDXL090-4-0,18	0.18	1,680	1.1	1.8	5.3	0.60	1.8	A1	B1
	13					1.1	1.9	5.3	0.60	1.9	A1	B1
	19		VDXL090-2-0,30	0.30	3,360	1.1	2.5	9.1	0.68	2.5	A1	B1
	26					1.1	2.9	9.1	0.68	2.9	A1	B1
	38		ADXL090-4-0,50	0.50	1,680	2.5	3.8	15	0.56	3.8	A1	B1
	54					2.5	4.4	15	0.56	4.4	A1	B1
	75		ADXL090-2-1,00	1.00	3,360	3.9	6.9	35	0.65	6.9	A2	B2
	108					3.9	7.6	35	0.65	7.6	A2	B2
	150		ADXL090-2-1,30	1.30	3,360	4.4	10	35	0.73	10	A2	B2
SAEx 14.6	4.8	360	VDXL090-4-0,14	0.14	1,680	0.9	1.4	4.9	0.55	1.4	A1	B1
	6.7					0.9	1.5	4.9	0.55	1.5	A1	B1
	9.6		VDXL090-4-0,30	0.30	1,680	2.0	3.2	11	0.52	3.2	A1	B1
	13					2.0	3.5	11	0.52	3.5	A1	B1
	19		VDXL090-2-0,60	0.60	3,360	2.9	4.5	19	0.61	4.5	A1	B2
	26					2.9	4.8	19	0.61	4.8	A1	B2
	38		ADXL090-4-1,00	1.00	1,680	4.5	7.6	38	0.60	7.6	A2	B2
	54					4.5	8.2	38	0.60	8.2	A2	B2
	75		ADXL090-2-2,00	2.00	3,360	7.2	12	69	0.69	12	A2	–
	108					7.2	14	69	0.69	14	A2	–
	150		ADXL090-2-2,30	2.30	3,360	7.6	18	69	0.72	18	A2	–
SAEx 16.2	4.8	710	VDXL112-4-0,30	0.30	1,680	1.5	2.9	10	0.60	2.9	A1	B1
	6.7					1.5	3.2	10	0.60	3.2	A1	B1
	9.6		VDXL112-4-0,60	0.60	1,680	2.9	5.1	21	0.53	5.1	A1	B2
	13					2.9	5.7	21	0.53	5.7	A1	B2
	19		VDXL112-2-1,00	1.00	3,360	4.0	7.7	42	0.68	7.7	A2	B2
	26					4.0	8.6	42	0.68	8.6	A2	B2
	38		ADXL112-4-2,00	2.00	1,680	7.6	13	51	0.65	13	A2	B3
	54					7.6	15	51	0.65	14	A2	B3
	75		ADXL112-2-3,50	3.50	3,360	11	23	114	0.78	23	A2	–
	108					11	27	114	0.78	25	A2	–
	150		ADXL112-2-4,00	4.00	3,360	11	29	114	0.81	25	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contactors	Thyristor
SAEx 07.2	4	20	VDXL063-4-0,01	0.01	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.40	0.4	A1	B1
	8		VDXL063-4-0,03	0.03	1,400	0.4	0.4	0.9	0.50	0.4	A1	B1
	11					0.4	0.4	0.9	0.50	0.4	A1	B1
	16		VDXL063-2-0,04	0.04	2,800	0.5	0.6	1.7	0.43	0.6	A1	B1
	22					0.5	0.6	1.7	0.43	0.6	A1	B1
	32		ADXL063-4-0,07	0.07	1,400	0.8	0.9	2.0	0.40	0.9	A1	B1
	45					0.8	0.9	2.0	0.40	0.9	A1	B1
	63		ADXL063-2-0,14	0.14	2,800	0.7	0.9	3.6	0.55	0.9	A1	B1
	90					0.7	1.0	3.6	0.55	1.0	A1	B1
SAEx 07.6	4	40	VDXL063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.50	0.4	A1	B1
	8		VDXL063-4-0,04	0.04	1,400	0.5	0.5	1.4	0.45	0.5	A1	B1
	11					0.5	0.5	1.4	0.45	0.5	A1	B1
	16		VDXL063-2-0,08	0.08	2,800	0.5	0.8	2.5	0.52	0.8	A1	B1
	22					0.5	0.8	2.5	0.52	0.8	A1	B1
	32		ADXL063-4-0,14	0.14	1,400	1.2	1.5	3.5	0.40	1.5	A1	B1
	45					1.2	1.5	3.5	0.40	1.5	A1	B1
	63		ADXL063-2-0,28	0.28	2,800	1.1	1.6	5.7	0.53	1.6	A1	B1
	90					1.1	1.7	5.7	0.53	1.7	A1	B1
SAEx 10.2	4	90	VDXL071-4-0,04	0.04	1,400	0.4	0.5	1.5	0.40	0.5	A1	B1
	5.6					0.4	0.5	1.5	0.40	0.5	A1	B1
	8		VDXL071-4-0,08	0.08	1,400	0.8	0.9	2.6	0.40	0.9	A1	B1
	11					0.8	1.0	2.6	0.40	1.0	A1	B1
	16		VDXL071-2-0,17	0.17	2,800	1.0	1.1	4.0	0.52	1.1	A1	B1
	22					1.0	1.3	4.0	0.52	1.3	A1	B1
	32		ADXL071-4-0,28	0.28	1,400	1.6	2.0	7.2	0.43	2.0	A1	B1
	45					1.6	2.2	7.2	0.43	2.2	A1	B1
	63		ADXL071-2-0,50	0.50	2,800	1.8	2.5	12	0.56	2.5	A1	B1
	90					1.8	3.2	12	0.56	3.2	A1	B1
SAEx 14.2	4	180	VDXL090-4-0,08	0.08	1,400	0.4	0.6	2.6	0.60	0.6	A1	B1
	5.6					0.4	0.7	2.6	0.60	0.7	A1	B1
	8		VDXL090-4-0,18	0.18	1,400	0.9	1.4	4.2	0.60	1.4	A1	B1
	11					0.9	1.5	4.2	0.60	1.5	A1	B1
	16		VDXL090-2-0,30	0.30	2,800	0.9	2.0	7.2	0.68	2.0	A1	B1
	22					0.9	2.3	7.2	0.68	2.3	A1	B1
	32		ADXL090-4-0,50	0.50	1,400	2.0	3.0	12	0.56	3.0	A1	B1
	45					2.0	3.5	12	0.56	3.5	A1	B1
	63		ADXL090-2-1,00	1.00	2,800	3.1	5.5	28	0.65	5.5	A2	B2
	90					3.1	6.0	28	0.65	6.0	A2	B2
SAEx 14.6	4	360	VDXL090-4-0,14	0.14	1,400	0.7	1.1	3.9	0.55	1.1	A1	B1
	5.6					0.7	1.2	3.9	0.55	1.2	A1	B1
	8		VDXL090-4-0,30	0.30	1,400	1.6	2.5	8.5	0.52	2.5	A1	B1
	11					1.6	2.8	8.5	0.52	2.8	A1	B1
	16		VDXL090-2-0,60	0.60	2,800	2.3	3.6	15	0.61	3.6	A1	B1
	22					2.3	3.8	15	0.61	3.8	A1	B1
	32		ADXL090-4-1,00	1.00	1,400	3.6	6.0	30	0.60	6.0	A2	B2
	45					3.6	6.5	30	0.60	6.5	A2	B2
	63		ADXL090-2-2,00	2.00	2,800	5.7	9.5	55	0.69	9.5	A2	B3
	90					5.7	11	55	0.69	11	A2	B3
SAEx 16.2	4	710	VDXL112-4-0,30	0.30	1,400	1.2	2.3	8.0	0.60	2.3	A1	B1
	5.6					1.2	2.5	8.0	0.60	2.5	A1	B1
	8		VDXL112-4-0,60	0.60	1,400	2.3	4.0	17	0.53	4.0	A1	B1
	11					2.3	4.5	17	0.53	4.5	A1	B1
	16		VDXL112-2-1,00	1.00	2,800	3.2	6.1	33	0.68	6.1	A2	B2
	22					3.2	6.8	33	0.68	6.8	A2	B2
	32		ADXL112-4-2,00	2.00	1,400	6.0	10	40	0.65	10	A2	B2
	45					6.0	12	40	0.65	11	A2	B2
	63		ADXL112-2-3,50	3.50	2,800	8.5	18	90	0.78	18	A2	–
	90					8.5	21	90	0.78	20	A2	–
SAEx 16.2	125	570	ADXL112-2-4,00	4.00	2,800	9.0	23	90	0.81	20	A2	–
	180					9.0	31	90	0.81	20	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	20	VDXL063-4-0.01	0.01	1,680	0.4	0.5	1.2	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.2	0.40	0.5	A1	B1
	9.6		VDXL063-4-0.03	0.03	1,680	0.5	0.5	1.1	0.50	0.5	A1	B1
	13					0.5	0.5	1.1	0.50	0.5	A1	B1
	19		VDXL063-2-0.04	0.04	3,360	0.6	0.7	2.0	0.43	0.7	A1	B1
	26					0.6	0.7	2.0	0.43	0.7	A1	B1
	38		ADXL063-4-0.07	0.07	1,680	1.0	1.1	2.4	0.40	1.1	A1	B1
	54					1.0	1.1	2.4	0.40	1.1	A1	B1
	75		ADXL063-2-0.14	0.14	3,360	0.8	1.1	4.3	0.55	1.1	A1	B1
	108					0.8	1.2	4.3	0.55	1.2	A1	B1
	150		ADXL063-2-0.21	0.21	3,360	0.8	1.4	4.3	0.70	1.4	A1	B1
	216					0.8	1.7	4.3	0.70	1.7	A1	B1
SAEx 07.6	4.8	40	VDXL063-4-0.02	0.02	1,680	0.5	0.5	1.2	0.50	0.5	A1	B1
	6.7					0.5	0.5	1.2	0.50	0.5	A1	B1
	9.6		VDXL063-4-0.04	0.04	1,680	0.6	0.6	1.7	0.45	0.6	A1	B1
	13					0.6	0.6	1.7	0.45	0.6	A1	B1
	19		VDXL063-2-0.08	0.08	3,360	0.6	1.0	3.0	0.52	1.0	A1	B1
	26					0.6	1.0	3.0	0.52	1.0	A1	B1
	38		ADXL063-4-0.14	0.14	1,680	1.4	1.8	4.2	0.40	1.8	A1	B1
	54					1.4	1.8	4.2	0.40	1.8	A1	B1
	75		ADXL063-2-0.28	0.28	3,360	1.3	1.9	6.8	0.53	1.9	A1	B1
	108					1.3	2.0	6.8	0.53	2.0	A1	B1
	150		ADXL063-2-0.35	0.35	3,360	1.4	2.4	6.8	0.60	2.4	A1	B1
	216					1.4	2.4	6.8	0.60	2.4	A1	B1
SAEx 10.2	4.8	90	VDXL071-4-0.04	0.04	1,680	0.4	0.6	1.8	0.40	0.6	A1	B1
	6.7					0.4	0.6	1.8	0.40	0.6	A1	B1
	9.6		VDXL071-4-0.08	0.08	1,680	1.0	1.1	3.1	0.40	1.1	A1	B1
	13					1.0	1.2	3.1	0.40	1.2	A1	B1
	19		VDXL071-2-0.17	0.17	3,360	1.2	1.3	4.8	0.52	1.3	A1	B1
	26					1.2	1.6	4.8	0.52	1.6	A1	B1
	38		ADXL071-4-0.28	0.28	1,680	1.9	2.4	8.6	0.43	2.4	A1	B1
	54					1.9	2.6	8.6	0.43	2.6	A1	B1
	75		ADXL071-2-0.50	0.50	3,360	2.2	3.0	14	0.56	3.0	A1	B1
	108					2.2	3.8	14	0.56	3.8	A1	B1
	150		ADXL071-2-0.70	0.70	3,360	2.4	4.6	14	0.67	4.6	A1	B1
	216					2.4	4.8	14	0.67	4.8	A1	B1
SAEx 14.2	4.8	180	VDXL090-4-0.08	0.08	1,680	0.5	0.7	3.1	0.60	0.7	A1	B1
	6.7					0.5	0.8	3.1	0.60	0.8	A1	B1
	9.6		VDXL090-4-0.18	0.18	1,680	1.1	1.7	5.0	0.60	1.7	A1	B1
	13					1.1	1.8	5.0	0.60	1.8	A1	B1
	19		VDXL090-2-0.30	0.30	3,360	1.1	2.4	8.6	0.68	2.4	A1	B1
	26					1.1	2.8	8.6	0.68	2.8	A1	B1
	38		ADXL090-4-0.50	0.50	1,680	2.4	3.6	14	0.56	3.6	A1	B1
	54					2.4	4.2	14	0.56	4.2	A1	B1
	75		ADXL090-2-1.00	1.00	3,360	3.7	6.6	34	0.65	6.6	A2	B2
	108					3.7	7.2	34	0.65	7.2	A2	B2
	150		ADXL090-2-1.30	1.30	3,360	4.2	9.8	34	0.73	9.7	A2	B2
	216					4.2	9.8	34	0.73	9.7	A2	B2
SAEx 14.6	4.8	360	VDXL090-4-0.14	0.14	1,680	0.8	1.3	4.7	0.55	1.3	A1	B1
	6.7					0.8	1.4	4.7	0.55	1.4	A1	B1
	9.6		VDXL090-4-0.30	0.30	1,680	1.9	3.0	10	0.52	3.0	A1	B1
	13					1.9	3.4	10	0.52	3.4	A1	B1
	19		VDXL090-2-0.60	0.60	3,360	2.8	4.3	18	0.61	4.3	A1	B1
	26					2.8	4.6	18	0.61	4.6	A1	B1
	38		ADXL090-4-1.00	1.00	1,680	4.3	7.2	36	0.60	7.2	A2	B2
	54					4.3	7.8	36	0.60	7.8	A2	B2
	75		ADXL090-2-2.00	2.00	3,360	6.8	11	66	0.69	11	A2	–
	108					6.8	13	66	0.69	13	A2	–
	150		ADXL090-2-2.30	2.30	3,360	7.2	17	66	0.72	17	A2	–
	216					7.2	18	66	0.72	18	A2	–
SAEx 16.2	4.8	710	VDXL112-4-0.30	0.30	1,680	1.4	2.8	9.6	0.60	2.8	A1	B1
	6.7					1.4	3.0	9.6	0.60	3.0	A1	B1
	9.6		VDXL112-4-0.60	0.60	1,680	2.8	4.8	20	0.53	4.8	A1	B2
	13					2.8	5.4	20	0.53	5.4	A1	B2
	19		VDXL112-2-1.00	1.00	3,360	3.8	7.3	40	0.68	7.3	A2	B2
	26					3.8	8.2	40	0.68	8.2	A2	B2
	38		ADXL112-4-2.00	2.00	1,680	7.2	12	48	0.65	12	A2	B3
	54					7.2	14	48	0.65	14	A2	B3
	75		ADXL112-2-3.50	3.50	3,360	10	22	108	0.78	22	A2	–
	108					10	25	108	0.78	24	A2	–
	150		ADXL112-2-4.00	4.00	3,360	11	28	108	0.81	24	A2	–
	216					11	37	108	0.81	24	A2	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4	20	VDXL063-4-0,01	0.01	1,400	0.3	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.3	0.4	1.0	0.40	0.4	A1	B1
	8		VDXL063-4-0,03	0.03	1,400	0.4	0.4	0.9	0.50	0.4	A1	B1
	11					0.4	0.4	0.9	0.50	0.4	A1	B1
	16		VDXL063-2-0,04	0.04	2,800	0.5	0.6	1.6	0.43	0.6	A1	B1
	22					0.5	0.6	1.6	0.43	0.6	A1	B1
	32		ADXL063-4-0,07	0.07	1,400	0.8	0.9	1.9	0.40	0.9	A1	B1
	45					0.8	0.9	1.9	0.40	0.9	A1	B1
	63		ADXL063-2-0,14	0.14	2,800	0.7	0.9	3.5	0.55	0.9	A1	B1
	90					0.7	1.0	3.5	0.55	1.0	A1	B1
SAEx 07.6	4	40	VDXL063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.50	0.4	A1	B1
	8		VDXL063-4-0,04	0.04	1,400	0.5	0.5	1.3	0.45	0.5	A1	B1
	11					0.5	0.5	1.3	0.45	0.5	A1	B1
	16		VDXL063-2-0,08	0.08	2,800	0.5	0.8	2.4	0.52	0.8	A1	B1
	22					0.5	0.8	2.4	0.52	0.8	A1	B1
	32		ADXL063-4-0,14	0.14	1,400	1.2	1.4	3.4	0.40	1.4	A1	B1
	45					1.2	1.4	3.4	0.40	1.4	A1	B1
	63		ADXL063-2-0,28	0.28	2,800	1.1	1.5	5.5	0.53	1.5	A1	B1
	90					1.1	1.6	5.5	0.53	1.6	A1	B1
SAEx 10.2	4	90	VDXL071-4-0,04	0.04	1,400	0.3	0.5	1.4	0.40	0.5	A1	B1
	5.6					0.3	0.5	1.4	0.40	0.5	A1	B1
	8		VDXL071-4-0,08	0.08	1,400	0.8	0.9	2.5	0.40	0.9	A1	B1
	11					0.8	1.0	2.5	0.40	1.0	A1	B1
	16		VDXL071-2-0,17	0.17	2,800	1.0	1.1	3.9	0.52	1.1	A1	B1
	22					1.0	1.3	3.9	0.52	1.3	A1	B1
	32		ADXL071-4-0,28	0.28	1,400	1.5	1.9	6.9	0.43	1.9	A1	B1
	45					1.5	2.1	6.9	0.43	2.1	A1	B1
	63		ADXL071-2-0,50	0.50	2,800	1.7	2.4	12	0.56	2.4	A1	B1
	90					1.7	3.1	12	0.56	3.1	A1	B1
SAEx 14.2	4	180	VDXL090-4-0,08	0.08	1,400	0.4	0.6	2.5	0.60	0.6	A1	B1
	5.6					0.4	0.7	2.5	0.60	0.7	A1	B1
	8		VDXL090-4-0,18	0.18	1,400	0.9	1.3	4.0	0.60	1.3	A1	B1
	11					0.9	1.4	4.0	0.60	1.4	A1	B1
	16		VDXL090-2-0,30	0.30	2,800	0.9	1.9	6.9	0.68	1.9	A1	B1
	22					0.9	2.2	6.9	0.68	2.2	A1	B1
	32		ADXL090-4-0,50	0.50	1,400	1.9	2.9	12	0.56	2.9	A1	B1
	45					1.9	3.4	12	0.56	3.4	A1	B1
	63		ADXL090-2-1,00	1.00	2,800	3.0	5.3	27	0.65	5.3	A2	B2
	90					3.0	5.8	27	0.65	5.8	A2	B2
SAEx 14.6	4	360	VDXL090-2-1,30	1.30	2,800	3.4	7.9	27	0.73	7.7	A2	B2
	5.6					3.4	7.9	27	0.73	7.7	A2	B2
	8		VDXL090-4-0,14	0.14	1,400	0.7	1.1	3.8	0.55	1.1	A1	B1
	11					0.7	1.2	3.8	0.55	1.2	A1	B1
	16		VDXL090-4-0,30	0.30	1,400	1.5	2.4	8.2	0.52	2.4	A1	B1
	22					1.5	2.7	8.2	0.52	2.7	A1	B1
	32		VDXL090-2-0,60	0.60	2,800	2.2	3.5	14	0.61	3.5	A1	B1
	45					2.2	3.7	14	0.61	3.7	A1	B1
	63		ADXL090-4-1,00	1.00	1,400	3.5	5.8	29	0.60	5.8	A2	B2
	90					3.5	6.3	29	0.60	6.3	A2	B2
SAEx 16.2	4	710	ADXL090-2-2,00	2.00	2,800	5.5	9.2	53	0.69	9.2	A2	B3
	5.6					5.5	11	53	0.69	11	A2	B3
	8		ADXL090-2-2,30	2.30	2,800	5.8	13	53	0.72	13	A2	B3
	11					5.8	14	53	0.72	14	A2	B3
	16		VDXL112-4-0,30	0.30	1,400	1.2	2.2	7.7	0.60	2.2	A1	B1
	22					1.2	2.4	7.7	0.60	2.4	A1	B1
	32		VDXL112-4-0,60	0.60	1,400	2.2	3.9	16	0.53	3.9	A1	B1
	45					2.2	4.3	16	0.53	4.3	A1	B1
	63		VDXL112-2-1,00	1.00	2,800	3.1	5.9	32	0.68	5.9	A2	B2
	90					3.1	6.6	32	0.68	6.6	A2	B2
SAEx 16.2	4	570	ADXL112-4-2,00	2.00	1,400	5.8	9.6	39	0.65	9.6	A2	B2
	5.6					5.8	12	39	0.65	11	A2	B2
	8		ADXL112-2-3,50	3.50	2,800	8.2	17	87	0.78	17	A2	–
	11					8.2	20	87	0.78	19	A2	–
	16		ADXL112-2-4,00	4.00	2,800	8.7	22	87	0.81	19	A2	–
	22					8.7	30	87	0.81	19	A2	–
	32											
	45											
	63											
	90											
	125											

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SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 30 min, 440 V/60 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	20	VDXL063-4-0,01	0.01	1,680	0.4	0.4	1.1	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.1	0.40	0.4	A1	B1
	9.6		VDXL063-4-0,03	0.03	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	13					0.4	0.4	1.0	0.50	0.4	A1	B1
	19		VDXL063-2-0,04	0.04	3,360	0.5	0.7	1.9	0.43	0.7	A1	B1
	26					0.5	0.7	1.9	0.43	0.7	A1	B1
	38		ADXL063-4-0,07	0.07	1,680	0.9	1.0	2.2	0.40	1.0	A1	B1
	54					0.9	1.0	2.2	0.40	1.0	A1	B1
	75		ADXL063-2-0,14	0.14	3,360	0.8	1.0	3.9	0.55	1.0	A1	B1
	108					0.8	1.1	3.9	0.55	1.1	A1	B1
	150		ADXL063-2-0,21	0.21	3,360	0.8	1.3	3.9	0.70	1.3	A1	B1
	216					0.8	1.5	3.9	0.70	1.5	A1	B1
SAEx 07.6	4.8	40	VDXL063-4-0,02	0.02	1,680	0.4	0.4	1.1	0.50	0.4	A1	B1
	6.7					0.4	0.4	1.1	0.50	0.4	A1	B1
	9.6		VDXL063-4-0,04	0.04	1,680	0.5	0.5	1.5	0.45	0.5	A1	B1
	13					0.5	0.5	1.5	0.45	0.5	A1	B1
	19		VDXL063-2-0,08	0.08	3,360	0.5	0.9	2.7	0.52	0.9	A1	B1
	26					0.5	0.9	2.7	0.52	0.9	A1	B1
	38		ADXL063-4-0,14	0.14	1,680	1.3	1.6	3.8	0.40	1.6	A1	B1
	54					1.3	1.6	3.8	0.40	1.6	A1	B1
	75		ADXL063-2-0,28	0.28	3,360	1.2	1.7	6.2	0.53	1.7	A1	B1
	108					1.2	1.9	6.2	0.53	1.9	A1	B1
	150		ADXL063-2-0,35	0.35	3,360	1.3	2.2	6.2	0.60	2.2	A1	B1
	216					1.3	2.2	6.2	0.60	2.2	A1	B1
SAEx 10.2	4.8	90	VDXL071-4-0,04	0.04	1,680	0.4	0.5	1.6	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.6	0.40	0.5	A1	B1
	9.6		VDXL071-4-0,08	0.08	1,680	0.9	1.0	2.8	0.40	1.0	A1	B1
	13					0.9	1.1	2.8	0.40	1.1	A1	B1
	19		VDXL071-2-0,17	0.17	3,360	1.1	1.2	4.4	0.52	1.2	A1	B1
	26					1.1	1.4	4.4	0.52	1.4	A1	B1
	38		ADXL071-4-0,28	0.28	1,680	1.7	2.2	7.9	0.43	2.2	A1	B1
	54					1.7	2.4	7.9	0.43	2.4	A1	B1
	75		ADXL071-2-0,50	0.50	3,360	2.0	2.7	13	0.56	2.7	A1	B1
	108					2.0	3.5	13	0.56	3.5	A1	B1
	150		ADXL071-2-0,70	0.70	3,360	2.2	4.1	13	0.67	4.1	A1	B1
	216					2.2	4.4	13	0.67	4.4	A1	B1
SAEx 14.2	4.8	180	VDXL090-4-0,08	0.08	1,680	0.4	0.7	2.8	0.60	0.7	A1	B1
	6.7					0.4	0.8	2.8	0.60	0.8	A1	B1
	9.6		VDXL090-4-0,18	0.18	1,680	1.0	1.5	4.6	0.60	1.5	A1	B1
	13					1.0	1.6	4.6	0.60	1.6	A1	B1
	19		VDXL090-2-0,30	0.30	3,360	1.0	2.2	7.9	0.68	2.2	A1	B1
	26					1.0	2.5	7.9	0.68	2.5	A1	B1
	38		ADXL090-4-0,50	0.50	1,680	2.2	3.3	13	0.56	3.3	A1	B1
	54					2.2	3.8	13	0.56	3.8	A1	B1
	75		ADXL090-2-1,00	1.00	3,360	3.4	6.0	31	0.65	6.0	A2	B2
	108					3.4	6.5	31	0.65	6.5	A2	B2
	150		ADXL090-2-1,30	1.30	3,360	3.8	8.9	31	0.73	8.8	A2	B2
	216					3.8	8.9	31	0.73	8.8	A2	B2
SAEx 14.6	4.8	360	VDXL090-4-0,14	0.14	1,680	0.8	1.2	4.3	0.55	1.2	A1	B1
	6.7					0.8	1.3	4.3	0.55	1.3	A1	B1
	9.6		VDXL090-4-0,30	0.30	1,680	1.7	2.7	9.3	0.52	2.7	A1	B1
	13					1.7	3.1	9.3	0.52	3.1	A1	B1
	19		VDXL090-2-0,60	0.60	3,360	2.5	3.9	16	0.61	3.9	A1	B1
	26					2.5	4.1	16	0.61	4.1	A1	B1
	38		ADXL090-4-1,00	1.00	1,680	3.9	6.5	33	0.60	6.5	A2	B2
	54					3.9	7.1	33	0.60	7.1	A2	B2
	75		ADXL090-2-2,00	2.00	3,360	6.2	10	60	0.69	10	A2	B3
	108					6.2	12	60	0.69	12	A2	B3
	150		ADXL090-2-2,30	2.30	3,360	6.5	15	60	0.72	15	A2	B3
	216					6.5	16	60	0.72	16	A2	B3
SAEx 16.2	4.8	710	VDXL112-4-0,30	0.30	1,680	1.3	2.5	8.7	0.60	2.5	A1	B1
	6.7					1.3	2.7	8.7	0.60	2.7	A1	B1
	9.6		VDXL112-4-0,60	0.60	1,680	2.5	4.4	19	0.53	4.4	A1	B2
	13					2.5	4.9	19	0.53	4.9	A1	B2
	19		VDXL112-2-1,00	1.00	3,360	3.5	6.7	36	0.68	6.7	A2	B2
	26					3.5	7.4	36	0.68	7.4	A2	B2
	38		ADXL112-4-2,00	2.00	1,680	6.5	11	44	0.65	11	A2	B2
	54					6.5	13	44	0.65	13	A2	B2
	75		ADXL112-2-3,50	3.50	3,360	9.3	20	98	0.78	20	A2	–
	108					9.3	23	98	0.78	21	A2	–
	150		ADXL112-2-4,00	4.00	3,360	9.8	25	98	0.81	21	A2	–
	216					9.8	34	98	0.81	21	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	20	VDXL063-4-0,01	0.01	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDXL063-4-0,03	0.03	1,680	0.4	0.4	0.9	0.50	0.4	A1	B1
	13					0.4	0.4	0.9	0.50	0.4	A1	B1
	19		VDXL063-2-0,04	0.04	3,360	0.5	0.6	1.8	0.43	0.6	A1	B1
	26					0.5	0.6	1.8	0.43	0.6	A1	B1
	38		ADXL063-4-0,07	0.07	1,680	0.8	0.9	2.1	0.40	0.9	A1	B1
	54					0.8	0.9	2.1	0.40	0.9	A1	B1
	75		ADXL063-2-0,14	0.14	3,360	0.7	0.9	3.8	0.55	0.9	A1	B1
	108					0.7	1.0	3.8	0.55	1.0	A1	B1
	150		ADXL063-2-0,21	0.21	3,360	0.7	1.3	3.8	0.70	1.3	A1	B1
SAEx 07.6	4.8	40	VDXL063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.50	0.4	A1	B1
	9.6		VDXL063-4-0,04	0.04	1,680	0.5	0.5	1.5	0.45	0.5	A1	B1
	13					0.5	0.5	1.5	0.45	0.5	A1	B1
	19		VDXL063-2-0,08	0.08	3,360	0.5	0.8	2.6	0.52	0.8	A1	B1
	26					0.5	0.8	2.6	0.52	0.8	A1	B1
	38		ADXL063-4-0,14	0.14	1,680	1.3	1.6	3.7	0.40	1.6	A1	B1
	54					1.3	1.6	3.7	0.40	1.6	A1	B1
	75		ADXL063-2-0,28	0.28	3,360	1.1	1.7	5.9	0.53	1.7	A1	B1
	108					1.1	1.8	5.9	0.53	1.8	A1	B1
	150		ADXL063-2-0,35	0.35	3,360	1.3	2.1	5.9	0.60	2.1	A1	B1
SAEx 10.2	4.8	90	VDXL071-4-0,04	0.04	1,680	0.4	0.5	1.6	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.6	0.40	0.5	A1	B1
	9.6		VDXL071-4-0,08	0.08	1,680	0.8	0.9	2.7	0.40	0.9	A1	B1
	13					0.8	1.0	2.7	0.40	1.0	A1	B1
	19		VDXL071-2-0,17	0.17	3,360	1.0	1.1	4.2	0.52	1.1	A1	B1
	26					1.0	1.4	4.2	0.52	1.4	A1	B1
	38		ADXL071-4-0,28	0.28	1,680	1.7	2.1	7.5	0.43	2.1	A1	B1
	54					1.7	2.3	7.5	0.43	2.3	A1	B1
	75		ADXL071-2-0,50	0.50	3,360	1.9	2.6	13	0.56	2.6	A1	B1
	108					1.9	3.3	13	0.56	3.3	A1	B1
	150		ADXL071-2-0,70	0.70	3,360	2.1	4.0	13	0.67	4.0	A1	B1
SAEx 14.2	4.8	180	VDXL090-4-0,08	0.08	1,680	0.4	0.6	2.7	0.60	0.6	A1	B1
	6.7					0.4	0.7	2.7	0.60	0.7	A1	B1
	9.6		VDXL090-4-0,18	0.18	1,680	0.9	1.5	4.4	0.60	1.5	A1	B1
	13					0.9	1.6	4.4	0.60	1.6	A1	B1
	19		VDXL090-2-0,30	0.30	3,360	0.9	2.1	7.5	0.68	2.1	A1	B1
	26					0.9	2.4	7.5	0.68	2.4	A1	B1
	38		ADXL090-4-0,50	0.50	1,680	2.1	3.1	13	0.56	3.1	A1	B1
	54					2.1	3.7	13	0.56	3.7	A1	B1
	75		ADXL090-2-1,00	1.00	3,360	3.2	5.7	29	0.65	5.7	A2	B2
	108					3.2	6.3	29	0.65	6.3	A2	B2
	150		ADXL090-2-1,30	1.30	3,360	3.7	8.6	29	0.73	8.3	A2	B2
SAEx 14.6	4.8	360	VDXL090-4-0,14	0.14	1,680	0.7	1.1	4.1	0.55	1.1	A1	B1
	6.7					0.7	1.3	4.1	0.55	1.3	A1	B1
	9.6		VDXL090-4-0,30	0.30	1,680	1.7	2.6	8.9	0.52	2.6	A1	B1
	13					1.7	2.9	8.9	0.52	2.9	A1	B1
	19		VDXL090-2-0,60	0.60	3,360	2.4	3.8	16	0.61	3.8	A1	B1
	26					2.4	4.0	16	0.61	4.0	A1	B1
	38		ADXL090-4-1,00	1.00	1,680	3.8	6.3	31	0.60	6.3	A2	B2
	54					3.8	6.8	31	0.60	6.8	A2	B2
	75		ADXL090-2-2,00	2.00	3,360	5.9	9.9	57	0.69	9.9	A2	B3
	108					5.9	12	57	0.69	12	A2	B3
	150		ADXL090-2-2,30	2.30	3,360	6.3	15	57	0.72	15	A2	B3
SAEx 16.2	4.8	710	VDXL112-4-0,30	0.30	1,680	1.3	2.4	8.3	0.60	2.4	A1	B1
	6.7					1.3	2.6	8.3	0.60	2.6	A1	B1
	9.6		VDXL112-4-0,60	0.60	1,680	2.4	4.2	18	0.53	4.2	A1	B1
	13					2.4	4.7	18	0.53	4.7	A1	B1
	19		VDXL112-2-1,00	1.00	3,360	3.3	6.4	34	0.68	6.4	A2	B2
	26					3.3	7.1	34	0.68	7.1	A2	B2
	38		ADXL112-4-2,00	2.00	1,680	6.3	10	42	0.65	10	A2	B2
	54					6.3	13	42	0.65	12	A2	B2
	75		ADXL112-2-3,50	3.50	3,360	8.9	19	94	0.78	19	A2	–
	108					8.9	22	94	0.78	21	A2	–
	150		ADXL112-2-4,00	4.00	3,360	9.4	24	94	0.81	21	A2	–
SAEx 16.2	4.8	570	VDXL112-2-4,00	4.00	3,360	9.4	32	94	0.81	21	A2	–
	6.7					9.4	32	94	0.81	21	A2	–
	9.6											
	13											
	19											
	26											
	38											
	54											
	75											
	108											
	150											
	216											

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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SAEx 07.2 – SAEx 16.2

Electrical data multi-turn actuators for open-close duty with 3-phase AC motors

Short-time duty S2 - 30 min, 480 V/60 Hz

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4.8	20	VDXL063-4-0,01	0.01	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDXL063-4-0,03	0.03	1,680	0.4	0.4	0.9	0.50	0.4	A1	B1
	13					0.4	0.4	0.9	0.50	0.4	A1	B1
	19		VDXL063-2-0,04	0.04	3,360	0.5	0.6	1.7	0.43	0.6	A1	B1
	26					0.5	0.6	1.7	0.43	0.6	A1	B1
	38		ADXL063-4-0,07	0.07	1,680	0.8	0.9	2.0	0.40	0.9	A1	B1
	54					0.8	0.9	2.0	0.40	0.9	A1	B1
	75		ADXL063-2-0,14	0.14	3,360	0.7	0.9	3.6	0.55	0.9	A1	B1
	108					0.7	1.0	3.6	0.55	1.0	A1	B1
	150		ADXL063-2-0,21	0.21	3,360	0.7	1.2	3.6	0.70	1.2	A1	B1
SAEx 07.6	4.8	40	VDXL063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.50	0.4	A1	B1
	9.6		VDXL063-4-0,04	0.04	1,680	0.5	0.5	1.4	0.45	0.5	A1	B1
	13					0.5	0.5	1.4	0.45	0.5	A1	B1
	19		VDXL063-2-0,08	0.08	3,360	0.5	0.8	2.5	0.52	0.8	A1	B1
	26					0.5	0.8	2.5	0.52	0.8	A1	B1
	38		ADXL063-4-0,14	0.14	1,680	1.2	1.5	3.5	0.40	1.5	A1	B1
	54					1.2	1.5	3.5	0.40	1.5	A1	B1
	75		ADXL063-2-0,28	0.28	3,360	1.1	1.6	5.7	0.53	1.6	A1	B1
	108					1.1	1.7	5.7	0.53	1.7	A1	B1
	150		ADXL063-2-0,35	0.35	3,360	1.2	2.0	5.7	0.60	2.0	A1	B1
SAEx 10.2	4.8	90	VDXL071-4-0,04	0.04	1,680	0.4	0.5	1.5	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.5	0.40	0.5	A1	B1
	9.6		VDXL071-4-0,08	0.08	1,680	0.8	0.9	2.6	0.40	0.9	A1	B1
	13					0.8	1.0	2.6	0.40	1.0	A1	B1
	19		VDXL071-2-0,17	0.17	3,360	1.0	1.1	4.0	0.52	1.1	A1	B1
	26					1.0	1.3	4.0	0.52	1.3	A1	B1
	38		ADXL071-4-0,28	0.28	1,680	1.6	2.0	7.2	0.43	2.0	A1	B1
	54					1.6	2.2	7.2	0.43	2.2	A1	B1
	75		ADXL071-2-0,50	0.50	3,360	1.8	2.5	12	0.56	2.5	A1	B1
	108					1.8	3.2	12	0.56	3.2	A1	B1
	150		ADXL071-2-0,70	0.70	3,360	2.0	3.8	12	0.67	3.8	A1	B1
SAEx 14.2	4.8	180	VDXL090-4-0,08	0.08	1,680	0.4	0.6	2.6	0.60	0.6	A1	B1
	6.7					0.4	0.7	2.6	0.60	0.7	A1	B1
	9.6		VDXL090-4-0,18	0.18	1,680	0.9	1.4	4.2	0.60	1.4	A1	B1
	13					0.9	1.5	4.2	0.60	1.5	A1	B1
	19		VDXL090-2-0,30	0.30	3,360	0.9	2.0	7.2	0.68	2.0	A1	B1
	26					0.9	2.3	7.2	0.68	2.3	A1	B1
	38		ADXL090-4-0,50	0.50	1,680	2.0	3.0	12	0.56	3.0	A1	B1
	54					2.0	3.5	12	0.56	3.5	A1	B1
	75		ADXL090-2-1,00	1.00	3,360	3.1	5.5	28	0.65	5.5	A2	B2
	108					3.1	6.0	28	0.65	6.0	A2	B2
	150		ADXL090-2-1,30	1.30	3,360	3.5	8.2	28	0.73	8.0	A2	B2
SAEx 14.6	4.8	360	VDXL090-4-0,14	0.14	1,680	0.7	1.1	3.9	0.55	1.1	A1	B1
	6.7					0.7	1.2	3.9	0.55	1.2	A1	B1
	9.6		VDXL090-4-0,30	0.30	1,680	1.6	2.5	8.5	0.52	2.5	A1	B1
	13					1.6	2.8	8.5	0.52	2.8	A1	B1
	19		VDXL090-2-0,60	0.60	3,360	2.3	3.6	15	0.61	3.6	A1	B1
	26					2.3	3.8	15	0.61	3.8	A1	B1
	38		ADXL090-4-1,00	1.00	1,680	3.6	6.0	30	0.60	6.0	A2	B2
	54					3.6	6.5	30	0.60	6.5	A2	B2
	75		ADXL090-2-2,00	2.00	3,360	5.7	9.5	55	0.69	9.5	A2	B3
	108					5.7	11	55	0.69	11	A2	B3
	150		ADXL090-2-2,30	2.30	3,360	6.0	14	55	0.72	14	A2	B3
SAEx 16.2	4.8	710	VDXL112-4-0,30	0.30	1,680	1.2	2.3	8.0	0.60	2.3	A1	B1
	6.7					1.2	2.5	8.0	0.60	2.5	A1	B1
	9.6		VDXL112-4-0,60	0.60	1,680	2.3	4.0	17	0.53	4.0	A1	B1
	13					2.3	4.5	17	0.53	4.5	A1	B1
	19		VDXL112-2-1,00	1.00	3,360	3.2	6.1	33	0.68	6.1	A2	B2
	26					3.2	6.8	33	0.68	6.8	A2	B2
	38		ADXL112-4-2,00	2.00	1,680	6.0	10	40	0.65	10	A2	B2
	54					6.0	12	40	0.65	11	A2	B2
	75		ADXL112-2-3,50	3.50	3,360	8.5	18	90	0.78	18	A2	–
	108					8.5	21	90	0.78	20	A2	–
	150		ADXL112-2-4,00	4.00	3,360	9.0	23	90	0.81	20	A2	–
SAEx 16.2	216					9.0	31	90	0.81	20	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAEx 07.2	4	20	VDXL063-4-0,01	0.01	1,400	0.3	0.3	0.8	0.40	0.3	A1	B1
	5.6					0.3	0.3	0.8	0.40	0.3	A1	B1
	8		VDXL063-4-0,03	0.03	1,400	0.3	0.3	0.7	0.50	0.3	A1	B1
	11					0.3	0.3	0.7	0.50	0.3	A1	B1
	16		VDXL063-2-0,04	0.04	2,800	0.4	0.5	1.4	0.43	0.5	A1	B1
	22					0.4	0.5	1.4	0.43	0.5	A1	B1
	32		ADXL063-4-0,07	0.07	1,400	0.6	0.7	1.6	0.40	0.7	A1	B1
	45					0.6	0.7	1.6	0.40	0.7	A1	B1
	63		ADXL063-2-0,14	0.14	2,800	0.6	0.7	2.9	0.55	0.7	A1	B1
	90					0.6	0.8	2.9	0.55	0.8	A1	B1
SAEx 07.6	4	40	VDXL063-4-0,02	0.02	1,400	0.3	0.3	0.8	0.50	0.3	A1	B1
	5.6					0.3	0.3	0.8	0.50	0.3	A1	B1
	8		VDXL063-4-0,04	0.04	1,400	0.4	0.4	1.1	0.45	0.4	A1	B1
	11					0.4	0.4	1.1	0.45	0.4	A1	B1
	16		VDXL063-2-0,08	0.08	2,800	0.4	0.6	2.0	0.52	0.6	A1	B1
	22					0.4	0.6	2.0	0.52	0.6	A1	B1
	32		ADXL063-4-0,14	0.14	1,400	1.0	1.2	2.8	0.40	1.2	A1	B1
	45					1.0	1.2	2.8	0.40	1.2	A1	B1
	63		ADXL063-2-0,28	0.28	2,800	0.9	1.3	4.6	0.53	1.3	A1	B1
	90					0.9	1.4	4.6	0.53	1.4	A1	B1
SAEx 10.2	4	90	VDXL071-4-0,04	0.04	1,400	0.3	0.4	1.2	0.40	0.4	A1	B1
	5.6					0.3	0.4	1.2	0.40	0.4	A1	B1
	8		VDXL071-4-0,08	0.08	1,400	0.6	0.7	2.1	0.40	0.7	A1	B1
	11					0.6	0.8	2.1	0.40	0.8	A1	B1
	16		VDXL071-2-0,17	0.17	2,800	0.8	0.9	3.2	0.52	0.9	A1	B1
	22					0.8	1.0	3.2	0.52	1.0	A1	B1
	32		ADXL071-4-0,28	0.28	1,400	1.3	1.6	5.8	0.43	1.6	A1	B1
	45					1.3	1.8	5.8	0.43	1.8	A1	B1
	63		ADXL071-2-0,50	0.50	2,800	1.4	2.0	9.6	0.56	2.0	A1	B1
	90					1.4	2.6	9.6	0.56	2.6	A1	B1
SAEx 14.2	4	180	VDXL090-4-0,08	0.08	1,400	0.3	0.5	2.1	0.60	0.5	A1	B1
	5.6					0.3	0.6	2.1	0.60	0.6	A1	B1
	8		VDXL090-4-0,18	0.18	1,400	0.7	1.1	3.4	0.60	1.1	A1	B1
	11					0.7	1.2	3.4	0.60	1.2	A1	B1
	16		VDXL090-2-0,30	0.30	2,800	0.7	1.6	5.8	0.68	1.6	A1	B1
	22					0.7	1.8	5.8	0.68	1.8	A1	B1
	32		ADXL090-4-0,50	0.50	1,400	1.6	2.4	9.6	0.56	2.4	A1	B1
	45					1.6	2.8	9.6	0.56	2.8	A1	B1
	63		ADXL090-2-1,00	1.00	2,800	2.5	4.4	22	0.65	4.4	A2	B2
	90					2.5	4.8	22	0.65	4.8	A2	B2
SAEx 14.6	4	140	VDXL090-2-1,30	1.30	2,800	2.8	6.6	22	0.73	6.6	A2	B2
	5.6					2.8	6.6	22	0.73	6.6	A2	B2
	8		VDXL090-4-0,14	0.14	1,400	0.6	0.9	3.1	0.55	0.9	A1	B1
	11					0.6	1.0	3.1	0.55	1.0	A1	B1
	16		VDXL090-4-0,30	0.30	1,400	1.3	2.0	6.8	0.52	2.0	A1	B1
	22					1.3	2.2	6.8	0.52	2.2	A1	B1
	32		VDXL090-2-0,60	0.60	2,800	1.8	2.9	12	0.61	2.9	A1	B1
	45					1.8	3.0	12	0.61	3.0	A1	B1
	63		ADXL090-4-1,00	1.00	1,400	2.9	4.8	24	0.60	4.8	A2	B2
	90					2.9	5.2	24	0.60	5.2	A2	B2
SAEx 16.2	4	710	ADXL090-2-2,00	2.00	2,800	4.6	7.6	44	0.69	7.6	A2	B2
	5.6					4.6	8.8	44	0.69	8.8	A2	B2
	8		ADXL090-2-2,30	2.30	2,800	4.8	11	44	0.72	11	A2	B2
	11					4.8	12	44	0.72	12	A2	B2
	16		VDXL112-4-0,30	0.30	1,400	1.0	1.8	6.4	0.60	1.8	A1	B1
	22					1.0	2.0	6.4	0.60	2.0	A1	B1
	32		VDXL112-4-0,60	0.60	1,400	1.8	3.2	14	0.53	3.2	A1	B1
	45					1.8	3.6	14	0.53	3.6	A1	B1
	63		VDXL112-2-1,00	1.00	2,800	2.6	4.9	26	0.68	4.9	A2	B2
	90					2.6	5.4	26	0.68	5.4	A2	B2
SAEx 16.2	4	570	ADXL112-4-2,00	2.00	1,400	4.8	8.0	32	0.65	8.0	A2	B2
	5.6					4.8	9.6	32	0.65	8.9	A2	B2
	8		ADXL112-2-3,50	3.50	2,800	6.8	14	72	0.78	14	A2	–
	11					6.8	17	72	0.78	16	A2	–
	16		ADXL112-2-4,00	4.00	2,800	7.2	18	72	0.81	16	A2	–
	22					7.2	25	72	0.81	16	A2	–
	32		ADXL112-2-4,00	4.00	2,800	7.2	25	72	0.81	16	A2	–
	45					7.2	25	72	0.81	16	A2	–
	63		ADXL112-2-4,00	4.00	2,800	7.2	25	72	0.81	16	A2	–
	90					7.2	25	72	0.81	16	A2	–
	125		ADXL112-2-4,00	4.00	2,800	7.2	25	72	0.81	16	A2	–
	180					7.2	25	72	0.81	16	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREX .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	30	VDXR063-4-0,02	0.02	1 680	0.9	0.9	2.2	0.40	0.9	A1	B1
	6.7					0.9	0.9	2.2	0.40	0.9	A1	B1
	9.6		VDXR063-4-0,04	0.04	1,680	0.9	0.9	2.2	0.50	0.9	A1	B1
	13					0.9	1.1	2.2	0.50	1.1	A1	B1
	19		VDXR063-2-0,06	0.06	3,360	1.3	1.3	4.1	0.42	1.3	A1	B1
	26					1.3	1.4	4.1	0.42	1.4	A1	B1
	38		ADXR063-4-0,10	0.10	1,680	2.1	2.1	5.2	0.42	2.1	A1	B1
	54					2.1	2.2	5.2	0.42	2.2	A1	B1
SAREx 07.6	75	60	ADXR063-2-0,20	0.20	3,360	1.7	2.6	9.6	0.60	2.6	A1	B1
	108					1.7	2.8	9.6	0.60	2.8	A1	B1
	4.8		VDXR063-4-0,03	0.03	1,680	0.9	1.1	2.2	0.43	1.1	A1	B1
	6.7					0.9	1.1	2.2	0.43	1.1	A1	B1
	9.6		VDXR063-4-0,06	0.06	1,680	1.3	1.4	3.5	0.38	1.4	A1	B1
	13					1.3	1.5	3.5	0.38	1.5	A1	B1
	19		VDXR063-2-0,12	0.12	3,360	1.5	2.0	6.5	0.52	2.0	A1	B1
	26					1.5	2.2	6.5	0.52	2.2	A1	B1
SAREx 10.2	38	120	ADXR063-4-0,20	0.20	1,680	3.5	4.1	10	0.42	4.1	A1	B1
	54					3.5	4.4	10	0.42	4.4	A1	B1
	75		ADXR063-2-0,40	0.40	3,360	3.9	5.0	20	0.53	5.0	A1	B2
	108					3.9	5.5	20	0.53	5.5	A1	B2
	4.8		VDXR071-4-0,06	0.06	1,680	1.1	1.3	4.4	0.40	1.3	A1	B1
	6.7					1.1	1.3	4.4	0.40	1.3	A1	B1
	9.6		VDXR071-4-0,12	0.12	1,680	2.2	2.4	6.5	0.40	2.4	A1	B1
	13					2.2	2.6	6.5	0.40	2.6	A1	B1
SAREx 14.2	19	250	VDXR071-2-0,25	0.25	3,360	2.8	3.3	9.8	0.52	3.3	A1	B1
	26					2.8	3.9	9.8	0.52	3.9	A1	B1
	38		ADXR071-4-0,40	0.40	1,680	5.5	5.7	19	0.42	5.7	A1	B2
	54					5.5	6.5	19	0.42	6.5	A1	B2
	75		ADXR071-2-0,70	0.70	3,360	6.5	8.7	35	0.54	8.7	A2	B2
	108					6.5	9.8	35	0.54	9.8	A2	B2
	4.8	500	VDXR090-4-0,12	0.12	1,680	1.1	1.7	6.1	0.60	1.7	A1	B1
	6.7					1.1	2.2	6.1	0.60	2.2	A1	B1
SAREx 14.6	9.6		VDXR090-4-0,25	0.25	1,680	2.2	3.5	11	0.60	3.5	A1	B1
	13					2.2	3.7	11	0.60	3.7	A1	B1
	19		VDXR090-2-0,45	0.45	3,360	3.3	6.5	20	0.64	6.5	A1	B2
	26					3.3	7.6	20	0.64	7.6	A1	B2
	38		ADXR090-4-0,75	0.75	1,680	5.7	9.4	35	0.62	9.4	A2	B2
	54					5.7	11	35	0.62	11	A2	B2
	75		ADXR090-2-1,40	1.40	3,360	11	17	83	0.60	17	A2	–
	108					11	20	83	0.60	20	A2	–
SAREx 16.2	4.8	1 000	VDXR090-4-0,20	0.20	1,680	2.0	3.3	11	0.54	3.3	A1	B1
	6.7					2.0	3.7	11	0.54	3.7	A1	B1
	9.6		VDXR090-4-0,40	0.40	1,680	3.9	6.5	20	0.56	6.5	A1	B2
	13					3.9	7.6	20	0.56	7.6	A1	B2
	19		VDXR090-2-0,80	0.80	3,360	7.9	11	39	0.51	11	A2	B2
	26					7.9	12	39	0.51	12	A2	B2
	38		ADXR090-4-1,60	1.60	1,680	12	16	83	0.57	16	A2	–
	54					12	20	83	0.57	20	A2	–
SAREx 16.2	75	1 000	ADXR090-2-3,00	3.00	3,360	20	31	148	0.60	31	A3	–
	108					20	35	148	0.60	35	A3	–
	4.8		VDXR112-4-0,40	0.40	1,680	3.1	5.9	22	0.65	5.9	A1	B2
	6.7					3.1	6.3	22	0.65	6.3	A1	B2
	9.6		VDXR112-4-0,80	0.80	1,680	6.5	11	48	0.57	11	A2	B3
	13					6.5	12	48	0.57	12	A2	B3
	19		VDXR112-2-1,50	1.50	3,360	12	20	87	0.60	20	A2	–
	26					12	23	87	0.60	23	A2	–
SAREx 16.2	38	1 000	ADXR112-4-3,00	3.00	1,680	19	33	131	0.71	33	A3	–
	54					19	37	131	0.71	37	A3	–
	75		ADXR112-2-5,00	5.00	3,360	26	55	249	0.80	54	A4	–
	108					26	65	249	0.80	54	A4	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	30	VDXR063-4-0,02	0.02	1,400	0.7	0.7	1.7	0.40	0.7	A1	B1
	5.6					0.7	0.7	1.7	0.40	0.7	A1	B1
	8		VDXR063-4-0,04	0.04	1,400	0.7	0.7	1.7	0.50	0.7	A1	B1
	11					0.7	0.9	1.7	0.50	0.9	A1	B1
	16		VDXR063-2-0,06	0.06	2,800	1.0	1.0	3.3	0.42	1.0	A1	B1
	22					1.0	1.1	3.3	0.42	1.1	A1	B1
	32		ADXR063-4-0,10	0.10	1,400	1.7	1.7	4.2	0.42	1.7	A1	B1
	45					1.7	1.7	4.2	0.42	1.7	A1	B1
SAREx 07.6	63	60	ADXR063-2-0,20	0.20	2,800	1.4	2.1	7.7	0.60	2.1	A1	B1
	90					1.4	2.3	7.7	0.60	2.3	A1	B1
	4		VDXR063-4-0,03	0.03	1,400	0.7	0.9	1.7	0.43	0.9	A1	B1
	5.6					0.7	0.9	1.7	0.43	0.9	A1	B1
	8		VDXR063-4-0,06	0.06	1,400	1.0	1.1	2.8	0.38	1.1	A1	B1
	11					1.0	1.2	2.8	0.38	1.2	A1	B1
	16		VDXR063-2-0,12	0.12	2,800	1.2	1.6	5.2	0.52	1.6	A1	B1
	22					1.2	1.7	5.2	0.52	1.7	A1	B1
SAREx 10.2	32	120	ADXR063-4-0,20	0.20	1,400	2.8	3.3	8.0	0.42	3.3	A1	B1
	45					2.8	3.5	8.0	0.42	3.5	A1	B1
	63		ADXR063-2-0,40	0.40	2,800	3.1	4.0	16	0.53	4.0	A1	B1
	90					3.1	4.3	16	0.53	4.3	A1	B1
	4		VDXR071-4-0,06	0.06	1,400	0.9	1.0	3.5	0.40	1.0	A1	B1
	5.6					0.9	1.0	3.5	0.40	1.0	A1	B1
	8		VDXR071-4-0,12	0.12	1,400	1.7	1.9	5.2	0.40	1.9	A1	B1
	11					1.7	2.1	5.2	0.40	2.1	A1	B1
SAREx 14.2	16	250	VDXR071-2-0,25	0.25	2,800	2.3	2.6	7.8	0.52	2.6	A1	B1
	22					2.3	3.1	7.8	0.52	3.1	A1	B1
	32		ADXR071-4-0,40	0.40	1,400	4.3	4.5	15	0.42	4.5	A1	B1
	45					4.3	5.2	15	0.42	5.2	A1	B1
	63		ADXR071-2-0,70	0.70	2,800	5.2	7.0	28	0.54	7.0	A1	B2
	90					5.2	7.8	28	0.54	7.8	A1	B2
	4		VDXR090-4-0,12	0.12	1,400	0.9	1.4	4.9	0.60	1.4	A1	B1
	5.6					0.9	1.7	4.9	0.60	1.7	A1	B1
SAREx 14.6	8	500	VDXR090-4-0,25	0.25	1,400	1.7	2.8	9.0	0.60	2.8	A1	B1
	11					1.7	3.0	9.0	0.60	3.0	A1	B1
	16		VDXR090-2-0,45	0.45	2,800	2.6	5.2	16	0.64	5.2	A1	B1
	22					2.6	6.1	16	0.64	6.1	A1	B1
	32		ADXR090-4-0,75	0.75	1,400	4.5	7.5	28	0.62	7.5	A1	B2
	45					4.5	8.7	28	0.62	8.7	A1	B2
	63		ADXR090-2-1,40	1.40	2,800	8.2	13	66	0.60	13	A2	–
	90					8.2	16	66	0.60	16	A2	–
SAREx 16.2	4	1,000	VDXR090-4-0,20	0.20	1,400	1.6	2.6	9.0	0.54	2.6	A1	B1
	5.6					1.6	3.0	9.0	0.54	3.0	A1	B1
	8		VDXR090-4-0,40	0.40	1,400	3.1	5.2	16	0.56	5.2	A1	B1
	11					3.1	6.1	16	0.56	6.1	A1	B1
	16		VDXR090-2-0,80	0.80	2,800	6.3	8.7	31	0.51	8.7	A2	B2
	22					6.3	9.6	31	0.51	9.6	A2	B2
	32		ADXR090-4-1,60	1.60	1,400	9.2	13	66	0.57	13	A2	–
	45					9.2	16	66	0.57	16	A2	–
SAREx 16.2	63	1,000	ADXR090-2-3,00	3.00	2,800	16	24	118	0.60	24	A3	–
	90					16	28	118	0.60	28	A3	–
	4		VDXR112-4-0,40	0.40	1,400	2.4	4.7	17	0.65	4.7	A1	B1
	5.6					2.4	5.0	17	0.65	5.0	A1	B1
	8		VDXR112-4-0,80	0.80	1,400	5.2	9.0	38	0.57	9.0	A2	B2
	11					5.2	9.6	38	0.57	9.6	A2	B2
	16		VDXR112-2-1,50	1.50	2,800	9.7	16	70	0.60	16	A2	–
	22					9.7	18	70	0.60	18	A2	–
SAREx 16.2	32	1,000	ADXR112-4-3,00	3.00	1,400	15	26	104	0.71	26	A3	–
	45					15	30	104	0.71	29	A3	–
	63		ADXR112-2-5,00	5.00	2,800	21	43	198	0.80	43	A4	–
	90					21	52	198	0.80	43	A4	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	30	VDXR063-4-0,02	0.02	1,400	0.4	0.4	1.1	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.1	0.40	0.4	A1	B1
	8		VDXR063-4-0,04	0.04	1,400	0.4	0.4	1.1	0.50	0.4	A1	B1
	11					0.4	0.5	1.1	0.50	0.5	A1	B1
	16		VDXR063-2-0,06	0.06	2,800	0.6	0.6	2.0	0.42	0.6	A1	B1
	22					0.6	0.7	2.0	0.42	0.7	A1	B1
	32		ADXR063-4-0,10	0.10	1,400	1.0	1.0	2.5	0.42	1.0	A1	B1
	45					1.0	1.1	2.5	0.42	1.1	A1	B1
SAREx 07.6	63	60	ADXR063-2-0,20	0.20	2,800	0.8	1.3	4.6	0.60	1.3	A1	B1
	90					0.8	1.4	4.6	0.60	1.4	A1	B1
	4		VDXR063-4-0,03	0.03	1,400	0.4	0.5	1.1	0.43	0.5	A1	B1
	5.6					0.4	0.5	1.1	0.43	0.5	A1	B1
	8		VDXR063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	11					0.6	0.7	1.7	0.38	0.7	A1	B1
	16		VDXR063-2-0,12	0.12	2,800	0.7	0.9	3.2	0.52	0.9	A1	B1
	22					0.7	1.1	3.2	0.52	1.1	A1	B1
SAREx 10.2	32	120	ADXR063-4-0,20	0.20	1,400	1.7	2.0	4.8	0.42	2.0	A1	B1
	45					1.7	2.1	4.8	0.42	2.1	A1	B1
	63		ADXR063-2-0,40	0.40	2,800	1.9	2.4	9.5	0.53	2.4	A1	B1
	90					1.9	2.6	9.5	0.53	2.6	A1	B1
	4		VDXR071-4-0,06	0.06	1,400	0.5	0.6	2.1	0.40	0.6	A1	B1
	5.6					0.5	0.6	2.1	0.40	0.6	A1	B1
	8		VDXR071-4-0,12	0.12	1,400	1.1	1.2	3.2	0.40	1.2	A1	B1
	11					1.1	1.3	3.2	0.40	1.3	A1	B1
SAREx 14.2	16	250	VDXR071-2-0,25	0.25	2,800	1.4	1.6	4.7	0.52	1.6	A1	B1
	22					1.4	1.9	4.7	0.52	1.9	A1	B1
	32		ADXR071-4-0,40	0.40	1,400	2.6	2.7	8.9	0.42	2.7	A1	B1
	45					2.6	3.2	8.9	0.42	3.2	A1	B1
	63		ADXR071-2-0,70	0.70	2,800	3.2	4.2	17	0.54	4.2	A1	B1
	90					3.2	4.7	17	0.54	4.7	A1	B1
	4		VDXR090-4-0,12	0.12	1,400	0.5	0.8	2.9	0.60	0.8	A1	B1
	5.6					0.5	1.1	2.9	0.60	1.1	A1	B1
SAREx 14.6	8	500	VDXR090-4-0,25	0.25	1,400	1.1	1.7	5.5	0.60	1.7	A1	B1
	11					1.1	1.8	5.5	0.60	1.8	A1	B1
	16		VDXR090-2-0,45	0.45	2,800	1.6	3.2	9.5	0.64	3.2	A1	B1
	22					1.6	3.7	9.5	0.64	3.7	A1	B1
	32		ADXR090-4-0,75	0.75	1,400	2.7	4.5	17	0.62	4.5	A1	B1
	45					2.7	5.3	17	0.62	5.3	A1	B1
	63		ADXR090-2-1,40	1.40	2,800	4.9	8.0	40	0.60	8.0	A2	B2
	90					4.9	9.5	40	0.60	9.5	A2	B2
SAREx 16.2	4	1,000	VDXR090-4-0,20	0.20	1,400	0.9	1.6	5.5	0.54	1.6	A1	B1
	5.6					0.9	1.8	5.5	0.54	1.8	A1	B1
	8		VDXR090-4-0,40	0.40	1,400	1.9	3.2	9.8	0.56	3.2	A1	B1
	11					1.9	3.7	9.8	0.56	3.7	A1	B1
	16		VDXR090-2-0,80	0.80	2,800	3.8	5.3	19	0.51	5.3	A1	B2
	22					3.8	5.8	19	0.51	5.8	A1	B2
	32		ADXR090-4-1,60	1.60	1,400	5.6	7.9	40	0.57	7.9	A2	B2
	45					5.6	9.5	40	0.57	9.5	A2	B2
SAREx 16.2	63	1,000	ADXR090-2-3,00	3.00	2,800	9.5	15	72	0.60	15	A2	–
	90					9.5	17	72	0.60	17	A2	–
	4		VDXR112-4-0,40	0.40	1,400	1.5	2.8	11	0.65	2.8	A1	B1
	5.6					1.5	3.1	11	0.65	3.1	A1	B1
	8		VDXR112-4-0,80	0.80	1,400	3.2	5.5	23	0.57	5.5	A1	B2
	11					3.2	5.8	23	0.57	5.8	A1	B2
	16		VDXR112-2-1,50	1.50	2,800	5.9	9.5	42	0.60	9.5	A2	B2
	22					5.9	11	42	0.60	11	A2	B2
SAREx 16.2	32	1,000	ADXR112-4-3,00	3.00	1,400	8.9	16	63	0.71	16	A2	B3
	45					8.9	18	63	0.71	18	A2	B3
	63		ADXR112-2-5,00	5.00	2,800	13	26	120	0.80	26	A3	–
	90					13	32	120	0.80	26	A3	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0.01	1,680	0.4	0.5	1.3	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.3	0.40	0.5	A1	B1
	9.6					0.5	0.5	1.1	0.50	0.5	A1	B1
	13					0.5	0.5	1.1	0.50	0.5	A1	B1
	19		VDXQ063-2-0,04	0.04	3,360	0.6	0.8	2.1	0.43	0.8	A1	B1
	26					0.6	0.8	2.1	0.43	0.8	A1	B1
	38					1.0	1.1	2.5	0.40	1.1	A1	B1
	54					1.0	1.1	2.5	0.40	1.1	A1	B1
SAREx 07.6	75	40	VDXQ063-4-0,02	0.02	1,680	0.5	0.5	1.3	0.50	0.5	A1	B1
	108					0.5	0.5	1.3	0.50	0.5	A1	B1
	4.8					0.6	0.6	1.8	0.45	0.6	A1	B1
	6.7					0.6	0.6	1.8	0.45	0.6	A1	B1
	9.6		VDXQ063-2-0,08	0.08	3,360	0.6	1.0	3.2	0.52	1.0	A1	B1
	13					0.6	1.0	3.2	0.52	1.0	A1	B1
	19					1.5	1.9	4.4	0.40	1.9	A1	B1
	26					1.5	1.9	4.4	0.40	1.9	A1	B1
SAREx 10.2	38	90	VDXQ063-4-0,14	0.14	1,680	1.4	2.0	7.2	0.53	2.0	A1	B1
	54					1.4	2.1	7.2	0.53	2.1	A1	B1
	75		VDXQ071-4-0,04	0.04	1,680	0.4	0.6	1.9	0.40	0.6	A1	B1
	108					0.4	0.6	1.9	0.40	0.6	A1	B1
	4.8					1.0	1.1	3.3	0.40	1.1	A1	B1
	6.7					1.0	1.3	3.3	0.40	1.3	A1	B1
	9.6		VDXQ071-2-0,17	0.17	3,360	1.3	1.4	5.1	0.52	1.4	A1	B1
	13					1.3	1.6	5.1	0.52	1.6	A1	B1
SAREx 14.2	19	180	VDXQ071-4-0,28	0.28	1,680	2.0	2.5	9.1	0.43	2.5	A1	B1
	26					2.0	2.8	9.1	0.43	2.8	A1	B1
	38		VDXQ090-4-0,08	0.08	1,680	0.5	0.8	3.3	0.60	0.8	A1	B1
	54					0.5	0.9	3.3	0.60	0.9	A1	B1
	75					1.1	1.8	5.3	0.60	1.8	A1	B1
	108					1.1	1.9	5.3	0.60	1.9	A1	B1
	4.8		VDXQ090-2-0,30	0.30	3,360	1.1	2.5	9.1	0.68	2.5	A1	B1
	6.7					1.1	2.9	9.1	0.68	2.9	A1	B1
SAREx 14.6	9.6	360	VDXQ090-4-0,50	0.50	1,680	2.5	3.8	15	0.56	3.8	A1	B1
	13					2.5	4.4	15	0.56	4.4	A1	B1
	19		VDXQ090-2-1,00	1.00	3,360	3.9	6.9	35	0.65	6.9	A2	B2
	26					3.9	7.6	35	0.65	7.6	A2	B2
	38		VDXQ090-4-0,14	0.14	1,680	0.9	1.4	4.9	0.55	1.4	A1	B1
	54					0.9	1.5	4.9	0.55	1.5	A1	B1
	75					2.0	3.2	11	0.52	3.2	A1	B1
	108					2.0	3.5	11	0.52	3.5	A1	B1
SAREx 16.2	4.8	710	VDXQ090-2-0,60	0.60	3,360	2.9	4.5	19	0.61	4.5	A1	B2
	6.7					2.9	4.8	19	0.61	4.8	A1	B2
	9.6		ADXQ090-4-1,00	1.00	1,680	4.5	7.6	38	0.60	7.6	A2	B2
	13					4.5	8.2	38	0.60	8.2	A2	B2
	19		ADXQ090-2-2,00	2.00	3,360	7.2	12	69	0.69	12	A2	–
	26					7.2	14	69	0.69	14	A2	–
	38		VDXQ112-4-0,30	0.30	1,680	1.5	2.9	10	0.60	2.9	A1	B1
	54					1.5	3.2	10	0.60	3.2	A1	B1
SAREx 16.2	75	710	VDXQ112-4-0,60	0.60	1,680	2.9	5.1	21	0.53	5.1	A1	B2
	108					2.9	5.7	21	0.53	5.7	A1	B2
	4.8		VDXQ112-2-1,00	1.00	3,360	4.0	7.7	42	0.68	7.7	A2	B2
	6.7					4.0	8.6	42	0.68	8.6	A2	B2
	9.6		ADXQ112-4-2,00	2.00	1,680	7.6	13	51	0.65	13	A2	B3
	13					7.6	15	51	0.65	14	A2	B3
	19		ADXQ112-2-3,50	3.50	3,360	11	23	114	0.78	23	A3	–
	26					11	27	114	0.78	25	A3	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	30	VDXR063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.40	0.4	A1	B1
	8		VDXR063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.5	1.0	0.50	0.5	A1	B1
	16		VDXR063-2-0,06	0.06	2,800	0.6	0.6	1.9	0.42	0.6	A1	B1
	22					0.6	0.7	1.9	0.42	0.7	A1	B1
	32		ADXR063-4-0,10	0.10	1,400	1.0	1.0	2.4	0.42	1.0	A1	B1
	45					1.0	1.0	2.4	0.42	1.0	A1	B1
SAREx 07.6	63	60	ADXR063-2-0,20	0.20	2,800	0.8	1.2	4.4	0.60	1.2	A1	B1
	90					0.8	1.3	4.4	0.60	1.3	A1	B1
	4		VDXR063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	5.6					0.4	0.5	1.0	0.43	0.5	A1	B1
	8		VDXR063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	11					0.6	0.7	1.6	0.38	0.7	A1	B1
	16		VDXR063-2-0,12	0.12	2,800	0.7	0.9	3.0	0.52	0.9	A1	B1
	22					0.7	1.0	3.0	0.52	1.0	A1	B1
SAREx 10.2	32	120	ADXR063-4-0,20	0.20	1,400	1.6	1.9	4.6	0.42	1.9	A1	B1
	45					1.6	2.0	4.6	0.42	2.0	A1	B1
	63		ADXR063-2-0,40	0.40	2,800	1.8	2.3	9.0	0.53	2.3	A1	B1
	90					1.8	2.5	9.0	0.53	2.5	A1	B1
	4		VDXR071-4-0,06	0.06	1,400	0.5	0.6	2.0	0.40	0.6	A1	B1
	5.6					0.5	0.6	2.0	0.40	0.6	A1	B1
	8		VDXR071-4-0,12	0.12	1,400	1.0	1.1	3.0	0.40	1.1	A1	B1
	11					1.0	1.2	3.0	0.40	1.2	A1	B1
SAREx 14.2	16	250	VDXR071-2-0,25	0.25	2,800	1.3	1.5	4.5	0.52	1.5	A1	B1
	22					1.3	1.8	4.5	0.52	1.8	A1	B1
	32		ADXR071-4-0,40	0.40	1,400	2.5	2.6	8.5	0.42	2.6	A1	B1
	45					2.5	3.0	8.5	0.42	3.0	A1	B1
	63		ADXR071-2-0,70	0.70	2,800	3.0	4.0	16	0.54	4.0	A1	B1
	90					3.0	4.5	16	0.54	4.5	A1	B1
	4		VDXR090-4-0,12	0.12	1,400	0.5	0.8	2.8	0.60	0.8	A1	B1
	5.6					0.5	1.0	2.8	0.60	1.0	A1	B1
SAREx 14.6	8	500	VDXR090-4-0,25	0.25	1,400	1.0	1.6	5.2	0.60	1.6	A1	B1
	11					1.0	1.7	5.2	0.60	1.7	A1	B1
	16		VDXR090-2-0,45	0.45	2,800	1.5	3.0	9.0	0.64	3.0	A1	B1
	22					1.5	3.5	9.0	0.64	3.5	A1	B1
	32		ADXR090-4-0,75	0.75	1,400	2.6	4.3	16	0.62	4.3	A1	B1
	45					2.6	5.0	16	0.62	5.0	A1	B1
	63		ADXR090-2-1,40	1.40	2,800	4.7	7.6	38	0.60	7.6	A2	B2
	90					4.7	9.0	38	0.60	9.0	A2	B2
SAREx 16.2	4	1,000	VDXR090-4-0,20	0.20	1,400	0.9	1.5	5.2	0.54	1.5	A1	B1
	5.6					0.9	1.7	5.2	0.54	1.7	A1	B1
	8		VDXR090-4-0,40	0.40	1,400	1.8	3.0	9.3	0.56	3.0	A1	B1
	11					1.8	3.5	9.3	0.56	3.5	A1	B1
	16		VDXR090-2-0,80	0.80	2,800	3.6	5.0	18	0.51	5.0	A1	B1
	22					3.6	5.5	18	0.51	5.5	A1	B1
	32		ADXR090-4-1,60	1.60	1,400	5.3	7.5	38	0.57	7.5	A2	B2
	45					5.3	9.0	38	0.57	9.0	A2	B2
SAREx 16.2	63	1,000	ADXR090-2-3,00	3.00	2,800	9.0	14	68	0.60	14	A2	–
	90					9.0	16	68	0.60	16	A2	–
	4		VDXR112-4-0,40	0.40	1,400	1.4	2.7	10	0.65	2.7	A1	B1
	5.6					1.4	2.9	10	0.65	2.9	A1	B1
	8		VDXR112-4-0,80	0.80	1,400	3.0	5.2	22	0.57	5.2	A1	B2
	11					3.0	5.5	22	0.57	5.5	A1	B2
	16		VDXR112-2-1,50	1.50	2,800	5.6	9.0	40	0.60	9.0	A2	B2
	22					5.6	11	40	0.60	11	A2	B2
SAREx 16.2	32	1,000	ADXR112-4-3,00	3.00	1,400	8.5	15	60	0.71	15	A2	B3
	45					8.5	17	60	0.71	17	A2	B3
	63		ADXR112-2-5,00	5.00	2,800	12	25	114	0.80	25	A3	–
	90					12	30	114	0.80	25	A3	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	30	VDXR063-4-0,02	0.02	1 680	0.5	0.5	1.2	0.40	0.5	A1	B1
	6.7					0.5	0.5	1.2	0.40	0.5	A1	B1
	9.6		VDXR063-4-0,04	0.04	1,680	0.5	0.5	1.2	0.50	0.5	A1	B1
	13					0.5	0.6	1.2	0.50	0.6	A1	B1
	19		VDXR063-2-0,06	0.06	3,360	0.7	0.7	2.3	0.42	0.7	A1	B1
	26					0.7	0.8	2.3	0.42	0.8	A1	B1
	38		ADXR063-4-0,10	0.10	1,680	1.1	1.1	2.9	0.42	1.1	A1	B1
	54					1.1	1.2	2.9	0.42	1.2	A1	B1
SAREx 07.6	75	60	ADXR063-2-0,20	0.20	3,360	1.0	1.4	5.3	0.60	1.4	A1	B1
	108					1.0	1.6	5.3	0.60	1.6	A1	B1
	4.8		VDXR063-4-0,03	0.03	1,680	0.5	0.6	1.2	0.43	0.6	A1	B1
	6.7					0.5	0.6	1.2	0.43	0.6	A1	B1
	9.6		VDXR063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	13					0.7	0.8	1.9	0.38	0.8	A1	B1
	19		VDXR063-2-0,12	0.12	3,360	0.8	1.1	3.6	0.52	1.1	A1	B1
	26					0.8	1.2	3.6	0.52	1.2	A1	B1
SAREx 10.2	38	120	ADXR063-4-0,20	0.20	1,680	1.9	2.3	5.5	0.42	2.3	A1	B1
	54					1.9	2.4	5.5	0.42	2.4	A1	B1
	75		ADXR063-2-0,40	0.40	3,360	2.2	2.8	11	0.53	2.8	A1	B1
	108					2.2	3.0	11	0.53	3.0	A1	B1
	4.8		VDXR071-4-0,06	0.06	1,680	0.6	0.7	2.4	0.40	0.7	A1	B1
	6.7					0.6	0.7	2.4	0.40	0.7	A1	B1
	9.6		VDXR071-4-0,12	0.12	1,680	1.2	1.3	3.6	0.40	1.3	A1	B1
	13					1.2	1.4	3.6	0.40	1.4	A1	B1
SAREx 14.2	19	250	VDXR071-2-0,25	0.25	3,360	1.6	1.8	5.4	0.52	1.8	A1	B1
	26					1.6	2.2	5.4	0.52	2.2	A1	B1
	38		ADXR071-4-0,40	0.40	1,680	3.0	3.1	10	0.42	3.1	A1	B1
	54					3.0	3.6	10	0.42	3.6	A1	B1
	75		ADXR071-2-0,70	0.70	3,360	3.6	4.8	19	0.54	4.8	A1	B2
	108					3.6	5.4	19	0.54	5.4	A1	B2
	4.8	500	VDXR090-4-0,12	0.12	1,680	0.6	1.0	3.4	0.60	1.0	A1	B1
	6.7					0.6	1.2	3.4	0.60	1.2	A1	B1
SAREx 14.6	9.6		VDXR090-4-0,25	0.25	1,680	1.2	1.9	6.2	0.60	1.9	A1	B1
	13					1.2	2.0	6.2	0.60	2.0	A1	B1
	19		VDXR090-2-0,45	0.45	3,360	1.8	3.6	11	0.64	3.6	A1	B1
	26					1.8	4.2	11	0.64	4.2	A1	B1
	38		ADXR090-4-0,75	0.75	1,680	3.1	5.2	19	0.62	5.2	A1	B2
	54					3.1	6.0	19	0.62	6.0	A1	B2
	75		ADXR090-2-1,40	1.40	3,360	5.6	9.1	46	0.60	9.1	A2	B3
	108					5.6	11	46	0.60	11	A2	B3
SAREx 16.2	4.8	1,000	VDXR090-4-0,20	0.20	1,680	1.1	1.8	6.2	0.54	1.8	A1	B1
	6.7					1.1	2.0	6.2	0.54	2.0	A1	B1
	9.6		VDXR090-4-0,40	0.40	1,680	2.2	3.6	11	0.56	3.6	A1	B1
	13					2.2	4.2	11	0.56	4.2	A1	B1
	19		VDXR090-2-0,80	0.80	3,360	4.3	6.0	22	0.51	6.0	A2	B2
	26					4.3	6.6	22	0.51	6.6	A2	B2
	38		ADXR090-4-1,60	1.60	1,680	6.4	9.0	46	0.57	9.0	A2	B3
	54					6.4	11	46	0.57	11	A2	B3
SAREx 16.2	75	1,000	ADXR090-2-3,00	3.00	3,360	11	17	82	0.60	17	A2	–
	108					11	19	82	0.60	19	A2	–
	4.8		VDXR112-4-0,40	0.40	1,680	1.7	3.2	12	0.65	3.2	A1	B1
	6.7					1.7	3.5	12	0.65	3.5	A1	B1
	9.6		VDXR112-4-0,80	0.80	1,680	3.6	6.2	26	0.57	6.2	A2	B2
	13					3.6	6.6	26	0.57	6.6	A2	B2
	19		VDXR112-2-1,50	1.50	3,360	6.7	11	48	0.60	11	A2	B3
	26					6.7	13	48	0.60	13	A2	B3
SAREx 16.2	38	1,000	ADXR112-4-3,00	3.00	1,680	10	18	72	0.71	18	A2	–
	54					10	20	72	0.71	20	A2	–
	75		ADXR112-2-5,00	5.00	3,360	14	30	137	0.80	30	A3	–
	108					14	36	137	0.80	30	A3	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	30	VDXR063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.40	0.4	A1	B1
	8		VDXR063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.5	1.0	0.50	0.5	A1	B1
	16		VDXR063-2-0,06	0.06	2,800	0.6	0.6	1.8	0.42	0.6	A1	B1
	22					0.6	0.6	1.8	0.42	0.6	A1	B1
	32		ADXR063-4-0,10	0.10	1,400	0.9	0.9	2.3	0.42	0.9	A1	B1
	45					0.9	1.0	2.3	0.42	1.0	A1	B1
SAREx 07.6	63	60	ADXR063-2-0,20	0.20	2,800	0.8	1.2	4.2	0.60	1.2	A1	B1
	90					0.8	1.3	4.2	0.60	1.3	A1	B1
	4		VDXR063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	5.6					0.4	0.5	1.0	0.43	0.5	A1	B1
	8		VDXR063-4-0,06	0.06	1,400	0.6	0.6	1.5	0.38	0.6	A1	B1
	11					0.6	0.7	1.5	0.38	0.7	A1	B1
	16		VDXR063-2-0,12	0.12	2,800	0.7	0.9	2.9	0.52	0.9	A1	B1
	22					0.7	1.0	2.9	0.52	1.0	A1	B1
SAREx 10.2	32	120	ADXR063-4-0,20	0.20	1,400	1.5	1.8	4.4	0.42	1.8	A1	B1
	45					1.5	1.9	4.4	0.42	1.9	A1	B1
	63		ADXR063-2-0,40	0.40	2,800	1.7	2.2	8.7	0.53	2.2	A1	B1
	90					1.7	2.4	8.7	0.53	2.4	A1	B1
	4		VDXR071-4-0,06	0.06	1,400	0.5	0.6	1.9	0.40	0.6	A1	B1
	5.6					0.5	0.6	1.9	0.40	0.6	A1	B1
	8		VDXR071-4-0,12	0.12	1,400	1.0	1.1	2.9	0.40	1.1	A1	B1
	11					1.0	1.2	2.9	0.40	1.2	A1	B1
SAREx 14.2	16	250	VDXR071-2-0,25	0.25	2,800	1.3	1.4	4.3	0.52	1.4	A1	B1
	22					1.3	1.7	4.3	0.52	1.7	A1	B1
	32		ADXR071-4-0,40	0.40	1,400	2.4	2.5	8.2	0.42	2.5	A1	B1
	45					2.4	2.9	8.2	0.42	2.9	A1	B1
	63		ADXR071-2-0,70	0.70	2,800	2.9	3.9	15	0.54	3.9	A1	B1
	90					2.9	4.3	15	0.54	4.3	A1	B1
	4		VDXR090-4-0,12	0.12	1,400	0.5	0.8	2.7	0.60	0.8	A1	B1
	5.6					0.5	1.0	2.7	0.60	1.0	A1	B1
SAREx 14.6	8	500	VDXR090-4-0,25	0.25	1,400	1.0	1.5	5.0	0.60	1.5	A1	B1
	11					1.0	1.6	5.0	0.60	1.6	A1	B1
	16		VDXR090-2-0,45	0.45	2,800	1.4	2.9	8.7	0.64	2.9	A1	B1
	22					1.4	3.4	8.7	0.64	3.4	A1	B1
	32		ADXR090-4-0,75	0.75	1,400	2.5	4.1	15	0.62	4.1	A1	B1
	45					2.5	4.8	15	0.62	4.8	A1	B1
	63		ADXR090-2-1,40	1.40	2,800	4.5	7.3	37	0.60	7.3	A2	B2
	90					4.5	8.7	37	0.60	8.7	A2	B2
SAREx 16.2	4	1,000	VDXR090-4-0,20	0.20	1,400	0.9	1.4	5.0	0.54	1.4	A1	B1
	5.6					0.9	1.6	5.0	0.54	1.6	A1	B1
	8		VDXR090-4-0,40	0.40	1,400	1.7	2.9	9.0	0.56	2.9	A1	B1
	11					1.7	3.4	9.0	0.56	3.4	A1	B1
	16		VDXR090-2-0,80	0.80	2,800	3.5	4.8	17	0.51	4.8	A1	B1
	22					3.5	5.3	17	0.51	5.3	A1	B1
	32		ADXR090-4-1,60	1.60	1,400	5.1	7.2	37	0.57	7.2	A2	B2
	45					5.1	8.7	37	0.57	8.7	A2	B2
SAREx 16.2	63	1,000	ADXR090-2-3,00	3.00	2,800	8.7	13	66	0.60	13	A2	–
	90					8.7	15	66	0.60	15	A2	–
	4		VDXR112-4-0,40	0.40	1,400	1.3	2.6	9.6	0.65	2.6	A1	B1
	5.6					1.3	2.8	9.6	0.65	2.8	A1	B1
	8		VDXR112-4-0,80	0.80	1,400	2.9	5.0	21	0.57	5.0	A1	B2
	11					2.9	5.3	21	0.57	5.3	A1	B2
	16		VDXR112-2-1,50	1.50	2,800	5.4	8.7	39	0.60	8.7	A2	B2
	22					5.4	10	39	0.60	10	A2	B2
SAREx 16.2	32	1,000	ADXR112-4-3,00	3.00	1,400	8.2	14	58	0.71	14	A2	B3
	45					8.2	16	58	0.71	16	A2	B3
	63		ADXR112-2-5,00	5.00	2,800	12	24	110	0.80	24	A2	–
	90					12	29	110	0.80	24	A2	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	30	VDXR063-4-0,02	0.02	1 680	0.4	0.4	1.1	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.1	0.40	0.4	A1	B1
	9.6		VDXR063-4-0,04	0.04	1,680	0.4	0.4	1.1	0.50	0.4	A1	B1
	13					0.4	0.5	1.1	0.50	0.5	A1	B1
	19		VDXR063-2-0,06	0.06	3,360	0.7	0.7	2.1	0.42	0.7	A1	B1
	26					0.7	0.7	2.1	0.42	0.7	A1	B1
	38		ADXR063-4-0,10	0.10	1,680	1.0	1.0	2.6	0.42	1.0	A1	B1
	54					1.0	1.1	2.6	0.42	1.1	A1	B1
SAREx 07.6	75	60	ADXR063-2-0,20	0.20	3,360	0.9	1.3	4.8	0.60	1.3	A1	B1
	108					0.9	1.4	4.8	0.60	1.4	A1	B1
	4.8		VDXR063-4-0,03	0.03	1,680	0.4	0.5	1.1	0.43	0.5	A1	B1
	6.7					0.4	0.5	1.1	0.43	0.5	A1	B1
	9.6		VDXR063-4-0,06	0.06	1,680	0.7	0.7	1.7	0.38	0.7	A1	B1
	13					0.7	0.8	1.7	0.38	0.8	A1	B1
	19		VDXR063-2-0,12	0.12	3,360	0.8	1.0	3.3	0.52	1.0	A1	B1
	26					0.8	1.1	3.3	0.52	1.1	A1	B1
SAREx 10.2	38	120	ADXR063-4-0,20	0.20	1,680	1.7	2.1	5.0	0.42	2.1	A1	B1
	54					1.7	2.2	5.0	0.42	2.2	A1	B1
	75		ADXR063-2-0,40	0.40	3,360	2.0	2.5	9.8	0.53	2.5	A1	B1
	108					2.0	2.7	9.8	0.53	2.7	A1	B1
	4.8		VDXR071-4-0,06	0.06	1,680	0.5	0.7	2.2	0.40	0.7	A1	B1
	6.7					0.5	0.7	2.2	0.40	0.7	A1	B1
	9.6		VDXR071-4-0,12	0.12	1,680	1.1	1.2	3.3	0.40	1.2	A1	B1
	13					1.1	1.3	3.3	0.40	1.3	A1	B1
SAREx 14.2	19	250	VDXR071-2-0,25	0.25	3,360	1.4	1.6	4.9	0.52	1.6	A1	B1
	26					1.4	2.0	4.9	0.52	2.0	A1	B1
	38		ADXR071-4-0,40	0.40	1,680	2.7	2.8	9.3	0.42	2.8	A1	B1
	54					2.7	3.3	9.3	0.42	3.3	A1	B1
	75		ADXR071-2-0,70	0.70	3,360	3.3	4.4	17	0.54	4.4	A1	B1
	108					3.3	4.9	17	0.54	4.9	A1	B1
	4.8	500	VDXR090-4-0,12	0.12	1,680	0.5	0.9	3.1	0.60	0.9	A1	B1
	6.7					0.5	1.1	3.1	0.60	1.1	A1	B1
SAREx 14.6	9.6		VDXR090-4-0,25	0.25	1,680	1.1	1.7	5.7	0.60	1.7	A1	B1
	13					1.1	1.9	5.7	0.60	1.9	A1	B1
	19		VDXR090-2-0,45	0.45	3,360	1.6	3.3	9.8	0.64	3.3	A1	B1
	26					1.6	3.8	9.8	0.64	3.8	A1	B1
	38		ADXR090-4-0,75	0.75	1,680	2.8	4.7	17	0.62	4.7	A1	B1
	54					2.8	5.5	17	0.62	5.5	A1	B1
	75		ADXR090-2-1,40	1.40	3,360	5.1	8.3	41	0.60	8.3	A2	B2
	108					5.1	9.8	41	0.60	9.8	A2	B2
SAREx 16.2	4.8	1,000	VDXR112-4-0,40	0.40	1,680	1.5	2.9	11	0.65	2.9	A1	B1
	6.7					1.5	3.2	11	0.65	3.2	A1	B1
	9.6		VDXR112-4-0,80	0.80	1,680	3.3	5.7	24	0.57	5.7	A1	B2
	13					3.3	6.0	24	0.57	6.0	A1	B2
	19		VDXR112-2-1,50	1.50	3,360	6.1	9.8	44	0.60	9.8	A2	B2
	26					6.1	12	44	0.60	12	A2	B2
	38		ADXR112-4-3,00	3.00	1,680	9.3	16	65	0.71	16	A2	B3
	54					9.3	19	65	0.71	19	A2	B3
SAREx 16.2	75	1,000	ADXR112-2-5,00	5.00	3,360	13	27	124	0.80	27	A3	–
	108					13	33	124	0.80	27	A3	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	30	VDXR063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDXR063-4-0,04	0.04	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	13					0.4	0.5	1.0	0.50	0.5	A1	B1
	19		VDXR063-2-0,06	0.06	3,360	0.6	0.6	2.0	0.42	0.6	A1	B1
	26					0.6	0.7	2.0	0.42	0.7	A1	B1
	38		ADXR063-4-0,10	0.10	1,680	1.0	1.0	2.5	0.42	1.0	A1	B1
	54					1.0	1.0	2.5	0.42	1.0	A1	B1
SAREx 07.6	75	60	ADXR063-2-0,20	0.20	3,360	0.8	1.3	4.6	0.60	1.3	A1	B1
	108					0.8	1.4	4.6	0.60	1.4	A1	B1
	4.8		VDXR063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.4	A1	B1
	6.7					0.4	0.5	1.0	0.43	0.5	A1	B1
	9.6		VDXR063-4-0,06	0.06	1,680	0.6	0.7	1.7	0.38	0.7	A1	B1
	13					0.6	0.7	1.7	0.38	0.7	A1	B1
	19		VDXR063-2-0,12	0.12	3,360	0.7	0.9	3.1	0.52	0.9	A1	B1
	26					0.7	1.0	3.1	0.52	1.0	A1	B1
SAREx 10.2	38	120	ADXR063-4-0,20	0.20	1,680	1.7	2.0	4.8	0.42	2.0	A1	B1
	54					1.7	2.1	4.8	0.42	2.1	A1	B1
	75		ADXR063-2-0,40	0.40	3,360	1.9	2.4	9.4	0.53	2.4	A1	B1
	108					1.9	2.6	9.4	0.53	2.6	A1	B1
	4.8		VDXR071-4-0,06	0.06	1,680	0.5	0.6	2.1	0.40	0.6	A1	B1
	6.7					0.5	0.6	2.1	0.40	0.6	A1	B1
	9.6		VDXR071-4-0,12	0.12	1,680	1.0	1.1	3.1	0.40	1.1	A1	B1
	13					1.0	1.3	3.1	0.40	1.3	A1	B1
SAREx 14.2	19	250	VDXR071-2-0,25	0.25	3,360	1.4	1.6	4.7	0.52	1.6	A1	B1
	26					1.4	1.9	4.7	0.52	1.9	A1	B1
	38		ADXR071-4-0,40	0.40	1,680	2.6	2.7	8.9	0.42	2.7	A1	B1
	54					2.6	3.1	8.9	0.42	3.1	A1	B1
	75		ADXR071-2-0,70	0.70	3,360	3.1	4.2	17	0.54	4.2	A1	B1
	108					3.1	4.7	17	0.54	4.7	A1	B1
	4.8	500	VDXR090-4-0,12	0.12	1,680	0.5	0.8	2.9	0.60	0.8	A1	B1
	6.7					0.5	1.0	2.9	0.60	1.0	A1	B1
SAREx 14.6	9.6		VDXR090-4-0,25	0.25	1,680	1.0	1.7	5.4	0.60	1.7	A1	B1
	13					1.0	1.8	5.4	0.60	1.8	A1	B1
	19		VDXR090-2-0,45	0.45	3,360	1.6	3.1	9.4	0.64	3.1	A1	B1
	26					1.6	3.7	9.4	0.64	3.7	A1	B1
	38		ADXR090-4-0,75	0.75	1,680	2.7	4.5	17	0.62	4.5	A1	B1
	54					2.7	5.2	17	0.62	5.2	A1	B1
	75		ADXR090-2-1,40	1.40	3,360	4.9	7.9	40	0.60	7.9	A2	B2
	108					4.9	9.4	40	0.60	9.4	A2	B2
SAREx 16.2	4.8	1 000	VDXR090-4-0,20	0.20	1,680	0.9	1.6	5.4	0.54	1.6	A1	B1
	6.7					0.9	1.8	5.4	0.54	1.8	A1	B1
	9.6		VDXR090-4-0,40	0.40	1,680	1.9	3.1	9.7	0.56	3.1	A1	B1
	13					1.9	3.7	9.7	0.56	3.7	A1	B1
	19		VDXR090-2-0,80	0.80	3,360	3.8	5.2	19	0.51	5.2	A1	B2
	26					3.8	5.7	19	0.51	5.7	A1	B2
	38		ADXR090-4-1,60	1.60	1,680	5.5	7.8	40	0.57	7.8	A2	B2
	54					5.5	9.4	40	0.57	9.4	A2	B2
SAREx 16.2	75	1 000	ADXR090-2-3,00	3.00	3,360	9.4	15	71	0.60	15	A2	–
	108					9.4	17	71	0.60	17	A2	–
	4.8		VDXR112-4-0,40	0.40	1,680	1.5	2.8	10	0.65	2.8	A1	B1
	6.7					1.5	3.0	10	0.65	3.0	A1	B1
	9.6		VDXR112-4-0,80	0.80	1,680	3.1	5.4	23	0.57	5.4	A1	B2
	13					3.1	5.7	23	0.57	5.7	A1	B2
	19		VDXR112-2-1,50	1.50	3,360	5.8	9.4	42	0.60	9.4	A2	B2
	26					5.8	11	42	0.60	11	A2	B2
SAREx 16.2	38	1 000	ADXR112-4-3,00	3.00	1,680	8.9	16	63	0.71	16	A2	B3
	54					8.9	18	63	0.71	18	A2	B3
	75		ADXR112-2-5,00	5.00	3,360	13	26	119	0.80	26	A3	–
	108					13	31	119	0.80	26	A3	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	30	VDXR063-4-0,02	0.02	1 680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDXR063-4-0,04	0.04	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	13					0.4	0.5	1.0	0.50	0.5	A1	B1
	19		VDXR063-2-0,06	0.06	3,360	0.6	0.6	1.9	0.42	0.6	A1	B1
	26					0.6	0.7	1.9	0.42	0.7	A1	B1
	38		ADXR063-4-0,10	0.10	1,680	1.0	1.0	2.4	0.42	1.0	A1	B1
	54					1.0	1.0	2.4	0.42	1.0	A1	B1
SAREx 07.6	75	60	ADXR063-2-0,20	0.20	3,360	0.8	1.2	4.4	0.60	1.2	A1	B1
	108					0.8	1.3	4.4	0.60	1.3	A1	B1
	4.8		VDXR063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.5	A1	B1
	6.7					0.4	0.5	1.0	0.43	0.5	A1	B1
	9.6		VDXR063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	13					0.6	0.7	1.6	0.38	0.7	A1	B1
	19		VDXR063-2-0,12	0.12	3,360	0.7	0.9	3.0	0.52	0.9	A1	B1
	26					0.7	1.0	3.0	0.52	1.0	A1	B1
SAREx 10.2	38	120	ADXR063-4-0,20	0.20	1,680	1.6	1.9	4.6	0.42	1.9	A1	B1
	54					1.6	2.0	4.6	0.42	2.0	A1	B1
	75		ADXR063-2-0,40	0.40	3,360	1.8	2.3	9.0	0.53	2.3	A1	B1
	108					1.8	2.5	9.0	0.53	2.5	A1	B1
	4.8		VDXR071-4-0,06	0.06	1,680	0.5	0.6	2.0	0.40	0.6	A1	B1
	6.7					0.5	0.6	2.0	0.40	0.6	A1	B1
	9.6		VDXR071-4-0,12	0.12	1,680	1.0	1.1	3.0	0.40	1.1	A1	B1
	13					1.0	1.2	3.0	0.40	1.2	A1	B1
SAREx 14.2	19	250	VDXR071-2-0,25	0.25	3,360	1.3	1.5	4.5	0.52	1.5	A1	B1
	26					1.3	1.8	4.5	0.52	1.8	A1	B1
	38		ADXR071-4-0,40	0.40	1,680	2.5	2.6	8.5	0.42	2.6	A1	B1
	54					2.5	3.0	8.5	0.42	3.0	A1	B1
	75		ADXR071-2-0,70	0.70	3,360	3.0	4.0	16	0.54	4.0	A1	B1
	108					3.0	4.5	16	0.54	4.5	A1	B1
	4.8		VDXR090-4-0,12	0.12	1,680	0.5	0.8	2.8	0.60	0.8	A1	B1
	6.7					0.5	1.0	2.8	0.60	1.0	A1	B1
SAREx 14.6	9.6	500	VDXR090-4-0,25	0.25	1,680	1.0	1.6	5.2	0.60	1.6	A1	B1
	13					1.0	1.7	5.2	0.60	1.7	A1	B1
	19		VDXR090-2-0,45	0.45	3,360	1.5	3.0	9.0	0.64	3.0	A1	B1
	26					1.5	3.5	9.0	0.64	3.5	A1	B1
	38		ADXR090-4-0,75	0.75	1,680	2.6	4.3	16	0.62	4.3	A1	B1
	54					2.6	5.0	16	0.62	5.0	A1	B1
	75		ADXR090-2-1,40	1.40	3,360	4.7	7.6	38	0.60	7.6	A2	B2
	108					4.7	9.0	38	0.60	9.0	A2	B2
SAREx 16.2	4.8	1 000	VDXR090-4-0,20	0.20	1,680	0.9	1.5	5.2	0.54	1.5	A1	B1
	6.7					0.9	1.7	5.2	0.54	1.7	A1	B1
	9.6		VDXR090-4-0,40	0.40	1,680	1.8	3.0	9.3	0.56	3.0	A1	B1
	13					1.8	3.5	9.3	0.56	3.5	A1	B1
	19		VDXR090-2-0,80	0.80	3,360	3.6	5.0	18	0.51	5.0	A1	B1
	26					3.6	5.5	18	0.51	5.5	A1	B1
	38		ADXR090-4-1,60	1.60	1,680	5.3	7.5	38	0.57	7.5	A2	B2
	54					5.3	9.0	38	0.57	9.0	A2	B2
SAREx 16.2	75	1 000	ADXR090-2-3,00	3.00	3,360	9.0	14	68	0.60	14	A2	–
	108					9.0	16	68	0.60	16	A2	–
	4.8		VDXR112-4-0,40	0.40	1,680	1.4	2.7	10	0.65	2.7	A1	B1
	6.7					1.4	2.9	10	0.65	2.9	A1	B1
	9.6		VDXR112-4-0,80	0.80	1,680	3.0	5.2	22	0.57	5.2	A1	B2
	13					3.0	5.5	22	0.57	5.5	A1	B2
	19		VDXR112-2-1,50	1.50	3,360	5.6	9.0	40	0.60	9.0	A2	B2
	26					5.6	11	40	0.60	11	A2	B2
SAREx 16.2	38	1 000	ADXR112-4-3,00	3.00	1,680	8.5	15	60	0.71	15	A2	B3
	54					8.5	17	60	0.71	17	A2	B3
	75		ADXR112-2-5,00	5.00	3,360	12	25	114	0.80	25	A3	–
	108					12	30	114	0.80	25	A3	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	30	VDXR063-4-0,02	0.02	1 400	0.3	0.3	0.8	0.40	0.3	A1	B1
	5.6					0.3	0.3	0.8	0.40	0.3	A1	B1
	8		VDXR063-4-0,04	0.04	1,400	0.3	0.3	0.8	0.50	0.3	A1	B1
	11					0.3	0.4	0.8	0.50	0.4	A1	B1
	16		VDXR063-2-0,06	0.06	2,800	0.5	0.5	1.5	0.42	0.5	A1	B1
	22					0.5	0.5	1.5	0.42	0.5	A1	B1
	32		ADXR063-4-0,10	0.10	1,400	0.8	0.8	1.9	0.42	0.8	A1	B1
	45					0.8	0.8	1.9	0.42	0.8	A1	B1
SAREx 07.6	63	60	ADXR063-2-0,20	0.20	2,800	0.6	1.0	3.5	0.60	1.0	A1	B1
	90					0.6	1.0	3.5	0.60	1.0	A1	B1
	4		VDXR063-4-0,03	0.03	1,400	0.3	0.4	0.8	0.43	0.4	A1	B1
	5.6					0.3	0.4	0.8	0.43	0.4	A1	B1
	8		VDXR063-4-0,06	0.06	1,400	0.5	0.5	1.3	0.38	0.5	A1	B1
	11					0.5	0.6	1.3	0.38	0.6	A1	B1
	16		VDXR063-2-0,12	0.12	2,800	0.6	0.7	2.4	0.52	0.7	A1	B1
	22					0.6	0.8	2.4	0.52	0.8	A1	B1
SAREx 10.2	32	120	ADXR063-4-0,20	0.20	1,400	1.3	1.5	3.7	0.42	1.5	A1	B1
	45					1.3	1.6	3.7	0.42	1.6	A1	B1
	63		ADXR063-2-0,40	0.40	2,800	1.4	1.8	7.2	0.53	1.8	A1	B1
	90					1.4	2.0	7.2	0.53	2.0	A1	B1
	4		VDXR071-4-0,06	0.06	1,400	0.4	0.5	1.6	0.40	0.5	A1	B1
	5.6					0.4	0.5	1.6	0.40	0.5	A1	B1
	8		VDXR071-4-0,12	0.12	1,400	0.8	0.9	2.4	0.40	0.9	A1	B1
	11					0.8	1.0	2.4	0.40	1.0	A1	B1
SAREx 14.2	16	250	VDXR071-2-0,25	0.25	2,800	1.0	1.2	3.6	0.52	1.2	A1	B1
	22					1.0	1.4	3.6	0.52	1.4	A1	B1
	32		ADXR071-4-0,40	0.40	1,400	2.0	2.1	6.8	0.42	2.1	A1	B1
	45					2.0	2.4	6.8	0.42	2.4	A1	B1
	63		ADXR071-2-0,70	0.70	2,800	2.4	3.2	13	0.54	3.2	A1	B1
	90					2.4	3.6	13	0.54	3.6	A1	B1
	4	250	VDXR090-4-0,12	0.12	1,400	0.4	0.6	2.2	0.60	0.6	A1	B1
	5.6					0.4	0.8	2.2	0.60	0.8	A1	B1
SAREx 14.6	8		VDXR090-4-0,25	0.25	1,400	0.8	1.3	4.2	0.60	1.3	A1	B1
	11					0.8	1.4	4.2	0.60	1.4	A1	B1
	16		VDXR090-2-0,45	0.45	2,800	1.2	2.4	7.2	0.64	2.4	A1	B1
	22					1.2	2.8	7.2	0.64	2.8	A1	B1
	32		ADXR090-4-0,75	0.75	1,400	2.1	3.4	13	0.62	3.4	A1	B1
	45					2.1	4.0	13	0.62	4.0	A1	B1
	63		ADXR090-2-1,40	1.40	2,800	3.8	6.1	30	0.60	6.1	A2	B2
	90					3.8	7.2	30	0.60	7.2	A2	B2
SAREx 16.2	4	500	VDXR090-4-0,20	0.20	1,400	0.7	1.2	4.2	0.54	1.2	A1	B1
	5.6					0.7	1.4	4.2	0.54	1.4	A1	B1
	8		VDXR090-4-0,40	0.40	1,400	1.4	2.4	7.4	0.56	2.4	A1	B1
	11					1.4	2.8	7.4	0.56	2.8	A1	B1
	16		VDXR090-2-0,80	0.80	2,800	2.9	4.0	14	0.51	4.0	A1	B1
	22					2.9	4.4	14	0.51	4.4	A1	B1
	32		ADXR090-4-1,60	1.60	1,400	4.2	6.0	30	0.57	6.0	A2	B2
	45					4.2	7.2	30	0.57	7.2	A2	B2
SAREx 16.2	63	1 000	ADXR090-2-3,00	3.00	2,800	7.2	11	54	0.60	11	A2	B3
	90					7.2	13	54	0.60	13	A2	B3
	4		VDXR112-4-0,40	0.40	1,400	1.1	2.2	8.0	0.65	2.2	A1	B1
	5.6					1.1	2.3	8.0	0.65	2.3	A1	B1
	8		VDXR112-4-0,80	0.80	1,400	2.4	4.2	18	0.57	4.2	A1	B1
	11					2.4	4.4	18	0.57	4.4	A1	B1
	16		VDXR112-2-1,50	1.50	2,800	4.5	7.2	32	0.60	7.2	A2	B2
	22					4.5	8.4	32	0.60	8.4	A2	B2
SAREx 16.2	32	1 000	ADXR112-4-3,00	3.00	1,400	6.8	12	48	0.71	12	A2	B3
	45					6.8	14	48	0.71	14	A2	B3
	63		ADXR112-2-5,00	5.00	2,800	9.6	20	91	0.80	20	A3	–
	90					9.6	24	91	0.80	20	A3	–

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0,01	1 680	0,8	0,9	2,2	0,40	0,9	A1	B1
	6.7					0,8	0,9	2,2	0,40	0,9	A1	B1
	9.6					0,9	0,9	2,0	0,50	0,9	A1	B1
	13					0,9	0,9	2,0	0,50	0,9	A1	B1
	19		VDXQ063-2-0,04	0,04	3 360	1,1	1,3	3,7	0,43	1,3	A1	B1
	26					1,1	1,3	3,7	0,43	1,3	A1	B1
	38					1,7	2,0	4,4	0,40	2,0	A1	B1
	54					1,7	2,0	4,4	0,40	2,0	A1	B1
SAREx 07.6	75	40	ADXQ063-4-0,07	0,07	1 680	1,5	2,0	7,9	0,55	2,0	A1	B1
	108					1,5	2,2	7,9	0,55	2,2	A1	B1
	4.8		VDXQ063-4-0,02	0,02	1 680	0,9	0,9	2,2	0,50	0,9	A1	B1
	6.7					0,9	0,9	2,2	0,50	0,9	A1	B1
	9.6					1,1	1,1	3,1	0,45	1,1	A1	B1
	13					1,1	1,1	3,1	0,45	1,1	A1	B1
	19		VDXQ063-2-0,08	0,08	3 360	1,1	1,7	5,5	0,52	1,7	A1	B1
	26					1,1	1,7	5,5	0,52	1,7	A1	B1
SAREx 10.2	38	90	ADXQ063-4-0,14	0,14	1 680	2,6	3,3	7,6	0,40	3,3	A1	B1
	54					2,6	3,3	7,6	0,40	3,3	A1	B1
	75		ADXQ063-2-0,28	0,28	3 360	2,4	3,5	12	0,53	3,5	A1	B1
	108					2,4	3,7	12	0,53	3,7	A1	B1
	4.8		VDXQ071-4-0,04	0,04	1 680	0,8	1,1	3,3	0,40	1,1	A1	B1
	6.7					0,8	1,1	3,3	0,40	1,1	A1	B1
	9.6					1,7	2,0	5,7	0,40	2,0	A1	B1
	13					1,7	2,2	5,7	0,40	2,2	A1	B1
SAREx 14.2	19	180	VDXQ071-2-0,17	0,17	3 360	2,2	2,4	8,7	0,52	2,4	A1	B1
	26					2,2	2,8	8,7	0,52	2,8	A1	B1
	38		ADXQ071-4-0,28	0,28	1 680	3,5	4,4	16	0,43	4,4	A1	B1
	54					3,5	4,8	16	0,43	4,8	A1	B1
	75		ADXQ071-2-0,50	0,50	3 360	3,9	5,5	26	0,56	5,5	A1	B2
	108					3,9	7,0	26	0,56	7,0	A1	B2
	4.8	360	VDXQ090-4-0,08	0,08	1 680	0,9	1,3	5,7	0,60	1,3	A1	B1
	6.7					0,9	1,5	5,7	0,60	1,5	A1	B1
	9.6		VDXQ090-4-0,18	0,18	1 680	2,0	3,1	9,2	0,60	3,1	A1	B1
	13					2,0	3,3	9,2	0,60	3,3	A1	B1
SAREx 14.6	19		VDXQ090-2-0,30	0,30	3 360	2,0	4,4	16	0,68	4,4	A1	B1
	26					2,0	5,0	16	0,68	5,0	A1	B1
	38		ADXQ090-4-0,50	0,50	1 680	4,4	6,5	26	0,56	6,5	A1	B2
	54					4,4	7,6	26	0,56	7,6	A1	B2
	75	710	ADXQ090-2-1,00	1,00	3 360	6,8	12	61	0,65	12	A2	B3
	108					6,8	13	61	0,65	13	A2	B3
	4.8		VDXQ090-4-0,14	0,14	1 680	1,5	2,4	8,5	0,55	2,4	A1	B1
	6.7					1,5	2,6	8,5	0,55	2,6	A1	B1
SAREx 16.2	9.6		VDXQ090-4-0,30	0,30	1 680	3,5	5,5	19	0,52	5,5	A1	B2
	13					3,5	6,1	19	0,52	6,1	A1	B2
	19		VDXQ090-2-0,60	0,60	3 360	5,0	7,9	33	0,61	7,9	A2	B2
	26					5,0	8,3	33	0,61	8,3	A2	B2
	38	710	ADXQ090-4-1,00	1,00	1 680	7,9	13	65	0,60	13	A2	B3
	54					7,9	14	65	0,60	14	A2	B3
	75		ADXQ090-2-2,00	2,00	3 360	12	21	120	0,69	21	A3	–
	108					12	24	120	0,69	24	A3	–
SAREx 16.2	4.8	710	VDXQ112-4-0,30	0,30	1 680	2,6	5,0	17	0,60	5,0	A1	B1
	6.7					2,6	5,5	17	0,60	5,5	A1	B1
	9.6		VDXQ112-4-0,60	0,60	1 680	5,0	8,7	37	0,53	8,7	A2	B2
	13					5,0	9,8	37	0,53	9,8	A2	B2
	19		VDXQ112-2-1,00	1,00	3 360	7,0	13	72	0,68	13	A2	–
	26					7,0	15	72	0,68	15	A2	–
	38		ADXQ112-4-2,00	2,00	1 680	13	22	87	0,65	22	A2	–
	54					13	26	87	0,65	24	A2	–
SAREx 16.2	75		ADXQ112-2-3,50	3,50	3 360	19	39	196	0,78	39	A4	–
	108					19	46	196	0,78	42	A4	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	20	VDXQ063-4-0,01	0.01	1,400	0.6	0.7	1.7	0.40	0.7	A1	B1
	5.6					0.6	0.7	1.7	0.40	0.7	A1	B1
	8		VDXQ063-4-0,03	0.03	1,400	0.7	0.7	1.6	0.50	0.7	A1	B1
	11					0.7	0.7	1.6	0.50	0.7	A1	B1
	16		VDXQ063-2-0,04	0.04	2,800	0.9	1.0	3.0	0.43	1.0	A1	B1
	22					0.9	1.0	3.0	0.43	1.0	A1	B1
	32		ADXQ063-4-0,07	0.07	1,400	1.4	1.6	3.5	0.40	1.6	A1	B1
	45					1.4	1.6	3.5	0.40	1.6	A1	B1
SAREx 07.6	63	40	ADXQ063-2-0,14	0.14	2,800	1.2	1.6	6.3	0.55	1.6	A1	B1
	90					1.2	1.7	6.3	0.55	1.7	A1	B1
	4		VDXQ063-4-0,02	0.02	1,400	0.7	0.7	1.7	0.50	0.7	A1	B1
	5.6					0.7	0.7	1.7	0.50	0.7	A1	B1
	8		VDXQ063-4-0,04	0.04	1,400	0.9	0.9	2.4	0.45	0.9	A1	B1
	11					0.9	0.9	2.4	0.45	0.9	A1	B1
	16		VDXQ063-2-0,08	0.08	2,800	0.9	1.4	4.3	0.52	1.4	A1	B1
	22					0.9	1.4	4.3	0.52	1.4	A1	B1
SAREx 10.2	32	90	ADXQ063-4-0,14	0.14	1,400	2.1	2.6	6.1	0.40	2.6	A1	B1
	45					2.1	2.6	6.1	0.40	2.6	A1	B1
	63		ADXQ063-2-0,28	0.28	2,800	1.9	2.8	9.9	0.53	2.8	A1	B1
	90					1.9	3.0	9.9	0.53	3.0	A1	B1
	4		VDXQ071-4-0,04	0.04	1,400	0.6	0.9	2.6	0.40	0.9	A1	B1
	5.6					0.6	0.9	2.6	0.40	0.9	A1	B1
	8		VDXQ071-4-0,08	0.08	1,400	1.4	1.6	4.5	0.40	1.6	A1	B1
	11					1.4	1.7	4.5	0.40	1.7	A1	B1
SAREx 14.2	16	180	VDXQ071-2-0,17	0.17	2,800	1.7	1.9	7.0	0.52	1.9	A1	B1
	22					1.7	2.3	7.0	0.52	2.3	A1	B1
	32		ADXQ071-4-0,28	0.28	1,400	2.8	3.5	13	0.43	3.5	A1	B1
	45					2.8	3.8	13	0.43	3.8	A1	B1
	63		ADXQ071-2-0,50	0.50	2,800	3.1	4.3	21	0.56	4.3	A1	B2
	90					3.1	5.6	21	0.56	5.6	A1	B2
	4		VDXQ090-4-0,08	0.08	1,400	0.7	1.0	4.5	0.60	1.0	A1	B1
	5.6					0.7	1.2	4.5	0.60	1.2	A1	B1
SAREx 14.6	8	360	VDXQ090-4-0,18	0.18	1,400	1.6	2.4	7.3	0.60	2.4	A1	B1
	11					1.6	2.6	7.3	0.60	2.6	A1	B1
	16		VDXQ090-2-0,30	0.30	2,800	1.6	3.5	13	0.68	3.5	A1	B1
	22					1.6	4.0	13	0.68	4.0	A1	B1
	32		ADXQ090-4-0,50	0.50	1,400	3.5	5.2	21	0.56	5.2	A1	B2
	45					3.5	6.1	21	0.56	6.1	A1	B2
	63		ADXQ090-2-1,00	1.00	2,800	5.4	9.6	49	0.65	9.6	A2	B3
	90					5.4	10	49	0.65	10	A2	B3
SAREx 16.2	4	710	VDXQ090-4-0,14	0.14	1,400	1.2	1.9	6.8	0.55	1.9	A1	B1
	5.6					1.2	2.1	6.8	0.55	2.1	A1	B1
	8		VDXQ090-4-0,30	0.30	1,400	2.8	4.3	15	0.52	4.3	A1	B1
	11					2.8	4.9	15	0.52	4.9	A1	B1
	16		VDXQ090-2-0,60	0.60	2,800	4.0	6.3	26	0.61	6.3	A1	B2
	22					4.0	6.6	26	0.61	6.6	A1	B2
	32		ADXQ090-4-1,00	1.00	1,400	6.3	10	52	0.60	10	A2	B3
	45					6.3	11	52	0.60	11	A2	B3
SAREx 16.2	63	710	ADXQ090-2-2,00	2.00	2,800	9.9	17	96	0.69	17	A2	–
	90					9.9	19	96	0.69	19	A2	–
	4		VDXQ112-4-0,30	0.30	1,400	2.1	4.0	14	0.60	4.0	A1	B1
	5.6					2.1	4.3	14	0.60	4.3	A1	B1
	8		VDXQ112-4-0,60	0.60	1,400	4.0	7.0	30	0.53	7.0	A2	B2
	11					4.0	7.8	30	0.53	7.8	A2	B2
	16		VDXQ112-2-1,00	1.00	2,800	5.6	11	57	0.68	11	A2	B3
	22					5.6	12	57	0.68	12	A2	B3
SAREx 16.2	32	710	ADXQ112-4-2,00	2.00	1,400	10	17	70	0.65	17	A2	–
	45					10	21	70	0.65	20	A2	–
	63		ADXQ112-2-3,50	3.50	2,800	15	31	157	0.78	31	A4	–
	90					15	37	157	0.78	34	A4	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	20	VDXQ063-4-0,01	0.01	1 400	0.4	0.4	1.1	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.1	0.40	0.4	A1	B1
	8		VDXQ063-4-0,03	0.03	1,400	0.4	0.4	0.9	0.50	0.4	A1	B1
	11					0.4	0.4	0.9	0.50	0.4	A1	B1
	16		VDXQ063-2-0,04	0.04	2,800	0.5	0.6	1.8	0.43	0.6	A1	B1
	22					0.5	0.6	1.8	0.43	0.6	A1	B1
	32		ADXQ063-4-0,07	0.07	1,400	0.8	0.9	2.1	0.40	0.9	A1	B1
	45					0.8	0.9	2.1	0.40	0.9	A1	B1
SAREx 07.6	63	40	ADXQ063-2-0,14	0.14	2,800	0.7	0.9	3.8	0.55	0.9	A1	B1
	90					0.7	1.1	3.8	0.55	1.1	A1	B1
	4		VDXQ063-4-0,02	0.02	1,400	0.4	0.4	1.1	0.50	0.4	A1	B1
	5.6					0.4	0.4	1.1	0.50	0.4	A1	B1
	8		VDXQ063-4-0,04	0.04	1,400	0.5	0.5	1.5	0.45	0.5	A1	B1
	11					0.5	0.5	1.5	0.45	0.5	A1	B1
	16		VDXQ063-2-0,08	0.08	2,800	0.5	0.8	2.6	0.52	0.8	A1	B1
	22					0.5	0.8	2.6	0.52	0.8	A1	B1
SAREx 10.2	32	90	ADXQ063-4-0,14	0.14	1,400	1.3	1.6	3.7	0.40	1.6	A1	B1
	45					1.3	1.6	3.7	0.40	1.6	A1	B1
	63		ADXQ063-2-0,28	0.28	2,800	1.2	1.7	6.0	0.53	1.7	A1	B1
	90					1.2	1.8	6.0	0.53	1.8	A1	B1
	4		VDXQ071-4-0,04	0.04	1,400	0.4	0.5	1.6	0.40	0.5	A1	B1
	5.6					0.4	0.5	1.6	0.40	0.5	A1	B1
	8		VDXQ071-4-0,08	0.08	1,400	0.8	0.9	2.7	0.40	0.9	A1	B1
	11					0.8	1.1	2.7	0.40	1.1	A1	B1
SAREx 14.2	16	180	VDXQ071-2-0,17	0.17	2,800	1.1	1.2	4.2	0.52	1.2	A1	B1
	22					1.1	1.4	4.2	0.52	1.4	A1	B1
	32		ADXQ071-4-0,28	0.28	1,400	1.7	2.1	7.6	0.43	2.1	A1	B1
	45					1.7	2.3	7.6	0.43	2.3	A1	B1
	63		ADXQ071-2-0,50	0.50	2,800	1.9	2.6	13	0.56	2.6	A1	B1
	90					1.9	3.4	13	0.56	3.4	A1	B1
	4		VDXQ090-4-0,08	0.08	1,400	0.4	0.6	2.7	0.60	0.6	A1	B1
	5.6					0.4	0.7	2.7	0.60	0.7	A1	B1
SAREx 14.6	8	360	VDXQ090-4-0,18	0.18	1,400	0.9	1.5	4.4	0.60	1.5	A1	B1
	11					0.9	1.6	4.4	0.60	1.6	A1	B1
	16		VDXQ090-2-0,30	0.30	2,800	0.9	2.1	7.6	0.68	2.1	A1	B1
	22					0.9	2.4	7.6	0.68	2.4	A1	B1
	32		ADXQ090-4-0,50	0.50	1,400	2.1	3.2	13	0.56	3.2	A1	B1
	45					2.1	3.7	13	0.56	3.7	A1	B1
	63		ADXQ090-2-1,00	1.00	2,800	3.3	5.8	29	0.65	5.8	A2	B2
	90					3.3	6.3	29	0.65	6.3	A2	B2
SAREx 16.2	4	710	VDXQ090-4-0,14	0.14	1,400	0.7	1.2	4.1	0.55	1.2	A1	B1
	5.6					0.7	1.3	4.1	0.55	1.3	A1	B1
	8		VDXQ090-4-0,30	0.30	1,400	1.7	2.6	8.9	0.52	2.6	A1	B1
	11					1.7	2.9	8.9	0.52	2.9	A1	B1
	16		VDXQ090-2-0,60	0.60	2,800	2.4	3.8	16	0.61	3.8	A1	B1
	22					2.4	4.0	16	0.61	4.0	A1	B1
	32		ADXQ090-4-1,00	1.00	1,400	3.8	6.3	32	0.60	6.3	A2	B2
	45					3.8	6.8	32	0.60	6.8	A2	B2
SAREx 16.2	63	710	ADXQ090-2-2,00	2.00	2,800	6.0	10	58	0.69	10	A2	B3
	90					6.0	12	58	0.69	12	A2	B3
	4		VDXQ112-4-0,30	0.30	1,400	1.3	2.4	8.4	0.60	2.4	A1	B1
	5.6					1.3	2.6	8.4	0.60	2.6	A1	B1
	8		VDXQ112-4-0,60	0.60	1,400	2.4	4.2	18	0.53	4.2	A1	B1
	11					2.4	4.7	18	0.53	4.7	A1	B1
	16		VDXQ112-2-1,00	1.00	2,800	3.4	6.4	35	0.68	6.4	A2	B2
	22					3.4	7.2	35	0.68	7.2	A2	B2
SAREx 16.2	32	710	ADXQ112-4-2,00	2.00	1,400	6.3	11	42	0.65	11	A2	B3
	45					6.3	13	42	0.65	12	A2	B3
	63		ADXQ112-2-3,50	3.50	2,800	8.9	19	95	0.78	19	A2	–
	90					8.9	22	95	0.78	21	A2	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0.01	1,680	0.4	0.5	1.3	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.3	0.40	0.5	A1	B1
	9.6					0.5	0.5	1.1	0.50	0.5	A1	B1
	13					0.5	0.5	1.1	0.50	0.5	A1	B1
	19		VDXQ063-2-0,04	0.04	3,360	0.6	0.8	2.1	0.43	0.8	A1	B1
	26					0.6	0.8	2.1	0.43	0.8	A1	B1
	38					1.0	1.1	2.5	0.40	1.1	A1	B1
	54					1.0	1.1	2.5	0.40	1.1	A1	B1
SAREx 07.6	75	40	VDXQ063-4-0,02	0.02	1,680	0.5	0.5	1.3	0.50	0.5	A1	B1
	108					0.5	0.5	1.3	0.50	0.5	A1	B1
	4.8					0.6	0.6	1.8	0.45	0.6	A1	B1
	6.7					0.6	0.6	1.8	0.45	0.6	A1	B1
	9.6		VDXQ063-2-0,08	0.08	3,360	0.6	1.0	3.2	0.52	1.0	A1	B1
	13					0.6	1.0	3.2	0.52	1.0	A1	B1
	19					1.5	1.9	4.4	0.40	1.9	A1	B1
	26					1.5	1.9	4.4	0.40	1.9	A1	B1
SAREx 10.2	38	90	VDXQ063-4-0,14	0.14	1,680	1.4	2.0	7.2	0.53	2.0	A1	B1
	54					1.4	2.1	7.2	0.53	2.1	A1	B1
	75		VDXQ071-4-0,04	0.04	1,680	0.4	0.6	1.9	0.40	0.6	A1	B1
	108					0.4	0.6	1.9	0.40	0.6	A1	B1
	4.8					1.0	1.1	3.3	0.40	1.1	A1	B1
	6.7					1.0	1.3	3.3	0.40	1.3	A1	B1
	9.6		VDXQ071-2-0,17	0.17	3,360	1.3	1.4	5.1	0.52	1.4	A1	B1
	13					1.3	1.6	5.1	0.52	1.6	A1	B1
SAREx 14.2	19	180	VDXQ071-4-0,28	0.28	1,680	2.0	2.5	9.1	0.43	2.5	A1	B1
	26					2.0	2.8	9.1	0.43	2.8	A1	B1
	38		VDXQ090-4-0,08	0.08	1,680	0.5	0.8	3.3	0.60	0.8	A1	B1
	54					0.5	0.9	3.3	0.60	0.9	A1	B1
	75					1.1	1.8	5.3	0.60	1.8	A1	B1
	108					1.1	1.9	5.3	0.60	1.9	A1	B1
	4.8		VDXQ090-2-0,30	0.30	3,360	1.1	2.5	9.1	0.68	2.5	A1	B1
	6.7					1.1	2.9	9.1	0.68	2.9	A1	B1
SAREx 14.6	9.6	360	VDXQ090-4-0,50	0.50	1,680	2.5	3.8	15	0.56	3.8	A1	B1
	13					2.5	4.4	15	0.56	4.4	A1	B1
	19		VDXQ090-2-1,00	1.00	3,360	3.9	6.9	35	0.65	6.9	A2	B2
	26					3.9	7.6	35	0.65	7.6	A2	B2
	38		VDXQ090-4-0,14	0.14	1,680	0.9	1.4	4.9	0.55	1.4	A1	B1
	54					0.9	1.5	4.9	0.55	1.5	A1	B1
	75					2.0	3.2	11	0.52	3.2	A1	B1
	108					2.0	3.5	11	0.52	3.5	A1	B1
SAREx 16.2	4.8	710	VDXQ090-2-0,60	0.60	3,360	2.9	4.5	19	0.61	4.5	A1	B2
	6.7					2.9	4.8	19	0.61	4.8	A1	B2
	9.6		ADXQ090-4-1,00	1.00	1,680	4.5	7.6	38	0.60	7.6	A2	B2
	13					4.5	8.2	38	0.60	8.2	A2	B2
	19		ADXQ090-2-2,00	2.00	3,360	7.2	12	69	0.69	12	A2	–
	26					7.2	14	69	0.69	14	A2	–
	38		VDXQ112-4-0,30	0.30	1,680	1.5	2.9	10	0.60	2.9	A1	B1
	54					1.5	3.2	10	0.60	3.2	A1	B1
SAREx 16.2	75	710	VDXQ112-4-0,60	0.60	1,680	2.9	5.1	21	0.53	5.1	A1	B2
	108					2.9	5.7	21	0.53	5.7	A1	B2
	4.8		VDXQ112-2-1,00	1.00	3,360	4.0	7.7	42	0.68	7.7	A2	B2
	6.7					4.0	8.6	42	0.68	8.6	A2	B2
	9.6		ADXQ112-4-2,00	2.00	1,680	7.6	13	51	0.65	13	A2	B3
	13					7.6	15	51	0.65	14	A2	B3
	19		ADXQ112-2-3,50	3.50	3,360	11	23	114	0.78	23	A3	–
	26					11	27	114	0.78	25	A3	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	20	VDXQ063-4-0,01	0.01	1 400	0.4	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.40	0.4	A1	B1
	8		VDXQ063-4-0,03	0.03	1,400	0.4	0.4	0.9	0.50	0.4	A1	B1
	11					0.4	0.4	0.9	0.50	0.4	A1	B1
	16		VDXQ063-2-0,04	0.04	2,800	0.5	0.6	1.7	0.43	0.6	A1	B1
	22					0.5	0.6	1.7	0.43	0.6	A1	B1
	32		ADXQ063-4-0,07	0.07	1,400	0.8	0.9	2.0	0.40	0.9	A1	B1
	45					0.8	0.9	2.0	0.40	0.9	A1	B1
SAREx 07.6	63	40	ADXQ063-2-0,14	0.14	2,800	0.7	0.9	3.6	0.55	0.9	A1	B1
	90					0.7	1.0	3.6	0.55	1.0	A1	B1
	4		VDXQ063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.50	0.4	A1	B1
	8		VDXQ063-4-0,04	0.04	1,400	0.5	0.5	1.4	0.45	0.5	A1	B1
	11					0.5	0.5	1.4	0.45	0.5	A1	B1
	16		VDXQ063-2-0,08	0.08	2,800	0.5	0.8	2.5	0.52	0.8	A1	B1
	22					0.5	0.8	2.5	0.52	0.8	A1	B1
SAREx 10.2	32	90	ADXQ063-4-0,14	0.14	1,400	1.2	1.5	3.5	0.40	1.5	A1	B1
	45					1.2	1.5	3.5	0.40	1.5	A1	B1
	63		ADXQ063-2-0,28	0.28	2,800	1.1	1.6	5.7	0.53	1.6	A1	B1
	90					1.1	1.7	5.7	0.53	1.7	A1	B1
SAREx 14.2	4	180	VDXQ071-4-0,04	0.04	1,400	0.4	0.5	1.5	0.40	0.5	A1	B1
	5.6					0.4	0.5	1.5	0.40	0.5	A1	B1
	8		VDXQ071-4-0,08	0.08	1,400	0.8	0.9	2.6	0.40	0.9	A1	B1
	11					0.8	1.0	2.6	0.40	1.0	A1	B1
	16		VDXQ071-2-0,17	0.17	2,800	1.0	1.1	4.0	0.52	1.1	A1	B1
	22					1.0	1.3	4.0	0.52	1.3	A1	B1
	32		ADXQ071-4-0,28	0.28	1,400	1.6	2.0	7.2	0.43	2.0	A1	B1
	45					1.6	2.2	7.2	0.43	2.2	A1	B1
SAREx 14.6	63	360	ADXQ071-2-0,50	0.50	2,800	1.8	2.5	12	0.56	2.5	A1	B1
	90					1.8	3.2	12	0.56	3.2	A1	B1
	4		VDXQ090-4-0,08	0.08	1,400	0.4	0.6	2.6	0.60	0.6	A1	B1
	5.6					0.4	0.7	2.6	0.60	0.7	A1	B1
	8		VDXQ090-4-0,18	0.18	1,400	0.9	1.4	4.2	0.60	1.4	A1	B1
	11					0.9	1.5	4.2	0.60	1.5	A1	B1
	16		VDXQ090-2-0,30	0.30	2,800	0.9	2.0	7.2	0.68	2.0	A1	B1
	22					0.9	2.3	7.2	0.68	2.3	A1	B1
SAREx 16.2	32	710	ADXQ090-4-0,50	0.50	1,400	2.0	3.0	12	0.56	3.0	A1	B1
	45					2.0	3.5	12	0.56	3.5	A1	B1
	63		ADXQ090-2-1,00	1.00	2,800	3.1	5.5	28	0.65	5.5	A2	B2
	90					3.1	6.0	28	0.65	6.0	A2	B2
	4		VDXQ090-4-0,14	0.14	1,400	0.7	1.1	3.9	0.55	1.1	A1	B1
	5.6					0.7	1.2	3.9	0.55	1.2	A1	B1
	8		VDXQ090-4-0,30	0.30	1,400	1.6	2.5	8.5	0.52	2.5	A1	B1
	11					1.6	2.8	8.5	0.52	2.8	A1	B1
SAREx 16.2	16	710	VDXQ090-2-0,60	0.60	2,800	2.3	3.6	15	0.61	3.6	A1	B1
	22					2.3	3.8	15	0.61	3.8	A1	B1
	32		ADXQ090-4-1,00	1.00	1,400	3.6	6.0	30	0.60	6.0	A2	B2
	45					3.6	6.5	30	0.60	6.5	A2	B2
	63		ADXQ090-2-2,00	2.00	2,800	5.7	9.5	55	0.69	9.5	A2	B3
	90					5.7	11	55	0.69	11	A2	B3
	4		VDXQ112-4-0,30	0.30	1,400	1.2	2.3	8.0	0.60	2.3	A1	B1
	5.6					1.2	2.5	8.0	0.60	2.5	A1	B1
SAREx 16.2	8	710	VDXQ112-4-0,60	0.60	1,400	2.3	4.0	17	0.53	4.0	A1	B1
	11					2.3	4.5	17	0.53	4.5	A1	B1
	16		VDXQ112-2-1,00	1.00	2,800	3.2	6.1	33	0.68	6.1	A2	B2
	22					3.2	6.8	33	0.68	6.8	A2	B2
	32		ADXQ112-4-2,00	2.00	1,400	6.0	10	40	0.65	10	A2	B2
	45					6.0	12	40	0.65	11	A2	B2
	63		ADXQ112-2-3,50	3.50	2,800	8.5	18	90	0.78	18	A2	–
	90					8.5	21	90	0.78	20	A2	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0.01	1,680	0.4	0.5	1.2	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.2	0.40	0.5	A1	B1
	9.6		VDXQ063-4-0,03	0.03	1,680	0.5	0.5	1.1	0.50	0.5	A1	B1
	13					0.5	0.5	1.1	0.50	0.5	A1	B1
	19		VDXQ063-2-0,04	0.04	3,360	0.6	0.7	2.0	0.43	0.7	A1	B1
	26					0.6	0.7	2.0	0.43	0.7	A1	B1
	38		ADXQ063-4-0,07	0.07	1,680	1.0	1.1	2.4	0.40	1.1	A1	B1
	54					1.0	1.1	2.4	0.40	1.1	A1	B1
SAREx 07.6	75	40	ADXQ063-2-0,14	0.14	3,360	0.8	1.1	4.3	0.55	1.1	A1	B1
	108					0.8	1.2	4.3	0.55	1.2	A1	B1
	4.8		VDXQ063-4-0,02	0.02	1,680	0.5	0.5	1.2	0.50	0.5	A1	B1
	6.7					0.5	0.5	1.2	0.50	0.5	A1	B1
	9.6		VDXQ063-4-0,04	0.04	1,680	0.6	0.6	1.7	0.45	0.6	A1	B1
	13					0.6	0.6	1.7	0.45	0.6	A1	B1
	19		VDXQ063-2-0,08	0.08	3,360	0.6	1.0	3.0	0.52	1.0	A1	B1
	26					0.6	1.0	3.0	0.52	1.0	A1	B1
SAREx 10.2	38	90	ADXQ063-4-0,14	0.14	1,680	1.4	1.8	4.2	0.40	1.8	A1	B1
	54					1.4	1.8	4.2	0.40	1.8	A1	B1
	75		ADXQ063-2-0,28	0.28	3,360	1.3	1.9	6.8	0.53	1.9	A1	B1
	108					1.3	2.0	6.8	0.53	2.0	A1	B1
	4.8		VDXQ071-4-0,04	0.04	1,680	0.4	0.6	1.8	0.40	0.6	A1	B1
	6.7					0.4	0.6	1.8	0.40	0.6	A1	B1
	9.6		VDXQ071-4-0,08	0.08	1,680	1.0	1.1	3.1	0.40	1.1	A1	B1
	13					1.0	1.2	3.1	0.40	1.2	A1	B1
SAREx 14.2	19	180	VDXQ071-2-0,17	0.17	3,360	1.2	1.3	4.8	0.52	1.3	A1	B1
	26					1.2	1.6	4.8	0.52	1.6	A1	B1
	38		ADXQ071-4-0,28	0.28	1,680	1.9	2.4	8.6	0.43	2.4	A1	B1
	54					1.9	2.6	8.6	0.43	2.6	A1	B1
	75		ADXQ071-2-0,50	0.50	3,360	2.2	3.0	14	0.56	3.0	A1	B1
	108					2.2	3.8	14	0.56	3.8	A1	B1
	4.8	360	VDXQ090-4-0,08	0.08	1,680	0.5	0.7	3.1	0.60	0.7	A1	B1
	6.7					0.5	0.8	3.1	0.60	0.8	A1	B1
SAREx 14.6	9.6		VDXQ090-4-0,18	0.18	1,680	1.1	1.7	5.0	0.60	1.7	A1	B1
	13					1.1	1.8	5.0	0.60	1.8	A1	B1
	19		VDXQ090-2-0,30	0.30	3,360	1.1	2.4	8.6	0.68	2.4	A1	B1
	26					1.1	2.8	8.6	0.68	2.8	A1	B1
	38		ADXQ090-4-0,50	0.50	1,680	2.4	3.6	14	0.56	3.6	A1	B1
	54					2.4	4.2	14	0.56	4.2	A1	B1
	75		ADXQ090-2-1,00	1.00	3,360	3.7	6.6	34	0.65	6.6	A2	B2
	108					3.7	7.2	34	0.65	7.2	A2	B2
SAREx 16.2	4.8	710	VDXQ090-4-0,14	0.14	1,680	0.8	1.3	4.7	0.55	1.3	A1	B1
	6.7					0.8	1.4	4.7	0.55	1.4	A1	B1
	9.6		VDXQ090-4-0,30	0.30	1,680	1.9	3.0	10	0.52	3.0	A1	B1
	13					1.9	3.4	10	0.52	3.4	A1	B1
	19		VDXQ090-2-0,60	0.60	3,360	2.8	4.3	18	0.61	4.3	A1	B1
	26					2.8	4.6	18	0.61	4.6	A1	B1
	38		ADXQ090-4-1,00	1.00	1,680	4.3	7.2	36	0.60	7.2	A2	B2
	54					4.3	7.8	36	0.60	7.8	A2	B2
SAREx 16.2	75	710	ADXQ090-2-2,00	2.00	3,360	6.8	11	66	0.69	11	A2	–
	108					6.8	13	66	0.69	13	A2	–
	4.8		VDXQ112-4-0,30	0.30	1,680	1.4	2.8	9.6	0.60	2.8	A1	B1
	6.7					1.4	3.0	9.6	0.60	3.0	A1	B1
	9.6		VDXQ112-4-0,60	0.60	1,680	2.8	4.8	20	0.53	4.8	A1	B2
	13					2.8	5.4	20	0.53	5.4	A1	B2
	19		VDXQ112-2-1,00	1.00	3,360	3.8	7.3	40	0.68	7.3	A2	B2
	26					3.8	8.2	40	0.68	8.2	A2	B2
SAREx 16.2	38	710	ADXQ112-4-2,00	2.00	1,680	7.2	12	48	0.65	12	A2	B3
	54					7.2	14	48	0.65	14	A2	B3
	75		ADXQ112-2-3,50	3.50	3,360	10	22	108	0.78	22	A3	–
	108					10	25	108	0.78	24	A3	–

1) – 3) Siehe Hinweise zu den Elektrischen Daten Drehantriebe SAEx .2/SAREx .2 mit Drehstrommotoren

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

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	20	VDXQ063-4-0,01	0.01	1,400	0.3	0.4	1.0	0.40	0.4	A1	B1
	5.6					0.3	0.4	1.0	0.40	0.4	A1	B1
	8		VDXQ063-4-0,03	0.03	1,400	0.4	0.4	0.9	0.50	0.4	A1	B1
	11					0.4	0.4	0.9	0.50	0.4	A1	B1
	16		VDXQ063-2-0,04	0.04	2,800	0.5	0.6	1.6	0.43	0.6	A1	B1
	22					0.5	0.6	1.6	0.43	0.6	A1	B1
	32		ADXQ063-4-0,07	0.07	1,400	0.8	0.9	1.9	0.40	0.9	A1	B1
	45					0.8	0.9	1.9	0.40	0.9	A1	B1
SAREx 07.6	63	40	ADXQ063-2-0,14	0.14	2,800	0.7	0.9	3.5	0.55	0.9	A1	B1
	90					0.7	1.0	3.5	0.55	1.0	A1	B1
	4		VDXQ063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	5.6					0.4	0.4	1.0	0.50	0.4	A1	B1
	8		VDXQ063-4-0,04	0.04	1,400	0.5	0.5	1.3	0.45	0.5	A1	B1
	11					0.5	0.5	1.3	0.45	0.5	A1	B1
	16		VDXQ063-2-0,08	0.08	2,800	0.5	0.8	2.4	0.52	0.8	A1	B1
	22					0.5	0.8	2.4	0.52	0.8	A1	B1
SAREx 10.2	32	90	ADXQ063-4-0,14	0.14	1,400	1.2	1.4	3.4	0.40	1.4	A1	B1
	45					1.2	1.4	3.4	0.40	1.4	A1	B1
	63		ADXQ063-2-0,28	0.28	2,800	1.1	1.5	5.5	0.53	1.5	A1	B1
	90					1.1	1.6	5.5	0.53	1.6	A1	B1
	4		VDXQ071-4-0,04	0.04	1,400	0.3	0.5	1.4	0.40	0.5	A1	B1
	5.6					0.3	0.5	1.4	0.40	0.5	A1	B1
	8		VDXQ071-4-0,08	0.08	1,400	0.8	0.9	2.5	0.40	0.9	A1	B1
	11					0.8	1.0	2.5	0.40	1.0	A1	B1
SAREx 14.2	16	180	VDXQ071-2-0,17	0.17	2,800	1.0	1.1	3.9	0.52	1.1	A1	B1
	22					1.0	1.3	3.9	0.52	1.3	A1	B1
	32		ADXQ071-4-0,28	0.28	1,400	1.5	1.9	6.9	0.43	1.9	A1	B1
	45					1.5	2.1	6.9	0.43	2.1	A1	B1
	63		ADXQ071-2-0,50	0.50	2,800	1.7	2.4	12	0.56	2.4	A1	B1
	90					1.7	3.1	12	0.56	3.1	A1	B1
	4		VDXQ090-4-0,08	0.08	1,400	0.4	0.6	2.5	0.60	0.6	A1	B1
	5.6					0.4	0.7	2.5	0.60	0.7	A1	B1
SAREx 14.6	8	360	VDXQ090-4-0,18	0.18	1,400	0.9	1.3	4.0	0.60	1.3	A1	B1
	11					0.9	1.4	4.0	0.60	1.4	A1	B1
	16		VDXQ090-2-0,30	0.30	2,800	0.9	1.9	6.9	0.68	1.9	A1	B1
	22					0.9	2.2	6.9	0.68	2.2	A1	B1
	32		ADXQ090-4-0,50	0.50	1,400	1.9	2.9	12	0.56	2.9	A1	B1
	45					1.9	3.4	12	0.56	3.4	A1	B1
	63		ADXQ090-2-1,00	1.00	2,800	3.0	5.3	27	0.65	5.3	A2	B2
	90					3.0	5.8	27	0.65	5.8	A2	B2
SAREx 16.2	4	710	VDXQ090-4-0,14	0.14	1,400	0.7	1.1	3.8	0.55	1.1	A1	B1
	5.6					0.7	1.2	3.8	0.55	1.2	A1	B1
	8		VDXQ090-4-0,30	0.30	1,400	1.5	2.4	8.2	0.52	2.4	A1	B1
	11					1.5	2.7	8.2	0.52	2.7	A1	B1
	16		VDXQ090-2-0,60	0.60	2,800	2.2	3.5	14	0.61	3.5	A1	B1
	22					2.2	3.7	14	0.61	3.7	A1	B1
	32		ADXQ090-4-1,00	1.00	1,400	3.5	5.8	29	0.60	5.8	A2	B2
	45					3.5	6.3	29	0.60	6.3	A2	B2
SAREx 16.2	63	710	ADXQ090-2-2,00	2.00	2,800	5.5	9.2	53	0.69	9.2	A2	B3
	90					5.5	11	53	0.69	11	A2	B3
	4		VDXQ112-4-0,30	0.30	1,400	1.2	2.2	7.7	0.60	2.2	A1	B1
	5.6					1.2	2.4	7.7	0.60	2.4	A1	B1
	8		VDXQ112-4-0,60	0.60	1,400	2.2	3.9	16	0.53	3.9	A1	B1
	11					2.2	4.3	16	0.53	4.3	A1	B1
	16		VDXQ112-2-1,00	1.00	2,800	3.1	5.9	32	0.68	5.9	A2	B2
	22					3.1	6.6	32	0.68	6.6	A2	B2
SAREx 16.2	32	710	ADXQ112-4-2,00	2.00	1,400	5.8	9.6	39	0.65	9.6	A2	B2
	45					5.8	12	39	0.65	11	A2	B2
	63		ADXQ112-2-3,50	3.50	2,800	8.2	17	87	0.78	17	A2	–
	90					8.2	20	87	0.78	19	A2	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0.01	1,680	0.4	0.4	1.1	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.1	0.40	0.4	A1	B1
	9.6		VDXQ063-4-0,03	0.03	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	13					0.4	0.4	1.0	0.50	0.4	A1	B1
	19		VDXQ063-2-0,04	0.04	3,360	0.5	0.7	1.9	0.43	0.7	A1	B1
	26					0.5	0.7	1.9	0.43	0.7	A1	B1
	38		ADXQ063-4-0,07	0.07	1,680	0.9	1.0	2.2	0.40	1.0	A1	B1
	54					0.9	1.0	2.2	0.40	1.0	A1	B1
SAREx 07.6	75	40	ADXQ063-2-0,14	0.14	3,360	0.8	1.0	3.9	0.55	1.0	A1	B1
	108					0.8	1.1	3.9	0.55	1.1	A1	B1
	4.8		VDXQ063-4-0,02	0.02	1,680	0.4	0.4	1.1	0.50	0.4	A1	B1
	6.7					0.4	0.4	1.1	0.50	0.4	A1	B1
	9.6		VDXQ063-4-0,04	0.04	1,680	0.5	0.5	1.5	0.45	0.5	A1	B1
	13					0.5	0.5	1.5	0.45	0.5	A1	B1
	19		VDXQ063-2-0,08	0.08	3,360	0.5	0.9	2.7	0.52	0.9	A1	B1
	26					0.5	0.9	2.7	0.52	0.9	A1	B1
SAREx 10.2	38	90	ADXQ063-4-0,14	0.14	1,680	1.3	1.6	3.8	0.40	1.6	A1	B1
	54					1.3	1.6	3.8	0.40	1.6	A1	B1
	75		ADXQ063-2-0,28	0.28	3,360	1.2	1.7	6.2	0.53	1.7	A1	B1
	108					1.2	1.9	6.2	0.53	1.9	A1	B1
	4.8		VDXQ071-4-0,04	0.04	1,680	0.4	0.5	1.6	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.6	0.40	0.5	A1	B1
	9.6		VDXQ071-4-0,08	0.08	1,680	0.9	1.0	2.8	0.40	1.0	A1	B1
	13					0.9	1.1	2.8	0.40	1.1	A1	B1
SAREx 14.2	19	180	VDXQ071-2-0,17	0.17	3,360	1.1	1.2	4.4	0.52	1.2	A1	B1
	26					1.1	1.4	4.4	0.52	1.4	A1	B1
	38		ADXQ071-4-0,28	0.28	1,680	1.7	2.2	7.9	0.43	2.2	A1	B1
	54					1.7	2.4	7.9	0.43	2.4	A1	B1
	75		ADXQ071-2-0,50	0.50	3,360	2.0	2.7	13	0.56	2.7	A1	B1
	108					2.0	3.5	13	0.56	3.5	A1	B1
	4.8	360	VDXQ090-4-0,08	0.08	1,680	0.4	0.7	2.8	0.60	0.7	A1	B1
	6.7					0.4	0.8	2.8	0.60	0.8	A1	B1
SAREx 14.6	9.6		VDXQ090-4-0,18	0.18	1,680	1.0	1.5	4.6	0.60	1.5	A1	B1
	13					1.0	1.6	4.6	0.60	1.6	A1	B1
	19		VDXQ090-2-0,30	0.30	3,360	1.0	2.2	7.9	0.68	2.2	A1	B1
	26					1.0	2.5	7.9	0.68	2.5	A1	B1
	38		ADXQ090-4-0,50	0.50	1,680	2.2	3.3	13	0.56	3.3	A1	B1
	54					2.2	3.8	13	0.56	3.8	A1	B1
	75		ADXQ090-2-1,00	1.00	3,360	3.4	6.0	31	0.65	6.0	A2	B2
	108					3.4	6.5	31	0.65	6.5	A2	B2
SAREx 16.2	4.8	710	VDXQ090-4-0,14	0.14	1,680	0.8	1.2	4.3	0.55	1.2	A1	B1
	6.7					0.8	1.3	4.3	0.55	1.3	A1	B1
	9.6		VDXQ090-4-0,30	0.30	1,680	1.7	2.7	9.3	0.52	2.7	A1	B1
	13					1.7	3.1	9.3	0.52	3.1	A1	B1
	19		VDXQ090-2-0,60	0.60	3,360	2.5	3.9	16	0.61	3.9	A1	B1
	26					2.5	4.1	16	0.61	4.1	A1	B1
	38		ADXQ090-4-1,00	1.00	1,680	3.9	6.5	33	0.60	6.5	A2	B2
	54					3.9	7.1	33	0.60	7.1	A2	B2
SAREx 16.2	75	710	ADXQ090-2-2,00	2.00	3,360	6.2	10	60	0.69	10	A2	B3
	108					6.2	12	60	0.69	12	A2	B3
	4.8		VDXQ112-4-0,30	0.30	1,680	1.3	2.5	8.7	0.60	2.5	A1	B1
	6.7					1.3	2.7	8.7	0.60	2.7	A1	B1
	9.6		VDXQ112-4-0,60	0.60	1,680	2.5	4.4	19	0.53	4.4	A1	B2
	13					2.5	4.9	19	0.53	4.9	A1	B2
	19		VDXQ112-2-1,00	1.00	3,360	3.5	6.7	36	0.68	6.7	A2	B2
	26					3.5	7.4	36	0.68	7.4	A2	B2
SAREx 16.2	38	710	ADXQ112-4-2,00	2.00	1,680	6.5	11	44	0.65	11	A2	B3
	54					6.5	13	44	0.65	13	A2	B3
	75		ADXQ112-2-3,50	3.50	3,360	9.3	20	98	0.78	20	A2	–
	108					9.3	23	98	0.78	21	A2	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0.01	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDXQ063-4-0,03	0.03	1,680	0.4	0.4	0.9	0.50	0.4	A1	B1
	13					0.4	0.4	0.9	0.50	0.4	A1	B1
	19		VDXQ063-2-0,04	0.04	3,360	0.5	0.6	1.8	0.43	0.6	A1	B1
	26					0.5	0.6	1.8	0.43	0.6	A1	B1
	38		ADXQ063-4-0,07	0.07	1,680	0.8	0.9	2.1	0.40	0.9	A1	B1
	54					0.8	0.9	2.1	0.40	0.9	A1	B1
SAREx 07.6	75	40	ADXQ063-2-0,14	0.14	3,360	0.7	0.9	3.8	0.55	0.9	A1	B1
	108					0.7	1.0	3.8	0.55	1.0	A1	B1
	4.8		VDXQ063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.50	0.4	A1	B1
	9.6		VDXQ063-4-0,04	0.04	1,680	0.5	0.5	1.5	0.45	0.5	A1	B1
	13					0.5	0.5	1.5	0.45	0.5	A1	B1
	19		VDXQ063-2-0,08	0.08	3,360	0.5	0.8	2.6	0.52	0.8	A1	B1
	26					0.5	0.8	2.6	0.52	0.8	A1	B1
SAREx 10.2	38	90	ADXQ063-4-0,14	0.14	1,680	1.3	1.6	3.7	0.40	1.6	A1	B1
	54					1.3	1.6	3.7	0.40	1.6	A1	B1
	75		ADXQ063-2-0,28	0.28	3,360	1.1	1.7	5.9	0.53	1.7	A1	B1
	108					1.1	1.8	5.9	0.53	1.8	A1	B1
	4.8		VDXQ071-4-0,04	0.04	1,680	0.4	0.5	1.6	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.6	0.40	0.5	A1	B1
	9.6		VDXQ071-4-0,08	0.08	1,680	0.8	0.9	2.7	0.40	0.9	A1	B1
	13					0.8	1.0	2.7	0.40	1.0	A1	B1
SAREx 14.2	19	180	VDXQ071-2-0,17	0.17	3,360	1.0	1.1	4.2	0.52	1.1	A1	B1
	26					1.0	1.4	4.2	0.52	1.4	A1	B1
	38		ADXQ071-4-0,28	0.28	1,680	1.7	2.1	7.5	0.43	2.1	A1	B1
	54					1.7	2.3	7.5	0.43	2.3	A1	B1
	75		ADXQ071-2-0,50	0.50	3,360	1.9	2.6	13	0.56	2.6	A1	B1
	108					1.9	3.3	13	0.56	3.3	A1	B1
	4.8	360	VDXQ090-4-0,08	0.08	1,680	0.4	0.6	2.7	0.60	0.6	A1	B1
	6.7					0.4	0.7	2.7	0.60	0.7	A1	B1
SAREx 14.6	9.6		VDXQ090-4-0,18	0.18	1,680	0.9	1.5	4.4	0.60	1.5	A1	B1
	13					0.9	1.6	4.4	0.60	1.6	A1	B1
	19		VDXQ090-2-0,30	0.30	3,360	0.9	2.1	7.5	0.68	2.1	A1	B1
	26					0.9	2.4	7.5	0.68	2.4	A1	B1
	38		ADXQ090-4-0,50	0.50	1,680	2.1	3.1	13	0.56	3.1	A1	B1
	54					2.1	3.7	13	0.56	3.7	A1	B1
	75		ADXQ090-2-1,00	1.00	3,360	3.2	5.7	29	0.65	5.7	A2	B2
	108					3.2	6.3	29	0.65	6.3	A2	B2
SAREx 16.2	4.8	710	VDXQ112-4-0,14	0.14	1,680	0.7	1.1	4.1	0.55	1.1	A1	B1
	6.7					0.7	1.3	4.1	0.55	1.3	A1	B1
	9.6		VDXQ112-4-0,30	0.30	1,680	1.7	2.6	8.9	0.52	2.6	A1	B1
	13					1.7	2.9	8.9	0.52	2.9	A1	B1
	19		VDXQ112-2-0,60	0.60	3,360	2.4	3.8	16	0.61	3.8	A1	B1
	26					2.4	4.0	16	0.61	4.0	A1	B1
	38		ADXQ112-4-1,00	1.00	1,680	3.8	6.3	31	0.60	6.3	A2	B2
	54					3.8	6.8	31	0.60	6.8	A2	B2
SAREx 16.2	75	710	ADXQ112-2-2,00	2.00	3,360	5.9	9.9	57	0.69	9.9	A2	B3
	108					5.9	12	57	0.69	12	A2	B3
	4.8		VDXQ112-4-0,30	0.30	1,680	1.3	2.4	8.3	0.60	2.4	A1	B1
	6.7					1.3	2.6	8.3	0.60	2.6	A1	B1
	9.6		VDXQ112-4-0,60	0.60	1,680	2.4	4.2	18	0.53	4.2	A1	B1
	13					2.4	4.7	18	0.53	4.7	A1	B1
	19		VDXQ112-2-1,00	1.00	3,360	3.3	6.4	34	0.68	6.4	A2	B2
	26					3.3	7.1	34	0.68	7.1	A2	B2
SAREx 16.2	38	710	ADXQ112-4-2,00	2.00	1,680	6.3	10	42	0.65	10	A2	B3
	54					6.3	13	42	0.65	12	A2	B3
	75		ADXQ112-2-3,50	3.50	3,360	8.9	19	94	0.78	19	A3	–
	108					8.9	22	94	0.78	21	A3	–

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4.8	20	VDXQ063-4-0,01	0.01	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.40	0.4	A1	B1
	9.6		VDXQ063-4-0,03	0.03	1,680	0.4	0.4	0.9	0.50	0.4	A1	B1
	13					0.4	0.4	0.9	0.50	0.4	A1	B1
	19		VDXQ063-2-0,04	0.04	3,360	0.5	0.6	1.7	0.43	0.6	A1	B1
	26					0.5	0.6	1.7	0.43	0.6	A1	B1
	38		ADXQ063-4-0,07	0.07	1,680	0.8	0.9	2.0	0.40	0.9	A1	B1
	54					0.8	0.9	2.0	0.40	0.9	A1	B1
SAREx 07.6	75	40	ADXQ063-2-0,14	0.14	3,360	0.7	0.9	3.6	0.55	0.9	A1	B1
	108					0.7	1.0	3.6	0.55	1.0	A1	B1
	4.8		VDXQ063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	6.7					0.4	0.4	1.0	0.50	0.4	A1	B1
	9.6		VDXQ063-4-0,04	0.04	1,680	0.5	0.5	1.4	0.45	0.5	A1	B1
	13					0.5	0.5	1.4	0.45	0.5	A1	B1
	19		VDXQ063-2-0,08	0.08	3,360	0.5	0.8	2.5	0.52	0.8	A1	B1
	26					0.5	0.8	2.5	0.52	0.8	A1	B1
SAREx 10.2	38	90	ADXQ063-4-0,14	0.14	1,680	1.2	1.5	3.5	0.40	1.5	A1	B1
	54					1.2	1.5	3.5	0.40	1.5	A1	B1
	75		ADXQ063-2-0,28	0.28	3,360	1.1	1.6	5.7	0.53	1.6	A1	B1
	108					1.1	1.7	5.7	0.53	1.7	A1	B1
	4.8		VDXQ071-4-0,04	0.04	1,680	0.4	0.5	1.5	0.40	0.5	A1	B1
	6.7					0.4	0.5	1.5	0.40	0.5	A1	B1
	9.6		VDXQ071-4-0,08	0.08	1,680	0.8	0.9	2.6	0.40	0.9	A1	B1
	13					0.8	1.0	2.6	0.40	1.0	A1	B1
SAREx 14.2	19	180	VDXQ071-2-0,17	0.17	3,360	1.0	1.1	4.0	0.52	1.1	A1	B1
	26					1.0	1.3	4.0	0.52	1.3	A1	B1
	38		ADXQ071-4-0,28	0.28	1,680	1.6	2.0	7.2	0.43	2.0	A1	B1
	54					1.6	2.2	7.2	0.43	2.2	A1	B1
	75		ADXQ071-2-0,50	0.50	3,360	1.8	2.5	12	0.56	2.5	A1	B1
	108					1.8	3.2	12	0.56	3.2	A1	B1
	4.8	360	VDXQ090-4-0,08	0.08	1,680	0.4	0.6	2.6	0.60	0.6	A1	B1
	6.7					0.4	0.7	2.6	0.60	0.7	A1	B1
SAREx 14.6	9.6		VDXQ090-4-0,18	0.18	1,680	0.9	1.4	4.2	0.60	1.4	A1	B1
	13					0.9	1.5	4.2	0.60	1.5	A1	B1
	19		VDXQ090-2-0,30	0.30	3,360	0.9	2.0	7.2	0.68	2.0	A1	B1
	26					0.9	2.3	7.2	0.68	2.3	A1	B1
	38		ADXQ090-4-0,50	0.50	1,680	2.0	3.0	12	0.56	3.0	A1	B1
	54					2.0	3.5	12	0.56	3.5	A1	B1
	75		ADXQ090-2-1,00	1.00	3,360	3.1	5.5	28	0.65	5.5	A2	B2
	108					3.1	6.0	28	0.65	6.0	A2	B2
SAREx 16.2	4.8	710	VDXQ112-4-0,30	0.30	1,680	1.2	2.3	8.0	0.60	2.3	A1	B1
	6.7					1.2	2.5	8.0	0.60	2.5	A1	B1
	9.6		VDXQ112-4-0,60	0.60	1,680	2.3	4.0	17	0.53	4.0	A1	B1
	13					2.3	4.5	17	0.53	4.5	A1	B1
	19		VDXQ112-2-1,00	1.00	3,360	3.2	6.1	33	0.68	6.1	A2	B2
	26					3.2	6.8	33	0.68	6.8	A2	B2
	38		ADXQ112-4-2,00	2.00	1,680	6.0	10	40	0.65	10	A2	B2
	54					6.0	12	40	0.65	11	A2	B2
SAREx 16.2	75	710	ADXQ112-2-3,50	3.50	3,360	8.5	18	90	0.78	18	A2	–
	108					8.5	21	90	0.78	20	A2	–

1) – 3) Refer to Notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SAREx 07.2	4	20	VDXQ063-4-0,01	0.01	1,400	0.3	0.3	0.8	0.40	0.3	A1	B1
	5.6					0.3	0.3	0.8	0.40	0.3	A1	B1
	8		VDXQ063-4-0,03	0.03	1,400	0.3	0.3	0.7	0.50	0.3	A1	B1
	11					0.3	0.3	0.7	0.50	0.3	A1	B1
	16		VDXQ063-2-0,04	0.04	2,800	0.4	0.5	1.4	0.43	0.5	A1	B1
	22					0.4	0.5	1.4	0.43	0.5	A1	B1
	32		ADXQ063-4-0,07	0.07	1,400	0.6	0.7	1.6	0.40	0.7	A1	B1
	45					0.6	0.7	1.6	0.40	0.7	A1	B1
SAREx 07.6	63	40	ADXQ063-2-0,14	0.14	2,800	0.6	0.7	2.9	0.55	0.7	A1	B1
	90					0.6	0.8	2.9	0.55	0.8	A1	B1
	4		VDXQ063-4-0,02	0.02	1,400	0.3	0.3	0.8	0.50	0.3	A1	B1
	5.6					0.3	0.3	0.8	0.50	0.3	A1	B1
	8		VDXQ063-4-0,04	0.04	1,400	0.4	0.4	1.1	0.45	0.4	A1	B1
	11					0.4	0.4	1.1	0.45	0.4	A1	B1
	16		VDXQ063-2-0,08	0.08	2,800	0.4	0.6	2.0	0.52	0.6	A1	B1
	22					0.4	0.6	2.0	0.52	0.6	A1	B1
SAREx 10.2	32	90	ADXQ063-4-0,14	0.14	1,400	1.0	1.2	2.8	0.40	1.2	A1	B1
	45					1.0	1.2	2.8	0.40	1.2	A1	B1
	63		ADXQ063-2-0,28	0.28	2,800	0.9	1.3	4.6	0.53	1.3	A1	B1
	90					0.9	1.4	4.6	0.53	1.4	A1	B1
	4		VDXQ071-4-0,04	0.04	1,400	0.3	0.4	1.2	0.40	0.4	A1	B1
	5.6					0.3	0.4	1.2	0.40	0.4	A1	B1
	8		VDXQ071-4-0,08	0.08	1,400	0.6	0.7	2.1	0.40	0.7	A1	B1
	11					0.6	0.8	2.1	0.40	0.8	A1	B1
SAREx 14.2	16	180	VDXQ071-2-0,17	0.17	2,800	0.8	0.9	3.2	0.52	0.9	A1	B1
	22					0.8	1.0	3.2	0.52	1.0	A1	B1
	32		ADXQ071-4-0,28	0.28	1,400	1.3	1.6	5.8	0.43	1.6	A1	B1
	45					1.3	1.8	5.8	0.43	1.8	A1	B1
	63		ADXQ071-2-0,50	0.50	2,800	1.4	2.0	9.6	0.56	2.0	A1	B1
	90					1.4	2.6	9.6	0.56	2.6	A1	B1
	4	360	VDXQ090-4-0,08	0.08	1,400	0.3	0.5	2.1	0.60	0.5	A1	B1
	5.6					0.3	0.6	2.1	0.60	0.6	A1	B1
SAREx 14.6	8		VDXQ090-4-0,18	0.18	1,400	0.7	1.1	3.4	0.60	1.1	A1	B1
	11					0.7	1.2	3.4	0.60	1.2	A1	B1
	16		VDXQ090-2-0,30	0.30	2,800	0.7	1.6	5.8	0.68	1.6	A1	B1
	22					0.7	1.8	5.8	0.68	1.8	A1	B1
	32		ADXQ090-4-0,50	0.50	1,400	1.6	2.4	9.6	0.56	2.4	A1	B1
	45					1.6	2.8	9.6	0.56	2.8	A1	B1
	63		ADXQ090-2-1,00	1.00	2,800	2.5	4.4	22	0.65	4.4	A2	B2
	90					2.5	4.8	22	0.65	4.8	A2	B2
SAREx 16.2	4	710	VDXQ112-4-0,30	0.30	1,400	1.0	1.8	6.4	0.60	1.8	A1	B1
	5.6					1.0	2.0	6.4	0.60	2.0	A1	B1
	8		VDXQ112-4-0,60	0.60	1,400	1.8	3.2	14	0.53	3.2	A1	B1
	11					1.8	3.6	14	0.53	3.6	A1	B1
	16		VDXQ112-2-1,00	1.00	2,800	2.6	4.9	26	0.68	4.9	A2	B2
	22					2.6	5.4	26	0.68	5.4	A2	B2
	32		ADXQ112-4-2,00	2.00	1,400	4.8	8.0	32	0.65	8.0	A2	B2
	45					4.8	9.6	32	0.65	8.9	A2	B2
SAREx 16.2	63	710	ADXQ112-2-3,50	3.50	2,800	6.8	14	72	0.78	14	A3	–
	90					6.8	17	72	0.78	16	A3	–

1) – 3) Refer to Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 3-phase AC motors

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

Notes on installation and sizing																																		
Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																																	
Motor protection	To protect against overheating, thermoswitches or PTC thermistors are embedded in the motor windings. Actuators without integral actuator controls (AUMA NORM): Thermoswitches or PTC thermistors have to be considered within the external controls (refer to terminal plan). Note: Failure to connect thermoswitches or PTC thermistors shall void the warranty for the motor. According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches. PTC thermistors additionally require a suitable tripping device in the actuator controls. Rating of the thermoswitches <table><tr><th colspan="2">AC current</th><th colspan="2">DC current</th></tr><tr><td colspan="2">250 V, 50 – 60 Hz</td><td>60 V</td><td>1.0 A</td></tr><tr><td>cos φ = 1</td><td>2.5 A</td><td>42 V</td><td>1.2 A</td></tr><tr><td>cos φ = 0.6</td><td>1.6 A</td><td>24 V</td><td>1.5 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Thermal motor protection is already integrated.				AC current		DC current		250 V, 50 – 60 Hz		60 V	1.0 A	cos φ = 1	2.5 A	42 V	1.2 A	cos φ = 0.6	1.6 A	24 V	1.5 A														
AC current		DC current																																
250 V, 50 – 60 Hz		60 V	1.0 A																															
cos φ = 1	2.5 A	42 V	1.2 A																															
cos φ = 0.6	1.6 A	24 V	1.5 A																															
Mains voltage, mains frequency	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %																																	
Terminal plan	<table><tr><th>Multi-turn actuators</th><th>Motor (type)</th><th>Motor protection</th><th>Mains voltage range</th><th>Terminal plan</th></tr><tr><td rowspan="5">SAEx 07.2 – SAEx 14.6</td><td rowspan="2">VEX.../AEX...</td><td>PTC</td><td>100 V – 240 V</td><td>TPA01R2AA-101-000</td></tr><tr><td>PTC</td><td>100 V – 120 V</td><td>TPA02R2AA-101-000</td></tr><tr><td rowspan="3">VCX.../ACX...</td><td>Thermoswitches</td><td>100 V – 120 V</td><td>TPA02R1AA-101-000</td></tr><tr><td>PTC</td><td>200 V – 240 V</td><td>TPA03R2AA-101-000</td></tr><tr><td>Thermoswitches</td><td>200 V – 240 V</td><td>TPA03R1AA-101-000</td></tr><tr><td>SAREx 07.2 – SAREx 14.6</td><td>VEX.../AEX...</td><td>PTC</td><td>100 V – 240 V</td><td>TPA01R2AA-001-000</td></tr></table> 1-phase AC motor with permanent split capacitor (PSC): VEX.../AEX... 1-phase AC motor with integral starting capacitor and solid state switch (CSIR): VCX.../ACX...				Multi-turn actuators	Motor (type)	Motor protection	Mains voltage range	Terminal plan	SAEx 07.2 – SAEx 14.6	VEX.../AEX...	PTC	100 V – 240 V	TPA01R2AA-101-000	PTC	100 V – 120 V	TPA02R2AA-101-000	VCX.../ACX...	Thermoswitches	100 V – 120 V	TPA02R1AA-101-000	PTC	200 V – 240 V	TPA03R2AA-101-000	Thermoswitches	200 V – 240 V	TPA03R1AA-101-000	SAREx 07.2 – SAREx 14.6	VEX.../AEX...	PTC	100 V – 240 V	TPA01R2AA-001-000		
Multi-turn actuators	Motor (type)	Motor protection	Mains voltage range	Terminal plan																														
SAEx 07.2 – SAEx 14.6	VEX.../AEX...	PTC	100 V – 240 V	TPA01R2AA-101-000																														
		PTC	100 V – 120 V	TPA02R2AA-101-000																														
	VCX.../ACX...	Thermoswitches	100 V – 120 V	TPA02R1AA-101-000																														
		PTC	200 V – 240 V	TPA03R2AA-101-000																														
		Thermoswitches	200 V – 240 V	TPA03R1AA-101-000																														
SAREx 07.2 – SAREx 14.6	VEX.../AEX...	PTC	100 V – 240 V	TPA01R2AA-001-000																														
Switchgear sizing	For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (electronically locked) can be used. Actuators without integral actuator controls (AUMA NORM): Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating power/motor power in compliance with the assigned AUMA power class. Switchgear assignment to AUMA power classes: <table><tr><th>AUMA power class</th><th>Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3</th><th colspan="2">Reversing contactor Motor power according to UL/CSA at</th></tr><tr><td></td><td>400 V AC</td><td>480 V AC</td><td>600 V AC</td></tr><tr><td>A1</td><td>4.0 kW</td><td>5.0 hp</td><td>5.0 hp</td></tr><tr><td>A2</td><td>7.5 kW</td><td>10 hp</td><td>10 hp</td></tr><tr><td>A3</td><td>15 kW</td><td>20 hp</td><td>25 hp</td></tr></table> <table><tr><th>AUMA power class</th><th>Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th></tr><tr><td></td><td>400 V AC</td></tr><tr><td>B1</td><td>6 A</td></tr><tr><td>B2</td><td>8.5 A</td></tr><tr><td>B3</td><td>16 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Required switchgear in power classes A1 to A3 or B1 to B2 are already integrated in AMExC controls. For actuators with ACExC integral actuator controls, required switchgear in power classes A1 to A3 or B1 to B3 are already integrated. For actuators with AMExC or ACExC integral actuator controls and installed switchgear in AUMA power class A3, an optional thermal overcurrent protection device cannot be directly integrated within the actuator controls. A control box is additionally required.				AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at			400 V AC	480 V AC	600 V AC	A1	4.0 kW	5.0 hp	5.0 hp	A2	7.5 kW	10 hp	10 hp	A3	15 kW	20 hp	25 hp	AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a		400 V AC	B1	6 A	B2	8.5 A	B3	16 A
AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at																																
	400 V AC	480 V AC	600 V AC																															
A1	4.0 kW	5.0 hp	5.0 hp																															
A2	7.5 kW	10 hp	10 hp																															
A3	15 kW	20 hp	25 hp																															
AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a																																	
	400 V AC																																	
B1	6 A																																	
B2	8.5 A																																	
B3	16 A																																	

Notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 1-phase AC motors	
1) Nominal power P _N	Mechanical power output at motor shaft at run torque of multi-turn actuator (corresponds to approx. 35 % of maximum torque). The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Permanent split/starting capacitor	For VEX/AEX motors, operating capacitors are integrated within the motor. For VCX/ACX motors, starting capacitors and starting switchgear are integrated within the motor.
3) Nominal current I _N	Current at run torque with approx. 35 % of the maximum torque
4) Max. current I _{max}	Current at maximum torque

Multi-turn actuator			Motor											
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma- nent split capaci- tor ²⁾ [μF]	Starting capaci- tor ²⁾ [μF]	Nominal current ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
													Contac- tor	Thyristor
SAEx 07.2	4.8	30	VEX048-4-0,02	0.02	1 680	30	–	3.4	3.4	6.0	0.82	3.4	A1	B1
	6.7							3.4	3.4	6.0	0.82	3.4	A1	B1
	9.6		VEX048-4-0,04	0.04	1 680	50	–	3.6	3.8	7.0	0.88	3.6	A1	B1
	13							3.6	3.8	7.0	0.88	3.6	A1	B1
	19		VEX048-2-0,06	0.06	3,360	90	–	4.5	6.0	23	0.90	5.0	A1	B2
	26							4.5	6.0	23	0.90	5.0	A1	B2
	38	25	AEX048-4-0,10	0.10	1,680	120	–	5.8	7.5	14	0.95	6.5	A1	B2
	54							5.8	7.5	14	0.95	6.5	A1	B2
	75		ACX048-2-0,20	0.20	3,360	–	285	8.5	12	72	0.65	9.2	A2	–
	108							8.5	12	72	0.65	9.2	A2	–
	150		ACX048-2-0,30	0.30	3,360	–	285	9.2	14	72	0.65	9.2	A2	–
	216							9.2	15	72	0.65	9.2	A2	–
SAEx 07.6	4.8	60	VEX048-4-0,03	0.03	1,680	30	–	3.4	3.8	6.0	0.85	3.4	A1	B1
	6.7							3.4	3.8	6.0	0.85	3.4	A1	B1
	9.6		VEX048-4-0,07	0.07	1,680	50	–	3.6	4.6	7.0	0.85	3.6	A1	B1
	13							3.6	4.6	7.0	0.85	3.6	A1	B1
	19		VEX048-2-0,12	0.12	3,360	90	–	4.5	7.0	23	0.93	5.0	A1	B2
	26							4.5	7.0	23	0.93	5.0	A1	B2
	38	50	AEX048-4-0,20	0.20	1,680	120	–	6.4	9.6	14	0.95	6.5	A1	B2
	54							6.4	9.6	14	0.95	6.5	A1	B2
	75		ACX048-2-0,40	0.40	3,360	–	480	11	20	60	0.75	14	A2	–
	108							11	20	60	0.75	14	A2	–
	150		ACX048-2-0,50	0.50	3,360	–	480	12	24	60	0.75	14	A2	–
	216							12	26	60	0.75	14	A2	–
SAEx 10.2	4.8	120	VEX048-4-0,06	0.06	1,680	50	–	3.6	4.6	7.0	0.85	3.6	A1	B1
	6.7							3.6	4.6	7.0	0.85	3.6	A1	B1
	9.6		VEX048-4-0,12	0.12	1,680	120	–	5.9	7.7	14	0.95	6.5	A1	B2
	13							5.9	7.7	14	0.95	6.5	A1	B2
	19		VEX048-2-0,25	0.25	3,360	100	–	5.8	11	22	0.92	7.0	A2	B2
	26							5.8	11	22	0.92	7.0	A2	B2
	38	100	ACX056-4-0,40	0.40	1,680	–	440	13	22	73	0.65	14	A2	–
	54							13	22	73	0.65	14	A2	–
	75		ACX056-2-0,70	0.70	3,360	–	780	14	34	110	0.84	22	A3	–
	108							14	34	110	0.84	22	A3	–
	150		ACX056-2-1,00	1.00	3,360	–	780	18	40	110	0.84	22	A3	–
	216							18	50	110	0.84	22	A3	–
SAEx 14.2	4.8	250	VEX056-4-0,12	0.12	1,680	100	–	4.6	6.6	20	0.93	4.8	A1	B2
	6.7							4.6	6.6	20	0.93	4.8	A1	B2
	9.6		VEX056-4-0,25	0.25	1,680	180	–	12	15	20	0.84	12	A2	B3
	13							12	15	20	0.84	12	A2	B3
	19		VCX056-2-0,45	0.45	3,360	–	480	11	23	100	0.81	12	A2	–
	26							11	23	100	0.81	12	A2	–
	38		ACX056-4-0,75	0.75	1,680	–	850	20	55	120	0.73	25	A3	–
SAEx 14.6	54							20	55	120	0.73	25	A3	–
	4.8	500	VEX056-4-0,20	0.20	1,680	180	–	11	15	20	0.84	12	A2	B3
	6.7							11	15	20	0.84	12	A2	B3
	9.6	400	VCX056-4-0,40	0.40	1,680	–	440	13	25	73	0.65	15	A2	–
	13							13	25	73	0.65	15	A2	–
	19		VCX056-2-0,80	0.80	3,360	–	780	16	48	110	0.80	22	A3	–
	26							16	48	110	0.80	22	A3	–

1) – 4) Refer to notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 1-phase AC motors

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

SAEx 07.2 – SAEx 14.6

Electrical data Multi-turn actuators for open-close duty with 1-phase AC motors

Short-time duty S2 - 15 min, 220 V – 240 V/50 Hz

Multi-turn actuator			Motor											
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Starting capaci-tor ²⁾ [μF]	Nominal current ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
													Contac-tor	Thyristor
SAEx 07.2	4	30	VEX048-4-0,02	0.02	1,400	10	–	1.9	2.5	3.1	0.55	2.5	A1	B1
	5.6							1.9	2.5	3.1	0.55	2.5	A1	B1
	8		VEX048-4-0,04	0.04	1,400	15	–	1.9	2.5	3.1	0.75	2.5	A1	B1
	11							1.9	2.5	3.1	0.75	2.5	A1	B1
	16		VEX048-2-0,06	0.06	2,800	25	–	1.8	2.2	7.5	0.97	2.0	A1	B1
	22							1.8	2.2	7.5	0.97	2.0	A1	B1
	32		AEX048-4-0,10	0.10	1,400	30	–	4.7	4.7	6.6	0.65	4.7	A1	B1
	45							4.7	4.7	6.6	0.65	4.7	A1	B1
	63	25	ACX048-2-0,20	0.20	2,800	–	480	4.9	5.6	36	0.52	5.0	A2	–
	90							4.9	5.6	36	0.52	5.0	A2	–
	125		ACX048-2-0,30	0.30	2,800	–	480	4.9	6.3	36	0.52	5.0	A2	–
	180							4.9	6.5	36	0.52	5.0	A2	–
SAEx 07.6	4	60	VEX048-4-0,03	0.03	1,400	10	–	1.9	2.5	3.1	0.55	2.5	A1	B1
	5.6							1.9	2.5	3.1	0.55	2.5	A1	B1
	8		VEX048-4-0,07	0.07	1,400	15	–	1.9	2.5	3.1	0.75	2.5	A1	B1
	11							1.9	2.5	3.1	0.75	2.5	A1	B1
	16		VEX048-2-0,12	0.12	2,800	25	–	1.8	2.7	7.5	0.97	2.0	A1	B1
	22							1.8	2.7	7.5	0.97	2.0	A1	B1
	32		AEX048-4-0,20	0.20	1,400	30	–	4.7	4.7	6.6	0.71	4.7	A1	B1
	45							4.7	4.7	6.6	0.71	4.7	A1	B1
	63	50	ACX048-2-0,40	0.40	2,800	–	480	9.1	11	55	0.42	10	A2	–
	90							9.1	11	55	0.42	10	A2	–
	125		ACX048-2-0,50	0.50	2,800	–	480	9.1	11	55	0.42	10	A2	–
	180							9.1	11	55	0.42	10	A2	–
SAEx 10.2	4	120	VEX048-4-0,06	0.06	1,400	15	–	1.8	2.5	3.1	0.75	2.5	A1	B1
	5.6							1.8	2.5	3.1	0.75	2.5	A1	B1
	8		VEX048-4-0,12	0.12	1,400	30	–	4.7	4.7	6.6	0.65	4.7	A1	B1
	11							4.7	4.7	6.6	0.65	4.7	A1	B1
	16		VEX048-2-0,25	0.25	2,800	25	–	2.6	4.2	14	0.78	3.0	A1	B1
	22							2.6	4.2	14	0.78	3.0	A1	B1
	32		ACX056-4-0,40	0.40	1,400	–	440	9.8	12	44	0.40	10	A2	–
	45							9.8	12	44	0.40	10	A2	–
	63	100	ACX056-2-0,70	0.70	2,800	–	850	8.0	14	70	0.80	12	A2	–
	90							8.0	14	70	0.80	12	A2	–
	125		ACX056-2-1,00	1.00	2,800	–	850	9.1	17	70	0.80	12	A2	–
	180							9.1	18	70	0.80	12	A2	–
SAEx 14.2	4	250	VEX056-4-0,12	0.12	1,400	25	–	2.4	2.8	13	0.68	2.5	A1	B1
	5.6							2.4	2.8	13	0.68	2.5	A1	B1
	8		VEX056-4-0,25	0.25	1,400	40	–	2.8	4.8	13	0.99	3.4	A1	B1
	11							2.8	4.8	13	0.99	3.4	A1	B1
	16		VCX056-2-0,45	0.45	2,800	–	480	6.4	10	54	0.65	7.3	A2	–
	22							6.4	10	54	0.65	7.3	A2	–
	32		ACX056-4-0,75	0.75	1,400	–	850	14	20	40	0.60	17	A2	–
	45							14	20	40	0.60	17	A2	–
SAEx 14.6	4	500	VEX056-4-0,20	0.20	1,400	40	–	2.7	4.8	13	0.99	3.4	A1	B1
	5.6							2.7	4.8	13	0.99	3.4	A1	B1
	8	400	VCX056-4-0,40	0.40	1,400	–	440	9.8	12	44	0.40	10	A2	–
	11							9.8	12	44	0.40	10	A2	–
	16		VCX056-2-0,80	0.80	2,800	–	850	8.3	16	70	0.80	12	A2	–
	22							8.3	16	70	0.80	12	A2	–

1) – 4) Refer to notes on Electrical data SAEx .2/SAEx .2 multi-turn actuators with 1-phase AC motors

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

SAEx 07.2 – SAEx 14.6

Electrical data Multi-turn actuators for open-close duty with 1-phase AC motors

Short-time duty S2 - 15 min, 220 V – 240 V/60 Hz

Multi-turn actuator			Motor											
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma- nent split capaci- tor ²⁾ [μF]	Starting capaci- tor ²⁾ [μF]	Nominal current ³⁾ I _N (A)	Max. cur- rent ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
													Con- tactor	Thyristor
SAEx 07.2	4.8	30	VEX048-4-0,02	0.02	1 680	10	–	1.8	1.9	3.4	0.60	1.8	A1	B1
	6.7							1.8	1.9	3.4	0.60	1.8	A1	B1
	9.6		VEX048-4-0,04	0.04	1,680	15	–	2.0	2.1	3.5	0.75	2.0	A1	B1
	13							2.0	2.1	3.5	0.75	2.0	A1	B1
	19		VEX048-2-0,06	0.06	3,360	25	–	2.7	3.5	6.8	0.75	3.4	A1	B1
	26							2.7	3.5	6.8	0.75	3.4	A1	B1
	38		AEX048-4-0,10	0.10	1,680	30	–	2.9	3.6	7.2	0.96	4.1	A1	B1
	54							2.9	3.6	7.2	0.96	4.1	A1	B1
	75	25	ACX048-2-0,20	0.20	3,360	–	480	4.4	5.7	40	0.46	5.1	A2	–
	108							4.4	6.2	40	0.46	5.1	A2	–
	150		ACX048-2-0,30	0.30	3,360	–	460	4.8	7.1	40	0.55	5.1	A2	–
216	4.8							7.4	40	0.55	5.1	A2	–	
SAEx 07.6	4.8	60	VEX048-4-0,03	0.03	1,680	10	–	1.8	1.9	3.4	0.85	1.8	A1	B1
	6.7							1.8	1.9	3.4	0.85	1.8	A1	B1
	9.6		VEX048-4-0,07	0.07	1,680	15	–	2.0	2.3	3.5	0.85	2.0	A1	B1
	13							2.0	2.3	3.5	0.85	2.0	A1	B1
	19		VEX048-2-0,12	0.12	3,360	25	–	3.3	4.0	6.8	0.80	3.4	A1	B1
	26							3.3	4.0	6.8	0.80	3.4	A1	B1
	38		AEX048-4-0,20	0.20	1,680	30	–	3.2	4.8	7.2	0.97	4.1	A1	B1
	54							3.2	4.8	7.2	0.97	4.1	A1	B1
	75	50	ACX048-2-0,40	0.40	3,360	–	480	5.8	8.5	45	0.64	7.8	A2	–
	108							5.8	9.6	45	0.64	7.8	A2	–
	150		ACX048-2-0,50	0.50	3,360	–	480	6.4	12	45	0.68	7.8	A2	–
216	6.4							13	45	0.68	7.8	A2	–	
SAEx 10.2	4.8	120	VEX048-4-0,06	0.06	1,680	15	–	2.0	2.3	3.6	0.85	2.0	A1	B1
	6.7							2.0	2.3	3.6	0.85	2.0	A1	B1
	9.6		VEX048-4-0,12	0.12	1,680	30	–	3.0	3.6	7.2	0.98	3.4	A1	B1
	13							3.0	3.6	7.2	0.98	3.4	A1	B1
	19		VEX048-2-0,25	0.25	3,360	35	–	3.9	5.6	12	0.82	4.3	A1	B1
	26							3.9	5.6	12	0.82	4.3	A1	B1
	38		ACX056-4-0,40	0.40	1,680	–	440	6.0	11	38	0.55	8.1	A2	–
	54							6.0	11	38	0.55	8.1	A2	–
	75	100	ACX056-2-0,70	0.70	3,360	–	850	6.8	13	72	0.76	13	A2	–
	108							6.8	17	72	0.76	13	A2	–
	150		ACX056-2-1,00	1.00	3,360	–	850	8.7	21	72	0.83	13	A2	–
216	8.7							25	72	0.83	13	A2	–	
SAEx 14.2	4.8	250	VEX056-4-0,12	0.12	1,680	25	–	1.9	2.9	12	0.94	2.1	A1	B1
	6.7							1.9	2.9	12	0.94	2.1	A1	B1
	9.6		VEX056-4-0,25	0.25	1,680	40	–	5.0	6.3	12	0.81	5.2	A1	B1
	13							5.0	6.3	12	0.81	5.2	A1	B1
	19		VCX056-2-0,45	0.45	3,360	–	480	6.0	12	52	0.63	6.7	A2	–
	26							6.0	12	52	0.63	6.7	A2	–
	38		ACX056-4-0,75	0.75	1,680	–	850	11	22	74	0.60	16	A2	–
54	11	22						74	0.60	16	A2	–		
SAEx 14.6	4.8	500	VEX056-4-0,20	0.20	1,680	45	–	5.5	6.9	12	0.80	5.5	A1	B2
	6.7	400						5.5	6.9	12	0.80	5.5	A1	B2
	9.6	400	VCX056-4-0,40	0.40	1,680	–	440	6.0	13	35	0.55	8.1	A2	–
	13							6.0	13	35	0.55	8.1	A2	–
	19							VCX056-2-0,80	0.80	3,360	–	850	7.5	21
26	7.5	21	72	0.80	13	A2	–							

1) – 4) Refer to notes on Electrical data SAEx .2/SAREx .2 multi-turn actuators with 1-phase AC motors

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Multi-turn actuator			Motor											
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Starting capaci-tor [μF]	Nominal current ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
													Contac-tor	Thyristor
SAREx 07.2	4.8	30	VEXR48-4-0,02	0.02	1,680	30	–	3.4	3.4	6.0	0.82	3.4	A1	B1
	6.7							3.4	3.4	6.0	0.82	3.4	A1	B1
	9.6		VEXR48-4-0,04	0.04	1,680	50	–	3.6	3.8	7.0	0.88	3.6	A1	B1
	13							3.6	3.8	7.0	0.88	3.6	A1	B1
	19		VEXR48-2-0,06	0.06	3,360	90	–	4.5	6.0	23	0.90	5.0	A1	B2
	26							4.5	6.0	23	0.90	5.0	A1	B2
	38		AEXR48-4-0,10	0.10	1,680	120	–	5.8	7.5	14	0.95	6.5	A1	B2
	54							5.8	7.5	14	0.95	6.5	A1	B2
SAREx 07.6	4.8	60	VEXR48-4-0,03	0.03	1,680	30	–	3.4	3.8	6.0	0.85	3.4	A1	B1
	6.7							3.4	3.8	6.0	0.85	3.4	A1	B1
	9.6		VEXR48-4-0,07	0.07	1,680	50	–	3.6	4.6	7.0	0.85	3.6	A1	B1
	13							3.6	4.6	7.0	0.85	3.6	A1	B1
	19		VEXR48-2-0,12	0.12	3,360	90	–	4.5	7.0	23	0.93	5.0	A1	B2
	26							4.5	7.0	23	0.93	5.0	A1	B2
	38		AEXR48-4-0,20	0.20	1,680	120	–	6.4	9.6	14	0.95	6.5	A1	B2
	54							6.4	9.6	14	0.95	6.5	A1	B2
SAREx 10.2	4.8	120	VEXR48-4-0,06	0.06	1,680	50	–	3.6	4.6	7.0	0.85	3.6	A1	B1
	6.7							3.6	4.6	7.0	0.85	3.6	A1	B1
	9.6		VEXR48-4-0,12	0.12	1,680	120	–	5.9	7.7	14	0.95	6.5	A1	B2
	13							5.9	7.7	14	0.95	6.5	A1	B2
	19		VEXR48-2-0,25	0.25	3,360	100	–	5.8	11	22	0.92	7.0	A2	B2
	26							5.8	11	22	0.92	7.0	A2	B2
SAREx 14.2	4.8	250	VEXR56-4-0,12	0.12	1,680	100	–	4.6	6.6	20	0.93	4.8	A1	B2
	6.7							4.6	6.6	20	0.93	4.8	A1	B2
	9.6		VEXR56-4-0,25	0.25	1,680	180	–	12	15	20	0.84	12	A2	B3
	13							12	15	20	0.84	12	A2	B3
SAREx 14.6	4.8	500	VEXR56-4-0,20	0.20	1,680	180	–	11	15	20	0.84	12	A2	B3
	6.7							11	15	20	0.84	12	A2	B3

1) – 4) Refer to notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 1-phase AC motors

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Multi-turn actuator			Motor											
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Starting capaci-tor [μF]	Nominal current ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
													Contac-tor	Thyristor
SAREx 07.2	4	30	VEXR48-4-0,02	0.02	1,400	10	–	1.9	2.5	3.1	0.55	2.5	A1	B1
	5.6							1.9	2.5	3.1	0.55	2.5	A1	B1
	8		VEXR48-4-0,04	0.04	1,400	15	–	1.9	2.5	3.1	0.75	2.5	A1	B1
	11							1.9	2.5	3.1	0.75	2.5	A1	B1
	16		VEXR48-2-0,06	0.06	2,800	25	–	1.8	2.2	7.5	0.97	2.0	A1	B1
	22							1.8	2.2	7.5	0.97	2.0	A1	B1
	32		AEXR48-4-0,10	0.10	1,400	30	–	4.7	4.7	6.6	0.65	4.6	A1	B1
	45							4.7	4.7	6.6	0.65	4.6	A1	B1
SAREx 07.6	4	60	VEXR48-4-0,03	0.03	1,400	10	–	1.9	2.5	3.1	0.55	2.5	A1	B1
	5.6							1.9	2.5	3.1	0.55	2.5	A1	B1
	8		VEXR48-4-0,07	0.07	1,400	15	–	1.9	2.5	3.1	0.75	2.5	A1	B1
	11							1.9	2.5	3.1	0.75	2.5	A1	B1
	16		VEXR48-2-0,12	0.12	2,800	25	–	1.8	2.7	7.5	0.97	2.0	A1	B1
	22							1.8	2.7	7.5	0.97	2.0	A1	B1
	32		AEXR48-4-0,20	0.20	1,400	30	–	4.7	4.7	6.6	0.71	4.6	A1	B1
	45							4.7	4.7	6.6	0.71	4.6	A1	B1
SAREx 10.2	4	120	VEXR48-4-0,06	0.06	1,400	15	–	1.8	2.5	3.1	0.75	2.5	A1	B1
	5.6							1.8	2.5	3.1	0.75	2.5	A1	B1
	8		VEXR48-4-0,12	0.12	1,400	30	–	4.7	4.7	6.6	0.65	4.6	A1	B1
	11							4.7	4.7	6.6	0.65	4.6	A1	B1
	16		VEXR48-2-0,25	0.25	2,800	25	–	2.6	4.2	14	0.78	3.0	A1	B1
	22							2.6	4.2	14	0.78	3.0	A1	B1
SAREx 14.2	4	250	VEXR56-4-0,12	0.12	1,400	25	–	2.4	2.8	13	0.68	2.5	A1	B1
	5.6							2.4	2.8	13	0.68	2.5	A1	B1
	8		VEXR56-4-0,25	0.25	1,400	40	–	2.8	4.8	13	0.99	3.4	A1	B1
	11							2.8	4.8	13	0.99	3.4	A1	B1
SAREx 14.6	4	500	VEXR56-4-0,20	0.20	1,400	40	–	2.7	4.8	13	0.99	3.4	A1	B1
	5.6							2.7	4.8	13	0.99	3.4	A1	B1

1) – 4) Refer to notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 1-phase AC motors

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Multi-turn actuator			Motor											
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma- nent split capaci- tor ²⁾ [μF]	Starting capaci- tor [μF]	Nominal current ³⁾ I _N (A)	Max. cur- rent ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
SAREx 07.2	4.8	30	VEXR48-4-0,02	0.02	1,680	10	–	1.8	1.9	3.4	0.60	1.8	A1	B1
	6.7							1.8	1.9	3.4	0.60	1.8	A1	B1
	9.6		VEXR48-4-0,04	0.04	1,680	15	–	2.0	2.1	3.5	0.75	2.0	A1	B1
	13							2.0	2.1	3.5	0.75	2.0	A1	B1
	19		VEXR48-2-0,06	0.06	3,360	25	–	2.7	3.5	6.8	0.75	3.4	A1	B1
	26							2.7	3.5	6.8	0.75	3.4	A1	B1
SAREx 07.6	38	60	VEXR48-4-0,03	0.03	1,680	10	–	2.9	3.6	7.2	0.96	4.1	A1	B1
	54							2.9	3.6	7.2	0.96	4.1	A1	B1
	4.8		VEXR48-4-0,07	0.07	1,680	15	–	2.0	2.3	3.5	0.85	2.0	A1	B1
	6.7							2.0	2.3	3.5	0.85	2.0	A1	B1
	9.6		VEXR48-2-0,12	0.12	3,360	25	–	3.3	4.0	6.8	0.80	3.4	A1	B1
	13							3.3	4.0	6.8	0.80	3.4	A1	B1
SAREx 10.2	19	120	VEXR48-4-0,20	0.20	1,680	30	–	3.2	4.8	7.2	0.97	4.1	A1	B1
	26							3.2	4.8	7.2	0.97	4.1	A1	B1
	4.8		VEXR48-4-0,06	0.06	1,680	15	–	2.0	2.3	3.6	0.85	2.0	A1	B1
	6.7							2.0	2.3	3.6	0.85	2.0	A1	B1
	9.6		VEXR48-4-0,12	0.12	1,680	30	–	3.0	3.6	7.2	0.98	3.4	A1	B1
	13							3.0	3.6	7.2	0.98	3.4	A1	B1
SAREx 14.2	19	250	VEXR48-2-0,25	0.25	3,360	35	–	3.9	5.6	12	0.82	4.3	A1	B1
	26							3.9	5.6	12	0.82	4.3	A1	B1
	4.8		VEXR56-4-0,12	0.12	1,680	25	–	1.9	2.9	12	0.94	2.1	A1	B1
	6.7							1.9	2.9	12	0.94	2.1	A1	B1
	9.6		VEXR56-4-0,25	0.25	1,680	40	–	5.0	6.3	12	0.81	5.2	A1	B1
	13							5.0	6.3	12	0.81	5.2	A1	B1
SAREx 14.6	4.8	500	VEXR56-4-0,20	0.20	1,680	45	–	5.5	6.9	12	0.80	5.5	A1	B2
	6.7							5.5	6.9	12	0.80	5.5	A1	B2

1) – 4) Refer to notes on Electrical data SAREx .2/SAREx .2 multi-turn actuators with 1-phase AC motors

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Multi-turn actuator			Motor							
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	Overcurrent protection device setting [A]	AUMA power class switchgear Contactor
SAEx 07.2	4 – 5.5	30	VKX0063-4-0,02G	0.02	1,800	4.5	5 – 6	25	5 – 6	A2
	6 – 7.5					4.5	5 – 7	25	5 – 7	A2
	7.5 – 11		VKX0063-4-0,04G	0.04	1,600	6.0	9 – 12	25	9 – 12	A2
	10 – 15.5					6.0	10 – 13	25	10 – 13	A2
	12.5 – 17		VKX0063-2-0,06G	0.06	2,700	6.0	13 – 15	40	13 – 15	A2
SAEx 07.6	17 – 23.5	60				6.0	14 – 16	40	14 – 16	A2
	3.5 – 5.5		VKX0063-4-0,03G	0.03	1,700	5.0	9 – 12	25	9 – 12	A2
	5 – 7.5					5.0	10 – 13	25	10 – 13	A2
	6 – 8		VKX0063-2-0,07G	0.07	2,700	6.0	10 – 11.5	40	10 – 11.5	A2
	8 – 11					6.0	11 – 13	40	11 – 13	A2

Notes on table

1) Nominal power P _N	Mechanical power output at motor shaft at run torque of multi-turn actuator (corresponds to approx. 35 % of maximum torque).
2) Nominal current I _N	Current at run torque
3) Max. current I _{max}	Current at maximum torque

Notes on installation and sizing

Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																
Motor type	The DC motors are designed as shunt motors.																
Motor protection	To protect against overheating, thermostats are embedded in the motor windings. Actuators without integral actuator controls (AUMA NORM): Thermostats have to be considered within the external controls (refer to terminal plan). Note: Failure to connect thermostats or PTC thermistors shall void the warranty for the motor. According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermostats. PTC thermistors additionally require a suitable tripping device in the actuator controls. <table><tr><th colspan="2">AC current</th><th colspan="2">DC current</th></tr><tr><td colspan="2">250 V, 50 – 60 Hz</td><td>60 V</td><td>1.0 A</td></tr><tr><td>cos φ = 1</td><td>2.5 A</td><td>42 V</td><td>1.2 A</td></tr><tr><td>cos φ = 0.6</td><td>1.6 A</td><td>24 V</td><td>1.5 A</td></tr></table> Actuators with AC integral actuator controls: Thermal motor protection is already integrated.	AC current		DC current		250 V, 50 – 60 Hz		60 V	1.0 A	cos φ = 1	2.5 A	42 V	1.2 A	cos φ = 0.6	1.6 A	24 V	1.5 A
AC current		DC current															
250 V, 50 – 60 Hz		60 V	1.0 A														
cos φ = 1	2.5 A	42 V	1.2 A														
cos φ = 0.6	1.6 A	24 V	1.5 A														
Switchgear sizing	For motor operation, reversing contactors (mechanically, electrically and electronically locked) can be used. Actuators without integral actuator controls (AUMA NORM): Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating currents in compliance with the assigned AUMA power class. Switchgear assignment to AUMA power classes: DC shunt motor, motor type VK: <table><tr><th>AUMA power class</th><th>Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-3</th></tr><tr><td>A2</td><td>30 A</td></tr></table> Actuators with ACExC integral controls: Required switchgear in power class A2 are directly integrated in the ACExC actuator controls.	AUMA power class	Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-3	A2	30 A												
AUMA power class	Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-3																
A2	30 A																

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	30	ADY0063-4-0,10	0.5	2.0	2.7	6
	12 – 108		ADY0063-2-0,20	0.5	2.1	4.0	6
	24 – 216	25	ADY0063-2-0,30	0.6	2.6	5.6	10
SARVEx 07.6	6 – 60	60	ADY0063-4-0,20	0.7	2.8	4.0	6
	12 – 108		ADY0063-2-0,40	0.9	3.4	6.2	10
	24 – 216	50	ADY0063-2-0,50	1.0	4.0	6.8	10
SARVEx 10.2	6 – 60	120	ADY0071-4-0,40	1.1	4.1	6.9	10
	12 – 108		ADY0071-2-0,70	1.4	5.7	9.8	16
	24 – 216	100	ADY0071-2-1,00	1.9	6.0	12	16
SARVEx 14.2	6 – 60	250	ADY0090-4-0,75	1.5	4.8	7.8	10
	12 – 108		ADY0090-2-1,40	2.5	7.9	14	16
	24 – 216	200	ADY0090-2-1,80	3.2	10	19	25
SARVEx 14.6	6 – 60	500	ADY0090-4-1,60	3.0	9.4	14	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SAVEx 07.2	6 – 60	30	ADY0063-4-0,10	0.6	1.3	1.8	6
	12 – 108		ADY0063-2-0,20	0.6	1.3	2.5	6
	24 – 216	25	ADY0063-2-0,30	0.7	1.5	3.5	6
SAVEx 07.6	6 – 60	60	ADY0063-4-0,20	0.9	2.0	2.8	6
	12 – 108		ADY0063-2-0,40	1.1	2.3	4.3	6
	24 – 216	50	ADY0063-2-0,50	1.2	2.7	4.8	6
SAVEx 10.2	6 – 60	120	ADY0071-4-0,40	1.3	2.8	4.4	6
	12 – 108		ADY0071-2-0,70	1.6	3.6	6.9	10
	24 – 216	100	ADY0071-2-1,00	1.8	4.1	7.4	10
SAVEx 14.2	6 – 60	250	ADY0090-4-0,75	1.7	3.8	6.1	10
	12 – 108		ADY0090-2-1,40	2.8	6.2	11	16
	24 – 216	200	ADY0090-2-1,80	3.5	7.9	15	20
SAVEx 14.6	6 – 60	500	ADY0090-4-1,60	2.9	6.5	9.9	16
	12 – 108		ADY0090-2-3,00	4.5	10	18	20
	24 – 216	400	ADY0090-2-3,30	5.6	12	23	25
SAVEx 16.2	6 – 60	1,000	ADY0112-4-3,00	5.3	11	17	20

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	20	ADYL063-4-0,07	0.4	1.6	2.0	6
	12 – 108		ADYL063-2-0,14	0.4	1.6	3.0	6
	24 – 216		ADYL063-2-0,21	0.5	2.1	4.2	6
SARVEx 07.6	6 – 60	40	ADYL063-4-0,14	0.6	2.4	2.9	6
	12 – 108		ADYL063-2-0,28	0.8	2.9	3.9	6
	24 – 216	30	ADYL063-2-0,35	0.8	3.0	4.0	6
SARVEx 10.2	6 – 60	90	ADYL071-4-0,28	0.8	2.9	5.0	6
	12 – 108		ADYL071-2-0,50	1.1	4.2	8.0	10
	24 – 216	70	ADYL071-2-0,70	1.6	5.0	8.2	10
SARVEx 14.2	6 – 60	180	ADYL090-4-0,50	1.3	4.0	6.4	10
	12 – 108		ADYL090-2-1,00	2.1	6.5	12	16
	24 – 216	140	ADYL090-2-1,30	2.7	8.4	16	20
SARVEx 14.6	6 – 60	360	ADYL090-4-1,00	2.5	7.8	11	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SAVEx 07.2	6 – 60	20	ADYL063-4-0,07	0.5	1.1	1.4	6
	12 – 108		ADYL063-2-0,14	0.5	1.1	2.1	6
	24 – 216		ADYL063-2-0,21	0.6	1.3	2.9	6
SAVEx 07.6	6 – 60	40	ADYL063-4-0,14	0.8	1.7	2.2	6
	12 – 108		ADYL063-2-0,28	0.9	2.0	2.9	6
	24 – 216		ADYL063-2-0,35	0.9	2.0	2.9	6
SAVEx 10.2	6 – 60	90	ADYL071-4-0,28	0.9	2.0	3.3	6
	12 – 108		ADYL071-2-0,50	1.2	2.7	5.2	10
	24 – 216		ADYL071-2-0,70	1.7	3.7	6.0	10
SAVEx 14.2	6 – 60	180	ADYL090-4-0,50	1.5	3.3	4.9	6
	12 – 108		ADYL090-2-1,00	2.4	5.4	8.8	10
	24 – 216		ADYL090-2-1,30	3.1	6.9	12	16
SAVEx 14.6	6 – 60	360	ADYL090-4-1,00	2.2	4.8	7.4	10
	12 – 108		ADYL090-2-2,00	3.3	7.3	13	16
	24 – 216		ADYL090-2-2,30	4.0	8.8	17	20
SAVEx 16.2	6 – 60	710	ADYL112-4-2,00	4.1	8.4	13	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P _{IN} [kW]	Nominal current ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	30	ADYR063-4-0,10	0.5	2.0	2.7	6
	12 – 108		ADYR063-2-0,20	0.5	2.1	4.0	6
	24 – 216	25	ADYR063-2-0,30	0.6	2.6	5.6	10
SARVEx 07.6	6 – 60	60	ADYR063-4-0,20	0.7	2.8	4.0	6
	12 – 108		ADYR063-2-0,40	0.9	3.4	6.2	10
	24 – 216	50	ADYR063-2-0,50	1.0	4.0	6.8	10
SARVEx 10.2	6 – 60	120	ADYR071-4-0,40	1.1	4.1	6.9	10
	12 – 108		ADYR071-2-0,70	1.4	5.7	9.8	16
	24 – 216	100	ADYR071-2-1,00	1.9	6.0	12	16
SARVEx 14.2	6 – 60	250	ADYR090-4-0,75	1.5	4.8	7.8	10
	12 – 108		ADYR090-2-1,40	2.5	7.9	14	16
	24 – 216	200	ADYR090-2-1,80	3.2	10	19	25
SARVEx 14.6	6 – 60	500	ADYR090-4-1,60	3.0	9.4	14	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	30	ADYR063-4-0,10	0.6	1.3	1.8	6
	12 – 108		ADYR063-2-0,20	0.6	1.3	2.5	6
	24 – 216	25	ADYR063-2-0,30	0.7	1.5	3.5	6
SARVEx 07.6	6 – 60	60	ADYR063-4-0,20	0.9	2.0	2.8	6
	12 – 108		ADYR063-2-0,40	1.1	2.3	4.3	6
	24 – 216	50	ADYR063-2-0,50	1.2	2.7	4.8	6
SARVEx 10.2	6 – 60	120	ADYR071-4-0,40	1.3	2.8	4.4	6
	12 – 108		ADYR071-2-0,70	1.6	3.6	6.9	10
	24 – 216	100	ADYR071-2-1,00	1.8	4.1	7.4	10
SARVEx 14.2	6 – 60	250	ADYR090-4-0,75	1.7	3.8	6.1	10
	12 – 108		ADYR090-2-1,40	2.8	6.2	11	16
	24 – 216	200	ADYR090-2-1,80	3.5	7.9	15	20
SARVEx 14.6	6 – 60	500	ADYR090-4-1,60	2.9	6.5	9.9	16
	12 – 108		ADYR090-2-3,00	4.5	10	18	20
	24 – 216	400	ADYR090-2-3,30	5.6	12	23	25
SARVEx 16.2	6 – 60	1,000	ADYR112-4-3,00	5.3	11	17	20

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	20	ADYQ063-4-0,07	0.4	1.6	2.0	6
	12 – 108		ADYQ063-2-0,14	0.4	1.6	3.0	6
SARVEx 07.6	6 – 60	40	ADYQ063-4-0,14	0.6	2.4	2.9	6
	12 – 108		ADYQ063-2-0,28	0.8	2.9	3.9	6
SARVEx 10.2	6 – 60	90	ADYQ071-4-0,28	0.8	2.9	5.0	6
	12 – 108		ADYQ071-2-0,50	1.1	4.2	8.0	10
SARVEx 14.2	6 – 60	180	ADYQ090-4-0,50	1.3	4.0	6.4	10
	12 – 108		ADYQ090-2-1,00	2.1	6.5	12	16
SARVEx 14.6	6 – 60	360	ADYQ090-4-1,00	2.5	7.8	11	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	20	ADYQ063-4-0,07	0.5	1.1	1.4	6
	12 – 108		ADYQ063-2-0,14	0.5	1.1	2.1	6
SARVEx 07.6	6 – 60	40	ADYQ063-4-0,14	0.8	1.7	2.2	6
	12 – 108		ADYQ063-2-0,28	0.9	2.0	2.9	6
SARVEx 10.2	6 – 60	90	ADYQ071-4-0,28	0.9	2.0	3.3	6
	12 – 108		ADYQ071-2-0,50	1.2	2.7	5.2	10
SARVEx 14.2	6 – 60	180	ADYQ090-4-0,50	1.5	3.3	4.9	6
	12 – 108		ADYQ090-2-1,00	2.4	5.4	8.8	10
SARVEx 14.6	6 – 60	360	ADYQ090-4-1,00	2.2	4.8	7.4	10
	12 – 108		ADYQ090-2-2,00	3.3	7.3	13	16
SARVEx 16.2	6 – 60	710	ADYQ112-4-2,00	4.1	8.4	13	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SAVEx 07.2	6 – 60	30	ASY0063-4-0,10	0.4	5.2	7.2	10
	12 – 108		ASY0063-2-0,20	0.5	5.9	10	16
	24 – 216	25	ASY0063-2-0,30	0.6	7.3	15	16
SAVEx 07.6	6 – 60	60	ASY0063-4-0,20	0.6	7.3	13	16
	12 – 108		ASY0063-2-0,40	0.8	9.9	18	20
	24 – 216	50	ASY0063-2-0,50	1.0	12	22	25
SAVEx 10.2	6 – 60	120	ASY0071-4-0,40	1.0	13	22	25

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SAVEx 07.2	6 – 60	30	ASY0063-4-0,10	0.6	4.0	5.0	6
	12 – 108		ASY0063-2-0,20	0.5	3.9	7.2	10
	24 – 216		ASY0063-2-0,30	0.7	4.9	10	16
SAVEx 07.6	6 – 60	60	ASY0063-4-0,20	0.7	4.6	7.0	10
	12 – 108		ASY0063-2-0,40	0.9	5.9	11	16
	24 – 216		ASY0063-2-0,50	1.0	6.8	13	16
SAVEx 10.2	6 – 60	120	ASY0071-4-0,40	1.1	7.6	14	16
	12 – 108		ASY0071-2-0,70	1.6	11	20	25
	24 – 216		ASY0071-2-1,00	2.0	12	22	25
SAVEx 14.2	6 – 60	250	ASY0090-4-0,75	1.5	8.9	15	16
	12 – 108		ASY0090-2-1,40	2.5	15	27	32

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SAVEx 07.2	6 – 60	20	ASYL063-4-0,07	0.4	4.4	5.5	10
	12 – 108		ASYL063-2-0,14	0.4	4.6	8.1	10
	24 – 216		ASYL063-2-0,21	0.5	5.7	11	16
SAVEx 07.6	6 – 60	40	ASYL063-4-0,14	0.5	6.4	9.7	16
	12 – 108		ASYL063-2-0,28	0.7	8.6	13	16
	24 – 216	30	ASYL063-2-0,35	0.8	10	14	16
SAVEx 10.2	6 – 60	90	ASYL071-4-0,28	0.8	9.8	17	20

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SAVEx 07.2	6 – 60	20	ASYL063-4-0,07	0.5	3.1	4.0	6
	12 – 108		ASYL063-2-0,14	0.5	3.1	5.8	10
	24 – 216		ASYL063-2-0,21	0.6	3.8	6.7	10
SAVEx 07.6	6 – 60	40	ASYL063-4-0,14	0.6	4.0	5.3	10
	12 – 108		ASYL063-2-0,28	0.7	4.7	6.9	10
	24 – 216	30	ASYL063-2-0,35	0.8	5.2	7.1	10
SAVEx 10.2	6 – 60	90	ASYL071-4-0,28	0.9	5.8	9.5	16
	12 – 108		ASYL071-2-0,50	1.2	8.2	14	16
	24 – 216	70	ASYL071-2-0,70	1.6	9.1	16	20
SAVEx 14.2	6 – 60	180	ASYL090-4-0,50	1.3	7.6	12	16
	12 – 108		ASYL090-2-1,00	2.2	13	21	25

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	30	ASYR063-4-0,10	0.4	5.2	7.2	10
	12 – 108		ASYR063-2-0,20	0.5	5.9	10	16
	24 – 216	25	ASYR063-2-0,30	0.6	7.3	15	16
SARVEx 07.6	6 – 60	60	ASYR063-4-0,20	0.6	7.3	13	16
	12 – 108		ASYR063-2-0,40	0.8	9.9	18	20
	24 – 216	50	ASYR063-2-0,50	1.0	12	22	25
SARVEx 10.2	6 – 60	120	ASYR071-4-0,40	1.0	13	22	25

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	30	ASYR063-4-0,10	0.6	4.0	5,0	6
	12 – 108		ASYR063-2-0,20	0.5	3.9	7,2	10
	24 – 216		ASYR063-2-0,30	0.7	4.9	10	16
SARVEx 07.6	6 – 60	60	ASYR063-4-0,20	0.7	4.6	7,0	10
	12 – 108		ASYR063-2-0,40	0.9	5.9	11	16
	24 – 216		ASYR063-2-0,50	1.0	6.8	13	16
SARVEx 10.2	6 – 60	120	ASYR071-4-0,40	1.1	7.6	14	16
	12 – 108		ASYR071-2-0,70	1.6	11	20	25
	24 – 216		ASYR071-2-1,00	2.0	12	22	25
SARVEx 14.2	6 – 60	250	ASYR090-4-0,75	1.5	8.9	15	16
	12 – 108		ASYR090-2-1,40	2.5	15	27	32

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	20	ASYQ063-4-0,07	0.4	4.4	5.5	10
	12 – 108		ASYQ063-2-0,14	0.4	4.6	8.1	10
SARVEx 07.6	6 – 60	40	ASYQ063-4-0,14	0.5	6.4	9.7	16
	12 – 108		ASYQ063-2-0,28	0.7	8.6	13	16

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Multi-turn actuator			Motor				Fuse ¹⁾
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Consumed nominal power ²⁾ P_{IN} [kW]	Nominal current ³⁾ I_N [A]	Max. current ⁴⁾ I_{max} [A]	Blow characteristics: Time-delay (gG) [A]
SARVEx 07.2	6 – 60	20	ASYQ063-4-0,07	0.5	3.1	4.0	6
	12 – 108		ASYQ063-2-0,14	0.5	3.1	5.8	10
SARVEx 07.6	6 – 60	40	ASYQ063-4-0,14	0.6	4.0	5.3	10
	12 – 108		ASYQ063-2-0,28	0.7	4.7	6.9	10
SARVEx 10.2	6 – 60	90	ASYQ071-4-0,28	0.9	5.8	9.5	16
	12 – 108		ASYQ071-2-0,50	1.2	8.2	14	16
SARVEx 14.2	6 – 60	180	ASYQ090-4-0,50	1.3	7.6	12	16
	12 – 108		ASYQ090-2-1,00	2.2	13	21	25

Notes on table

1) Protection on site	For short-circuit protection of the actuator, fuses have to be provided by the customer. The actuators are suitable for use in current circuits with a maximum short-circuit 1-phase AC current value of 5,000 A root-mean-square (R.M.S). The output data of the fuses to be provided on site must not exceed the following values: 32 A/600 V at a maximum mains mains short circuit current of 5,000 A AC.
2) Consumed nominal power P_{IN}	Mains power consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
3) Nominal current I_N	Mains current consumption for 230 V rated voltage V at multi-turn actuator run torque (approx. 35 % of the maximum torque) and maximum output speed.
4) Max. current I_{max}	Mains current consumption for 230 V rated voltage at maximum torque and approx. 50 % output speed. Starting current $I_A \leq I_{max}$

Notes on installation and sizing

Electrical data	Current and power data are approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.
Rated voltage	Mains voltage for defining current and power data
Motor operation	On the basis of the supplied 1-phase or 3-phase AC mains voltage, the frequency converter generates a variable 3-phase AC voltage, adjustable in terms of frequency and amplitude. Motor speed and thus actuator speed is internally set via the frequency.
Motor protection	To protect against overheating, PTC thermistors are embedded in the motor windings. Evaluation of PTC thermistors is integrated in the ACVExC controls.
Mains voltage, mains frequency	Permissible variation of mains voltage: ± 10 % Permissible variation of mains frequency: ± 5 %

Notes on installation and sizing																					
Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																				
Motor protection	To protect against overheating, thermoswitches or PTC thermistors are embedded in the motor windings. Actuators without integral actuator controls (AUMA NORM): Thermoswitches or PTC thermistors have to be considered within the external controls (refer to terminal plan). Note: Failure to connect thermoswitches or PTC thermistors shall void the warranty for the motor. According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches. PTC thermistors additionally require a suitable tripping device in the actuator controls. Rating of the thermoswitches <table><tr><th colspan="2">AC current</th><th colspan="2">DC current</th></tr><tr><td colspan="2">250 V, 50 – 60 Hz</td><td>60 V</td><td>1.0 A</td></tr><tr><td>cos φ = 1</td><td>2.5 A</td><td>42 V</td><td>1.2 A</td></tr><tr><td>cos φ = 0.6</td><td>1.6 A</td><td>24 V</td><td>1.5 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Thermal motor protection is already integrated.			AC current		DC current		250 V, 50 – 60 Hz		60 V	1.0 A	cos φ = 1	2.5 A	42 V	1.2 A	cos φ = 0.6	1.6 A	24 V	1.5 A		
AC current		DC current																			
250 V, 50 – 60 Hz		60 V	1.0 A																		
cos φ = 1	2.5 A	42 V	1.2 A																		
cos φ = 0.6	1.6 A	24 V	1.5 A																		
Mains voltage, mains frequency	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %																				
Terminal plan	<table><tr><th>Part-turn actuators</th><th>Terminal plan</th></tr><tr><td>SQEx 05.2 – SQEx 14.2</td><td>TPA00R2AA-101-000 (basic version in combination with PTC thermistors)</td></tr><tr><td>SQEx 05.2 – SQEx 14.2</td><td>TPA00R1AA-101-000 (basic version in combination with thermoswitches)</td></tr><tr><td>SQREx 05.2 – SQREx 14.2</td><td>TPA00R2AA-001-000 (basic version)</td></tr></table>			Part-turn actuators	Terminal plan	SQEx 05.2 – SQEx 14.2	TPA00R2AA-101-000 (basic version in combination with PTC thermistors)	SQEx 05.2 – SQEx 14.2	TPA00R1AA-101-000 (basic version in combination with thermoswitches)	SQREx 05.2 – SQREx 14.2	TPA00R2AA-001-000 (basic version)										
Part-turn actuators	Terminal plan																				
SQEx 05.2 – SQEx 14.2	TPA00R2AA-101-000 (basic version in combination with PTC thermistors)																				
SQEx 05.2 – SQEx 14.2	TPA00R1AA-101-000 (basic version in combination with thermoswitches)																				
SQREx 05.2 – SQREx 14.2	TPA00R2AA-001-000 (basic version)																				
Switchgear sizing	For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (electronically locked) can be used. Actuators without integral actuator controls (AUMA NORM): Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating power/motor power in compliance with the assigned AUMA power class. Switchgear assignment to AUMA power classes: <table><tr><th>AUMA power class</th><th>Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3</th><th colspan="2">Reversing contactor Motor power according to UL/CSA at</th></tr><tr><td></td><td>400 V AC</td><td>480 V AC</td><td>600 V AC</td></tr><tr><td>A1</td><td>4.0 kW</td><td>5.0 hp</td><td>5.0 hp</td></tr></table> <table><tr><th>AUMA power class</th><th>Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th></tr><tr><td></td><td>400 V AC</td></tr><tr><td>B1</td><td>6 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Required switchgear in power classes A1 or B1 are already integrated in AMExC or ACExC controls.			AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at			400 V AC	480 V AC	600 V AC	A1	4.0 kW	5.0 hp	5.0 hp	AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a		400 V AC	B1	6 A
AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at																			
	400 V AC	480 V AC	600 V AC																		
A1	4.0 kW	5.0 hp	5.0 hp																		
AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a																				
	400 V AC																				
B1	6 A																				

Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors	
1) Nominal power P_N	Mechanical power output at motor shaft at run torque of part-turn actuator (corresponds to approx. 35 % of maximum torque). The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi \times \sqrt{3}$
2) Nominal current I_N	Current at run torque
3) Max. current I_{max}	Current at maximum torque

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQEx 05.2	3	150	VDX0063-2-0,06	0.06	3,360	1.3	1.3	4.1	0.42	1.3	A1	B1
	4.5					1.3	1.3	4.1	0.42	1.3	A1	B1
	6		VDX0063-4-0,04	0.04	1,680	0.9	0.9	2.2	0.50	0.9	A1	B1
	9					0.9	0.9	2.2	0.50	0.9	A1	B1
	12		VDX0063-4-0,02	0.02	1,680	0.9	0.9	2.2	0.40	0.9	A1	B1
	17					0.9	0.9	2.2	0.40	0.9	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.7	0.7	1.5	0.38	0.7	A1	B1
SQEx 07.2	3	300	VDX0063-2-0,12	0.12	3,360	1.5	2.0	6.5	0.52	2.0	A1	B1
	4.5					1.5	2.0	6.5	0.52	2.0	A1	B1
	6		VDX0063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	9					1.3	1.5	3.5	0.38	1.5	A1	B1
	12		VDX0063-4-0,03	0.03	1,680	0.9	1.1	2.2	0.43	1.1	A1	B1
	17					0.9	1.1	2.2	0.43	1.1	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.7	0.7	1.5	0.39	0.7	A1	B1
SQEx 10.2	3	450	VDX0063-2-0,10	0.10	1,680	1.7	2.2	4.4	0.48	2.2	A1	B1
	4.5					1.7	2.2	4.4	0.48	2.2	A1	B1
	6		SDX0063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	9					1.3	1.5	3.5	0.38	1.5	A1	B1
	12		SDX0063-4-0,04	0.04	1,680	1.1	1.1	2.2	0.48	1.1	A1	B1
	17					1.1	1.1	2.2	0.48	1.1	A1	B1
	25		SDX0063-4-0,02	0.02	1,680	0.7	0.7	1.5	0.43	0.7	A1	B1
SQEx 12.2	3	900	VDX0063-2-0,19	0.19	3,360	2.2	2.6	7.6	0.53	2.6	A1	B1
	4.5					2.2	2.6	7.6	0.53	2.6	A1	B1
	6		VDX0063-4-0,10	0.10	1,680	1.7	2.0	4.4	0.48	2.0	A1	B1
	9					1.7	2.0	4.4	0.48	2.0	A1	B1
	12		SDX0063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	17					1.3	1.5	3.5	0.38	1.5	A1	B1
	25		SDX0063-4-0,04	0.04	1,680	1.1	1.1	2.2	0.48	1.1	A1	B1
SQEx 14.2	3	1,800	VDX0063-2-0,19	0.19	3,360	2.2	2.6	7.6	0.53	2.6	A1	B1
	4.5					2.2	2.6	7.6	0.53	2.6	A1	B1
	6		VDX0063-4-0,10	0.10	1,680	1.7	2.0	4.4	0.48	2.0	A1	B1
	9					1.7	2.0	4.4	0.48	2.0	A1	B1
	12		SDX0063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	17					1.3	1.5	3.5	0.38	1.5	A1	B1
	25		SDX0063-4-0,04	0.04	1,680	1.1	1.1	2.2	0.48	1.1	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEX 05.2	4	150	VDX0063-2-0,06	0,06	2 800	1.0	1.0	3.3	0.42	1.0	A1	B1
	5.6					1.0	1.0	3.3	0.42	1.0	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.7	0.7	1.7	0.50	0.7	A1	B1
	11					0.7	0.7	1.7	0.50	0.7	A1	B1
	16		VDX0063-4-0,02	0.02	1,400	0.7	0.7	1.7	0.40	0.7	A1	B1
	22					0.7	0.7	1.7	0.40	0.7	A1	B1
	32		SDX0063-4-0,01 SDX0063-8-0,01	0.01	1,400 700	0.5	0.5	1.2	0.38	0.5	A1	B1
63	0.7	0.7				0.9	0.61	0.7	A1	B1		
SQEX 07.2	4	300	VDX0063-2-0,12	0.12	2,800	1.2	1.6	5.2	0.52	1.6	A1	B1
	5.6					1.2	1.6	5.2	0.52	1.6	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1
	11					1.0	1.2	2.8	0.38	1.2	A1	B1
	16		VDX0063-4-0,03	0.03	1,400	0.7	0.9	1.7	0.43	0.9	A1	B1
	22					0.7	0.9	1.7	0.43	0.9	A1	B1
	32		SDX0063-4-0,01 SDX0063-8-0,01	0.01	1,400 700	0.5	0.5	1.2	0.38	0.5	A1	B1
63	0.7	0.7				0.9	0.61	0.7	A1	B1		
SQEX 10.2	8	450	VDX0063-4-0,10	0.10	1,400	1.4	1.7	3.5	0.48	1.7	A1	B1
	11					1.4	1.6	3.5	0.48	1.6	A1	B1
	16	SDX0063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1	
	22				1.0	1.2	2.8	0.38	1.2	A1	B1	
	32	600	SDX0063-4-0,04	0.04	1,400	0.9	0.9	1.7	0.48	0.9	A1	B1
	45					0.9	0.9	1.7	0.48	0.9	A1	B1
	63		SDX0063-4-0,02	0.02	1,400	0.5	0.5	1.2	0.43	0.5	A1	B1
SQEX 12.2	11	900	VDX0063-2-0,19	0.19	2,800	1.7	2.1	6.1	0.53	2.1	A1	B1
	16		VDX0063-4-0,10	0.10	1,400	1.4	1.7	3.5	0.48	1.7	A1	B1
	22	1.4				1.6	3.5	0.48	1.6	A1	B1	
	32	SDX0063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1	
	45				1.0	1.2	2.8	0.38	1.2	A1	B1	
	63	SDX0063-4-0,04	0.04	1,400	0.9	0.9	1.7	0.48	0.9	A1	B1	
	90				0.9	0.9	1.7	0.48	0.9	A1	B1	
125	SDX0063-4-0,02	0.02	1,400	0.5	0.5	1.2	0.43	0.5	A1	B1		
SQEX 14.2	24	1,800	VDX0063-2-0,19	0.19	2,800	1.7	2.1	6.1	0.53	2.1	A1	B1
	36		VDX0063-4-0,10	0.10	1,400	1.4	1.6	3.5	0.48	1.6	A1	B1
	48	2,400				1.4	1.6	3.5	0.48	1.6	A1	B1
	72	SDX0063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1	
100	1.0				1.2	2.8	0.38	1.2	A1	B1		

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	4	150	VDX0063-2-0,06	0.06	2,800	0.6	0.6	2.0	0.42	0.6	A1	B1
	5.6					0.6	0.6	2.0	0.42	0.6	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.4	0.4	1.1	0.50	0.4	A1	B1
	11					0.4	0.4	1.1	0.50	0.4	A1	B1
	16		VDX0063-4-0,02	0.02	1,400	0.4	0.4	1.1	0.40	0.4	A1	B1
	22					0.4	0.4	1.1	0.40	0.4	A1	B1
	32		SDX0063-4-0,01 SDX0063-8-0,01	0.01	1,400 700	0.3	0.3	0.7	0.38	0.3	A1	B1
63	0.4	0.4				0.5	0.61	0.4	A1	B1		
SQEx 07.2	4	300	VDX0063-2-0,12	0.12	2,800	0.7	0.9	3.2	0.52	0.9	A1	B1
	5.6					0.7	0.9	3.2	0.52	0.9	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	11					0.6	0.7	1.7	0.38	0.7	A1	B1
	16		VDX0063-4-0,03	0.03	1,400	0.4	0.5	1.1	0.43	0.5	A1	B1
	22					0.4	0.5	1.1	0.43	0.5	A1	B1
	32		SDX0063-4-0,01 SDX0063-8-0,01	0.01	1,400 700	0.3	0.3	0.7	0.38	0.3	A1	B1
63	0.4	0.4				0.5	0.61	0.4	A1	B1		
SQEx 10.2	8	450	VDX0063-4-0,10	0.10	1,400	0.8	1.1	2.1	0.48	1.1	A1	B1
	11					0.8	0.9	2.1	0.48	0.9	A1	B1
	16		600	SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1
	22	0.6					0.7	1.7	0.38	0.7	A1	B1
	32	SDX0063-4-0,04		0.04	1,400	0.5	0.5	1.1	0.48	0.5	A1	B1
	45					0.5	0.5	1.1	0.48	0.5	A1	B1
	63	SDX0063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1	
SQEx 12.2	11	900	VDX0063-2-0,19	0.19	2,800	1.1	1.3	3.7	0.53	1.3	A1	B1
	16					0.8	1.1	2.1	0.48	1.1	A1	B1
	22	VDX0063-4-0,10	0.10	1,400	0.8	0.9	2.1	0.48	0.9	A1	B1	
	32				0.6	0.7	1.7	0.38	0.7	A1	B1	
	45	1,200	SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	63					0.5	0.5	1.1	0.48	0.5	A1	B1
	90		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.1	0.48	0.5	A1	B1
	125					0.5	0.5	1.1	0.48	0.5	A1	B1
SQEx 14.2	24	1,800	SDX0063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1
	36		VDX0063-2-0,19	0.19	2,800	1.1	1.3	3.7	0.53	1.3	A1	B1
	48	2,400	VDX0063-4-0,10	0.10	1,400	0.8	0.9	2.1	0.48	0.9	A1	B1
	72					0.8	0.9	2.1	0.48	0.9	A1	B1
	100		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	3	150	VDX0063-2-0,06	0.06	3,360	0.8	0.8	2.4	0.42	0.8	A1	B1
	4.5					0.8	0.8	2.4	0.42	0.8	A1	B1
	6		VDX0063-4-0,04	0.04	1,680	0.5	0.5	1.3	0.50	0.5	A1	B1
	9					0.5	0.5	1.3	0.50	0.5	A1	B1
	12		VDX0063-4-0,02	0.02	1,680	0.5	0.5	1.3	0.40	0.5	A1	B1
	17					0.5	0.5	1.3	0.40	0.5	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.4	0.4	0.9	0.38	0.4	A1	B1
50	SDX0063-8-0,01	840	0.5		0.5	0.6	0.61	0.5	A1	B1		
SQEx 07.2	3	300	VDX0063-2-0,12	0.12	3,360	0.9	1.1	3.8	0.52	1.1	A1	B1
	4.5					0.9	1.1	3.8	0.52	1.1	A1	B1
	6		VDX0063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1
	9					0.8	0.9	2.0	0.38	0.9	A1	B1
	12		VDX0063-4-0,03	0.03	1,680	0.5	0.6	1.3	0.43	0.6	A1	B1
	17					0.5	0.6	1.3	0.43	0.6	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.4	0.4	0.9	0.39	0.4	A1	B1
50	SDX0063-8-0,01	840	0.5		0.5	0.6	0.61	0.5	A1	B1		
SQEx 10.2	6	450	VDX0063-4-0,10	0.10	1,680	1.0	1.3	2.5	0.48	1.3	A1	B1
	9					1.0	1.1	2.5	0.48	1.1	A1	B1
	12	SDX0063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1	
	17				0.8	0.9	2.0	0.38	0.9	A1	B1	
	25	SDX0063-4-0,04	0.04	1,680	0.6	0.6	1.3	0.48	0.6	A1	B1	
	35				0.6	0.6	1.3	0.48	0.6	A1	B1	
	50	SDX0063-4-0,02	0.02	1,680	0.4	0.4	0.9	0.43	0.4	A1	B1	
SQEx 12.2	9	900	VD00063-2-0,19	0.19	3,360	1.3	1.5	4.4	0.53	1.5	A1	B1
	12		VDX0063-4-0,10	0.10	1,680	1.0	1.3	2.5	0.48	1.3	A1	B1
	17	1.0				1.1	2.5	0.48	1.1	A1	B1	
	25	1,200	SDX0063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1
	35					0.8	0.9	2.0	0.38	0.9	A1	B1
	50		SD00063-4-0,04	0.04	1,680	0.6	0.6	1.3	0.48	0.6	A1	B1
	75					0.6	0.6	1.3	0.48	0.6	A1	B1
108	VD00063-4-0,02	0.02	1,680	0.4	0.4	0.9	0.43	0.4	A1	B1		
SQEx 14.2	20	1,800	VDX0063-2-0,19	0.19	3,360	1.3	1.5	4.4	0.53	1.5	A1	B1
	30		VDX0063-4-0,10	0.10	1,680	1.0	1.1	2.5	0.48	1.1	A1	B1
	40	2,400				1.0	1.1	2.5	0.48	1.1	A1	B1
	60	SDX0063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1	
	85				0.8	0.9	2.0	0.38	0.9	A1	B1	

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
SQEx 05.2	4	150	VDX0063-2-0,06	0.06	2,800	0.6	0.6	1.9	0.42	0.6	A1	B1
	5.6					0.6	0.6	1.9	0.42	0.6	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.4	1.0	0.50	0.4	A1	B1
	16		VDX0063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	22					0.4	0.4	1.0	0.40	0.4	A1	B1
	32		SDX0063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
SQEx 07.2	4	300	VDX0063-2-0,12	0.12	2,800	0.7	0.9	3.0	0.52	0.9	A1	B1
	5.6					0.7	0.9	3.0	0.52	0.9	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	11					0.6	0.7	1.6	0.38	0.7	A1	B1
	16		VDX0063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	22					0.4	0.5	1.0	0.43	0.5	A1	B1
	32		SDX0063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
SQEx 10.2	4	450	VDX0063-2-0,12	0.12	2,800	0.7	0.9	3.0	0.52	0.9	A1	B1
	5.6					0.7	0.9	3.0	0.52	0.9	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	11					0.6	0.7	1.6	0.38	0.7	A1	B1
	16		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	22					0.6	0.7	1.6	0.38	0.7	A1	B1
	32		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
SQEx 12.2	4	900	VDX0063-2-0,19	0.19	2,800	1.0	1.2	3.5	0.53	1.2	A1	B1
	5.6					1.0	1.2	3.5	0.53	1.2	A1	B1
	8		VDX0063-4-0,10	0.10	1,400	0.8	1.0	2.0	0.48	1.0	A1	B1
	11					0.8	0.9	2.0	0.48	0.9	A1	B1
	16		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	22					0.6	0.7	1.6	0.38	0.7	A1	B1
	32		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
SQEx 14.2	4	1,800	VDX0063-2-0,19	0.19	2,800	1.0	1.2	3.5	0.53	1.2	A1	B1
	5.6					1.0	1.2	3.5	0.53	1.2	A1	B1
	8		VDX0063-4-0,10	0.10	1,400	0.8	0.9	2.0	0.48	0.9	A1	B1
	11					0.8	0.9	2.0	0.48	0.9	A1	B1
	16		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	22					0.6	0.7	1.6	0.38	0.7	A1	B1
	32		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	3	150	VDX0063-2-0,06	0.06	3,360	0.7	0.7	2.3	0.42	0.7	A1	B1
	4.5					0.7	0.7	2.3	0.42	0.7	A1	B1
	6		VDX0063-4-0,04	0.04	1,680	0.5	0.5	1.2	0.50	0.5	A1	B1
	9					0.5	0.5	1.2	0.50	0.5	A1	B1
	12		VDX0063-4-0,02	0.02	1,680	0.5	0.5	1.2	0.40	0.5	A1	B1
	17					0.5	0.5	1.2	0.40	0.5	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.4	0.4	0.8	0.38	0.4	A1	B1
50	SDX0063-8-0,01	840	0.5		0.5	0.6	0.61	0.5	A1	B1		
SQEx 07.2	3	300	VDX0063-2-0,12	0.12	3,360	0.8	1.1	3.6	0.52	1.1	A1	B1
	4.5					0.8	1.1	3.6	0.52	1.1	A1	B1
	6		VDX0063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	9					0.7	0.8	1.9	0.38	0.8	A1	B1
	12		VDX0063-4-0,03	0.03	1,680	0.5	0.6	1.2	0.43	0.6	A1	B1
	17					0.5	0.6	1.2	0.43	0.6	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.4	0.4	0.8	0.39	0.4	A1	B1
50	SDX0063-8-0,01	840	0.5		0.5	0.6	0.61	0.5	A1	B1		
SQEx 10.2	6	450	VDX0063-4-0,10	0.10	1,680	1.0	1.2	2.4	0.48	1.2	A1	B1
	9					1.0	1.1	2.4	0.48	1.1	A1	B1
	12	SDX0063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1	
	17				0.7	0.8	1.9	0.38	0.8	A1	B1	
	25	600	SDX0063-4-0,04	0.04	1,680	0.6	0.6	1.2	0.48	0.6	A1	B1
	35					0.6	0.6	1.2	0.48	0.6	A1	B1
	50		SDX0063-4-0,02	0.02	1,680	0.4	0.4	0.8	0.43	0.4	A1	B1
SQEx 12.2	9	900	VDX0063-2-0,19	0.19	3,360	1.2	1.4	4.2	0.53	1.4	A1	B1
	12		VDX0063-4-0,10	0.10	1,680	1.0	1.2	2.4	0.48	1.2	A1	B1
	17	1.0				1.1	2.4	0.48	1.1	A1	B1	
	25	SDX0063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1	
	35				0.7	0.8	1.9	0.38	0.8	A1	B1	
	50	1,200	SDX0063-4-0,04	0.04	1,680	0.6	0.6	1.2	0.48	0.6	A1	B1
	75					0.6	0.6	1.2	0.48	0.6	A1	B1
108	VDX0063-4-0,02		0.02	1,680	0.4	0.4	0.8	0.43	0.4	A1	B1	
SQEx 14.2	20	1,800	VDX0063-2-0,19	0.19	3,360	1.2	1.4	4.2	0.53	1.4	A1	B1
	30		VDX0063-4-0,10	0.10	1,680	1.0	1.1	2.4	0.48	1.1	A1	B1
	40	2,400				1.0	1.1	2.4	0.48	1.1	A1	B1
	60	SDX0063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1	
	85				0.7	0.8	1.9	0.38	0.8	A1	B1	

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQEx 05.2	4	150	VDX0063-2-0,06	0.06	2,800	0.6	0.6	1.8	0.42	0.6	A1	B1
	5.6					0.6	0.6	1.8	0.42	0.6	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.4	1.0	0.50	0.4	A1	B1
	16		VDX0063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	22					0.4	0.4	1.0	0.40	0.4	A1	B1
	32		SDX0063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
SQEx 07.2	4	300	VDX0063-2-0,12	0.12	2,800	0.7	0.9	2.9	0.52	0.9	A1	B1
	5.6					0.7	0.9	2.9	0.52	0.9	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1
	11					0.6	0.7	1.5	0.38	0.7	A1	B1
	16		VDX0063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	22					0.4	0.5	1.0	0.43	0.5	A1	B1
	32		SDX0063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
SQEx 10.2	4	450	VDX0063-2-0,10	0.10	1,400	0.4	0.4	0.5	0.61	0.4	A1	B1
	5.6					0.4	0.4	0.5	0.61	0.4	A1	B1
	8		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1
	11					0.6	0.7	1.5	0.38	0.7	A1	B1
	16		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
	22					0.5	0.5	1.0	0.48	0.5	A1	B1
	32		SDX0063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1
SQEx 12.2	4	900	VDX0063-2-0,19	0.19	2,800	1.0	1.2	3.4	0.53	1.2	A1	B1
	5.6					0.8	1.0	1.9	0.48	1.0	A1	B1
	8		VDX0063-4-0,10	0.10	1,400	0.8	0.9	1.9	0.48	0.9	A1	B1
	11					0.6	0.7	1.5	0.38	0.7	A1	B1
	16		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1
	22					0.6	0.7	1.5	0.38	0.7	A1	B1
	32		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
SQEx 14.2	4	1,800	VDX0063-2-0,19	0.19	2,800	1.0	1.2	3.4	0.53	1.2	A1	B1
	5.6					0.8	0.9	1.9	0.48	0.9	A1	B1
	8		VDX0063-4-0,10	0.10	1,400	0.8	0.9	1.9	0.48	0.9	A1	B1
	11					0.8	0.9	1.9	0.48	0.9	A1	B1
	16		SDX0063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1
	22					0.6	0.7	1.5	0.38	0.7	A1	B1
	32		SDX0063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	3	150	VDX0063-2-0,06	0.06	3,360	0.7	0.7	2.1	0.57	0.7	A1	B1
	4.5					0.7	0.7	2.1	0.57	0.7	A1	B1
	6		VDX0063-4-0,04	0.04	1,680	0.4	0.4	1.1	0.50	0.4	A1	B1
	9					0.4	0.4	1.1	0.50	0.4	A1	B1
	12		VDX0063-4-0,02	0.02	1,680	0.4	0.4	1.1	0.40	0.4	A1	B1
	17					0.4	0.4	1.1	0.40	0.4	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.3	0.3	0.8	0.38	0.3	A1	B1
50	SDX0063-8-0,01	840	0.4		0.4	0.5	0.61	0.4	A1	B1		
SQEx 07.2	3	300	VDX0063-2-0,12	0.12	3,360	0.8	1.0	3.3	0.52	1.0	A1	B1
	4.5					0.8	1.0	3.3	0.52	1.0	A1	B1
	6		VDX0063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1
	9					0.7	0.8	1.7	0.38	0.8	A1	B1
	12		VDX0063-4-0,03	0.03	1,680	0.4	0.4	1.1	0.43	0.4	A1	B1
	17					0.4	0.4	1.1	0.43	0.4	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.3	0.3	0.8	0.39	0.3	A1	B1
50	SDX0063-8-0,01	840	0.4		0.4	0.5	0.61	0.4	A1	B1		
SQEx 10.2	6	450	VDX0063-4-0,10	0.10	1,680	0.9	1.1	2.2	0.48	1.1	A1	B1
	9					0.9	1.0	2.2	0.48	1.0	A1	B1
	12	SDX0063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1	
	17				0.7	0.8	1.7	0.38	0.8	A1	B1	
	25	SDX0063-4-0,04	0.04	1,680	0.5	0.5	1.1	0.48	0.5	A1	B1	
	35				0.5	0.5	1.1	0.48	0.5	A1	B1	
	50	SDX0063-4-0,02	0.02	1,680	0.3	0.3	0.8	0.43	0.3	A1	B1	
SQEx 12.2	9	900	VDX0063-2-0,19	0.19	3,360	1.1	1.3	3.8	0.53	1.3	A1	B1
	12		VDX0063-4-0,10	0.10	1,680	0.9	1.1	2.2	0.48	1.1	A1	B1
	17	0.9				1.0	2.2	0.48	1.0	A1	B1	
	25	SDX0063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1	
	35				0.7	0.8	1.7	0.38	0.8	A1	B1	
	50	SDX0063-4-0,04	0.04	1,680	0.5	0.5	1.1	0.48	0.5	A1	B1	
	75				0.5	0.5	1.1	0.48	0.5	A1	B1	
108	VDX0063-4-0,02	0.02	1,680	0.3	0.3	0.8	0.43	0.3	A1	B1		
SQEx 14.2	20	1,800	VDX0063-2-0,19	0.19	3,360	1.1	1.3	3.8	0.53	1.3	A1	B1
	30		VDX0063-4-0,10	0.10	1,680	0.9	1.0	2.2	0.48	1.0	A1	B1
	40	0.9				1.0	2.2	0.48	1.0	A1	B1	
	60	2,400	SDX0063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1
	85					0.7	0.8	1.7	0.38	0.8	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	3	150	VDX0063-2-0,06	0.06	3,360	0.6	0.6	2.0	0.42	0.6	A1	B1
	4.5					0.6	0.6	2.0	0.42	0.6	A1	B1
	6		VDX0063-4-0,04	0.04	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	9					0.4	0.4	1.0	0.50	0.4	A1	B1
	12		VDX0063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	17					0.4	0.4	1.0	0.40	0.4	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.3	0.3	0.7	0.38	0.3	A1	B1
50	SDX0063-8-0,01	840	0.4		0.4	0.5	0.61	0.4	A1	B1		
SQEx 07.2	3	300	VDX0063-2-0,12	0.12	3,360	0.7	0.9	3.1	0.52	0.9	A1	B1
	4.5					0.7	0.9	3.1	0.52	0.9	A1	B1
	6		VDX0063-4-0,06	0.06	1,680	0.6	0.7	1.7	0.38	0.7	A1	B1
	9					0.6	0.7	1.7	0.38	0.7	A1	B1
	12		VDX0063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.5	A1	B1
	17					0.4	0.5	1.0	0.43	0.5	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.3	0.3	0.7	0.39	0.3	A1	B1
50	SDX0063-8-0,01	840	0.4		0.4	0.5	0.61	0.4	A1	B1		
SQEx 10.2	6	450	VDX0063-4-0,10	0.10	1,680	0.8	1.0	2.1	0.48	1.0	A1	B1
	9					0.8	0.9	2.1	0.48	0.9	A1	B1
	12	SDX0063-4-0,06	0.06	1,680	0.6	0.7	1.7	0.38	0.7	A1	B1	
	17				0.6	0.7	1.7	0.38	0.7	A1	B1	
	25	SDX0063-4-0,04	0.04	1,680	0.5	0.5	1.0	0.48	0.5	A1	B1	
	35				0.5	0.5	1.0	0.48	0.5	A1	B1	
	50	SDX0063-4-0,02	0.02	1,680	0.3	0.3	0.7	0.43	0.3	A1	B1	
SQEx 12.2	9	900	VDX0063-2-0,19	0.19	3,360	1.0	1.3	3.7	0.53	1.3	A1	B1
	12		0.8	1.0	2.1	0.48	1.0	A1	B1			
	17	VDX0063-4-0,10	0.10	1,680	0.8	0.9	2.1	0.48	0.9	A1	B1	
	25	SDX0063-4-0,06	0.06	1,680	0.6	0.7	1.7	0.38	0.7	A1	B1	
	35				0.6	0.7	1.7	0.38	0.7	A1	B1	
	50	SDX0063-4-0,04	0.04	1,680	0.5	0.5	1.0	0.48	0.5	A1	B1	
	75				0.5	0.5	1.0	0.48	0.5	A1	B1	
108	VDX0063-4-0,02	0.02	1,680	0.3	0.3	0.7	0.43	0.3	A1	B1		
SQEx 14.2	20	1,800	VDX0063-2-0,19	0.19	3,360	1.0	1.3	3.7	0.53	1.3	A1	B1
	30		0.8	0.9	2.1	0.48	0.9	A1	B1			
	40	2,400	VDX0063-4-0,10	0.10	1,680	0.8	0.9	2.1	0.48	0.9	A1	B1
	60		SDX0063-4-0,06	0.06	1,680	0.6	0.7	1.7	0.38	0.7	A1	B1
	85					0.6	0.7	1.7	0.38	0.7	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	3	150	VDX0063-2-0,06	0.06	3,360	0.6	0.6	1.9	0.42	0.6	A1	B1
	4.5					0.6	0.6	1.9	0.42	0.6	A1	B1
	6		VDX0063-4-0,04	0.04	1,680	0.4	0.4	1.0	0.50	0.4	A1	B1
	9					0.4	0.4	1.0	0.50	0.4	A1	B1
	12		VDX0063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	17					0.4	0.4	1.0	0.40	0.4	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.3	0.3	0.7	0.38	0.3	A1	B1
50	SDX0063-8-0,01	840	0.4		0.4	0.5	0.61	0.4	A1	B1		
SQEx 07.2	3	300	VDX0063-2-0,12	0.12	3,360	0.7	0.9	3.0	0.52	0.9	A1	B1
	4.5					0.7	0.9	3.0	0.52	0.9	A1	B1
	6		VDX0063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	9					0.6	0.7	1.6	0.38	0.7	A1	B1
	12		VDX0063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.5	A1	B1
	17					0.4	0.5	1.0	0.43	0.5	A1	B1
	25		SDX0063-4-0,01	0.01	1,680	0.3	0.3	0.7	0.39	0.3	A1	B1
50	SDX0063-8-0,01	840	0.4		0.4	0.5	0.61	0.4	A1	B1		
SQEx 10.2	6	450	VDX0063-4-0,10	0.10	1,680	0.8	1.0	2.0	0.48	1.0	A1	B1
	9					0.8	0.9	2.0	0.48	0.9	A1	B1
	12	600	SDX0063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	17					0.6	0.7	1.6	0.38	0.7	A1	B1
	25					0.5	0.5	1.0	0.48	0.5	A1	B1
	35					0.5	0.5	1.0	0.48	0.5	A1	B1
50	SDX0063-4-0,02	0.02	1,680	0.3	0.3	0.7	0.43	0.3	A1	B1		
SQEx 12.2	9	900	VDX0063-2-0,19	0.19	3,360	1.0	1.2	3.5	0.53	1.2	A1	B1
	12		VDX0063-4-0,10	0.10	1,680	0.8	1.0	2.0	0.48	1.0	A1	B1
	17	0.8				0.9	2.0	0.48	0.9	A1	B1	
	25	1,200	SDX0063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	35					0.6	0.7	1.6	0.38	0.7	A1	B1
	50					0.5	0.5	1.0	0.48	0.5	A1	B1
	75					0.5	0.5	1.0	0.48	0.5	A1	B1
	108	VDX0063-4-0,02	0.02	1,680	0.3	0.3	0.7	0.43	0.3	A1	B1	
SQEx 14.2	20	1,800	VDX0063-2-0,19	0.19	3,360	1.0	1.2	3.5	0.53	1.2	A1	B1
	30		VDX0063-4-0,10	0.10	1,680	0.8	0.9	2.0	0.48	0.9	A1	B1
	40	0.8				0.9	2.0	0.48	0.9	A1	B1	
	60	2,400	SDX0063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	85					0.6	0.7	1.6	0.38	0.7	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQEx 05.2	4	150	VDX0063-2-0,06	0,06	2,800	0.5	0.5	1.5	0.42	0.5	A1	B1
	5.6					0.5	0.5	1.5	0.42	0.5	A1	B1
	8		VDX0063-4-0,04	0.04	1,400	0.3	0.3	0.8	0.50	0.3	A1	B1
	11					0.3	0.3	0.8	0.50	0.3	A1	B1
	16		VDX0063-4-0,02	0.02	1,400	0.3	0.3	0.8	0.40	0.3	A1	B1
	22					0.3	0.3	0.8	0.40	0.3	A1	B1
	32		SDX0063-4-0,01	0.01	1,400	0.2	0.2	0.6	0.38	0.2	A1	B1
63	0.3	0.3				0.4	0.61	0.3	A1	B1		
SQEx 07.2	4	300	VDX0063-2-0,12	0.12	2,800	0.6	0.7	2.4	0.52	0.7	A1	B1
	5.6					0.6	0.7	2.4	0.52	0.7	A1	B1
	8		VDX0063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1
	11					0.5	0.6	1.3	0.38	0.6	A1	B1
	16		VDX0063-4-0,03	0.03	1,400	0.3	0.4	0.8	0.43	0.4	A1	B1
	22					0.3	0.4	0.8	0.43	0.4	A1	B1
	32		SDX0063-4-0,01	0.01	1,400	0.2	0.2	0.6	0.38	0.2	A1	B1
63	0.3	0.3				0.4	0.61	0.3	A1	B1		
SQEx 10.2	8	450	VDX0063-4-0,10	0.10	1,400	0.6	0.8	1.6	0.48	0.8	A1	B1
	11					0.6	0.7	1.6	0.48	0.7	A1	B1
	16	600	SDX0063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1
	22					0.5	0.6	1.3	0.38	0.6	A1	B1
	32		SDX0063-4-0,04	0.04	1,400	0.4	0.4	0.8	0.48	0.4	A1	B1
	45					0.4	0.4	0.8	0.48	0.4	A1	B1
	63		SDX0063-4-0,02	0.02	1,400	0.2	0.2	0.6	0.43	0.2	A1	B1
SQEx 12.2	11	900	VDX0063-2-0,19	0.19	2,800	0.8	1.0	2.8	0.53	1.0	A1	B1
	16		0.6	0.8	1.6	0.48	0.8	A1	B1			
	22	1,200	VDX0063-4-0,10	0.10	1,400	0.6	0.7	1.6	0.48	0.7	A1	B1
	32		0.5	0.6	1.3	0.38	0.6	A1	B1			
	45		SDX0063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1
	63					0.4	0.4	0.8	0.48	0.4	A1	B1
	90		SDX0063-4-0,04	0.04	1,400	0.4	0.4	0.8	0.48	0.4	A1	B1
125	SDX0063-4-0,02	0.02	1,400	0.2	0.2	0.6	0.43	0.2	A1	B1		
SQEx 14.2	24	1,800	VDX0063-2-0,19	0.19	2,800	0.8	1.0	2.8	0.53	1.0	A1	B1
	36		0.6	0.7	1.6	0.48	0.7	A1	B1			
	48	2,400	VDX0063-4-0,10	0.10	1,400	0.6	0.7	1.6	0.48	0.7	A1	B1
	72		0.6	0.7	1.6	0.48	0.7	A1	B1			
100	SDX0063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1		
						0.5	0.6	1.3	0.38	0.6	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N [A]	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQREx 05.2	6	150	VDXR063-4-0,04	0.04	1,680	0.9	0.9	2.2	0.50	0.9	A1	B1
	9					0.9	0.9	2.2	0.50	0.9	A1	B1
	12		VDXR063-4-0,02	0.02	1,680	0.9	0.9	2.2	0.40	0.9	A1	B1
	17					0.9	0.9	2.2	0.40	0.9	A1	B1
	25		SDXR063-4-0,01	0.01	1,680	0.7	0.7	1.5	0.38	0.7	A1	B1
	50		SDXR063-8-0,01		840	0.9	0.9	1.1	0.61	0.9	A1	B1
SQREx 07.2	6	300	VDXR063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	9					1.3	1.5	3.5	0.38	1.5	A1	B1
	12		VDXR063-4-0,03	0.03	1,680	0.9	1.1	2.2	0.43	1.1	A1	B1
	17					0.9	1.1	2.2	0.43	1.1	A1	B1
	25		SDXR063-4-0,01	0.01	1,680	0.7	0.7	1.5	0.38	0.7	A1	B1
	50		SDXR063-8-0,01		840	0.9	0.9	1.1	0.61	0.9	A1	B1
SQREx 10.2	9	600	VDXR063-4-0,10	0.10	1,680	1.7	2.0	4.4	0.48	2.0	A1	B1
	12					1.3	1.5	3.5	0.38	1.5	A1	B1
	17		SDXR063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	25					1.1	1.1	2.2	0.48	1.1	A1	B1
	35		SDXR063-4-0,04	0.04	1,680	1.1	1.1	2.2	0.48	1.1	A1	B1
	50		SDXR063-4-0,02		1,680	0.7	0.7	1.5	0.43	0.7	A1	B1
SQREx 12.2	12	900	VDXR063-4-0,10	0.10	1,680	1.7	2.2	4.4	0.48	2.2	A1	B1
	17					1.7	2.0	4.4	0.48	2.0	A1	B1
	25	1 200	SDXR063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	35					1.3	1.5	3.5	0.38	1.5	A1	B1
	50		SDXR063-4-0,04	0.04	1,680	1.1	1.1	2.2	0.48	1.1	A1	B1
	75					1.1	1.1	2.2	0.48	1.1	A1	B1
SQREx 14.2	108	2 400	SDXR063-4-0,02	0.02	1,680	0.7	0.7	1.5	0.43	0.7	A1	B1
	30		VDXR063-4-0,10	0.10	1,680	1.7	2.0	4.4	0.48	2.0	A1	B1
	40					1.7	2.0	4.4	0.48	2.0	A1	B1
	60		SDXR063-4-0,06	0.06	1,680	1.3	1.5	3.5	0.38	1.5	A1	B1
	85					1.3	1.5	3.5	0.38	1.5	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQREx 05.2	8	150	VDXR063-4-0,04	0.04	1,400	0.7	0.7	1.7	0.50	0.7	A1	B1
	11					0.7	0.7	1.7	0.50	0.7	A1	B1
	16					0.7	0.7	1.7	0.40	0.7	A1	B1
	22		SDXR063-4-0,01	0.01	1,400	0.7	0.7	1.7	0.40	0.7	A1	B1
	32					0.5	0.5	1.2	0.38	0.5	A1	B1
	63					0.7	0.7	0.9	0.61	0.7	A1	B1
SQREx 07.2	8	300	VDXR063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1
	11					1.0	1.2	2.8	0.38	1.2	A1	B1
	16					0.7	0.9	1.7	0.43	0.9	A1	B1
	22		SDXR063-4-0,03	0.03	1,400	0.7	0.9	1.7	0.43	0.9	A1	B1
	32					0.5	0.5	1.2	0.38	0.5	A1	B1
	63					0.7	0.7	0.9	0.61	0.7	A1	B1
SQREx 10.2	11	600	VDXR063-4-0,10	0.10	1,400	1.4	1.6	3.5	0.48	1.6	A1	B1
	16					1.0	1.2	2.8	0.38	1.2	A1	B1
	22					1.0	1.2	2.8	0.38	1.2	A1	B1
	32		SDXR063-4-0,06	0.06	1,400	0.9	0.9	1.7	0.48	0.9	A1	B1
	45					0.9	0.9	1.7	0.48	0.9	A1	B1
	63					0.5	0.5	1.2	0.43	0.5	A1	B1
SQREx 12.2	16	900	VDXR063-4-0,10	0.10	1,400	1.4	1.7	3.5	0.48	1.7	A1	B1
	22					1.4	1.6	3.5	0.48	1.6	A1	B1
	32					1.0	1.2	2.8	0.38	1.2	A1	B1
	45		SDXR063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1
	63					0.9	0.9	1.7	0.48	0.9	A1	B1
	90					0.9	0.9	1.7	0.48	0.9	A1	B1
SQREx 14.2	125	1,200	SDXR063-4-0,02	0.02	1,400	0.5	0.5	1.2	0.43	0.5	A1	B1
	16					1.4	1.6	3.5	0.48	1.6	A1	B1
	22					1.4	1.6	3.5	0.48	1.6	A1	B1
	32					1.0	1.2	2.8	0.38	1.2	A1	B1
SQREx 14.2	48	2,400	SDXR063-4-0,06	0.06	1,400	1.0	1.2	2.8	0.38	1.2	A1	B1
	72					1.0	1.2	2.8	0.38	1.2	A1	B1
	100					1.0	1.2	2.8	0.38	1.2	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQREx 05.2	8	150	VDXR063-4-0,04	0.04	1,400	0.4	0.4	1.1	0.50	0.4	A1	B1
	11					0.4	0.4	1.1	0.50	0.4	A1	B1
	16					0.4	0.4	1.1	0.40	0.4	A1	B1
	22		SDXR063-4-0,02	0.02	1,400	0.4	0.4	1.1	0.40	0.4	A1	B1
	32					0.3	0.3	0.7	0.38	0.3	A1	B1
	63					0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 07.2	8	300	VDXR063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	11					0.6	0.7	1.7	0.38	0.7	A1	B1
	16					0.4	0.5	1.1	0.43	0.5	A1	B1
	22		SDXR063-4-0,03	0.03	1,400	0.4	0.5	1.1	0.43	0.5	A1	B1
	32					0.3	0.3	0.7	0.38	0.3	A1	B1
	63					0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 10.2	11	600	VDXR063-4-0,10	0.10	1,400	0.8	0.9	2.1	0.48	0.9	A1	B1
	16					0.6	0.7	1.7	0.38	0.7	A1	B1
	22					0.6	0.7	1.7	0.38	0.7	A1	B1
	32		SDXR063-4-0,06	0.06	1,400	0.5	0.5	1.1	0.48	0.5	A1	B1
	45					0.5	0.5	1.1	0.48	0.5	A1	B1
	63					0.3	0.3	0.7	0.43	0.3	A1	B1
SQREx 12.2	16	900	VDXR063-4-0,10	0.10	1,400	0.8	1.1	2.1	0.48	1.1	A1	B1
	22					0.8	0.9	2.1	0.48	0.9	A1	B1
	32					0.6	0.7	1.7	0.38	0.7	A1	B1
	45		SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	63					0.5	0.5	1.1	0.48	0.5	A1	B1
	90					0.5	0.5	1.1	0.48	0.5	A1	B1
SQREx 14.2	125	1,200	SDXR063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1
	16					0.8	0.9	2.1	0.48	0.9	A1	B1
	22					0.8	0.9	2.1	0.48	0.9	A1	B1
	32					0.6	0.7	1.7	0.38	0.7	A1	B1
SQREx 14.2	48	2,400	SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.7	0.38	0.7	A1	B1
	72					0.6	0.7	1.7	0.38	0.7	A1	B1
	100					0.6	0.7	1.7	0.38	0.7	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristo
SQREx 05.2	6	150	VDXR063-4-0,04	0.04	1,680	0.5	0.5	1.3	0.50	0.5	A1	B1
	9					0.5	0.5	1.3	0.50	0.5	A1	B1
	12		VDXR063-4-0,02	0.02	1,680	0.5	0.5	1.3	0.40	0.5	A1	B1
	17					0.5	0.5	1.3	0.40	0.5	A1	B1
	25		SDXR063-4-0,01	0.01	1,680	0.4	0.4	0.9	0.38	0.4	A1	B1
	50		SDXR063-8-0,01		840	0.5	0.5	0.6	0.61	0.5	A1	B1
SQREx 07.2	6	300	VDXR063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1
	9					0.8	0.9	2.0	0.38	0.9	A1	B1
	12		VDXR063-4-0,03	0.03	1,680	0.5	0.6	1.3	0.43	0.6	A1	B1
	17					0.5	0.6	1.3	0.43	0.6	A1	B1
	25		SDXR063-4-0,01	0.01	1,680	0.4	0.4	0.9	0.38	0.4	A1	B1
	50		SDXR063-8-0,01		840	0.5	0.5	0.6	0.61	0.5	A1	B1
SQREx 10.2	9	600	VDXR063-4-0,10	0.10	1,680	1.0	1.1	2.5	0.48	1.1	A1	B1
	12		SDXR063-4-0,06		1,680	0.8	0.9	2.0	0.38	0.9	A1	B1
	17			0.8		0.9	2.0	0.38	0.9	A1	B1	
	25		SDXR063-4-0,04	1,680	0.6	0.6	1.3	0.48	0.6	A1	B1	
	35				0.6	0.6	1.3	0.48	0.6	A1	B1	
	50		SDXR063-4-0,02	0.02	1,680	0.4	0.4	0.9	0.43	0.4	A1	B1
SQREx 12.2	12	900	VDXR063-4-0,10	0.10	1,680	1.0	1.3	2.5	0.48	1.3	A1	B1
	17					1.0	1.1	2.5	0.48	1.1	A1	B1
	25	1 200	SDXR063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1
	35					0.8	0.9	2.0	0.38	0.9	A1	B1
	50		SDXR063-4-0,04	0.04	1,680	0.6	0.6	1.3	0.48	0.6	A1	B1
	75					0.6	0.6	1.3	0.48	0.6	A1	B1
SQREx 14.2	108	2 400	SDXR063-4-0,02	0.02	1,680	0.4	0.4	0.9	0.43	0.4	A1	B1
	30		VDXR063-4-0,10	0.10	1,680	1.0	1.1	2.5	0.48	1.1	A1	B1
	40					1.0	1.1	2.5	0.48	1.1	A1	B1
	60		SDXR063-4-0,06	0.06	1,680	0.8	0.9	2.0	0.38	0.9	A1	B1
85	0.8	0.9				2.0	0.38	0.9	A1	B1		

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Speed [rpm]	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contactor	Thyristor
SQREx 05.2	8	150	VDXR063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.4	1.0	0.50	0.4	A1	B1
	16		VDXR063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	22					0.4	0.4	1.0	0.40	0.4	A1	B1
	32		SDXR063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
	63		SDXR063-8-0,01		700	0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 07.2	8	300	VDXR063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	11					0.6	0.7	1.6	0.38	0.7	A1	B1
	16		VDXR063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	22					0.4	0.5	1.0	0.43	0.5	A1	B1
	32		SDXR063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
	63		SDXR063-8-0,01		700	0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 10.2	11	600	VDXR063-4-0,10	0.10	1,400	0.8	0.9	2.0	0.48	0.9	A1	B1
	16		SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	22					0.6	0.7	1.6	0.38	0.7	A1	B1
	32		SDXR063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
	45					0.5	0.5	1.0	0.48	0.5	A1	B1
	63		SDXR063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1
SQREx 12.2	16	900	VDXR063-4-0,10	0.10	1,400	0.8	1.0	2.0	0.48	1.0	A1	B1
	22					0.8	0.9	2.0	0.48	0.9	A1	B1
	32	1,200	SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	45					0.6	0.7	1.6	0.38	0.7	A1	B1
	63		SDXR063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
	90					0.5	0.5	1.0	0.48	0.5	A1	B1
125	SDXR063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1		
SQREx 14.2	36	1,800	VDXR063-4-0,10	0.10	1,400	0.8	0.9	2.0	0.48	0.9	A1	B1
	48	0.8				0.9	2.0	0.48	0.9	A1	B1	
	72	2,400	SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.6	0.38	0.7	A1	B1
	100					0.6	0.7	1.6	0.38	0.7	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristo
SQREx 05.2	6	150	VDXR063-4-0,04	0.04	1,680	0.5	0.5	1.2	0.50	0.5	A1	B1
	9					0.5	0.5	1.2	0.50	0.5	A1	B1
	12		VDXR063-4-0,02	0.02	1,680	0.5	0.5	1.2	0.40	0.5	A1	B1
	17					0.5	0.5	1.2	0.40	0.5	A1	B1
	25		SDXR063-4-0,01	0.01	1,680	0.4	0.4	0.8	0.38	0.4	A1	B1
50	SDXR063-8-0,01	840	0.5		0.5	0.6	0.61	0.5	A1	B1		
SQREx 07.2	6	300	VDXR063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	9					0.7	0.8	1.9	0.38	0.8	A1	B1
	12		VDXR063-4-0,03	0.03	1,680	0.5	0.6	1.2	0.43	0.6	A1	B1
	17					0.5	0.6	1.2	0.43	0.6	A1	B1
	25		SDXR063-4-0,01	0.01	1,680	0.4	0.4	0.8	0.38	0.4	A1	B1
50	SDXR063-8-0,01	840	0.5		0.5	0.6	0.61	0.5	A1	B1		
SQREx 10.2	9	600	VDXR063-4-0,10	0.10	1,680	1.0	1.1	2.4	0.48	1.1	A1	B1
	12		SDXR063-4-0,06		1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	17					0.7	0.8	1.9	0.38	0.8	A1	B1
	25		SDXR063-4-0,04	0.04	1,680	0.6	0.6	1.2	0.48	0.6	A1	B1
	35					0.6	0.6	1.2	0.48	0.6	A1	B1
50	SDXR063-4-0,02	0.02	1,680	0.4	0.4	0.8	0.43	0.4	A1	B1		
SQREx 12.2	12	900	VDXR063-4-0,10	0.10	1,680	1.0	1.2	2.4	0.48	1.2	A1	B1
	17					1.0	1.1	2.4	0.48	1.1	A1	B1
	25	1 200	SDXR063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	35					0.7	0.8	1.9	0.38	0.8	A1	B1
	50		SDXR063-4-0,04	0.04	1,680	0.6	0.6	1.2	0.48	0.6	A1	B1
75	0.6					0.6	1.2	0.48	0.6	A1	B1	
108	SDXR063-4-0,02	0.02	1,680	0.4	0.4	0.8	0.43	0.4	A1	B1		
SQREx 14.2	30	1 800	VDXR063-4-0,10	0.10	1,680	1.0	1.1	2.4	0.48	1.1	A1	B1
	40					1.0	1.1	2.4	0.48	1.1	A1	B1
	60	2 400	SDXR063-4-0,06	0.06	1,680	0.7	0.8	1.9	0.38	0.8	A1	B1
	85					0.7	0.8	1.9	0.38	0.8	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQREx 05.2	8	150	VDXR063-4-0,04	0.04	1,400	0.4	0.4	1.0	0.50	0.4	A1	B1
	11					0.4	0.4	1.0	0.50	0.4	A1	B1
	16		VDXR063-4-0,02	0.02	1,400	0.4	0.4	1.0	0.40	0.4	A1	B1
	22					0.4	0.4	1.0	0.40	0.4	A1	B1
	32		SDXR063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
	63		SDXR063-8-0,01		700	0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 07.2	8	300	VDXR063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1
	11					0.6	0.7	1.5	0.38	0.7	A1	B1
	16		VDXR063-4-0,03	0.03	1,400	0.4	0.5	1.0	0.43	0.5	A1	B1
	22					0.4	0.5	1.0	0.43	0.5	A1	B1
	32		SDXR063-4-0,01	0.01	1,400	0.3	0.3	0.7	0.38	0.3	A1	B1
	63		SDXR063-8-0,01		700	0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 10.2	11	600	VDXR063-4-0,10	0.10	1,400	0.8	0.9	1.9	0.48	0.9	A1	B1
	16		SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1
	22					0.6	0.7	1.5	0.38	0.7	A1	B1
	32		SDXR063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1
	45					0.5	0.5	1.0	0.48	0.5	A1	B1
	63		SDXR063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1
SQREx 12.2	16	900	VDXR063-4-0,10	0.10	1,400	0.8	1.0	1.9	0.48	1.0	A1	B1
	22	1,200				0.8	0.9	1.9	0.48	0.9	A1	B1
	32	SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1	
	45				0.6	0.7	1.5	0.38	0.7	A1	B1	
	63	SDXR063-4-0,04	0.04	1,400	0.5	0.5	1.0	0.48	0.5	A1	B1	
	90				0.5	0.5	1.0	0.48	0.5	A1	B1	
SQREx 14.2	125	SDXR063-4-0,02	0.02	1,400	0.3	0.3	0.7	0.43	0.3	A1	B1	
	36	1,800	VDXR063-4-0,10	0.10	1,400	0.8	0.9	1.9	0.48	0.9	A1	B1
	48	2,400				0.8	0.9	1.9	0.48	0.9	A1	B1
	72	SDXR063-4-0,06	0.06	1,400	0.6	0.7	1.5	0.38	0.7	A1	B1	
100	0.6				0.7	1.5	0.38	0.7	A1	B1		

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQREx 05.2	6	150	VDXR063-4-0,04	0.04	1,680	0.4	0.4	1.1	0.50	0.4	A1	B1
	9					0.4	0.4	1.1	0.50	0.4	A1	B1
	12					0.4	0.4	1.1	0.40	0.4	A1	B1
	17		SDXR063-4-0,01	0.01	1,680	0.4	0.4	1.1	0.40	0.4	A1	B1
	25					0.3	0.3	0.8	0.38	0.3	A1	B1
	50					0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 07.2	6	300	VDXR063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1
	9					0.7	0.8	1.7	0.38	0.8	A1	B1
	12					0.4	0.5	1.1	0.43	0.5	A1	B1
	17		SDXR063-4-0,01	0.01	1,680	0.4	0.5	1.1	0.43	0.5	A1	B1
	25					0.3	0.3	0.8	0.38	0.3	A1	B1
	50					0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 10.2	9	600	VDXR063-4-0,10	0.10	1,680	0.9	1.0	2.2	0.48	1.0	A1	B1
	12					0.7	0.8	1.7	0.38	0.8	A1	B1
	17					0.7	0.8	1.7	0.38	0.8	A1	B1
	25		SDXR063-4-0,04	0.04	1,680	0.5	0.5	1.1	0.48	0.5	A1	B1
	35					0.5	0.5	1.1	0.48	0.5	A1	B1
	50					0.3	0.3	0.8	0.43	0.3	A1	B1
SQREx 12.2	12	900	VDXR063-4-0,10	0.10	1,680	0.9	1.1	2.2	0.48	1.1	A1	B1
	17					0.9	1.0	2.2	0.48	1.0	A1	B1
	25					0.7	0.8	1.7	0.38	0.8	A1	B1
	35		SDXR063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1
	50					0.5	0.5	1.1	0.48	0.5	A1	B1
	75					0.5	0.5	1.1	0.48	0.5	A1	B1
SQREx 14.2	108	1,200	SDXR063-4-0,02	0.02	1,680	0.3	0.3	0.8	0.43	0.3	A1	B1
	30	1,800	VDXR063-4-0,10	0.10	1,680	0.9	1.0	2.2	0.48	1.0	A1	B1
	40					0.9	1.0	2.2	0.48	1.0	A1	B1
	60		SDXR063-4-0,06	0.06	1,680	0.7	0.8	1.7	0.38	0.8	A1	B1
	85					0.7	0.8	1.7	0.38	0.8	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQREx 05.2	6	150	VDXR063-4-0,04	0.04	1,400	0.3	0.3	0.9	0.50	0.3	A1	B1
	9					0.3	0.3	0.9	0.50	0.3	A1	B1
	12					0.3	0.3	0.9	0.40	0.3	A1	B1
	17		VDXR063-4-0,02	0.02	1,400	0.3	0.3	0.9	0.40	0.3	A1	B1
	25					0.3	0.3	0.6	0.38	0.3	A1	B1
	50					0.3	0.3	0.4	0.61	0.3	A1	B1
SQREx 07.2	6	300	VDXR063-4-0,06	0.06	1,400	0.5	0.6	1.4	0.38	0.6	A1	B1
	9					0.5	0.6	1.4	0.38	0.6	A1	B1
	12					0.3	0.3	0.9	0.43	0.3	A1	B1
	17		VDXR063-4-0,03	0.03	1,400	0.3	0.3	0.9	0.43	0.3	A1	B1
	25					0.3	0.3	0.6	0.38	0.3	A1	B1
	50					0.3	0.3	0.4	0.61	0.3	A1	B1
SQREx 10.2	9	600	VDXR063-4-0,10	0.10	1,400	0.7	0.8	1.7	0.48	0.8	A1	B1
	12					0.5	0.6	1.4	0.38	0.6	A1	B1
	17					0.5	0.6	1.4	0.38	0.6	A1	B1
	25		SDXR063-4-0,06	0.06	1,400	0.4	0.4	0.9	0.48	0.4	A1	B1
	35					0.4	0.4	0.9	0.48	0.4	A1	B1
	50					0.3	0.3	0.6	0.43	0.3	A1	B1
SQREx 12.2	12	900	VDXR063-4-0,10	0.10	1,400	0.7	0.9	1.7	0.48	0.9	A1	B1
	17					0.7	0.8	1.7	0.48	0.8	A1	B1
	25					0.5	0.6	1.4	0.38	0.6	A1	B1
	35		SDXR063-4-0,06	0.06	1,400	0.5	0.6	1.4	0.38	0.6	A1	B1
	50					0.4	0.4	0.9	0.48	0.4	A1	B1
	75					0.4	0.4	0.9	0.48	0.4	A1	B1
SQREx 14.2	108	1,200	SDXR063-4-0,02	0.02	1,400	0.3	0.3	0.6	0.43	0.3	A1	B1
	30	1,800	VDXR063-4-0,10	0.10	1,400	0.7	0.8	1.7	0.48	0.8	A1	B1
	40					0.7	0.8	1.7	0.48	0.8	A1	B1
	60		SDXR063-4-0,06	0.06	1,400	0.5	0.6	1.4	0.38	0.6	A1	B1
	85					0.5	0.6	1.4	0.38	0.6	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-	Thyristor
SQREx 05.2	6	150	VDXR063-4-0,04	0.04	1 680	0.4	0.4	1.0	0.50	0.4	A1	B1
	9					0.4	0.4	1.0	0.50	0.4	A1	B1
	12					0.4	0.4	1.0	0.40	0.4	A1	B1
	17		VDXR063-4-0,02	0.02	1,680	0.4	0.4	1.0	0.40	0.4	A1	B1
	25					0.3	0.3	0.7	0.38	0.3	A1	B1
	50					0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 07.2	6	300	VDXR063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	9					0.6	0.7	1.6	0.38	0.7	A1	B1
	12					0.4	0.5	1.0	0.43	0.5	A1	B1
	17		VDXR063-4-0,03	0.03	1,680	0.4	0.5	1.0	0.43	0.5	A1	B1
	25					0.3	0.3	0.7	0.38	0.3	A1	B1
	50					0.4	0.4	0.5	0.61	0.4	A1	B1
SQREx 10.2	9	600	VDXR063-4-0,10	0.10	1,680	0.8	0.9	2.0	0.48	0.9	A1	B1
	12					0.6	0.7	1.6	0.38	0.7	A1	B1
	17					0.6	0.7	1.6	0.38	0.7	A1	B1
	25		SDXR063-4-0,06	0.06	1,680	0.5	0.5	1.0	0.48	0.5	A1	B1
	35					0.5	0.5	1.0	0.48	0.5	A1	B1
	50					0.3	0.3	0.7	0.43	0.3	A1	B1
SQREx 12.2	12	900	VDXR063-4-0,10	0.10	1,680	0.8	1.0	2.0	0.48	1.0	A1	B1
	17					0.8	0.9	2.0	0.48	0.9	A1	B1
	25					0.6	0.7	1.6	0.38	0.7	A1	B1
	35		SDXR063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	50					0.5	0.5	1.0	0.48	0.5	A1	B1
	75					0.5	0.5	1.0	0.48	0.5	A1	B1
SQREx 14.2	108	1,200	SDXR063-4-0,02	0.02	1,680	0.3	0.3	0.7	0.43	0.3	A1	B1
	30	1,800	VDXR063-4-0,10	0.10	1,680	0.8	0.9	2.0	0.48	0.9	A1	B1
	40					0.8	0.9	2.0	0.48	0.9	A1	B1
	60		SDXR063-4-0,06	0.06	1,680	0.6	0.7	1.6	0.38	0.7	A1	B1
	85					0.6	0.7	1.6	0.38	0.7	A1	B1

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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Part-turn actuator			Motor									
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Nominal current ²⁾ I _N (A)	Max. current ³⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurr. prot. device setting [A]	AUMA power class for switchgear	
											Contact-tor	Thyristor
SQREx 05.2	8	150	VDXR063-4-0,04	0.04	1,400	0.3	0.3	0.8	0.50	0.3	A1	B1
	11					0.3	0.3	0.8	0.50	0.3	A1	B1
	16		VDXR063-4-0,02	0.02	1,400	0.3	0.3	0.8	0.40	0.3	A1	B1
	22					0.3	0.3	0.8	0.40	0.3	A1	B1
	32		SDXR063-4-0,01	0.01	1,400	0.2	0.2	0.6	0.38	0.2	A1	B1
	63		SDXR063-8-0,01		700	0.3	0.3	0.4	0.61	0.3	A1	B1
SQREx 07.2	8	300	VDXR063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1
	11					0.5	0.6	1.3	0.38	0.6	A1	B1
	16		VDXR063-4-0,03	0.03	1,400	0.3	0.4	0.8	0.43	0.4	A1	B1
	22					0.3	0.4	0.8	0.43	0.4	A1	B1
	32		SDXR063-4-0,01	0.01	1,400	0.2	0.2	0.6	0.38	0.2	A1	B1
	63		SDXR063-8-0,01		700	0.3	0.3	0.4	0.61	0.3	A1	B1
SQREx 10.2	11	600	VDXR063-4-0,10	0.10	1,400	0.6	0.7	1.6	0.48	0.7	A1	B1
	16		SDXR063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1
	22					0.5	0.6	1.3	0.38	0.6	A1	B1
	32		SDXR063-4-0,04	0.04	1,400	0.4	0.4	0.8	0.48	0.4	A1	B1
	45					0.4	0.4	0.8	0.48	0.4	A1	B1
	63		SDXR063-4-0,02	0.02	1,400	0.2	0.2	0.6	0.43	0.2	A1	B1
SQREx 12.2	16	900	VDXR063-4-0,10	0.10	1,400	0.6	0.8	1.6	0.48	0.8	A1	B1
	22	1,200				0.6	0.7	1.6	0.48	0.7	A1	B1
	32	SDXR063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1	
	45				0.5	0.6	1.3	0.38	0.6	A1	B1	
	63	SDXR063-4-0,04	0.04	1,400	0.4	0.4	0.8	0.48	0.4	A1	B1	
	90				0.4	0.4	0.8	0.48	0.4	A1	B1	
SQREx 14.2	125	SDXR063-4-0,02	0.02	1,400	0.2	0.2	0.6	0.43	0.2	A1	B1	
	36	1,800	VDXR063-4-0,10	0.10	1,400	0.6	0.7	1.6	0.48	0.7	A1	B1
	48	2,400				0.6	0.7	1.6	0.48	0.7	A1	B1
	72	SDXR063-4-0,06	0.06	1,400	0.5	0.6	1.3	0.38	0.6	A1	B1	
100	0.5				0.6	1.3	0.38	0.6	A1	B1		

1) – 3) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 3-phase AC motors

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

Notes on installation and sizing																					
Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																				
Motor protection	To protect against overheating, thermostats or PTC thermistors are embedded in the motor windings. Actuators without integral actuator controls (AUMA NORM): Thermostats or PTC thermistors have to be considered within the external controls (refer to terminal plan). Note: Failure to connect thermostats or PTC thermistors shall void the warranty for the motor. According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermostats. PTC thermistors additionally require a suitable tripping device in the actuator controls. Rating of the thermostats <table><tr><th colspan="2">AC current</th><th colspan="2">DC current</th></tr><tr><td colspan="2">250 V, 50 – 60 Hz</td><td>60 V</td><td>1.0 A</td></tr><tr><td>cos φ = 1</td><td>2.5 A</td><td>42 V</td><td>1.2 A</td></tr><tr><td>cos φ = 0.6</td><td>1.6 A</td><td>24 V</td><td>1.5 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Thermal motor protection is already integrated.			AC current		DC current		250 V, 50 – 60 Hz		60 V	1.0 A	cos φ = 1	2.5 A	42 V	1.2 A	cos φ = 0.6	1.6 A	24 V	1.5 A		
AC current		DC current																			
250 V, 50 – 60 Hz		60 V	1.0 A																		
cos φ = 1	2.5 A	42 V	1.2 A																		
cos φ = 0.6	1.6 A	24 V	1.5 A																		
Mains voltage, mains frequency	Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %																				
Terminal plan	<table><tr><th>Part-turn actuators</th><th>Motor (type)</th><th colspan="2">Terminal plan</th></tr><tr><td rowspan="2">SQEx 05.2 – SQEx 14.2</td><td rowspan="2">VWX.../SWX...</td><td colspan="2">TPA01R1AA-101-000</td></tr><tr><td colspan="2">TPA01R2AA-101-000</td></tr><tr><td rowspan="2">SQREx 05.2 – SQREx 14.2</td><td rowspan="2">VWX.../SWX...</td><td colspan="2">TPA01R1AA-001-000</td></tr><tr><td colspan="2">TPA01R2AA-001-000</td></tr></table> For further information refer to "Technical data Multi-turn actuators SQREx 05.2 – SQREx 14.2 for modulating duty with 1-phase AC motors".			Part-turn actuators	Motor (type)	Terminal plan		SQEx 05.2 – SQEx 14.2	VWX.../SWX...	TPA01R1AA-101-000		TPA01R2AA-101-000		SQREx 05.2 – SQREx 14.2	VWX.../SWX...	TPA01R1AA-001-000		TPA01R2AA-001-000			
Part-turn actuators	Motor (type)	Terminal plan																			
SQEx 05.2 – SQEx 14.2	VWX.../SWX...	TPA01R1AA-101-000																			
		TPA01R2AA-101-000																			
SQREx 05.2 – SQREx 14.2	VWX.../SWX...	TPA01R1AA-001-000																			
		TPA01R2AA-001-000																			
Switchgear sizing	For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (electronically locked) can be used. Actuators without integral actuator controls (AUMA NORM): Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating power/motor power in compliance with the assigned AUMA power class. Switchgear assignment to AUMA power classes: <table><tr><th>AUMA power class</th><th>Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3</th><th colspan="2">Reversing contactor Motor power according to UL/CSA at</th></tr><tr><td></td><td>400 V AC</td><td>480 V AC</td><td>600 V AC</td></tr><tr><td>A1</td><td>4.0 kW</td><td>5.0 hp</td><td>5.0 hp</td></tr></table> <table><tr><th>AUMA power class</th><th>Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th></tr><tr><td></td><td>400 V AC</td></tr><tr><td>B1</td><td>6 A</td></tr></table> Actuators with AMExC or ACExC integral controls: Required switchgear in power classes A1 or B1 are already integrated in AMExC or ACExC controls.			AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at			400 V AC	480 V AC	600 V AC	A1	4.0 kW	5.0 hp	5.0 hp	AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a		400 V AC	B1	6 A
AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at																			
	400 V AC	480 V AC	600 V AC																		
A1	4.0 kW	5.0 hp	5.0 hp																		
AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a																				
	400 V AC																				
B1	6 A																				

Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

1) Nominal power P_N	Mechanical power output at motor shaft at run torque of part-turn actuator (corresponds to approx. 35 % of maximum torque). The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Permanent split/starting capacitor	For VWX /SWX motors, operating capacitors are integrated within the motor.
3) Nominal current I_N	Current at run torque
4) Max. current I_{max}	Current at maximum torque

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
												Contac-tor	Thyristor
SQEx 05.2	4	150	VWX0063-2-0,06	0.06	2,800	70	2.6	3.4	12	0.85	3.4	A1	B1
	5.6						2.6	3.2	12	0.85	3.2	A1	B1
	8		VWX0063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
	11						2.3	2.6	4.6	0.97	2.6	A1	B1
	16		VWX0063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1
	22						1.8	1.8	4.1	0.84	1.8	A1	B1
	32		SWX0063-4-0,01	0.01	1,400	35	1.8	1.8	4.1	0.81	1.8	A1	B1
63	SWX0063-8-0,01	700					25	1.5	1.5	1.8	0.99	1.5	A1
SQEx 07.2	4	300	VWX0063-2-0,12	0.12	2,800	100	3.7	5.4	12	0.98	5.4	A1	B1
	5.6						3.7	5.0	12	0.98	5.0	A1	B1
	8		VWX0063-4-0,06	0.06	1,400	70	3.5	4.0	7.0	0.88	4.0	A1	B1
	11						3.5	3.8	7.0	0.88	3.8	A1	B1
	16		VWX0063-4-0,03	0.03	1,400	50	2.3	2.6	4.6	0.96	2.6	A1	B1
	22						2.3	2.6	4.6	0.96	2.6	A1	B1
	32		SWX0063-4-0,01	0.01	1,400	35	1.8	1.9	4.1	0.81	1.9	A1	B1
63	SWX0063-8-0,01	700					25	1.5	1.6	1.8	0.99	1.6	A1
SQEx 10.2	8	450	VWX0063-4-0,10	0.10	1,400	80	3.9	4.5	7.4	0.94	4.5	A1	B1
	11						3.9	4.6	7.4	0.94	4.6	A1	B1
	16	600	SWX0063-4-0,06	0.06	1,400	60	3.1	3.5	6.8	0.84	3.5	A1	B1
	22						3.1	3.4	6.8	0.84	3.4	A1	B1
	32		SWX0063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
	45	2.3					2.6	4.6	0.97	2.6	A1	B1	
	63	SWX0063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1	
SQEx 12.2	11	900	VWX0063-2-0,19	0.19	2,800	110	4.5	6.0	12	0.98	6.0	A1	B1
	16						3.9	4.5	7.4	0.94	4.5	A1	B1
	22	VWX0063-4-0,10	0.10	1,400	80	3.9	4.3	7.4	0.94	4.3	A1	B1	
	32					3.1	3.5	6.8	0.84	3.5	A1	B1	
	45	1,200	SWX0063-4-0,06	0.06	1,400	60	3.1	3.4	6.8	0.84	3.4	A1	B1
	63						2.3	2.7	4.6	0.97	2.7	A1	B1
	90		SWX0063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
125	SWX0063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1		
SQEx 14.2	24	1,800	VWX0063-2-0,19	0.19	2,800	110	4.5	6.0	12	0.98	6.0	A1	B1
	36						3.9	4.5	7.4	0.94	4.5	A1	B1
	48	2,400	VWX0063-4-0,10	0.10	1,400	80	3.9	4.6	7.4	0.94	4.6	A1	B1
	72						3.1	3.5	6.8	0.84	3.5	A1	B1
100	SWX0063-4-0,06	0.06	1,400	60	3.1	3.4	6.8	0.84	3.4	A1	B1		

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma- nent split capaci- tor ²⁾ [μF]	Nomi- nal cur- rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
SQEx 05.2	3	150	VWX0063-2-0,06	0.06	3,360	70	2.6	4.0	14	0.96	4.0	A1	B1
	4.5						2.6	3.7	14	0.96	3.7	A1	B1
	6		VWX0063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1
	9						2.7	3.1	5.4	0.98	3.1	A1	B1
	12		VWX0063-4-0,02	0.02	1,680	35	1.7	1.8	4.9	0.84	1.8	A1	B1
	17						1.7	1.8	4.9	0.84	1.8	A1	B1
	25		SWX0063-4-0,01	0.01	1,680	35	1.6	1.7	4.9	0.82	1.7	A1	B1
	50						1.8	1.8	2.1	0.99	1.8	A1	B1
SQEx 07.2	3	300	VWX0063-2-0,12	0.12	3,360	100	4.7	7.0	14	0.91	7.0	A1	B1
	4.5						4.7	6.5	14	0.91	6.5	A1	B1
	6		VWX0063-4-0,06	0.06	1,680	70	3.5	4.4	8.5	0.98	4.4	A1	B1
	9						3.5	4.2	8.5	0.98	4.2	A1	B1
	12		VWX0063-4-0,03	0.03	1,680	50	2.6	3.1	5.4	0.98	3.1	A1	B1
	17						2.6	3.0	5.4	0.98	3.0	A1	B1
	25		SWX0063-4-0,01	0.01	1,680	35	1.6	1.9	4.9	0.82	1.9	A1	B1
	50						1.8	1.9	2.1	0.99	1.9	A1	B1
SQEx 10.2	6	450	VWX0063-4-0,10	0.10	1,680	80	4.3	5.6	8.8	0.98	5.6	A1	B1
	9						4.3	5.7	8.8	0.98	5.7	A1	B1
	12	600	SWX0063-4-0,06	0.06	1,680	60	2.9	3.9	7.7	0.96	3.9	A1	B1
	17						2.9	3.5	7.7	0.96	3.5	A1	B1
	25		SWX0063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1
	35						2.7	3.0	5.4	0.98	3.0	A1	B1
	50		SWX0063-4-0,02	0.02	1,680	35	1.7	1.8	4.9	0.84	1.8	A1	B1
SQEx 12.2	9	900	VWX0063-2-0,19	0.19	3,360	110	6.0	7.2	14	0.90	7.2	A1	B1
	12						4.3	5.6	8.8	0.98	5.6	A1	B1
	17	1,200	VWX0063-4-0,10	0.10	1,680	80	4.3	5.7	8.8	0.98	5.7	A1	B1
	25						2.9	3.9	7.7	0.96	3.9	A1	B1
	35		SWX0063-4-0,06	0.06	1,680	60	2.9	3.5	7.7	0.96	3.5	A1	B1
	50						2.7	3.2	5.4	0.98	3.2	A1	B1
	75		SWX0063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1
SQEx 14.2	108	1,800	VWX0063-4-0,02	0.02	1,680	35	1.7	1.8	4.9	0.84	1.8	A1	B1
	20						6.0	7.2	14	0.90	7.2	A1	B1
	30	2,400	VWX0063-2-0,19	0.19	3,360	110	6.0	7.2	14	0.90	7.2	A1	B1
	40						4.3	5.6	8.8	0.98	5.6	A1	B1
	60		VWX0063-4-0,10	0.10	1,680	80	4.3	5.7	8.8	0.98	5.7	A1	B1
	85						2.9	3.9	7.7	0.96	3.9	A1	B1
			SWX0063-4-0,06	0.06	1,680	60	2.9	3.5	7.7	0.96	3.5	A1	B1
							2.9	3.5	7.7	0.96	3.5	A1	B1

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
												Contac-tor	Thyristor
SQEx 05.2	4	150	VWX0063-2-0,06	0.06	2,800	16	1.7	1.9	6.3	0.69	1.9	A1	B1
	5.6						1.7	1.8	6.3	0.69	1.8	A1	B1
	8		VWX0063-4-0,04	0.04	1,400	12	1.1	1.3	2.3	0.96	1.3	A1	B1
	11						1.1	1.3	2.3	0.96	1.3	A1	B1
	16		VWX0063-4-0,02	0.02	1,400	8.0	1.0	1.0	2.1	0.76	1.0	A1	B1
	22						1.0	1.0	2.1	0.76	1.0	A1	B1
	32						1.0	1.0	2.1	0.74	1.0	A1	B1
SQEx 07.2	63	300	SWX0063-4-0,01	0.01	1,400	8.0	1.0	1.0	2.1	0.74	1.0	A1	B1
	4		VWX0063-2-0,12	0.12	2,800	25	1.8	2.7	6.4	0.98	2.7	A1	B1
	5.6						1.8	2.5	6.4	0.98	2.5	A1	B1
	8		VWX0063-4-0,06	0.06	1,400	20	1.8	2.1	3.6	0.98	2.1	A1	B1
	11						1.8	2.0	3.6	0.98	2.0	A1	B1
	16		VWX0063-4-0,03	0.03	1,400	12	1.1	1.2	2.3	0.96	1.2	A1	B1
	22						1.1	1.2	2.3	0.96	1.2	A1	B1
SQEx 10.2	32						1.1	1.2	2.3	0.96	1.2	A1	B1
	45	600	SWX0063-4-0,01	0.01	1,400	8.0	1.0	1.0	2.1	0.74	1.0	A1	B1
	63		SWX0063-8-0,01	0.01	700	6.3	0.9	0.9	1.0	0.99	0.9	A1	B1
	8		VWX0063-4-0,10	0.10	1,400	20	1.9	2.2	3.6	0.99	2.2	A1	B1
	11						1.9	2.3	3.6	0.99	2.3	A1	B1
	16		SWX0063-4-0,06	0.06	1,400	16	1.6	1.8	3.5	0.88	1.8	A1	B1
	22						1.6	1.7	3.5	0.88	1.7	A1	B1
SQEx 12.2	32						1.1	1.3	2.3	0.96	1.3	A1	B1
	45	1,200	SWX0063-4-0,04	0.04	1,400	12	1.1	1.3	2.3	0.96	1.3	A1	B1
	63		VWX0063-4-0,02	0.02	1,400	8.0	1.0	1.0	2.1	0.76	1.0	A1	B1
	90						1.0	1.0	2.1	0.76	1.0	A1	B1
	125						1.0	1.0	2.1	0.76	1.0	A1	B1
	24		VWX0063-2-0,19	0.19	2,800	25	2.0	2.6	6.4	0.99	2.6	A1	B1
	36		VWX0063-4-0,10	0.10	1,400	20	1.9	2.2	3.6	0.99	2.2	A1	B1
SQEx 14.2	48						1.9	2.3	3.6	0.99	2.3	A1	B1
	72	2,400	SWX0063-4-0,06	0.06	1,400	16	1.6	1.8	3.5	0.88	1.8	A1	B1
	100						1.6	1.7	3.5	0.88	1.7	A1	B1

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
												Contac-tor	Thyristor
SQEx 05.2	3	150	VWX0063-2-0,06	0.06	3 360	16	1.3	1.9	7.4	0.94	1.9	A1	B1
	4.5						1.3	1.7	7.4	0.94	1.7	A1	B1
	6		VWX0063-4-0,04	0.04	1,680	12	1.3	1.5	2.7	0.98	1.5	A1	B1
	9						1.3	1.5	2.7	0.98	1.5	A1	B1
	12		VWX0063-4-0,02	0.02	1,680	8.0	1.0	1.1	2.5	0.80	1.1	A1	B1
	17						1.0	1.1	2.5	0.80	1.1	A1	B1
	25		SWX0063-4-0,01	0.01	1,680	8.0	1.0	1.0	2.5	0.76	1.0	A1	B1
50	SWX0063-8-0,01	0.01					840	6.3	1.0	1.0	1.1	0.99	1.0
SQEx 07.2	3	300	VWX0063-2-0,12	0.12	3,360	25	2.4	3.4	7.6	0.91	3.4	A1	B1
	4.5						2.4	3.0	7.6	0.91	3.0	A1	B1
	6		VWX0063-4-0,06	0.06	1,680	20	1.9	2.4	4.6	0.98	2.4	A1	B1
	9						1.9	2.3	4.6	0.98	2.3	A1	B1
	12		VWX0063-4-0,03	0.03	1,680	12	1.2	1.4	2.7	0.98	1.4	A1	B1
	17						1.2	1.4	2.7	0.98	1.4	A1	B1
	25		SWX0063-4-0,01	0.01	1,680	8.0	1.0	1.1	2.5	0.76	1.1	A1	B1
50	SWX0063-8-0,01	0.01					840	6.3	1.0	1.0	1.1	0.99	1.1
SQEx 10.2	6	450	VWX0063-4-0,10	0.10	1,680	20	2.0	2.7	4.6	0.98	2.7	A1	B1
	9						2.0	2.8	4.6	0.98	2.8	A1	B1
	12	SWX0063-4-0,06	0.06	1,680	16	1.5	2.0	4.3	0.96	2.0	A1	B1	
	17					1.5	1.8	4.3	0.96	1.8	A1	B1	
	25	SWX0063-4-0,04	0.04	1,680	12	1.3	1.5	2.7	0.98	1.5	A1	B1	
	35					1.3	1.5	2.7	0.98	1.5	A1	B1	
	50	SWX0063-4-0,02	0.02	1,680	8.0	1.0	1.1	2.5	0.80	1.1	A1	B1	
SQEx 12.2	9	900	VWX0063-2-0,19	0.19	3,360	25	2.7	3.6	7.6	0.92	3.6	A1	B1
	12						2.0	2.7	4.6	0.98	2.7	A1	B1
	17	VWX0063-4-0,10	0.10	1,680	20	2.0	2.8	4.6	0.98	2.8	A1	B1	
	25					2.0	2.8	4.6	0.98	2.0	A1	B1	
	35	SWX0063-4-0,06	0.06	1,680	16	1.5	2.0	4.3	0.96	2.0	A1	B1	
	50					1.5	2.0	4.3	0.96	2.0	A1	B1	
	75	SWX0063-4-0,04	0.04	1,680	12	1.3	1.5	2.7	0.98	1.5	A1	B1	
108	1.3					1.5	2.7	0.98	1.5	A1	B1		
SQEx 14.2	20	1,800	VWX0063-2-0,19	0.19	3,360	25	2.7	3.6	7.6	0.92	3.6	A1	B1
	30						2.0	2.7	4.6	0.98	2.7	A1	B1
	40	VWX0063-4-0,10	0.10	1,680	20	2.0	2.8	4.6	0.98	2.8	A1	B1	
	60					2.0	2.8	4.6	0.98	2.0	A1	B1	
	85	SWX0063-4-0,06	0.06	1,680	16	1.5	2.0	4.3	0.96	2.0	A1	B1	
85	1.5					2.0	4.3	0.96	2.0	A1	B1		

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
SQREx 05.2	8	150	VWXR063-4-0,04	0.04	1 400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
	11						2.3	2.6	4.6	0.97	2.6	A1	B1
	16			0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1
	22						1.8	1.8	4.1	0.84	1.8	A1	B1
	32						1.8	1.8	4.1	0.81	1.8	A1	B1
SQREx 07.2	63	300	SWXR063-4-0,01	0.01	1,400	35	1.5	1.5	1.8	0.99	1.5	A1	B1
	8						1.5	1.5	1.8	0.99	1.5	A1	B1
	11			0.06	1,400	70	3.5	4.0	7.0	0.88	4.0	A1	B1
	16						3.5	3.8	7.0	0.88	3.8	A1	B1
	22						2.3	2.6	4.6	0.96	2.6	A1	B1
SQREx 10.2	32	600	VWXR063-4-0,03	0.03	1,400	50	2.3	2.6	4.6	0.96	2.6	A1	B1
	45						2.3	2.6	4.6	0.96	2.6	A1	B1
	63			0.01	1,400	35	1.8	1.9	4.1	0.81	1.9	A1	B1
	11						1.5	1.6	1.8	0.99	1.6	A1	B1
	16						1.5	1.6	1.8	0.99	1.6	A1	B1
SQREx 12.2	22	900	VWXR063-4-0,10	0.10	1,400	80	3.9	4.6	7.4	0.94	4.6	A1	B1
	32						3.1	3.5	6.8	0.84	3.5	A1	B1
	45			0.06	1,400	60	3.1	3.4	6.8	0.84	3.4	A1	B1
	63						2.3	2.7	4.6	0.97	2.7	A1	B1
	90						2.3	2.6	4.6	0.97	2.6	A1	B1
SQREx 14.2	125	1,200	SWXR063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
	16						2.3	2.7	4.6	0.97	2.7	A1	B1
	22			0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1
	32						1.8	1.9	4.1	0.84	1.9	A1	B1
	45						1.8	1.9	4.1	0.84	1.9	A1	B1
SQREx 14.2	63	1,800	VWXR063-4-0,10	0.10	1,400	80	3.9	4.5	7.4	0.94	4.5	A1	B1
	90						3.9	4.6	7.4	0.94	4.6	A1	B1
	125			0.06	1,400	60	3.1	3.5	6.8	0.84	3.5	A1	B1
	16						3.1	3.5	6.8	0.84	3.5	A1	B1
	22						3.1	3.4	6.8	0.84	3.4	A1	B1

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
SQREx 05.2	6	150	VWXR063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1
	9						2.7	3.1	5.4	0.98	3.1	A1	B1
	12						1.7	1.8	4.9	0.84	1.8	A1	B1
	17						1.7	1.8	4.9	0.84	1.8	A1	B1
	25						1.6	1.7	4.9	0.82	1.7	A1	B1
SQREx 07.2	50	300	VWXR063-8-0,01	0.01	840	25	1.8	1.8	2.1	0.99	1.8	A1	B1
	6						3.5	4.4	8.5	0.98	4.4	A1	B1
	9						3.5	4.2	8.5	0.98	4.2	A1	B1
	12						2.6	3.1	5.4	0.98	3.1	A1	B1
	17						2.6	3.0	5.4	0.98	3.0	A1	B1
SQREx 10.2	25	600	VWXR063-4-0,01	0.01	1,680	35	1.6	1.9	4.9	0.82	1.9	A1	B1
	35						1.8	1.9	2.1	0.99	1.9	A1	B1
	50						2.9	3.9	7.7	0.96	3.9	A1	B1
	9						2.9	3.5	7.7	0.96	3.5	A1	B1
	12						2.7	3.2	5.4	0.98	3.2	A1	B1
SQREx 12.2	17	900	VWXR063-4-0,06	0.06	1,680	70	2.7	3.0	5.4	0.98	3.0	A1	B1
	25						1.7	1.8	4.9	0.84	1.8	A1	B1
	35						4.3	5.6	8.8	0.98	5.6	A1	B1
	50						4.3	5.7	8.8	0.98	5.7	A1	B1
	75						2.9	3.9	7.7	0.96	3.9	A1	B1
SQREx 14.2	108	1,200	VWXR063-4-0,04	0.04	1,680	50	2.9	3.5	7.7	0.96	3.5	A1	B1
	30						2.7	3.2	5.4	0.98	3.2	A1	B1
	40						2.7	3.2	5.4	0.98	3.2	A1	B1
	60						1.7	1.8	4.9	0.84	1.8	A1	B1
	85						4.3	5.7	8.8	0.98	5.7	A1	B1
SQREx 14.2	30	1,800	VWXR063-4-0,02	0.02	1,680	35	1.7	1.8	4.9	0.84	1.8	A1	B1
	40						4.3	5.6	8.8	0.98	5.6	A1	B1
	60						4.3	5.7	8.8	0.98	5.7	A1	B1
	85						2.9	3.9	7.7	0.96	3.9	A1	B1
	108						2.9	3.5	7.7	0.96	3.5	A1	B1

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Part-turn actuator			Motor														
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear					
												Contact- tor	Thyristor				
SQREx 05.2	8	150	VWXR063-4-0,04	0.04	1,400	12	1.1	1.3	2.3	0.96	1.3	A1	B1				
	11						1.1	1.3	2.3	0.96	1.3	A1	B1				
	16		VWXR063-4-0,02	0.02	1,400	8.0	1.0	1.0	2.1	0.76	1.0	A1	B1				
	22						1.0	1.0	2.1	0.76	1.0	A1	B1				
	32						SWXR063-4-0,01	0.01	1,400	8.0	1.0	1.0	2.1	0.74	1.0	A1	B1
	63						SWXR063-8-0,01	0.01	700	6.3	0.9	0.9	1.0	0.99	0.9	A1	B1
SQREx 07.2	8	300	VWXR063-4-0,06	0.06	1,400	20	1.8	2.1	3.6	0.98	2.1	A1	B1				
	11						1.8	2.0	3.6	0.98	2.0	A1	B1				
	16		VWXR063-4-0,03	0.03	1,400	12	1.1	1.2	2.3	0.96	1.2	A1	B1				
	22						1.1	1.2	2.3	0.96	1.2	A1	B1				
	32						SWXR063-4-0,01	0.01	1,400	8.0	1.0	1.0	2.1	0.74	1.0	A1	B1
	63						SWXR063-8-0,01	0.01	700	6.3	0.9	0.9	1.0	0.99	0.9	A1	B1
SQREx 10.2	11	600	SWXR063-4-0,10	0.10	1,400	20	1.9	2.3	3.6	0.99	2.3	A1	B1				
	16						1.6	1.8	3.5	0.88	1.8	A1	B1				
	22		SWXR063-4-0,06	0.06	1,400	16	1.6	1.7	3.5	0.88	1.7	A1	B1				
	32						1.1	1.3	2.3	0.96	1.3	A1	B1				
	45						1.1	1.3	2.3	0.96	1.3	A1	B1				
	63						SWXR063-4-0,02	0.02	1,400	8.0	1.0	1.0	2.1	0.76	1.0	A1	B1
SQREx 12.2	16	900	VWXR063-4-0,10	0.10	1,400	20	1.9	2.2	3.6	0.99	2.2	A1	B1				
	22	1.9					2.3	3.6	0.99	2.3	A1	B1					
	32	SWXR063-4-0,06	0.06	1,400	16	1.6	1.8	3.5	0.88	1.8	A1	B1					
	45					1.6	1.7	3.5	0.88	1.7	A1	B1					
	63					1.1	1.3	2.3	0.96	1.3	A1	B1					
	90					1.1	1.3	2.3	0.96	1.3	A1	B1					
125	SWXR063-4-0,02	0.02	1,400	8.0	1.0	1.0	2.1	0.76	1.0	A1	B1						
SQREx 14.2	36	1,800	VWXR063-4-0,10	0.10	1,400	20	1.9	2.2	3.6	0.99	2.2	A1	B1				
	48	1.9					2.3	3.6	0.99	2.3	A1	B1					
	72	2,400	SWXR063-4-0,06	0.06	1,400	16	1.6	1.8	3.5	0.88	1.8	A1	B1				
	100						1.6	1.7	3.5	0.88	1.7	A1	B1				

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perman-ent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N (A)	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
												Contact- tor	Thyristor
SQREx 05.2	6	150	VWXR063-4-0,04	0.04	1,680	12	1.3	1.5	2.7	0.98	1.5	A1	B1
	9						1.3	1.5	2.7	0.98	1.5	A1	B1
	12						1.0	1.1	2.5	0.80	1.1	A1	B1
	17						1.0	1.1	2.5	0.80	1.1	A1	B1
	25						1.0	1.0	2.5	0.76	1.0	A1	B1
SQREx 07.2	50	300	SWXR063-8-0,01	0.01	840	6.3	1.0	1.0	1.1	0.99	1.0	A1	B1
	6						1.9	2.4	4.6	0.98	2.4	A1	B1
	9						1.9	2.3	4.6	0.98	2.3	A1	B1
	12						1.2	1.4	2.7	0.98	1.4	A1	B1
	17						1.2	1.4	2.7	0.98	1.4	A1	B1
SQREx 10.2	25	600	SWXR063-4-0,01	0.01	1,680	8.0	1.0	1.1	2.5	0.76	1.1	A1	B1
	50						1.0	1.0	1.1	0.99	1.1	A1	B1
	9						2.0	2.8	4.6	0.98	2.8	A1	B1
	12						1.5	2.0	4.3	0.96	2.0	A1	B1
	17						1.5	1.8	4.3	0.96	1.8	A1	B1
SQREx 12.2	25	900	SWXR063-4-0,04	0.04	1,680	12	1.3	1.5	2.7	0.98	1.5	A1	B1
	35						1.3	1.5	2.7	0.98	1.5	A1	B1
	50						1.0	1.1	2.5	0.80	1.1	A1	B1
	75						2.0	2.7	4.6	0.98	2.7	A1	B1
	108						2.0	2.8	4.6	0.98	2.8	A1	B1
SQREx 14.2	30	2,400	VWXR063-4-0,10	0.10	1,680	20	2.0	2.7	4.6	0.98	2.7	A1	B1
	40						2.0	2.8	4.6	0.98	2.8	A1	B1
	60						1.5	2.0	4.3	0.96	2.0	A1	B1
	85						1.5	2.0	4.3	0.96	2.0	A1	B1
							1.5	2.0	4.3	0.96	2.0	A1	B1

1) – 4) Refer to Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

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

Electrical data Part-turn actuators for open-close duty with DC motors Short-time duty S2 - 10 min, 24 V DC	SGExC 05.1 – SGExC 12.1

Part-turn actuator			Motor					
Type	Operating time for 90° in seconds ¹⁾	Torque max. Nm	Type	Power P _N (kW)	Speed rpm	Nominal current ²⁾ I _N (A)	Current ³⁾ approx. I _{max} . (A)	Starting current I _A (A)
SGExC 05.1	5 – 10	150	SKE080-2/60A-G	0.14	2,500	14	17	40
SGExC 07.1	10 – 15	300	SKE080-2/60A-G	0.14	2,500	14	17	40
SGExC 10.1	20 – 25	600	SKE080-2/60A-G	0.14	2,500	14	18	40
SGExC 12.1	30 – 35	840	SKE080-2/60A-G	0.14	2,500	14	23	40

All DC motors are manufactured as shunt motors.

Motor data are approximate. Due to usual manufacturing tolerances there may be deviations from the values given.

The permissible fluctuation of the nominal voltage is $\pm 10\%$. If the voltage drops below, there is a reduction of the nominal output torque.

For further details refer to “Technical data Part-turn actuators for open-close duty with DC motors SGExC 05.1 – SGExC 12.1”.

1) depending on the torque demanded from the actuator

2) Current at running torque according to Technical data SGExC 05.1 – SGExC 12.1 with DC motors

3) Current at max. torque. We recommend to select switchgear and cables according to these values.

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

Electrical data Part-turn actuators for open-close duty with DC motors Short-time duty S2 - 10 min, 110 V DC	SGExC 05.1 – SGExC 12.1

Part-turn actuator			Motor					
Type	Operating time for 90° in seconds ¹⁾	Torque max. Nm	Type	Power P _N (kW)	Speed rpm	Nominal current ²⁾ I _N (A)	Current ³⁾ approx. I _{max} . (A)	Starting current I _A (A)
SGExC 05.1	5 – 10	150	SKE080-2/60A-G	0.14	2,500	2.8	2.8	8.0
SGExC 07.1	10 – 15	300	SKE080-2/60A-G	0.14	2,500	2.8	2.8	8.0
SGExC 10.1	20 – 25	600	SKE080-2/60A-G	0.14	2,500	2.8	3.0	8.0
SGExC 12.1	30 – 35	840	SKE080-2/60A-G	0.14	2,500	2.8	4.0	8.0

All DC motors are manufactured as shunt motors.

Motor data are approximate. Due to usual manufacturing tolerances there may be deviations from the values given.

The permissible fluctuation of the nominal voltage is $\pm 10\%$. If the voltage drops below, there is a reduction of the nominal output torque.

For further details refer to “Technical data Part-turn actuators for open-close duty with DC motors SGExC 05.1 – SGExC 12.1”.

1) depending on the torque demanded from the actuator

2) Current at running torque according to Technical data SGExC 05.1 – SGExC 12.1 with DC motors

3) Current at max. torque. We recommend to select switchgear and cables according to these values.

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

Electrical data Part-turn actuators for open-close duty with DC motors Short-time duty S2 - 10 min, 220 V DC	SGExC 05.1 – SGExC 12.1

Part-turn actuator			Motor					
Type	Operating time for 90° in seconds ¹⁾	Torque max. Nm	Type	Power P _N (kW)	Speed rpm	Nominal current ²⁾ I _N (A)	Current ³⁾ approx. I _{max} . (A)	Starting current I _A (A)
SGExC 05.1	5 – 10	150	SKE080-2/60A-G	0.14	2,500	1.4	1.4	4.0
SGExC 07.1	10 – 15	300	SKE080-2/60A-G	0.14	2,500	1.4	1.4	4.0
SGExC 10.1	20 – 25	600	SKE080-2/60A-G	0.14	2,500	1.4	1.5	4.0
SGExC 12.1	30 – 35	840	SKE080-2/60A-G	0.14	2,500	1.4	2.0	4.0

All DC motors are manufactured as shunt motors.

Motor data are approximate. Due to usual manufacturing tolerances there may be deviations from the values given.

The permissible fluctuation of the nominal voltage is $\pm 10\%$. If the voltage drops below, there is a reduction of the nominal output torque.

For further details refer to “Technical data Part-turn actuators for open-close duty with DC motors SGExC 05.1 – SGExC 12.1”.

1) depending on the torque demanded from the actuator

2) Current at running torque according to Technical data SGExC 05.1 – SGExC 12.1 with DC motors

3) Current at max. torque. We recommend to select switchgear and cables according to these values.

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

5 Dimensions Actuators/Actuator controls

Multi-turn actuators

SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2 with 3-phase AC motor	288
SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2 with 3-phase AC motor with KT/KM	290
SAEx 07.2-UW – SAEx 16.2-UW / SAREx 07.2-UW – SAREx 16.2-UW / SAVEx 07.2-UW – SAVEx 16.2-UW / SARVEx 07.2-UW – SARVEx 16.2-UW	292
SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2 with 1-phase AC motor	294

Multi-turn actuators with actuator controls AMExC / ACExC

SAEx 07 .2 – SAEx 16.2 / SAREx 07 .2 – SAREx 16.2 with AMExC 01.1	296
SAEx 07 .2 – SAEx 16.2 / SAREx 07 .2 – SAREx 16.2 with AMExC 01.1 with KT/KM	298
SAEx 07 .2 – SAEx 16.2 / SAREx 07 .2 – SAREx 16.2 with ACExC 01.2	300
SAEx 07 .2 – SAEx 16.2 / SAREx 07 .2 – SAREx 16.2 with ACExC 01.2 with KT/KM	302

Multi-turn actuators with actuator controls ACVExC

SAVEx 07 .2 – SA 16.2 / SARVEx 07 .2 – SAR 16.2 with ACVExC 01.2	304
SAVEx 07 .2 – SA 16.2 / SARVEx 07 .2 – SAR 16.2 with ACVExC 01.2 with KT/KM	306

Part-turn actuators

SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with 3-phase AC motor	308
SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with 3-phase AC motor with KT/KM	310
SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with 1-phase AC motor	312
SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with 1-phase AC motor with KT/KM	314

Part-turn actuators with actuator controls AMExC / ACExC

SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with AMExC 01.1	316
SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with AMExC 01.1 with KT/KM	318
SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with ACExC 01.2	320
SQEx 05.2 – SQEx 14.2 / SQREx 05.2 – SQREx 14.2 with ACExC 01.1 with KT/KM	322

Accessories

Wall bracket AMExC 01.1	324
Wall bracket AMExC 01.1 with KT/KM	325
Wall bracket ACExC 01.2	326
Wall bracket ACExC 01.2 with KT/KM	327
Electrical connection	328
Handwheels	330
Floor pedestals	334
Anti-backdrive device LMS 07.1 – LMS 16.1	335

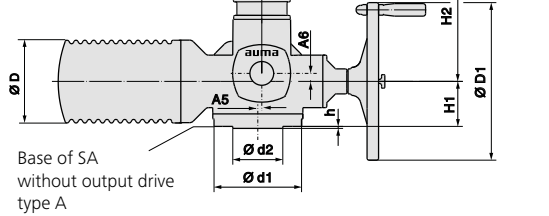
Dimensions Multi-turn actuators with 3-phase AC motors

With explosion proof plug/socket connector

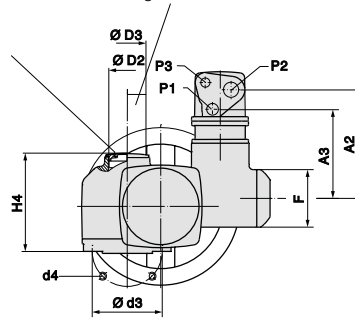
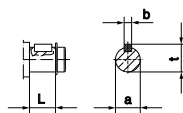
Space required for removal

Standard KP:

Plug/socket connector with screw-type terminals

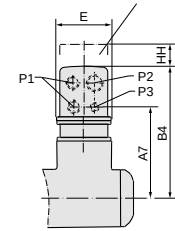


Base of SA without output drive type A

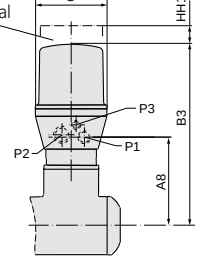
Protection tube for rising valve stem¹⁾**Handwheel shaft**

Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338
For dimensions see overleaf

Space required for removal

**Option KPH:**

Ex plug/socket connector with screw-type terminals

**Option KES:**

Ex plug/socket connector with terminal blocks

- 1) On explicit order only, in steps of 100 mm length each
2) Standard, other threads on request

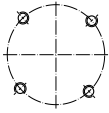
Dimensions	SAEx 07.2 SAREx 07.2		SAEx 07.6 SAREx 07.6		SAEx 10.2 SAREx 10.2	SAEx 14.2 SAREx 14.2	SAEx 14.6 SAREx 14.6	SAEx 16.2 SAREx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A2	221		221		221	221	221	221
A3	181		181		181	181	181	181
A4	103		103		103	119	119	123.5
A5	—		—		—	8	8	15
A6	—		—		—	16	16	20
A7	207		207		207	207	207	207
A8	172		172		172	172	172	172
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
B3	394		394		394	394	394	394
B4	282		282		282	282	282	282
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1¼"		G 1¼"		G 2"	G 2½"	G 2½"	G3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
E	115		115		115	115	115	115
F	115		115		115	115	115	115
G	150		150		150	150	150	150
H1	78		78		80	90	90	110
H2	257		257		257	273	273	277
H4	160		160		170	196	196	235
L	20		20		24	38.8	45.8	45.8
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
HH min.	60		60		60	60	60	60
HH1 min.	130		130		130	130	130	130
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

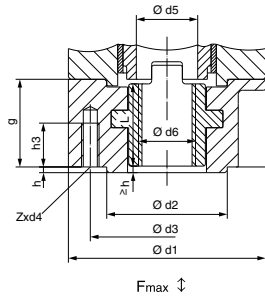
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



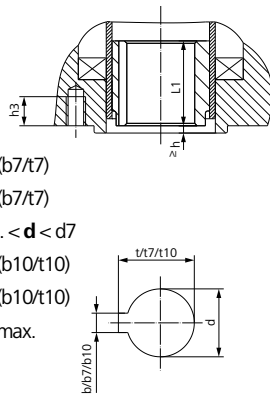
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70 60		70 60		100		130	
Ø d3		70	102		102		140		165	
d4		M8	M10		M10		M16		M20	
Ø d5			36		44		62		80	
Ø d6 max. 5)		Tr 26 ACME 1"	Tr 32 6) ACME 1 1/4"		Tr 40 ACME 1 1/2"		Tr 55 ACME 2 1/4"		Tr 75 ACME 3"	
g		40	50		50		65		80	
h			3		3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z			4		4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** 1) d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** 1) d ≤ d10 max.

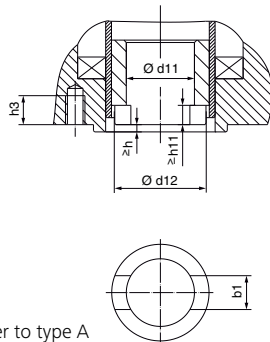
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

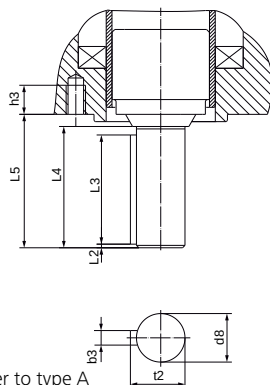
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		—	20		20		30		40	
Ø d11 max.		—	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6			20		20		30		40	
b3 h9			6		6		8		12	
h3		12	13		15		25		30	
L2			1.5		1.5		2		3	
L3			45		45		63		80	
L4			50		50		70		90	
L5			55		55		76		97	
t2			22.5		22.5		33		43	
Weight kg			0.4		0.7		2		4.3	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

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

Dimensions Multi-turn actuators with 3-phase AC motors

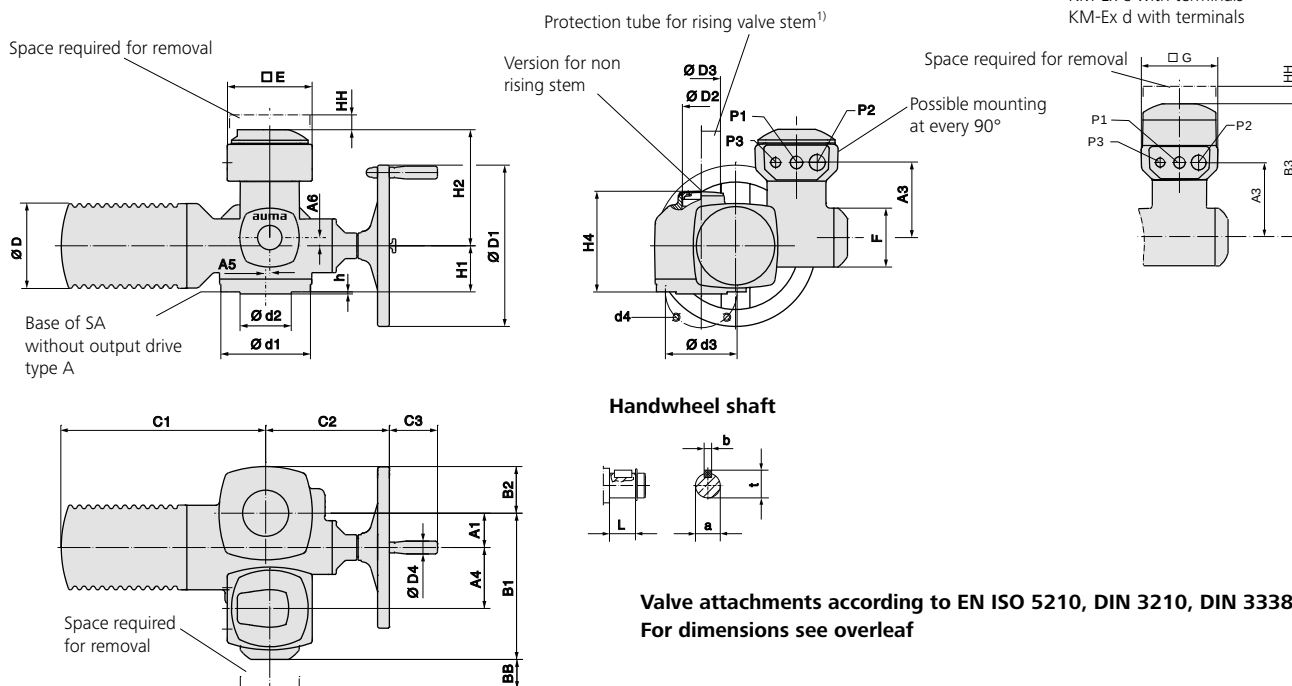
Ex plug/socket connector with terminal block (KT/KM)

Standard:

KT-Ex e with push-in connection

Option:

KT-Ex d with push-in connection
 KM-Ex e with terminals
 KM-Ex d with terminals



Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338
 For dimensions see overleaf

- 1) On explicit order only
 2) Standard, other threads on request

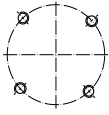
Dimensions	SAEx 07.2 SAREx 07.2		SAEx 07.6 SAREx 07.6		SAEx 10.2 SAREx 10.2	SAEx 14.2 SAREx 14.2	SAEx 14.6 SAREx 14.6	SAEx 16.2 SAREx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A3	148		148		148	148	148	148
A4	103		103		103	119	119	123.5
A5	–		–		–	8	8	15
A6	–		–		–	16	16	20
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
B3	272		272		272	272	272	272
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1¼"		G 1¼"		G 2"	G 2½"	G 2½"	G3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
□ E	166		166		166	166	166	166
F	115		115		115	115	115	115
□ G	170		170		170	170	170	170
H1	78		78		80	90	90	110
H2	213		213		213	229	229	233
H4	160		160		170	196	196	235
L	20		20		24	38.8	45.8	45.8
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
HH min.	50		50		50	50	50	50
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90 125		90 125		125	175	175	210
Ø d2	55 70 (60)		55 70 (60)		70 (60)	100	100	130
Ø d3	70 102		70 102		102	140	140	165
d4	4 x M8 4 x M10		4 x M8 4 x M10		4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

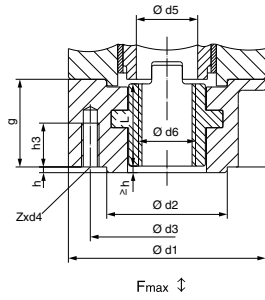
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



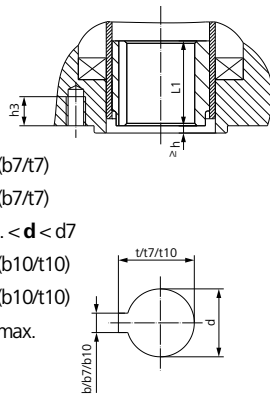
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70	60	70	60	100		130	
Ø d3		70	102		102		140		165	
d4		M8	M10		M10		M16		M20	
Ø d5		36			44		62		80	
Ø d6 max. 5)		Tr 26	Tr 32 6)		Tr 40		Tr 55		Tr 75	
		ACME 1"	ACME 1 1/4" 6)		ACME 1 1/2"		ACME 2 1/4"		ACME 3"	
g		40	50		50		65		80	
h		3			3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z		4			4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** 1) d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** 1) d ≤ d10 max.

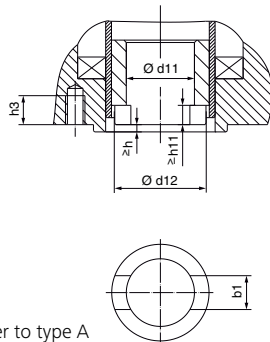
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

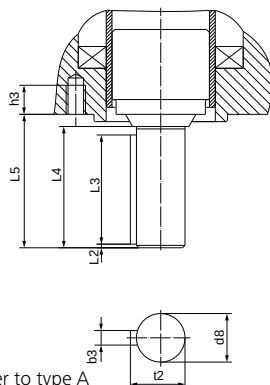
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		—	20		20		30		40	
Ø d11 max.		—	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6		20			20		30		40	
b3 h9		6			6		8		12	
h3		12	13		15		25		30	
L2		1.5			1.5		2		3	
L3		45			45		63		80	
L4		50			50		70		90	
L5		55			55		76		97	
t2		22.5			22.5		33		43	
Weight kg		0.4			0.7		2		4.3	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

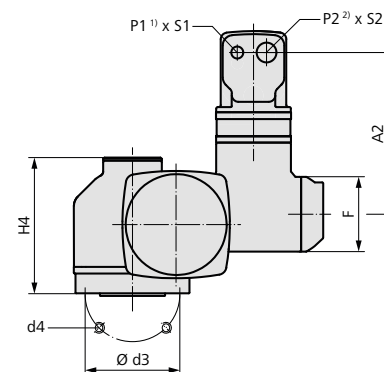
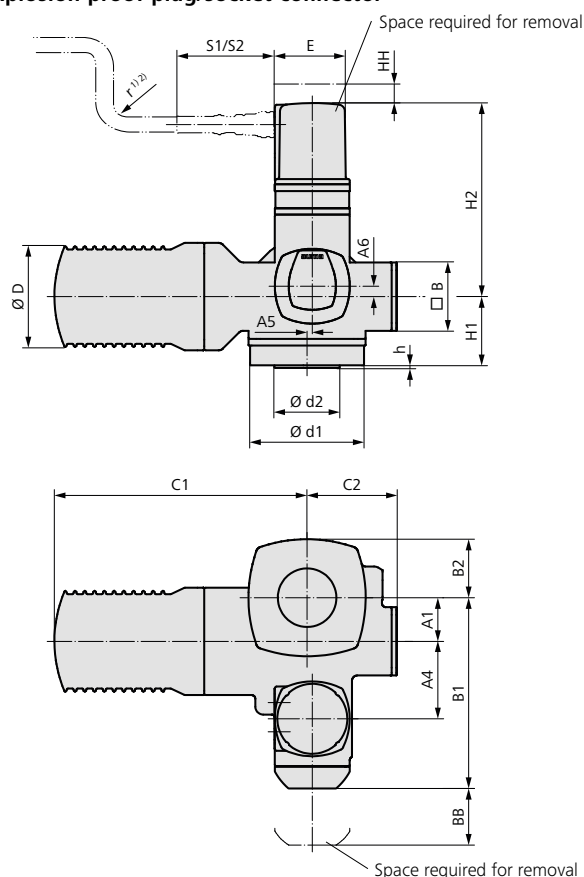
5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

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

SAEx 07.2-UW – SAEx 16.2-UW/SAREx 07.2-UW – SAREx 16.2-UW
SAVEx 07.2-UW – SAVEx 16.2-UW/SARVEx 07.2-UW – SARVEx 16.2-UW
Dimensions Multi-turn actuators with 3-phase AC motor for continuous underwater use

With explosion proof plug/socket connector



Output drives according to EN ISO 5210, DIN 3210
For dimensions see overleaf

1) Motor cable:

Outer diameter approx. 12.1 mm, minimum bending radius r , fixed installation: 90 mm

2) Hybrid cable with control cables and CAN cables:

Outer diameter approx. 21.7 mm, minimum bending radius r , fixed installation: 130 mm

Dimensions	SAEx 07.2		SAEx 07.6		SAEx 10.2	SAEx 14.2	SAEx 14.6	SAEx 16.2
EN ISO 5210	F07	F10	F07	F10	F10	F14	F14	F16
A1	40		40		50	67	67	80
A2	249		249		249	249	249	249
A4	103		103		103	119	119	123.5
A5	–		–		–	8	8	15
A6	–		–		–	16	16	20
□ B	70		70		70	105	105	105
B1	245		245		255	293	293	311
B2	62		62		65	90	90	115
C1	268		268		283	389	389	437
C2	112		112		112	138	138	156
Ø D	104		104		124	155	155	192
E	115		115		115	115	115	115
F	115		115		115	115	115	115
H1	96	100	96	100	101	106	106	122
H2	282		282		282	298	298	302
H4	176	180	176	180	188	209	209	244
P1 ¹⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
S1	136		136		136	136	136	136
S2	162		162		162	162	162	162
BB min.	180		180		180	180	180	180
HH min.	60		60		60	60	60	60
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70	55	70	70	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5

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

SAEx 07.2-UW – SAEx 16.2-UW/SAREx 07.2-UW – SAREx 16.2-UW
SAVEx 07.2-UW – SAVEx 16.2-UW/SARVEx 07.2-UW – SARVEx 16.2-UW

Dimensions Output drives according to EN ISO 5210, DIN 3210

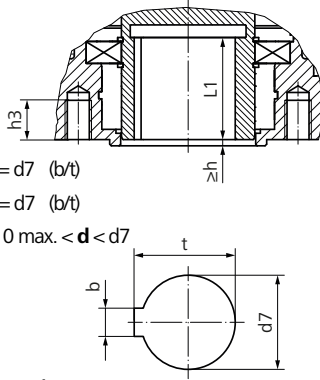
Bore with keyway

Type

EN ISO 5210 **B1** $d = d7$ (b/t)

DIN 3210 **B** $d = d7$ (b/t)

EN ISO 5210 **B2**¹⁾ $d10 \text{ max.} < d < d7$



For missing dimensions, refer to actuator

Dimensions	SAEx 07.2/SAEx 07.6		SAEx 10.2	SAEx 14.2/SAEx 14.6	SAEx 16.2
EN ISO 5210	F07	F10	F10	F14	F16
Ø d7 H9	28	42	42	60	80
b JS9	8	12	12	18	22
t	31.3	45.3	45.3	64.4	85.4
Ø d10 max.	20	30	30	45	60
h3	12	15	15	25	30
L1	35	45	45	65	80

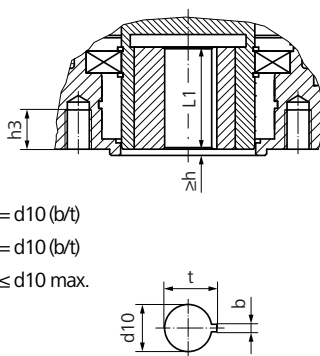
Output drive sleeve²⁾

Type

EN ISO 5210 **B3** $d = d10$ (b/t)

DIN 3210 **E** $d = d10$ (b/t)

EN ISO 5210 **B4**¹⁾ $d \leq d10 \text{ max.}$



For missing dimensions, refer to actuator

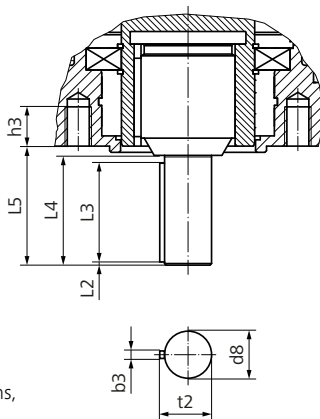
Dimensions	SAEx 07.2/SAEx 07.6		SAEx 10.2	SAEx 14.2/SAEx 14.6	SAEx 16.2
EN ISO 5210	F07	F10	F10	F14	F16
Ø d10 H9	16	20	20	30	40
b JS9	5	6	6	8	12
t	18.3	22.8	22.8	33.3	43.3
Ø d10 max.	20	30	30	45	60
h3	12	15	15	25	30
L1	35	45	45	65	80

Shaft end

Type

EN ISO 5210 **D**

DIN 3210 **D**



For missing dimensions,
refer to actuator

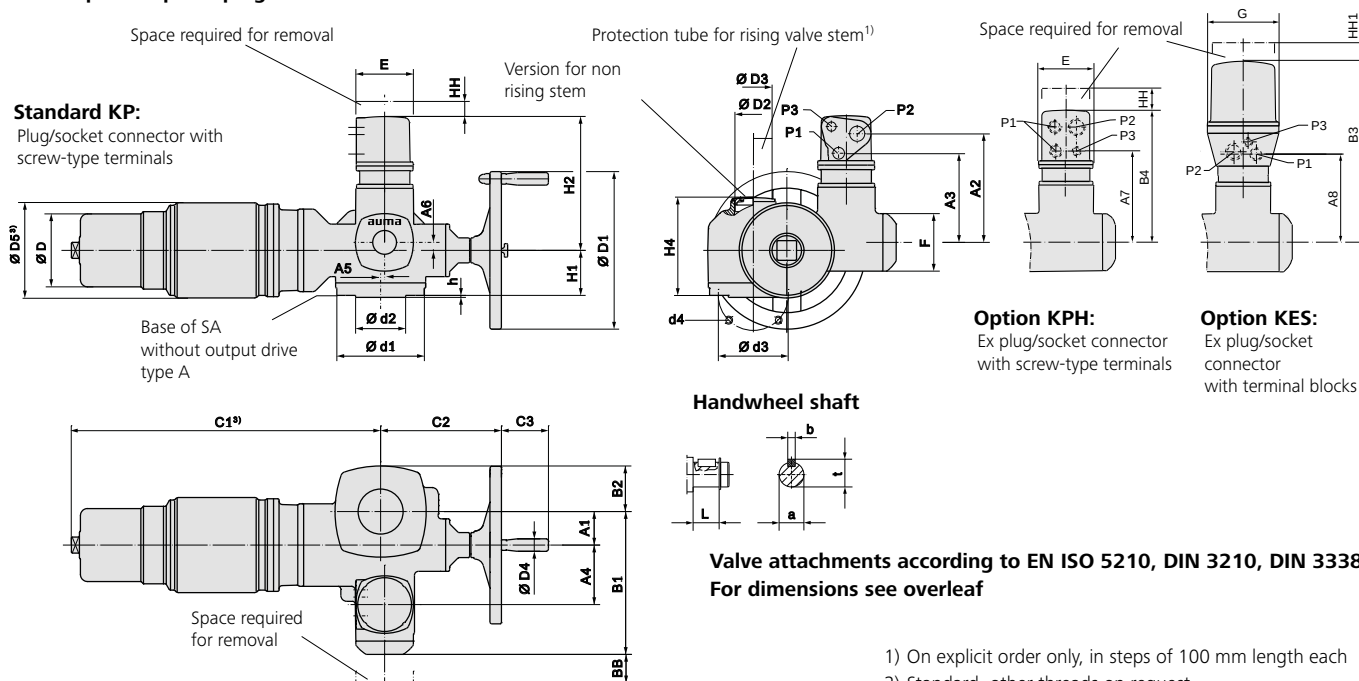
Dimensions	SAEx 07.2/SAEx 07.6		SAEx 10.2	SAEx 14.2/SAEx 14.6	SAEx 16.2
EN ISO 5210	F07	F10	F10	F14	F16
Ø d8 g6	20		20	30	40
b3 h9	6		6	8	12
h3	12	15	15	25	30
L2	1.5		1.5	2	3
L3	45		45	63	80
L4	50		50	70	90
L5	55		55	76	97
t2	22.5		22.5	33	43
Weight kg	0.4		0.7	2	4.3

1) Dimensions b, t depend on Ø dy, refer to DIN 6885-1

2) Weight included in actuator

Dimensions Multi-turn actuators with 1-ph AC motor

With explosion proof plug/socket connector



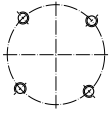
Dimensions	SAEx 07.2/SAREx 07.2		SAEx 07.6/SAREx 07.6		SAEx 10.2/SAREx 10.2	SAEx 14.2/SAREx 14.2	SAEx 14.6/SAREx 14.6
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)
A1	40		40		50	67	67
A2	221		221		221	221	221
A3	181		181		181	181	181
A4	103		103		103	119	119
A5	–		–		–	8	8
A6	–		–		–	16	16
A7	207		207		207	207	207
A8	172		172		172	172	172
B1	245		245		255	293	293
B2	62		62		65	90	90
B3	394		394		394	394	394
B4	282		282		282	282	282
C1 ³⁾	565		565		576 (571)	622	622
C2	186		186		191	242	245
C3	63		63		63	94	94
Ø D	146		146		146	146	146
Ø D1	160		160		200	315	400
Ø D2	G 1 1/4"		G 1 1/4"		G 2"	G 2 1/2"	G 2 1/2"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7
Ø D4	20		20		20	25	25
Ø D5 ³⁾	170		170		190 (170)	190	190
E	115		115		115	115	115
F	115		115		115	115	115
G	150		150		150	150	150
H1	78		78		80	90	90
H2	257		257		257	273	273
H4	160		160		170	196	196
L	20		20		24	38.8	45.8
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180
HH min.	60		60		60	60	60
HH1 min.	130		130		130	130	130
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7
b	6		6		6	8	8
Ø d1	90	125	90	125	125	175	175
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100
Ø d3	70	102	70	102	102	140	140
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16
h	3		3		3	4	4
t	22.5		22.5		22.5	33	33

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

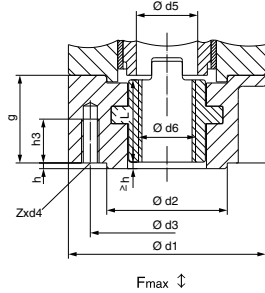
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



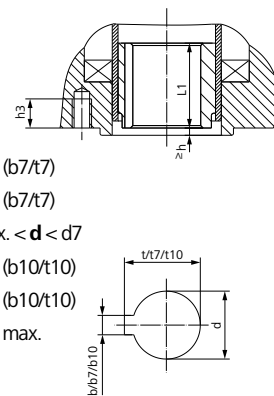
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2
F max. kN		40	70		70		160	
Ø d1		90	125		125		175	
Ø d2		55	70	60	70	60	100	
Ø d3		70	102		102		140	
d4		M8	M10		M10		M16	
Ø d5			36		44		62	
Ø d6 max. ⁵⁾		Tr 26 ACME 1"	Tr 32 ⁶⁾ ACME 1 1/4"		Tr 40 ACME 1 1/2"		Tr 55 ACME 2 1/4"	
g		40	50		50		65	
h			3		3		4	
h3		12	15		15		25	
L		37.5	47.5		47.5		61.5	
Z			4		4		4	
Weight kg		1.1	2.8		2.8		6.8	

Output drive sleeve ³⁾

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** ¹⁾ d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** ¹⁾ d ≤ d10 max.

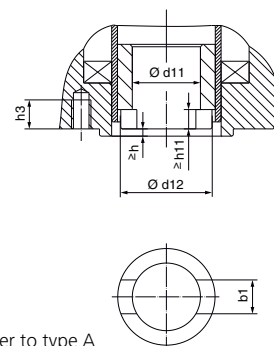
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2
Ø d7 H9		28	42		42		60	
b7 JS9		8	12		12		18	
t7		31.3	45.3		45.3		64.4	
Ø d10 H9		16	20		20		30	
b10 JS9		5	6		6		8	
t10		18.3	22.8		22.8		33.3	
Ø d10 max.		25	35		35		45	
h3		12	13		15		25	
L1		35	45		45		65	

Dog coupling ³⁾

Type

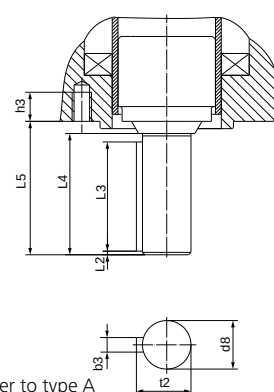
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2
b1 H11		14 ⁴⁾	14		14		20	
Ø d11 H11		28 ⁴⁾	28		28		38	
Ø d11 min.		–	20		20		30	
Ø d11 max.		–	42 ^{2) 6)}		42		60	
Ø d12		36.8	51.8		51.8		73.8	
h3		12	13		15		25	
h11		7 ⁴⁾	7		7		8	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2
Ø d8 g6			20		20		30	
b3 h9			6		6		8	
h3		12	13		15		25	
L2			1.5		1.5		2	
L3			45		45		63	
L4			50		50		70	
L5			55		55		76	
t2			22.5		22.5		33	
Weight kg			0.4		0.7		2	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

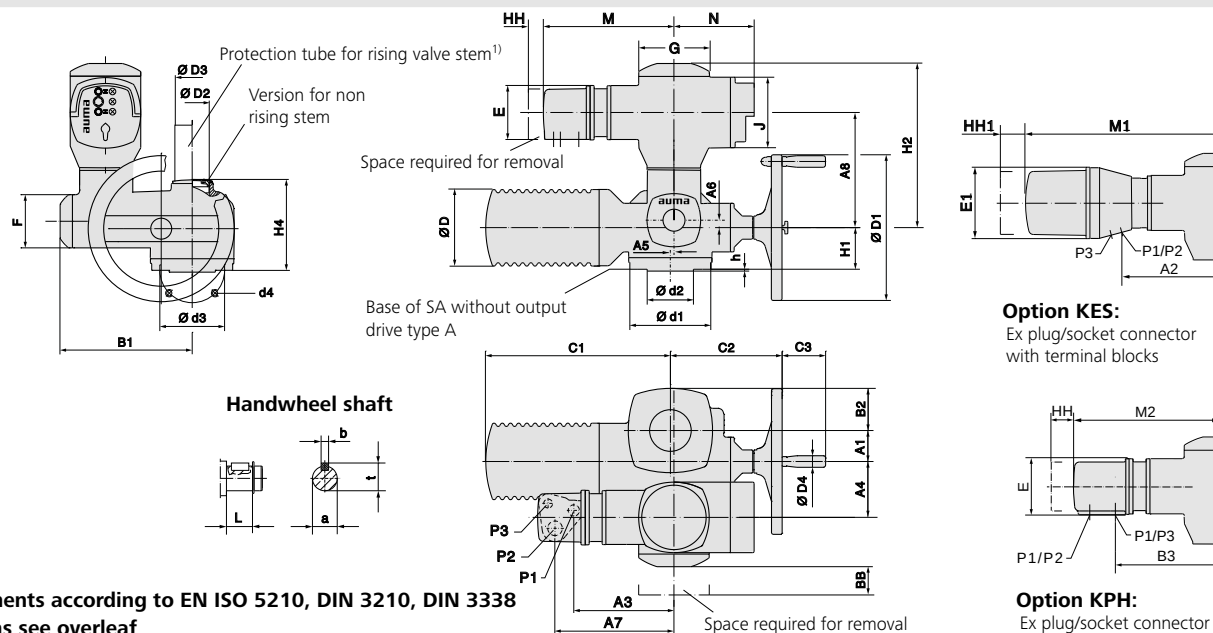
4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

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Dimensions Multi-turn actuators with AMExC integral actuator controls (also for field bus)



Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338

For dimensions see overleaf

- 1) On explicit order only, in steps of 100 mm length each
 2) Standard, other threads on request

Standard KP:

Plug/socket connector with screw-type terminals

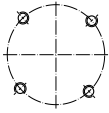
Dimensions	SAEx 07.2 SAREx 07.2		SAEx 07.6 SAREx 07.6		SAEx 10.2 SAREx 10.2	SAEx 14.2 SAREx 14.2	SAEx 14.6 SAREx 14.6	SAEx 16.2 SAREx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A2	209		209		209	209	209	209
A3	216		216		216	216	216	216
A4	103		103		103	119	119	123.5
A5	–		–		–	8	8	15
A6	–		–		–	16	16	20
A7	256		256		256	256	256	256
A8	243		243		243	259	259	263
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
B3	242		242		242	242	242	242
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1¼"		G 1¼"		G 2"	G 2½"	G 2½"	G 3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
E	115		115		115	115	115	115
E1	150		150		150	150	150	150
F	115		115		115	115	115	115
G	154		154		154	154	154	154
H1	78		78		80	90	90	110
H2	430		430		430	446	446	450
H4	160		160		170	196	196	235
J	154		154		154	154	154	154
L	20		20		24	38.8	45.8	45.8
M	292		292		292	292	292	292
M1	429		429		429	429	429	429
M2	317		317		317	317	317	317
N	189		189		189	189	189	189
P1 ²)	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²)	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²)	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
HH min.	60		60		60	60	60	60
HH1 min.	130		130		130	130	130	130
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

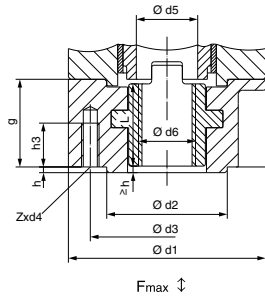
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



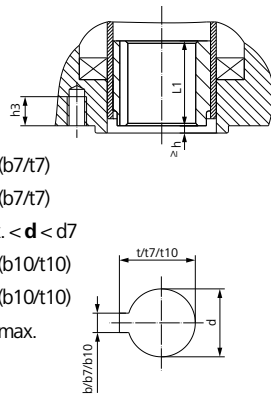
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70 60		70 60		100		130	
Ø d3		70	102		102		140		165	
d4		M8	M10		M10		M16		M20	
Ø d5		36			44		62		80	
Ø d6 max. 5)		Tr 26	Tr 32 6)		Tr 40		Tr 55		Tr 75	
		ACME 1"	ACME 1 1/4" 6)		ACME 1 1/2"		ACME 2 1/4"		ACME 3"	
g		40	50		50		65		80	
h		3			3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z		4			4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** 1) d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** 1) d ≤ d10 max.

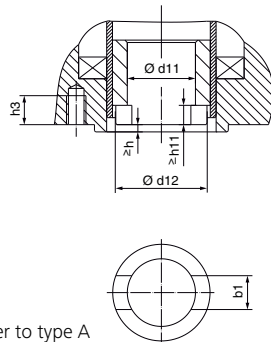
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

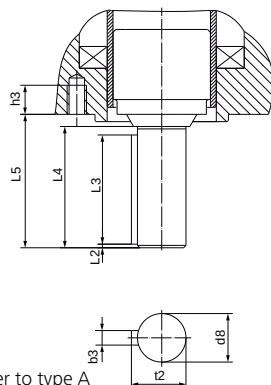
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		—	20		20		30		40	
Ø d11 max.		—	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6		20			20		30		40	
b3 h9		6			6		8		12	
h3		12	13		15		25		30	
L2		1.5			1.5		2		3	
L3		45			45		63		80	
L4		50			50		70		90	
L5		55			55		76		97	
t2		22.5			22.5		33		43	
Weight kg		0.4			0.7		2		4.3	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

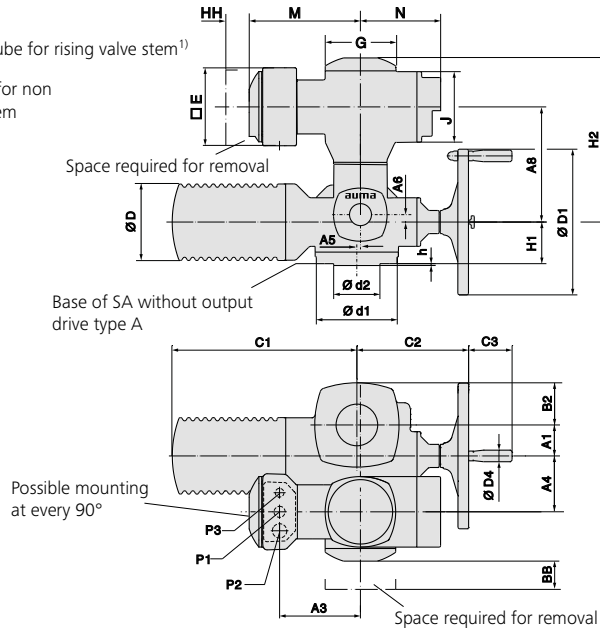
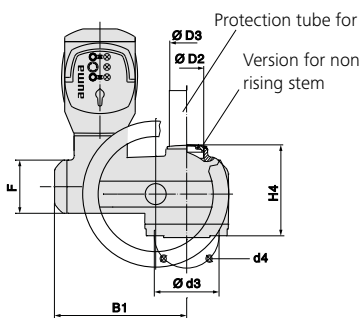
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Multi-turn actuators with AMExC integral actuator controls (also for field bus)

Ex plug/socket connector with terminal block (KT/KM)

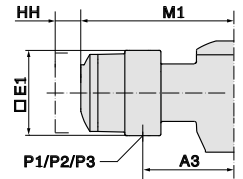
Standard:

KT-Ex e with push-in connection

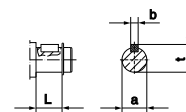


Option:

KT-Ex d with push-in connection
 KM-Ex e with terminals
 KM-Ex d with terminals



Handwheel shaft



1) On explicit order only

2) Standard, other threads on request

Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338
 For dimensions see overleaf

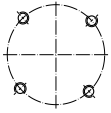
Dimensions	SAEx 07.2 SAREx 07.2		SAEx 07.6 SAREx 07.6		SAEx 10.2 SAREx 10.2	SAEx 14.2 SAREx 14.2	SAEx 14.6 SAREx 14.6	SAEx 16.2 SAREx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A3	183		183		183	183	183	183
A4	103		103		103	119	119	123.5
A5	–		–		–	8	8	15
A6	–		–		–	16	16	20
A8	243		243		243	259	259	263
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1¼"		G 1¼"		G 2"	G 2½"	G 2½"	G 3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
□ E	166		166		166	166	166	166
□ E1	170		170		170	170	170	170
F	115		115		115	115	115	115
G	154		154		154	154	154	154
H1	78		78		80	90	90	110
H2	430		430		430	446	446	450
H4	160		160		170	196	196	235
J	154		154		154	154	154	154
L	20		20		24	38.8	45.8	45.8
M	248		248		248	248	248	248
M1	307		307		307	307	307	307
N	189		189		189	189	189	189
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
HH min.	50		50		50	50	50	50
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

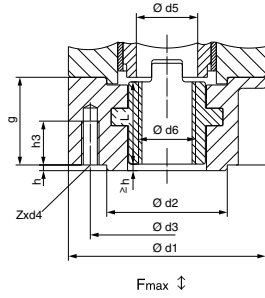
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



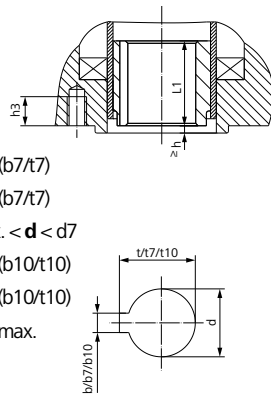
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70 60		70 60		100		130	
Ø d3		70	102		102		140		165	
d4		M8	M10		M10		M16		M20	
Ø d5		36			44		62		80	
Ø d6 max. 5)		Tr 26	Tr 32 6)		Tr 40		Tr 55		Tr 75	
		ACME 1"	ACME 1 1/4" 6)		ACME 1 1/2"		ACME 2 1/4"		ACME 3"	
g		40	50		50		65		80	
h		3			3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z		4			4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** 1) d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** 1) d ≤ d10 max.

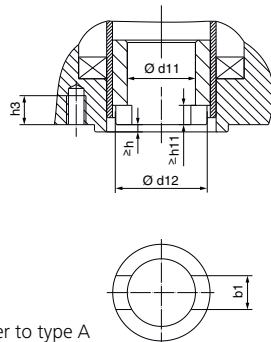
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

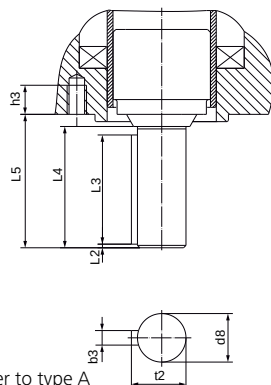
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		—	20		20		30		40	
Ø d11 max.		—	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6		20			20		30		40	
b3 h9		6			6		8		12	
h3		12	13		15		25		30	
L2		1.5			1.5		2		3	
L3		45			45		63		80	
L4		50			50		70		90	
L5		55			55		76		97	
t2		22.5			22.5		33		43	
Weight kg		0.4			0.7		2		4.3	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

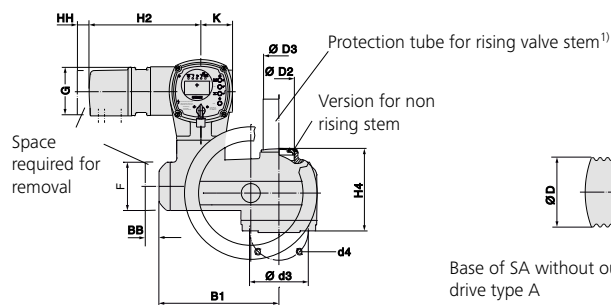
4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

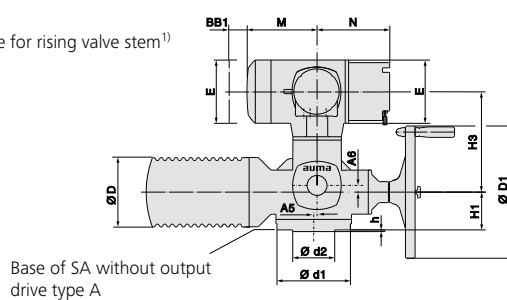
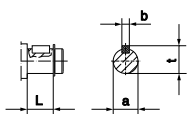
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Multi-turn actuators with ACExC integral actuator controls (also for Fieldbus & HART)

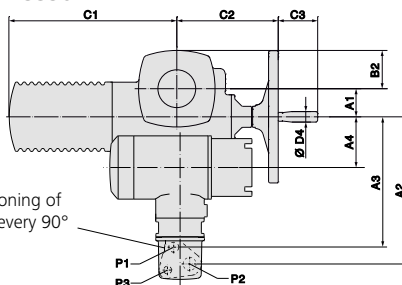


Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338
For dimensions see overleaf

Handwheel shaft

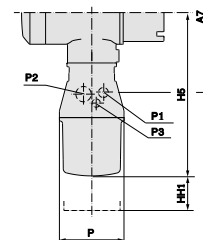


Possible positioning of plug cover at every 90°



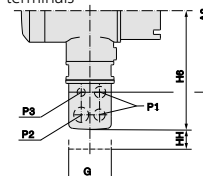
Option KES:

Ex plug/socket connector with terminal blocks



Option KPH:

Ex plug/socket connector with screw-type terminals



1) On explicit order only, in steps of 100 mm length each

2) Standard, other threads on request

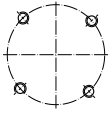
Dimensions	SAEx 07.2 SAREx 07.2		SAEx 07.6 SAREx 07.6		SAEx 10.2 SAREx 10.2	SAEx 14.2 SAREx 14.2	SAEx 14.6 SAREx 14.6	SAEx 16.2 SAREx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A2	334		334		334	350	350	354
A3	294		294		294	310	310	315
A4	103		103		103	119	119	123.5
A5	–		–		–	8	8	15
A6	–		–		–	16	16	20
A7	287		287		287	287	287	287
A8	320		320		320	320	320	320
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1¼"		G 1¼"		G 2"	G 2½"	G 2½"	G 3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
E	154		154		154	154	154	154
F	115		115		115	115	115	115
G	115		115		115	115	115	115
H1	78		78		80	90	90	110
H2	267		267		267	267	267	267
H3	235		235		235	251	251	255
H4	160		160		170	196	196	235
H5	404		404		404	404	404	404
H6	292		292		292	292	292	292
K	78		78		78	78	78	78
L	20		20		24	38.8	45.8	45.8
M	199		199		199	199	199	199
N	171		171		171	171	171	171
P	150		150		150	150	150	150
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
BB1 min.	75		75		75	75	75	75
HH min.	60		60		60	60	60	60
HH1 min.	130		130		130	130	130	130
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

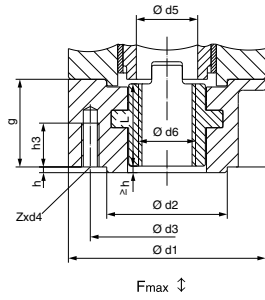
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



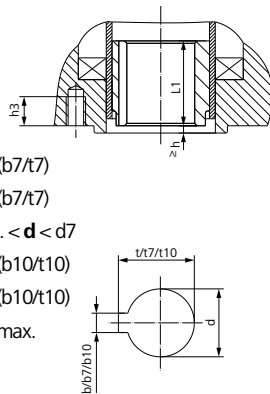
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70 60		70 60		100		130	
Ø d3		70	102		102		140		165	
d4		M8	M10		M10		M16		M20	
Ø d5		36			44		62		80	
Ø d6 max. 5)		Tr 26	Tr 32 6)		Tr 40		Tr 55		Tr 75	
		ACME 1"	ACME 1 1/4" 6)		ACME 1 1/2"		ACME 2 1/4"		ACME 3"	
g		40	50		50		65		80	
h		3			3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z		4			4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** 1) d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** 1) d ≤ d10 max.

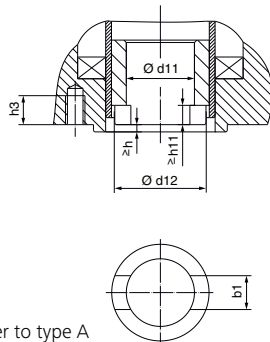
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

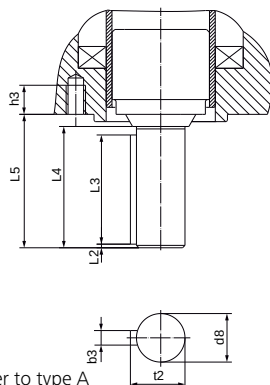
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		—	20		20		30		40	
Ø d11 max.		—	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6		20			20		30		40	
b3 h9		6			6		8		12	
h3		12	13		15		25		30	
L2		1.5			1.5		2		3	
L3		45			45		63		80	
L4		50			50		70		90	
L5		55			55		76		97	
t2		22.5			22.5		33		43	
Weight kg		0.4			0.7		2		4.3	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

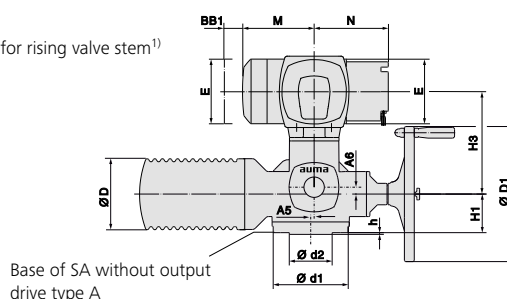
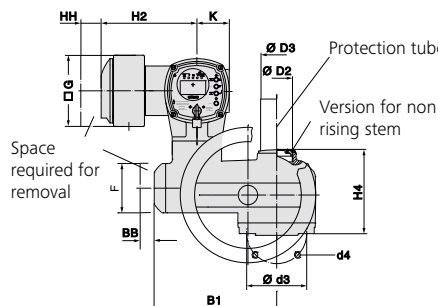
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Multi-turn actuators with ACExC integral actuator controls (also for Fieldbus & HART)

Ex plug/socket connector with terminal block (KT/KM)

Standard:

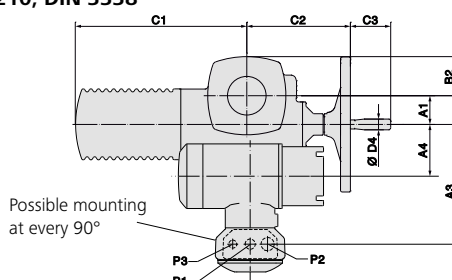
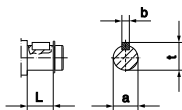
KT-Ex e with push-in connection



Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338

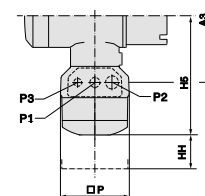
For dimensions see overleaf

Handwheel shaft



Option:

KT-Ex d with push-in connection
 KM-Ex e with terminals
 KM-Ex d with terminals



1) On explicit order only

2) Standard, other threads on request

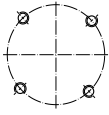
Dimensions	SAEx 07.2 SAREx 07.2		SAEx 07.6 SAREx 07.6		SAEx 10.2 SAREx 10.2	SAEx 14.2 SAREx 14.2	SAEx 14.6 SAREx 14.6	SAEx 16.2 SAREx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A3	261		261		261	277	277	282
A4	103		103		103	119	119	123.5
A5	—		—		—	8	8	15
A6	—		—		—	16	16	20
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1 1/4"		G 1 1/4"		G 2"	G 2 1/2"	G 2 1/2"	G 3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
E	154		154		154	154	154	154
F	115		115		115	115	115	115
□ G	166		166		166	166	166	166
H1	78		78		80	90	90	110
H2	223		223		223	223	223	223
H3	235		235		235	251	251	255
H4	160		160		170	196	196	235
H5	282		282		282	282	282	282
K	78		78		78	78	78	78
L	20		20		24	38.8	45.8	45.8
M	199		199		199	199	199	199
N	171		171		171	171	171	171
□ P	170		170		170	170	170	170
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
BB1 min.	75		75		75	75	75	75
HH min.	50		50		50	50	50	50
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

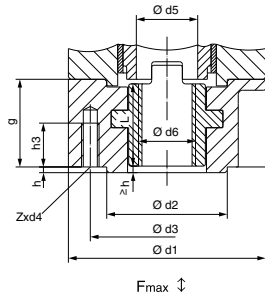
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

Type

EN ISO 5210 **A**DIN 3210 **A**

Arrangement of holes d4



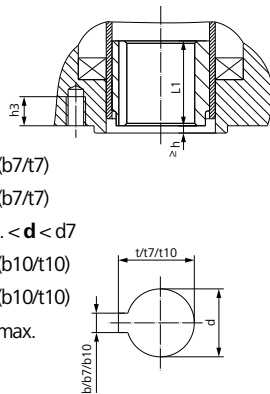
Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70 60		70 60		100		130	
Ø d3		70	102		102		140		165	
d4		M8	M10		M10		M16		M20	
Ø d5		36			44		62		80	
Ø d6 max. 5)		Tr 26	Tr 32 6)		Tr 40		Tr 55		Tr 75	
		ACME 1"	ACME 1 1/4" 6)		ACME 1 1/2"		ACME 2 1/4"		ACME 3"	
g		40	50		50		65		80	
h		3			3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z		4			4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)DIN 3210 **B** d = d7 (b7/t7)EN ISO 5210 **B2** 1) d10 max. < d < d7EN ISO 5210 **B3** d = d10 (b10/t10)DIN 3210 **E** d = d10 (b10/t10)EN ISO 5210 **B4** 1) d ≤ d10 max.

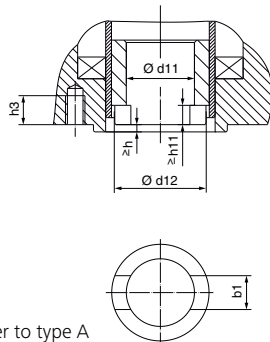
For missing dimensions, refer to type A



Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

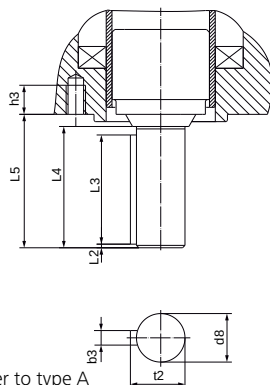
EN ISO 5210 **C** = d11DIN 3338 **C** = d11

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		—	20		20		30		40	
Ø d11 max.		—	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

Shaft end

Type

EN ISO 5210 **D**DIN 3210 **D**

For missing dimensions, refer to type A

Dimensions		SAEx 07.2/SAEx 07.6			SAEx 10.2		SAEx 14.2/SAEx 14.6		SAEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6		20			20		30		40	
b3 h9		6			6		8		12	
h3		12	13		15		25		30	
L2		1.5			1.5		2		3	
L3		45			45		63		80	
L4		50			50		70		90	
L5		55			55		76		97	
t2		22.5			22.5		33		43	
Weight kg		0.4			0.7		2		4.3	

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

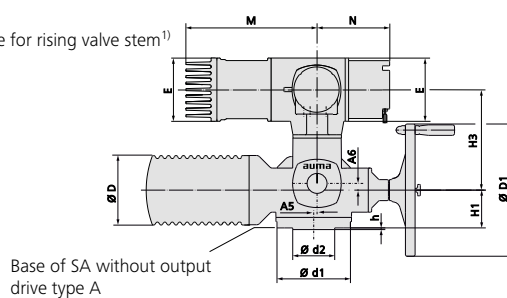
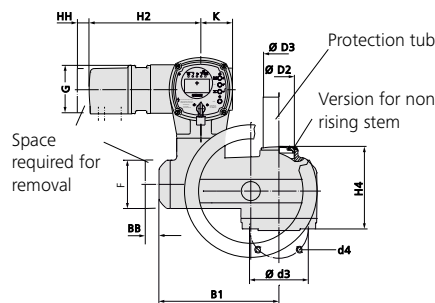
4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

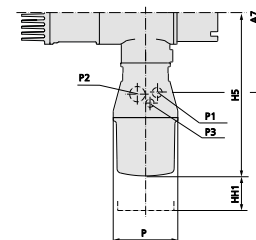
6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

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Dimensions Multi-turn actuators with ACVExC integral actuator controls (also for Fieldbus & HART)

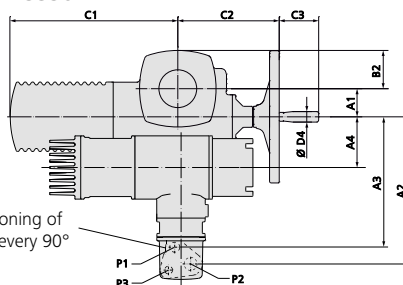
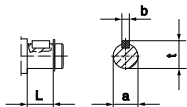


Option KES:
Ex plug/socket connector with terminal blocks

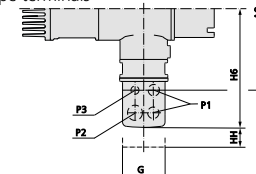


Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338
For dimensions see overleaf

Handwheel shaft



Option KPH:
Ex plug/socket connector with screw-type terminals



- 1) On explicit order only, in steps of 100 mm length each
2) Standard, other threads on request

Dimensions	SAVEx 07.2 SARVEx 07.2		SAVEx 07.6 SARVEx 07.6		SAVEx 10.2 SARVEx 10.2	SAVEx 14.2 SARVEx 14.2	SAVEx 14.6 SARVEx 14.6	SAVEx 16.2 SARVEx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A2	334		334		334	350	350	354
A3	294		294		294	310	310	315
A4	103		103		103	119	119	123.5
A5	—		—		—	8	8	15
A6	—		—		—	16	16	20
A7	287		287		287	287	287	287
A8	320		320		320	320	320	320
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1 1/4"		G 1 1/4"		G 2"	G 2 1/2"	G 2 1/2"	G 3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
E	154		154		154	154	154	154
F	115		115		115	115	115	115
G	115		115		115	115	115	115
H1	78		78		80	90	90	110
H2	267		267		267	267	267	267
H3	235		235		235	251	251	255
H4	160		160		170	196	196	235
H5	404		404		404	404	404	404
H6	292		292		292	292	292	292
K	78		78		78	78	78	78
L	20		20		24	38.8	45.8	45.8
M	313		313		313	313	313	313
N	171		171		171	171	171	171
P	150		150		150	150	150	150
P1 ²⁾	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²⁾	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²⁾	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
HH min.	60		60		60	60	60	60
HH1 min.	130		130		130	130	130	130
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

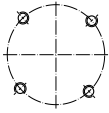
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

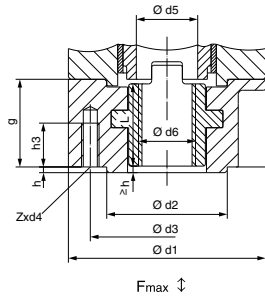
Type

EN ISO 5210 **A**

DIN 3210 **A**



Arrangement of holes d4



Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70	60	70	60	100		130	
Ø d3		70		102	102		140		165	
d4		M8		M10	M10		M16		M20	
Ø d5			36		44		62		80	
Ø d6 max. 5)		Tr 26 ACME 1"	Tr 32 6) ACME 1 1/4"		Tr 40 ACME 1 1/2"		Tr 55 ACME 2 1/4"		Tr 75 ACME 3"	
g		40	50		50		65		80	
h			3		3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z			4		4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)

DIN 3210 **B** d = d7 (b7/t7)

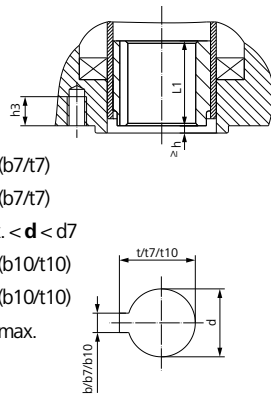
EN ISO 5210 **B2** 1) d10 max. < d < d7

EN ISO 5210 **B3** d = d10 (b10/t10)

DIN 3210 **E** d = d10 (b10/t10)

EN ISO 5210 **B4** 1) d ≤ d10 max.

For missing dimensions, refer to type A



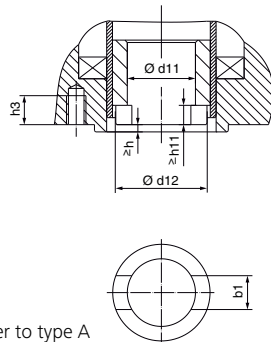
Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

EN ISO 5210 **C** = d11

DIN 3338 **C** = d11



Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		–	20		20		30		40	
Ø d11 max.		–	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

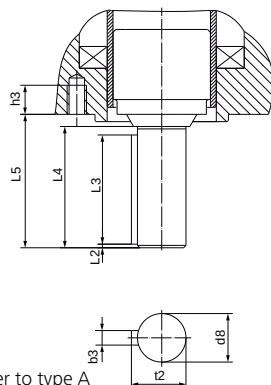
For missing dimensions, refer to type A

Shaft end

Type

EN ISO 5210 **D**

DIN 3210 **D**



Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6			20		20		30		40	
b3 h9			6		6		8		12	
h3		12	13		15		25		30	
L2			1.5		1.5		2		3	
L3			45		45		63		80	
L4			50		50		70		90	
L5			55		55		76		97	
t2			22.5		22.5		33		43	
Weight kg			0.4		0.7		2		4.3	

For missing dimensions, refer to type A

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

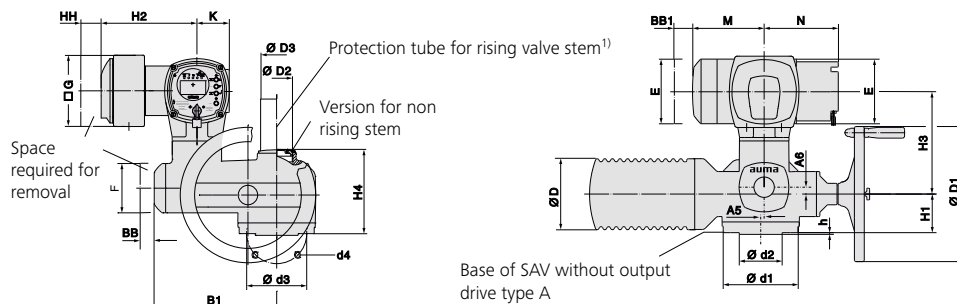
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Multi-turn actuators with ACVExC integral actuator controls (also for Fieldbus & HART)

Ex plug/socket connector with terminal block (KT/KM)

Standard:

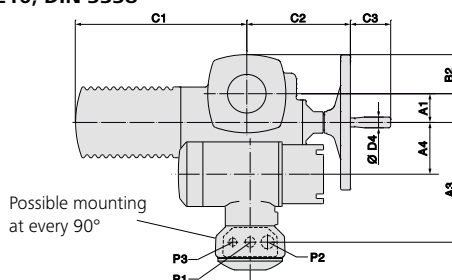
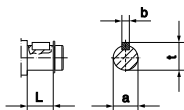
KT-Ex e with push-in connection



Valve attachments according to EN ISO 5210, DIN 3210, DIN 3338

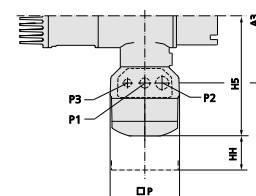
For dimensions see overleaf

Handwheel shaft



Option:

KT-Ex d with push-in connection
KM-Ex e with terminals
KM-Ex d with terminals



1) On explicit order only

2) Standard, other threads on request

Dimensions	SAVEx 07.2 SARVEx 07.2		SAVEx 07.6 SARVEx 07.6		SAVEx 10.2 SARVEx 10.2	SAVEx 14.2 SARVEx 14.2	SAVEx 14.6 SARVEx 14.6	SAVEx 16.2 SARVEx 16.2
EN ISO 5210 (DIN 3210)	F07	F10 (G0)	F07	F10 (G0)	F10 (G0)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
A1	40		40		50	67	67	80
A3	261		261		261	277	277	282
A4	103		103		103	119	119	123.5
A5	—		—		—	8	8	15
A6	—		—		—	16	16	20
B1	245		245		255	293	293	311
B2	62		62		65	90	90	117
C1	268		268		283	389	389	432
C2	186		186		191	242	245	271
C3	63		63		63	94	94	94
Ø D	104		104		124	155	155	192
Ø D1	160		160		200	315	400	500
Ø D2	G 1¼"		G 1¼"		G 2"	G 2½"	G 2½"	G 3"
Ø D3	42 x 3.3		42 x 3.3		60 x 3.7	76 x 3.7	76 x 3.7	89 x 4.1
Ø D4	20		20		20	25	25	25
E	154		154		154	154	154	154
F	115		115		115	115	115	115
□ G	166		166		166	166	166	166
H1	78		78		80	90	90	110
H2	223		223		223	223	223	223
H3	235		235		235	251	251	255
H4	160		160		170	196	196	235
H5	282		282		282	282	282	282
K	78		78		78	78	78	78
L	20		20		24	38.8	45.8	45.8
M	313		313		313	313	313	313
N	171		171		171	171	171	171
□ P	170		170		170	170	170	170
P1 ²)	M25 x 1.5		M25 x 1.5		M25 x 1.5	M25 x 1.5	M25 x 1.5	M25 x 1.5
P2 ²)	M32 x 1.5		M32 x 1.5		M32 x 1.5	M32 x 1.5	M32 x 1.5	M32 x 1.5
P3 ²)	M20 x 1.5		M20 x 1.5		M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5
BB min.	180		180		180	180	180	180
HH min.	50		50		50	50	50	50
Ø a	20 d7		20 d7		20 d7	30 d7	30 d7	30 d7
b	6		6		6	8	8	8
Ø d1	90	125	90	125	125	175	175	210
Ø d2	55	70 (60)	55	70 (60)	70 (60)	100	100	130
Ø d3	70	102	70	102	102	140	140	165
d4	4 x M8	4 x M10	4 x M8	4 x M10	4 x M10	4 x M16	4 x M16	4 x M20
h	3		3		3	4	4	5
t	22.5		22.5		22.5	33	33	33

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

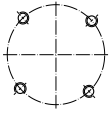
Dimensions Valve attachments according to EN ISO 5210, DIN 3338, DIN 3210

Stem nut

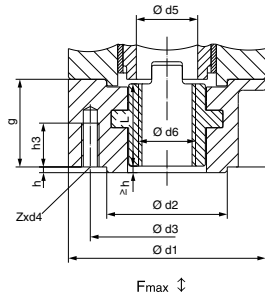
Type

EN ISO 5210 **A**

DIN 3210 **A**



Arrangement of holes d4



Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. kN		40	70		70		160		250	
Ø d1		90	125		125		175		210	
Ø d2		55	70	60	70	60	100		130	
Ø d3		70		102	102		140		165	
d4		M8		M10	M10		M16		M20	
Ø d5			36		44		62		80	
Ø d6 max. 5)		Tr 26 ACME 1"	Tr 32 6) ACME 1 1/4"		Tr 40 ACME 1 1/2"		Tr 55 ACME 2 1/4"		Tr 75 ACME 3"	
g		40	50		50		65		80	
h			3		3		4		5	
h3		12	15		15		25		35	
L		37.5	47.5		47.5		61.5		76.5	
Z			4		4		4		4	
Weight kg		1.1	2.8		2.8		6.8		11.7	

Output drive sleeve 3)

Type

EN ISO 5210 **B1** d = d7 (b7/t7)

DIN 3210 **B** d = d7 (b7/t7)

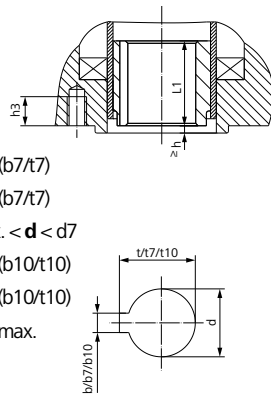
EN ISO 5210 **B2** 1) d10 max. < d < d7

EN ISO 5210 **B3** d = d10 (b10/t10)

DIN 3210 **E** d = d10 (b10/t10)

EN ISO 5210 **B4** 1) d ≤ d10 max.

For missing dimensions, refer to type A



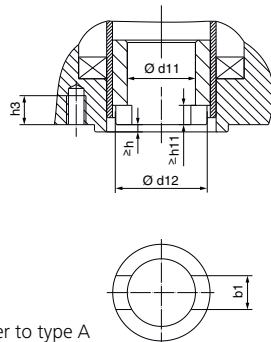
Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d7 H9		28	42		42		60		80	
b7 JS9		8	12		12		18		22	
t7		31.3	45.3		45.3		64.4		85.4	
Ø d10 H9		16	20		20		30		40	
b10 JS9		5	6		6		8		12	
t10		18.3	22.8		22.8		33.3		43.3	
Ø d10 max.		25	35		35		45		60	
h3		12	13		15		25		30	
L1		35	45		45		65		80	

Dog coupling 3)

Type

EN ISO 5210 **C** = d11

DIN 3338 **C** = d11



Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b1 H11		14 4)	14		14		20		24	
Ø d11 H11		28 4)	28		28		38		47	
Ø d11 min.		–	20		20		30		40	
Ø d11 max.		–	42 2) 6)		42		60		80	
Ø d12		36.8	51.8		51.8		73.8		98	
h3		12	13		15		25		30	
h11		7 4)	7		7		8		10	

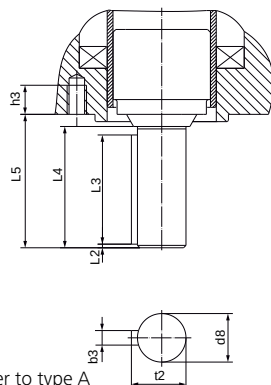
For missing dimensions, refer to type A

Shaft end

Type

EN ISO 5210 **D**

DIN 3210 **D**



Dimensions		SAVEx 07.2/SAVEx 07.6			SAVEx 10.2		SAVEx 14.2/SAVEx 14.6		SAVEx 16.2	
EN ISO 5210	DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
Ø d8 g6			20		20		30		40	
b3 h9			6		6		8		12	
h3		12	13		15		25		30	
L2			1.5		1.5		2		3	
L3			45		45		63		80	
L4			50		50		70		90	
L5			55		55		76		97	
t2			22.5		22.5		33		43	
Weight kg			0.4		0.7		2		4.3	

For missing dimensions, refer to type A

1) Dimensions b, t depend on Ø d, refer to DIN 6885-1

2) For rising valve stem Ø d11 max. = Ø d5 of type A

3) Weight included in actuator

4) Dimensions neither complying with EN ISO 5210 nor with DIN 3338

5) Nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

6) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/4"

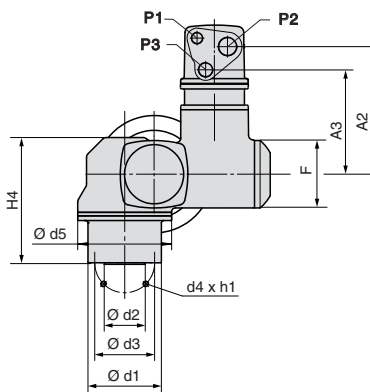
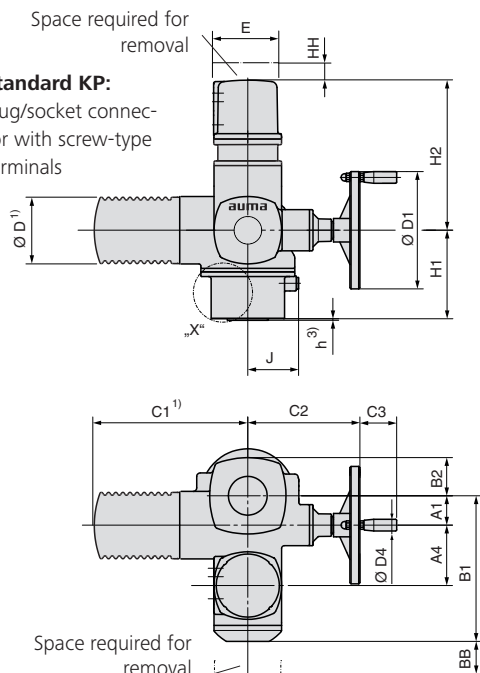
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Dimensions Part-turn actuators

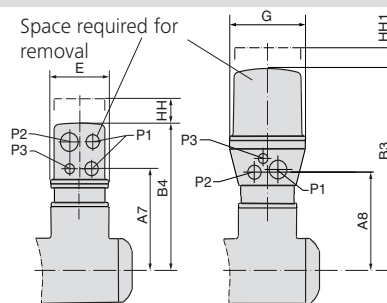
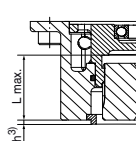
With AUMA 3-phase motor and explosion-proof plug/socket connector

Standard KP:

Plug/socket connector with screw-type terminals



Detail X



Option KH (KPH):
Plug/socket connector with screw-type terminals

Option KS (KES):
Plug/socket connector with terminal blocks

1) Exact dimension depending on motor used

2) Standard, other threads on request

3) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.

4) Combined fange F05/F07 without spigot (standard). As an alternative an individual fange F07 can be ordered with/without spigot

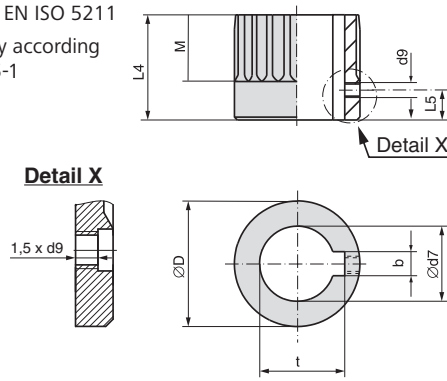
Output drives according to EN ISO 5211
For dimensions see overleaf

Dimensions	SQEx 05.2		SQEx 07.2			SQEx 10.2		SQEx 12.2		SQEx 14.2	
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10	F10	F12	F12	F14	F14	F16
A1		40				50		50		50	
A2		221				221		221		221	
A3		181				181		181		181	
A4		103				103		103		103	
A7		207				207		207		207	
A8		172				172		172		172	
B1		245				255		255		255	
B2		50				65		65		65	
B3		395				395		395		395	
B4		282				282		282		282	
C1 ¹⁾		268				268		268		268	
C2		186				191		191		191	
C3		63				63		63		63	
Ø D ¹⁾		104				104		104		104	
Ø D1		160				200		200		200	
Ø D4		20				20		20		20	
E		115				115		115		115	
F		115				115		115		115	
G		150				150		150		150	
H1	134		134		160	151	183	175	215	210	260
H2		257				257		257		257	
H4	193		193		218	214	246	238	278	273	323
J		69				86		109		128	
L max.	40		40		66	50	82	61	101	75	125
P1 ²⁾		M20 x 1.5				M20 x 1.5		M20 x 1.5		M20 x 1.5	
P2 ²⁾		M32 x 1.5				M32 x 1.5		M32 x 1.5		M32 x 1.5	
P3 ²⁾		M25 x 1.5				M25 x 1.5		M25 x 1.5		M25 x 1.5	
BB min.		180				180		180		180	
HH min.		60				60		60		60	
HH1 min.		130				130		130		130	
Ø d1	90		90		125	125	150	150	175	175	210
Ø d2	–		–		70	70	85	85	100	100	130
Ø d3	50	70	50	70	102	102	125	125	140	140	165
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16	4 x M16	4 x M20
Ø d5		125				160		210		225	
h ³⁾	–		–		2.5	2.5		2.5	3.5	3.5	4.5
h1	12	15	12	15	16	18	19	22	25	29	32

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

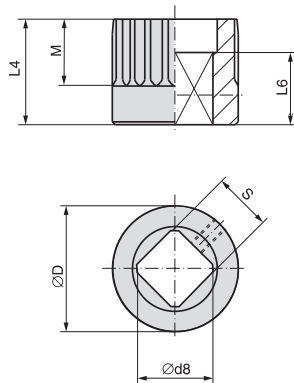
Dimensions Couplings according to EN ISO 5211

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



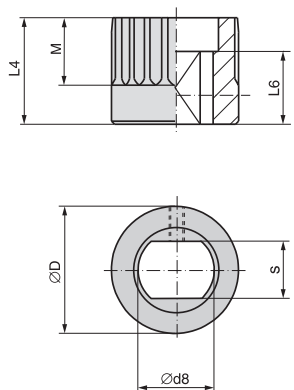
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
b JS9 ¹⁾	6		6		8		10		14	
Ø d7 H8 ²⁾	18		22		28		36		48	
Ø d7 max.	25.4		25.4		38		50		60	
d9 ³⁾	M5		M5		M6		M6		M6	
L4	35		35	60	45	75	55	95	65	115
L5 ³⁾	8		8		10		10		10	
M	20		20		30		40		47	40
t ¹⁾	20.8		24.8		31.3		39.3		51.8	

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		40.2 ⁴⁾		48.2		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	30		30		30		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		30 ⁴⁾		36		46	

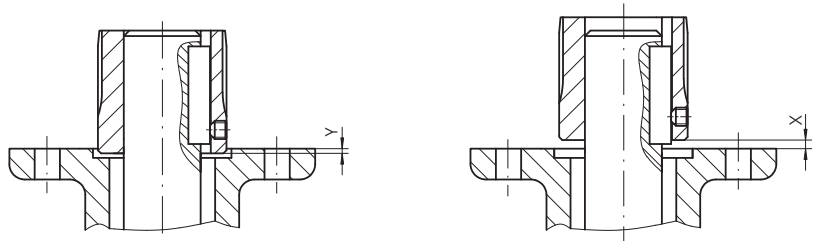
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		36.2		48.2 (48 ⁵⁾)		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	25		25		25		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		27		36 (41 ⁵⁾)		46	

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	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

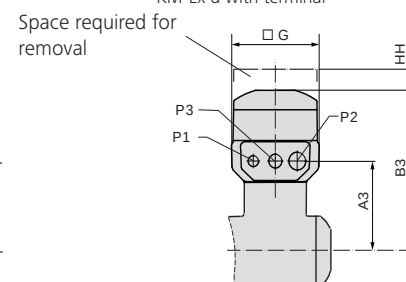
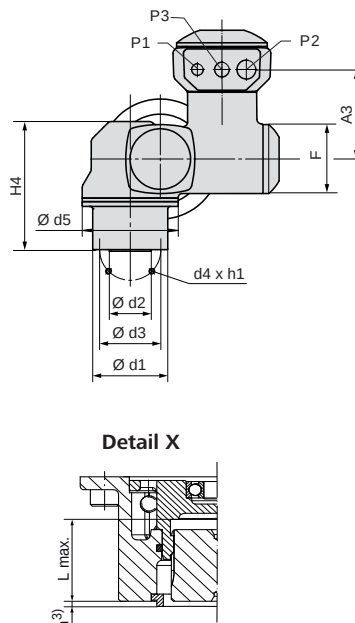
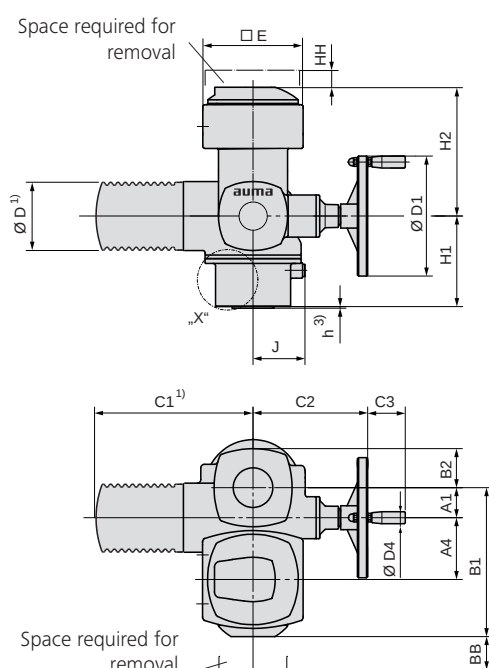
Dimensions Part-turn actuators

With AUMA 3-phase AC motor and Ex plug/socket connector with terminal block (KT/KM)

Standard:

KT-Ex e with push-in connection

Option:

KT-Ex d with push-in connection
KM-Ex e with terminal
KM-Ex d with terminal

- 1) Exact dimension depending on motor used
- 2) Standard, other threads on request
- 3) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.
- 4) Combined fange F05/F07 without spigot (standard). As an alternative an individual fange F07 can be ordered with/without spigot

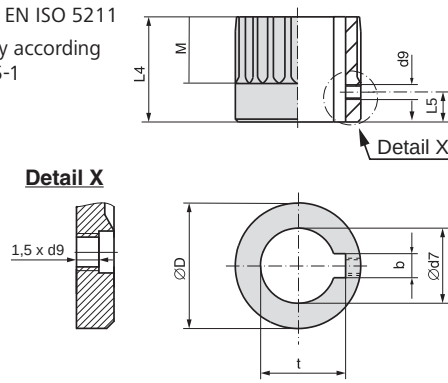
Output drives according to EN ISO 5211
For dimensions see overleaf

Dimensions	SQEx 05.2		SQEx 07.2			SQEx 10.2		SQEx 12.2		SQEx 14.2	
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10	F10	F12	F12	F14	F14	F16
A1		40				50		50		50	
A3		148				148		148		148	
A4		103				103		103		103	
B1		245				255		255		255	
B2		50				65		65		65	
B3		272				272		272		272	
C1 ¹⁾		268				268		268		268	
C2		186				191		191		191	
C3		63				63		63		63	
Ø D ¹⁾		104				104		104		104	
Ø D1		160				200		200		200	
Ø D4		20				20		20		20	
□ E		166				166		166		166	
F		115				115		115		115	
□ G		170				170		170		170	
H1	134		134		160	151	183	175	215	210	260
H2		213				213		213		213	
H4	193		193		218	214	246	238	278	273	323
J		69				86		109		128	
L max.	40		40		66	50	82	61	101	75	125
P1 ²⁾		M20 x 1.5				M20 x 1.5		M20 x 1.5		M20 x 1.5	
P2 ²⁾		M32 x 1.5				M32 x 1.5		M32 x 1.5		M32 x 1.5	
P3 ²⁾		M25 x 1.5				M25 x 1.5		M25 x 1.5		M25 x 1.5	
BB min.		180				180		180		180	
HH min.		50				50		50		50	
Ø d1	90		90		125	125	150	150	175	175	210
Ø d2	–		–		70	70	85	85	100	100	130
Ø d3	50	70	50	70	102	102	125	125	140	140	165
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16	4 x M16	4 x M20
Ø d5		125				160		210		225	
h ³⁾	–		–		2.5	2.5		2.5	3.5	3.5	4.5
h1	12	15	12	15	16	18	19	22	25	29	32

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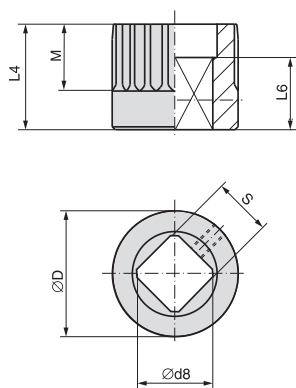
Dimensions Couplings according to EN ISO 5211

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



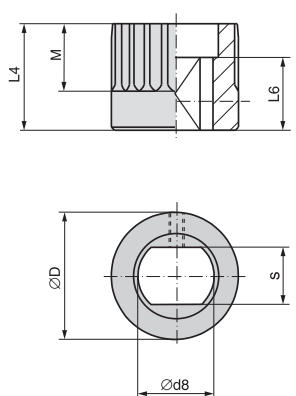
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
b JS9 ¹⁾	6	6	6	6	8	8	10	10	14	14
Ø d7 H8 ²⁾	18	22	22	22	28	28	36	36	48	48
Ø d7 max.	25.4	25.4	25.4	25.4	38	38	50	50	60	60
d9 ³⁾	M5	M5	M5	M5	M6	M6	M6	M6	M6	M6
L4	35	35	60	60	45	75	55	95	65	115
L5 ³⁾	8	8	8	8	10	10	10	10	10	10
M	20	20	20	20	30	30	40	40	47	40
t ¹⁾	20.8	24.8	24.8	24.8	31.3	31.3	39.3	39.3	51.8	51.8

Square bore according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	40.2 ⁴⁾	40.2	48.2	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	30	30	30	30	30	30	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	30 ⁴⁾	30	36	36	46	46

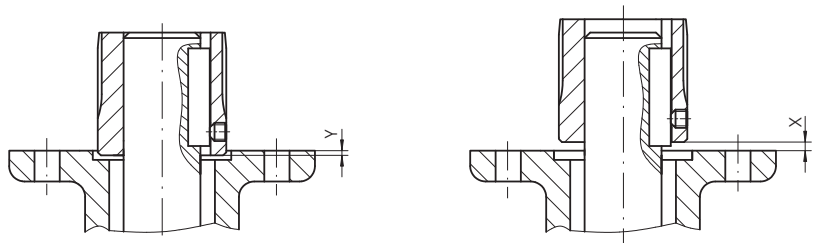
Bore with two-flats according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	36.2	36.2	48.2 (48 ⁵⁾)	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	25	25	25	25	25	25	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	27	27	36 (41 ⁵⁾)	36	46	46

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	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

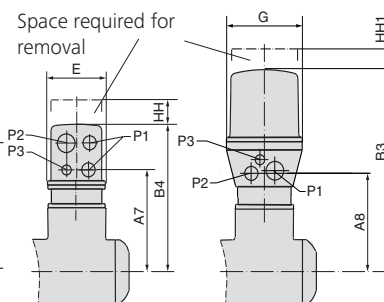
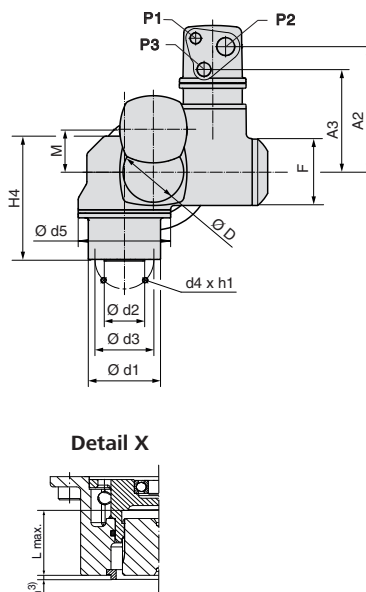
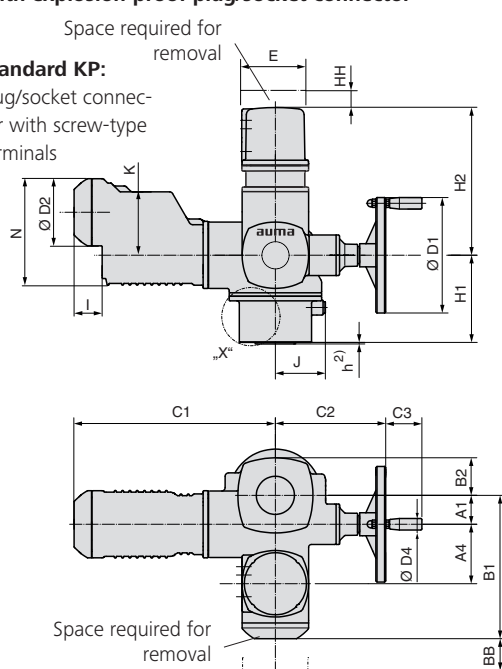
5) According to DIN 475

Dimensions Part-turn actuators with 1-ph AC motor

With explosion-proof plug/socket connector

Standard KP:

Plug/socket connector with screw-type terminals



Option KH (KPH):
Plug/socket connector with screw-type terminals

Option KS (KES):
Plug/socket connector with terminal blocks

Output drives according to EN ISO 5211
For dimensions see overleaf

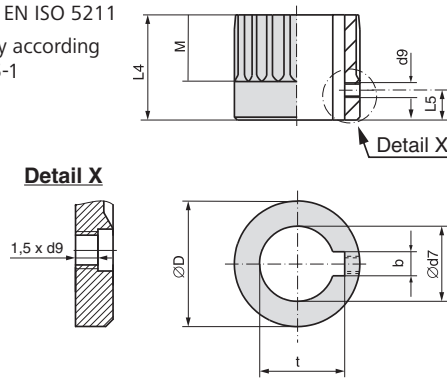
- 1) Standard, other threads on request
- 2) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.
- 3) Combined flange F05/F07 without spigot (standard). As an alternative an individual flange F07 can be ordered with/without spigot

Dimensions	SQEx 05.2		SQEx 07.2			SQEx 10.2		SQEx 12.2		SQEx 14.2	
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10	F10	F12	F12	F14	F14	F16
A1		40				50		50		50	
A2		221				221		221		221	
A3		181				181		181		181	
A4		103				103		103		103	
A7		207				207		207		207	
A8		172				172		172		172	
B1		245				255		255		255	
B2		50				65		65		65	
B3		395				395		395		395	
B4		282				282		282		282	
C1		350				350		350		350	
C2		186				191		191		191	
C3		63				63		63		63	
Ø D		104				104		104		104	
Ø D1		160				200		200		200	
Ø D2		115				115		115		115	
Ø D4		20				20		20		20	
E		115				115		115		115	
F		115				115		115		115	
G		150				150		150		150	
H1	134		134	160	151	183	175	215	210	260	
H2		257			257		257		257		
H4	193		193	218	214	246	238	278	273	323	
I		52			52		52		52		
J		69			86		109		128		
K		108			108		108		108		
L max.	40		40	66	50	82	61	101	75	125	
M		73			73		73		73		
N		188			188		188		188		
P1 ¹⁾		M20 x 1.5			M20 x 1.5		M20 x 1.5		M20 x 1.5		
P2 ¹⁾		M32 x 1.5			M32 x 1.5		M32 x 1.5		M32 x 1.5		
P3 ¹⁾		M25 x 1.5			M25 x 1.5		M25 x 1.5		M25 x 1.5		
BB min.		180			180		180		180		
HH min.		60			60		60		60		
HH1 min.		130			130		130		130		
Ø d1	90		90	125	125	150	150	175	175	210	
Ø d2	—		—	70	70	85	85	100	100	130	
Ø d3	50	70	50	70	102	102	125	125	140	140	165
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16	4 x M16	4 x M20
Ø d5		125			160		210		225		
h ²⁾	—		—	2.5	2.5		2.5	3.5	3.5	4.5	
h1	12	15	12	15	16	18	19	22	25	29	32

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

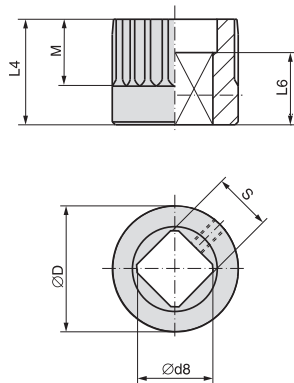
Dimensions Couplings according to EN ISO 5211

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



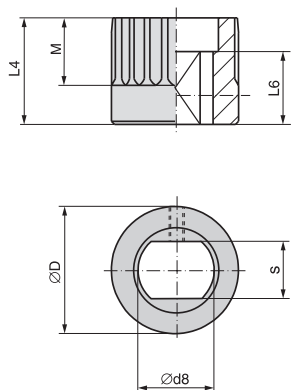
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
b JS9 ¹⁾	6		6		8		10		14	
Ø d7 H8 ²⁾	18		22		28		36		48	
Ø d7 max.	25.4		25.4		38		50		60	
d9 ³⁾	M5		M5		M6		M6		M6	
L4	35		35	60	45	75	55	95	65	115
L5 ³⁾	8		8		10		10		10	
M	20		20		30		40		47	40
t ¹⁾	20.8		24.8		31.3		39.3		51.8	

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		40.2 ⁴⁾		48.2		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	30		30		30		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		30 ⁴⁾		36		46	

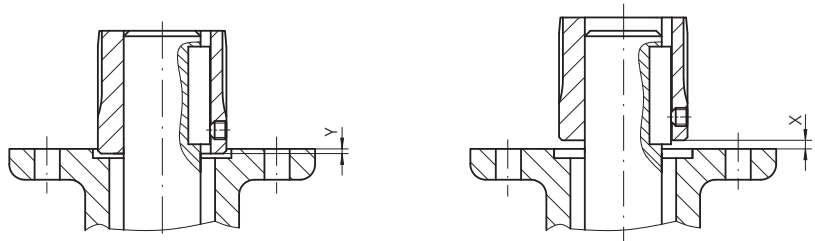
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		36.2		48.2 (48 ⁵⁾)		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	25		25		25		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		27		36 (41 ⁵⁾)		46	

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	10	10



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

2) Recommended size according to EN ISO 5211

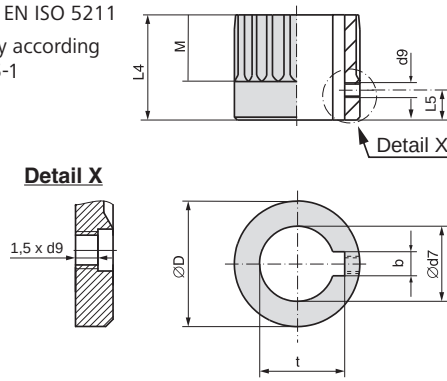
3) Thread with grub screw

4) According to DIN 79

5) According to DIN 475

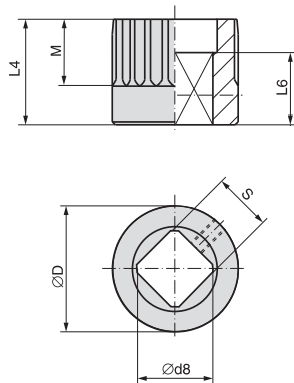
Dimensions Couplings according to EN ISO 5211

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



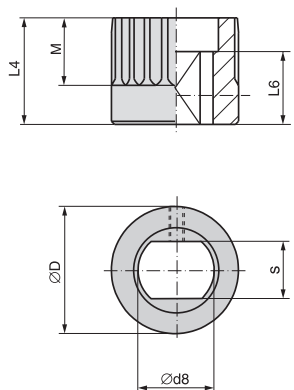
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
b JS9 ¹⁾	6	6	6	6	8	8	10	10	14	14
Ø d7 H8 ²⁾	18	22	22	22	28	28	36	36	48	48
Ø d7 max.	25.4	25.4	25.4	25.4	38	38	50	50	60	60
d9 ³⁾	M5	M5	M5	M5	M6	M6	M6	M6	M6	M6
L4	35	35	60	60	45	75	55	95	65	115
L5 ³⁾	8	8	8	8	10	10	10	10	10	10
M	20	20	20	20	30	30	40	40	47	40
t ¹⁾	20.8	24.8	24.8	24.8	31.3	31.3	39.3	39.3	51.8	51.8

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	40.2 ⁴⁾	40.2	48.2	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	30	30	30	30	30	30	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	30 ⁴⁾	30	36	36	46	46

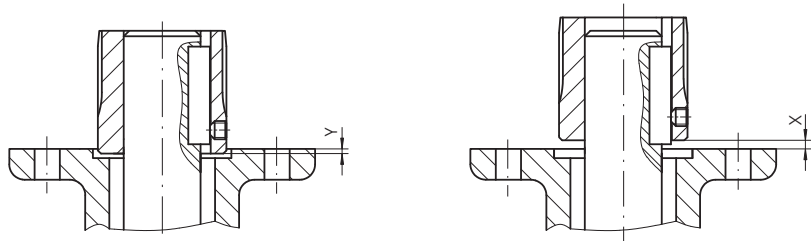
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	36.2	36.2	48.2 (48 ⁵⁾)	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	25	25	25	25	25	25	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	27	27	36 (41 ⁵⁾)	36	46	46

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	10	10



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

2) Recommended size according to EN ISO 5211

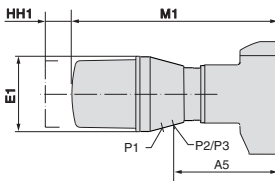
3) Thread with grub screw

4) According to DIN 79

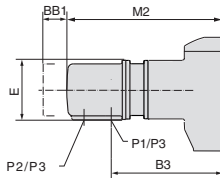
5) According to DIN 475

Dimensions Part-turn actuators with AMExC integral actuator controls (also for f eldbus)

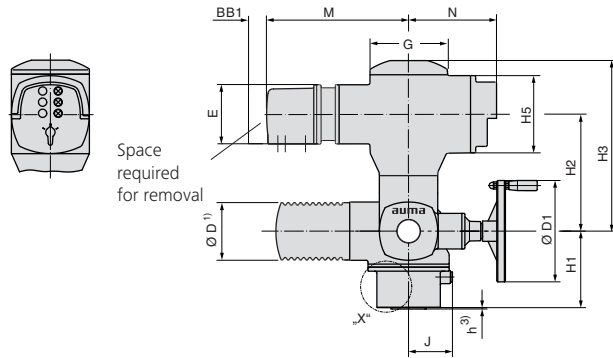
With AUMA 3-phase motor and explosion-proof plug/socket connector

**Option KS (KES):**

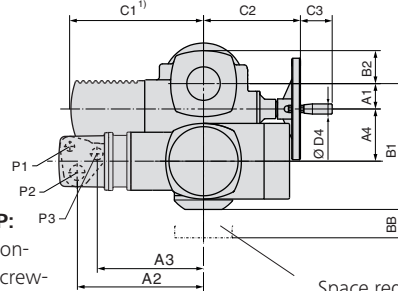
Plug/socket connector with terminal blocks

**Option KH (KPH):**

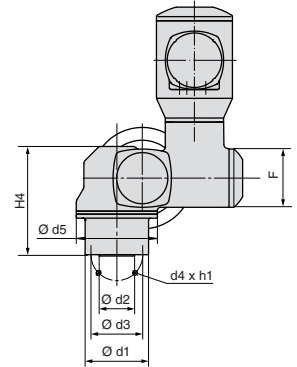
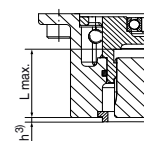
Plug/socket connector with screw-type terminals

**Standard KP:**

Plug/socket connector with screw-type terminals



Space required for removal

**Detail X****Output drives**

according to EN ISO 5211

For dimensions see overleaf

1) Exact dimension depending on motor used

2) Standard, other threads on request

3) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.

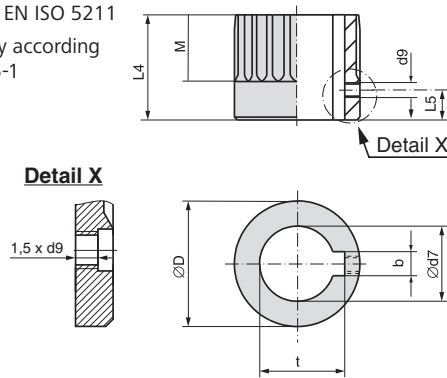
4) Combined fange F05/F07 without spigot (standard). As an alternative an individual fange F07 can be ordered with/without spigot

Dimensions	SQEx 05.2/AMExC 01.1	SQEx 07.2/AMExC 01.1	SQEx 10.2/AMExC 01.1	SQEx 12.2/AMExC 01.1	SQEx 14.2/AMExC 01.1
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10
A1		40			50
A2		256			256
A3		216			216
A4		103			103
A5		209			209
B1		245			255
B2		50			65
B3		242			242
C1 ¹⁾		268			268
C2		186			191
C3		63			63
Ø D ¹⁾		104			104
Ø D1		160			200
Ø D4		20			20
E		115			115
E1		150			150
F		115			115
G		154			154
H1	134		134		160
H2		243			243
H3		430			430
H4	193		193		218
H5		154			154
J		69			86
L max.	40		40		66
M		292			292
M1		429			429
M2		317			317
N		189			189
P1 ²⁾		M20 x 1.5			M20 x 1.5
P2 ²⁾		M32 x 1.5			M32 x 1.5
P3 ²⁾		M25 x 1.5			M25 x 1.5
BB min.		180			180
BB1 min.		60			60
HH1 min.		130			130
Ø d1	90		90		125
Ø d2	—		—		70
Ø d3	50	70	50	70	102
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10
Ø d5		125			160
h ³⁾	—		—		2.5
h1	12	15	12	15	16

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

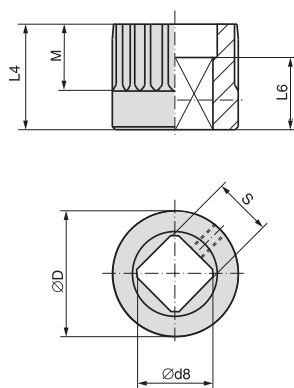
Dimensions Couplings according to EN ISO 5211

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



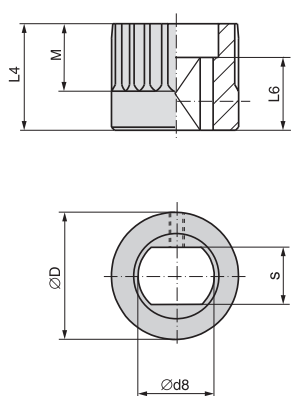
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
b JS9 ¹⁾	6	6	6	6	8	8	10	10	14	14
Ø d7 H8 ²⁾	18	22	22	22	28	28	36	36	48	48
Ø d7 max.	25.4	25.4	25.4	25.4	38	38	50	50	60	60
d9 ³⁾	M5	M5	M5	M5	M6	M6	M6	M6	M6	M6
L4	35	35	60	60	45	75	55	95	65	115
L5 ³⁾	8	8	8	8	10	10	10	10	10	10
M	20	20	20	20	30	30	40	40	47	40
t ¹⁾	20.8	24.8	24.8	24.8	31.3	31.3	39.3	39.3	51.8	51.8

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	40.2 ⁴⁾	40.2	48.2	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	30	30	30	30	30	30	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	30 ⁴⁾	30	36	36	46	46

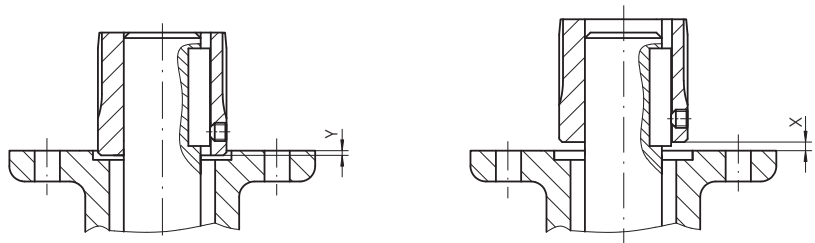
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	36.2	36.2	48.2 (48 ⁵⁾)	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	25	25	25	25	25	25	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	27	27	36 (41 ⁵⁾)	36	46	46

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	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

Dimensions Part-turn actuators with AMExC integral actuator controls (also for f eldbus)

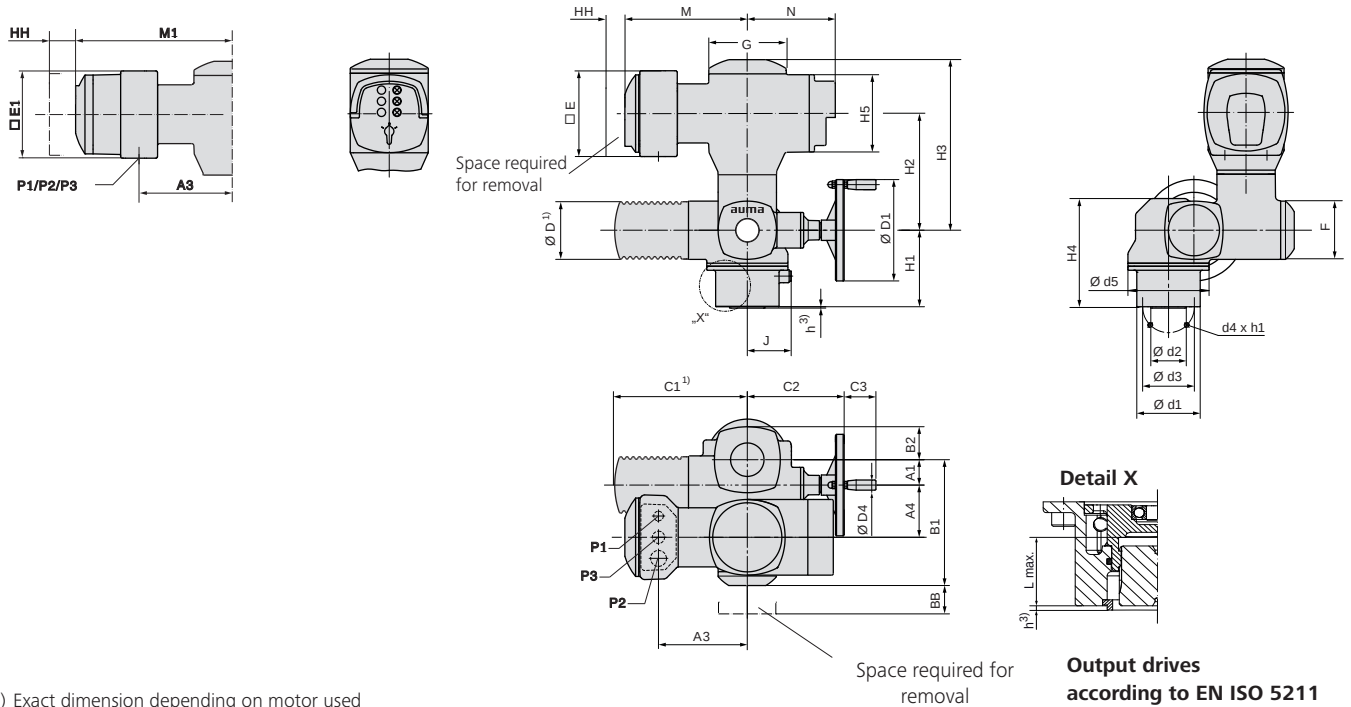
With AUMA 3-phase AC motor and Ex plug/socket connector with terminal block (KT/KM)

Option:

KT-Ex d with push-in connection
 KM-Ex e with terminals
 KM-Ex d with terminals

Standard:

KT-Ex e with push-in connection



1) Exact dimension depending on motor used

2) Standard, other threads on request

3) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.

4) Combined fange F05/F07 without spigot (standard). As an alternative an individual fange F07 can be ordered with/without spigot

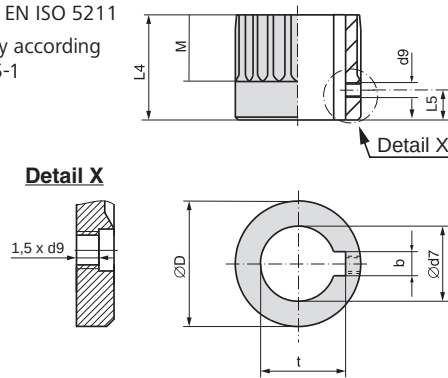
Output drives
 according to EN ISO 5211
 For dimensions see overleaf

Dimensions	SQEx 05.2/AMExC 01.1		SQEx 07.2/AMExC 01.1			SQEx 10.2/AMExC 01.1		SQEx 12.2/AMExC 01.1		SQEx 14.2/AMExC 01.1	
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10	F10	F12	F12	F14	F14	F16
A1	40					50		50		50	
A3	183					183		183		183	
A4	103					103		103		103	
B1	245					255		255		255	
B2	50					65		65		65	
C1 ¹⁾	268					268		268		268	
C2	186					191		191		191	
C3	63					63		63		63	
Ø D ¹⁾	104					104		104		104	
Ø D1	160					200		200		200	
Ø D4	20					20		20		20	
□ E	166					166		166		166	
□ E1	170					170		170		170	
F	115					115		115		115	
G	154					154		154		154	
H1	134		134		160	151	183	175	215	210	260
H2		243				243		243		243	
H3		430				430		430		430	
H4	193		193		218	214	246	238	278	273	323
H5		154				154		154		154	
J		69				86		109		128	
L max.	40		40		66	50	82	61	101	75	125
M		248				248		248		248	
M1		307				307		307		307	
N		189				189		189		189	
P1 ²⁾	M20 x 1.5					M20 x 1.5		M20 x 1.5		M20 x 1.5	
P2 ²⁾	M32 x 1.5					M32 x 1.5		M32 x 1.5		M32 x 1.5	
P3 ²⁾	M25 x 1.5					M25 x 1.5		M25 x 1.5		M25 x 1.5	
BB min.	180					180		180		180	
HH min.	50					50		50		50	
Ø d1	90		90		125	125	150	150	175	175	210
Ø d2	–		–		70	70	85	85	100	100	130
Ø d3	50	70	50	70	102	102	125	125	140	140	165
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16	4 x M16	4 x M20
Ø d5	125					160		210		225	
h ³⁾	–		–		2.5	2.5		2.5	3.5	3.5	4.5
h1	12	15	12	15	16	18	19	22	25	29	32

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

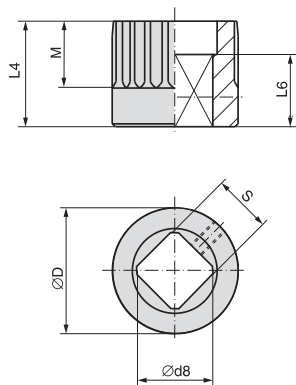
Dimensions Couplings according to EN ISO 5211

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



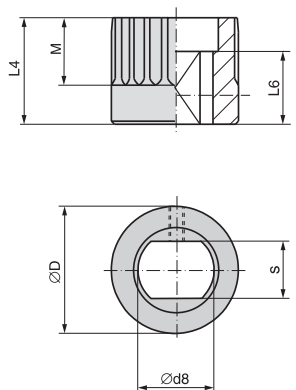
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
b JS9 ¹⁾	6		6		8		10		14	
Ø d7 H8 ²⁾	18		22		28		36		48	
Ø d7 max.	25.4		25.4		38		50		60	
d9 ³⁾	M5		M5		M6		M6		M6	
L4	35		35	60	45	75	55	95	65	115
L5 ³⁾	8		8		10		10		10	
M	20		20		30		40		47	40
t ¹⁾	20.8		24.8		31.3		39.3		51.8	

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		40.2 ⁴⁾		48.2		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	30		30		30		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		30 ⁴⁾		36		46	

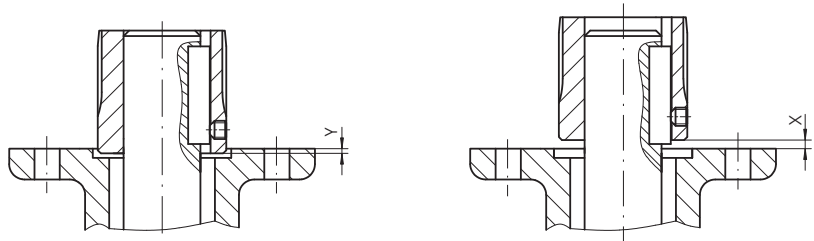
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		36.2		48.2 (48 ⁵⁾)		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	25		25		25		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		27		36 (41 ⁵⁾)		46	

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	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

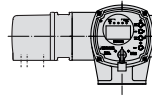
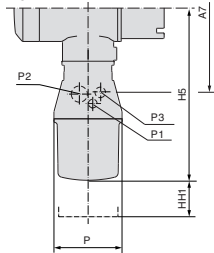
5) According to DIN 475

Dimensions Part-turn actuators with ACExC integral actuator controls (also for Fieldbus & HART)

With AUMA 3-phase motor and explosion-proof plug/socket connector

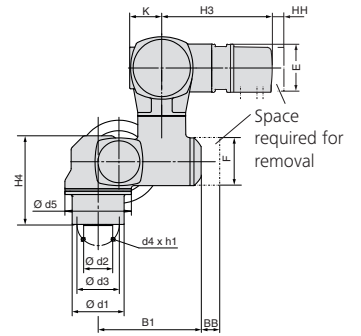
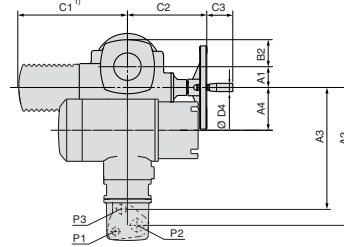
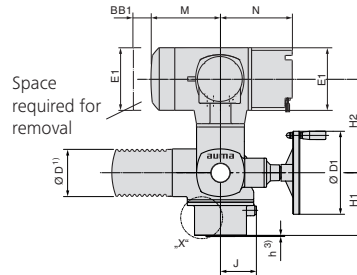
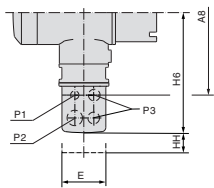
Option KS (KES):

Plug/socket connector with terminal blocks

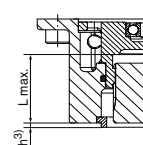


Option KH (KPH):

Plug/socket connector with screw-type terminals



Detail X



Standard KP:

Plug/socket connector with screw-type terminals

Output drives according to EN ISO 5211
For dimensions see overleaf

1) Exact dimension depending on motor used

2) Standard, other threads on request

3) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.

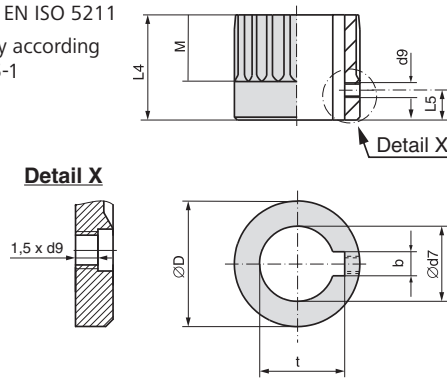
4) Combined flange F05/F07 without spigot (standard). As an alternative an individual flange F07 can be ordered with/without spigot

Dimensions	SQEx 05.2/ACExC 01.2		SQEx 07.2/ACExC 01.2			SQEx 10.2/ACExC 01.2		SQEx 12.2/ACExC 01.2		SQEx 14.2/ACExC 01.2	
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10	F10	F12	F12	F14	F14	F16
A1	40					50		50		50	
A2	334					334		334		334	
A3	294					294		294		294	
A4	103					103		103		103	
A7	287					287		287		287	
A8	320					320		320		320	
B1	245					255		255		255	
B2	50					65		65		65	
C1 ¹⁾	268					268		268		268	
C2	186					191		191		191	
C3	63					63		63		63	
Ø D ¹⁾	104					104		104		104	
Ø D1	160					200		200		200	
Ø D4	20					20		20		20	
E	115					115		115		115	
E1	154					154		154		154	
F	115					115		115		115	
H1	134		134		160	151	183	175	215	210	260
H2		235				235		235		235	
H3		267				267		267		267	
H4	193		193		218	214	246	238	278	273	323
H5		404				404		404		404	
H6		292				292		292		292	
J		69				86		109		128	
K		78				78		78		78	
L max.	40		40		66	50	82	61	101	75	125
M		199				199		199		199	
N		171				171		171		171	
P		150				150		150		150	
P1 ²⁾	M20 x 1.5					M20 x 1.5		M20 x 1.5		M20 x 1.5	
P2 ²⁾	M32 x 1.5					M32 x 1.5		M32 x 1.5		M32 x 1.5	
P3 ²⁾	M25 x 1.5					M25 x 1.5		M25 x 1.5		M25 x 1.5	
BB min.	180					180		180		180	
BB1 min.	75					75		75		75	
HH min.	60					60		60		60	
HH1 min.	130					130		130		130	
Ø d1	90		90		125	125	150	150	175	175	210
Ø d2	–		–		70	70	85	85	100	100	130
Ø d3	50	70	50	70	102	102	125	125	140	140	165
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16	4 x M16	4 x M20
Ø d5	125					160		210		225	
h ³⁾	–		–		2.5	2.5		2.5	3.5	3.5	4.5
h1	12	15	12	15	16	18	19	22	25	29	32

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

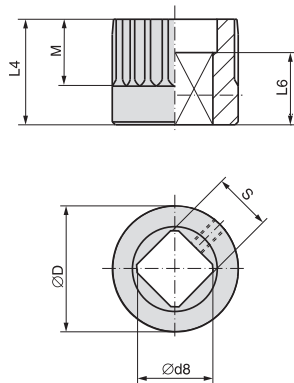
Dimensions Couplings according to EN ISO 5211

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



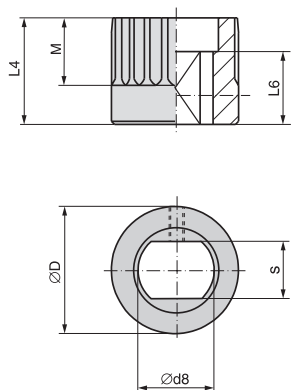
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
b JS9 ¹⁾	6		6		8		10		14	
Ø d7 H8 ²⁾	18		22		28		36		48	
Ø d7 max.	25.4		25.4		38		50		60	
d9 ³⁾	M5		M5		M6		M6		M6	
L4	35		35	60	45	75	55	95	65	115
L5 ³⁾	8		8		10		10		10	
M	20		20		30		40		47	40
t ¹⁾	20.8		24.8		31.3		39.3		51.8	

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		40.2 ⁴⁾		48.2		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	30		30		30		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		30 ⁴⁾		36		46	

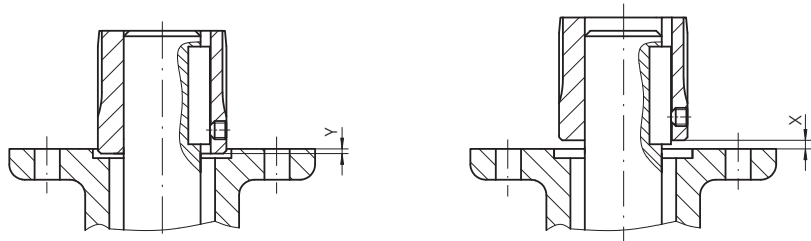
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75		41.75		51.75		67.6		81.6	
Ø d8 min. ²⁾	18.1		22.2		28.2		36.2		48.2	
Ø d8 max.	28.2		28.2		36.2		48.2 (48 ⁵⁾)		60.2	
L4	35		35	60	45	75	55	95	65	115
L6 min.	25		25		25		30		40	
M	20		20		30		40		47	40
s H11 ²⁾	14		17		22		27		36	
s H11 max.	22		22		27		36 (41 ⁵⁾)		46	

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	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

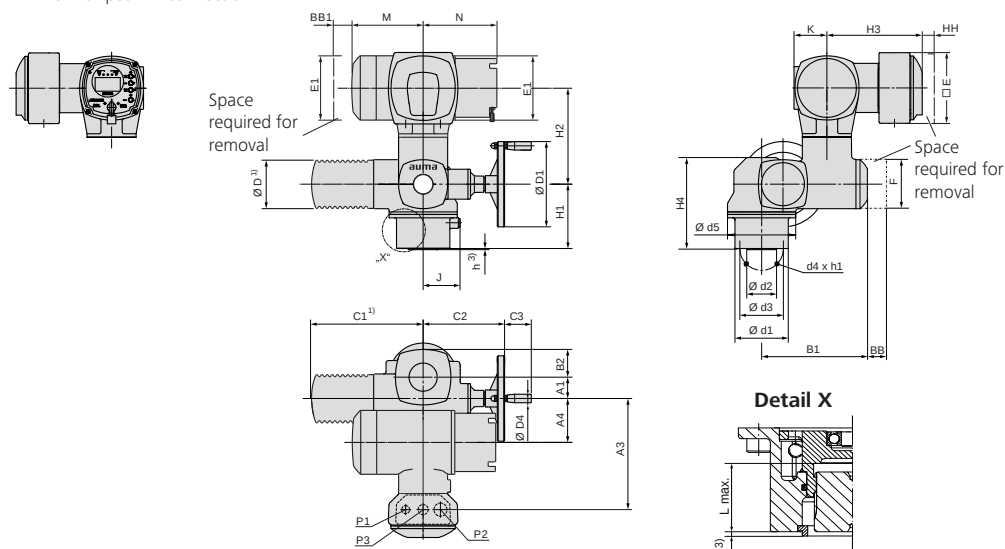
5) According to DIN 475

Dimensions Part-turn actuators with ACExC integral actuator controls (also for Fieldbus & HART)

With AUMA 3-phase AC motor and Ex plug/socket connector with terminal block (KT/KM)

Standard:

KT-Ex e with push-in connection

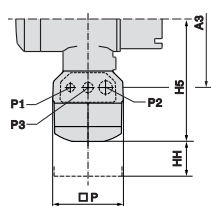


Option:

KT-Ex d with push-in connection

KM-Ex e with terminals

KM-Ex d with terminals

Output drives according to EN ISO 5211
For dimensions see overleaf

1) Exact dimension depending on motor used

2) Standard, other threads on request

3) Allowance for spigot is not available as standard. The spigot ring is a separate component, available as option.

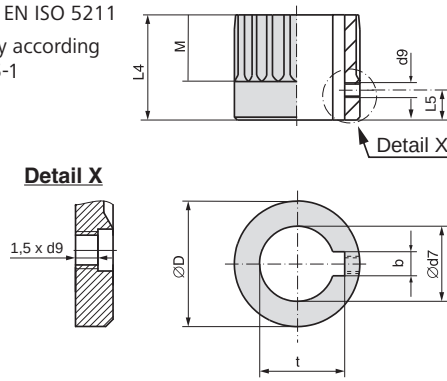
4) Combined fange F05/F07 without spigot (standard). As an alternative an individual fange F07 can be ordered with/without spigot

Dimensions	SQEx 05.2/ACExC 01.2		SQEx 07.2/ACExC 01.2			SQEx 10.2/ACExC 01.2		SQEx 12.2/ACExC 01.2		SQEx 14.2/ACExC 01.2	
EN ISO 5211	F05 ⁴⁾	F07 ⁴⁾	F05 ⁴⁾	F07 ⁴⁾	F10	F10	F12	F12	F14	F14	F16
A1	40					50		50		50	
A3	261					261		261		261	
A4	103					103		103		103	
B1	245					255		255		255	
B2	50					65		65		65	
C1 ¹⁾	268					268		268		268	
C2	186					191		191		191	
C3	63					63		63		63	
Ø D ¹⁾	104					104		104		104	
Ø D1	160					200		200		200	
Ø D4	20					20		20		20	
□ E	166					166		166		166	
E1	154					154		154		154	
F	115					115		115		115	
H1	134		134		160	151	183	175	215	210	260
H2	235					235		235		235	
H3	223					223		223		223	
H4	193		193		218	214	246	238	278	273	323
H5	282					282		282		282	
J	69					86		109		128	
K	78					78		78		78	
L max.	40		40		66	50	82	61	101	75	125
M	199					199		199		199	
N	171					171		171		171	
□ P	170					170		170		170	
P1 ²⁾	M20 x 1.5					M20 x 1.5		M20 x 1.5		M20 x 1.5	
P2 ²⁾	M32 x 1.5					M32 x 1.5		M32 x 1.5		M32 x 1.5	
P3 ²⁾	M25 x 1.5					M25 x 1.5		M25 x 1.5		M25 x 1.5	
BB min.	180					180		180		180	
BB1 min.	75					75		75		75	
HH min.	50					50		50		50	
Ø d1	90		90		125	125	150	150	175	175	210
Ø d2	—		—		70	70	85	85	100	100	130
Ø d3	50	70	50	70	102	102	125	125	140	140	165
d4	4 x M6	4 x M8	4 x M6	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16	4 x M16	4 x M20
Ø d5	125					160		210		225	
h ³⁾	—		—		2.5	2.5		2.5	3.5	3.5	4.5
h1	12	15	12	15	16	18	19	22	25	29	32

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

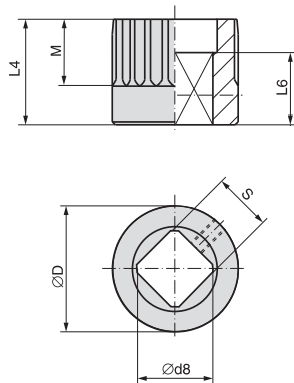
Dimensions Couplings according to EN ISO 5211

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



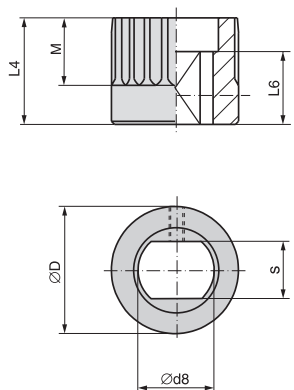
Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
b JS9 ¹⁾	6	6	6	6	8	8	10	10	14	14
Ø d7 H8 ²⁾	18	22	22	22	28	28	36	36	48	48
Ø d7 max.	25.4	25.4	25.4	25.4	38	38	50	50	60	60
d9 ³⁾	M5	M5	M5	M5	M6	M6	M6	M6	M6	M6
L4	35	35	60	60	45	75	55	95	65	115
L5 ³⁾	8	8	8	8	10	10	10	10	10	10
M	20	20	20	20	30	30	40	40	47	40
t ¹⁾	20.8	24.8	24.8	24.8	31.3	31.3	39.3	39.3	51.8	51.8

Square bore
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	40.2 ⁴⁾	40.2	48.2	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	30	30	30	30	30	30	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	30 ⁴⁾	30	36	36	46	46

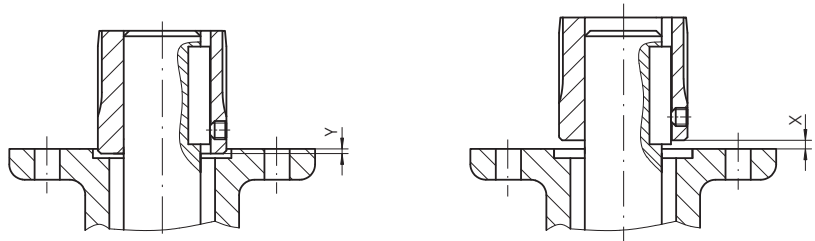
Bore with two-flats
according to EN ISO 5211



Dimensions	SQEx 05.2		SQEx 07.2		SQEx 10.2		SQEx 12.2		SQ Ex14.2	
EN ISO 5211	F05	F07	F07	F10	F10	F12	F12	F14	F14	F16
Ø D	41.75	41.75	41.75	41.75	51.75	51.75	67.6	67.6	81.6	81.6
Ø d8 min. ²⁾	18.1	22.2	22.2	22.2	28.2	28.2	36.2	36.2	48.2	48.2
Ø d8 max.	28.2	28.2	28.2	28.2	36.2	36.2	48.2 (48 ⁵⁾)	48.2	60.2	60.2
L4	35	35	60	60	45	75	55	95	65	115
L6 min.	25	25	25	25	25	25	30	30	40	40
M	20	20	20	20	30	30	40	40	47	40
s H11 ²⁾	14	17	17	17	22	22	27	27	36	36
s H11 max.	22	22	22	22	27	27	36 (41 ⁵⁾)	36	46	46

Mounting position of coupling

X max.	3	4	5	8
Y max.	2	5	10	10



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

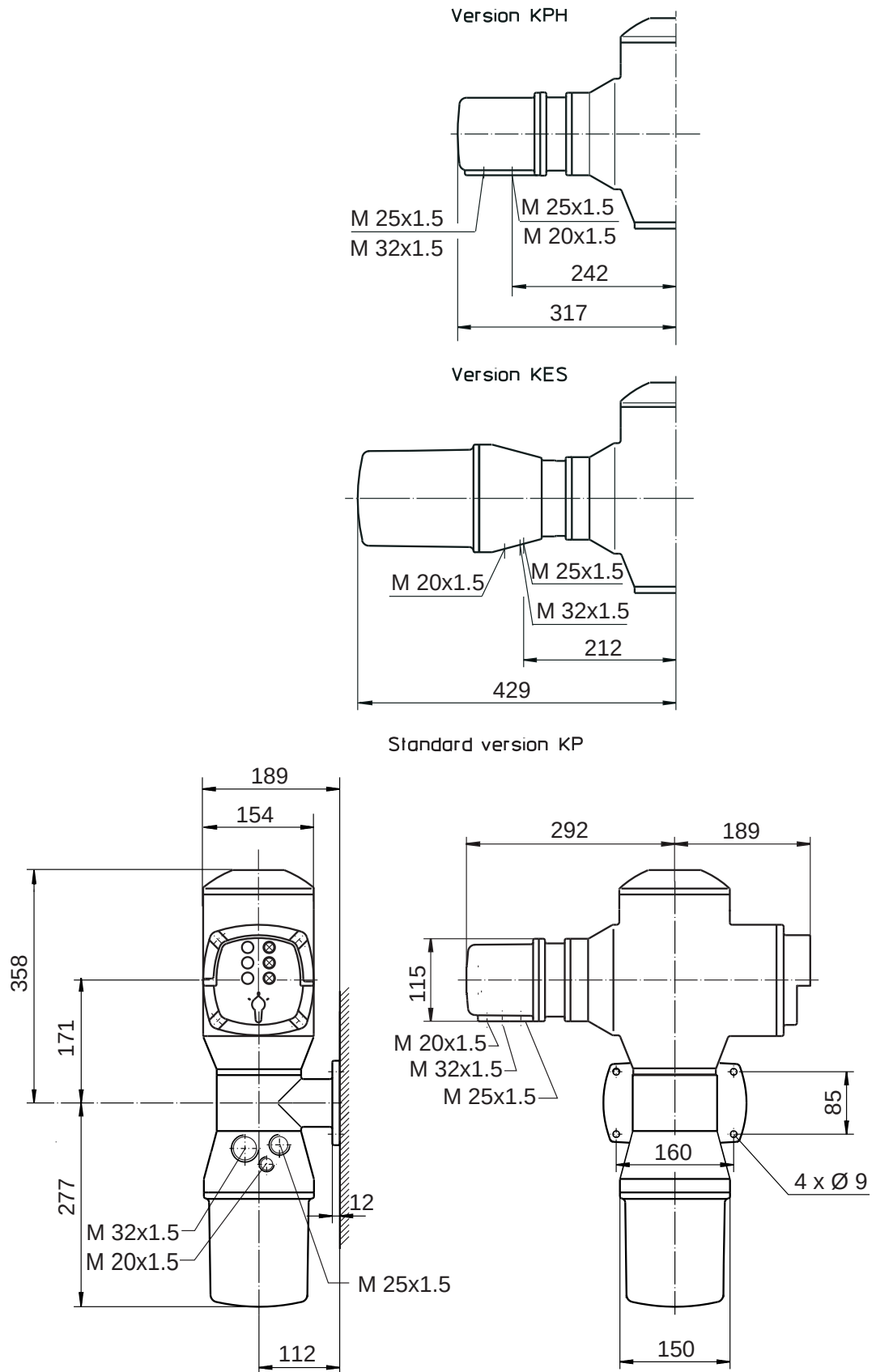
2) Recommended size according to EN ISO 5211

3) Thread with grub screw

4) According to DIN 79

5) According to DIN 475

Dimensions AMExC 01.1 wall bracket

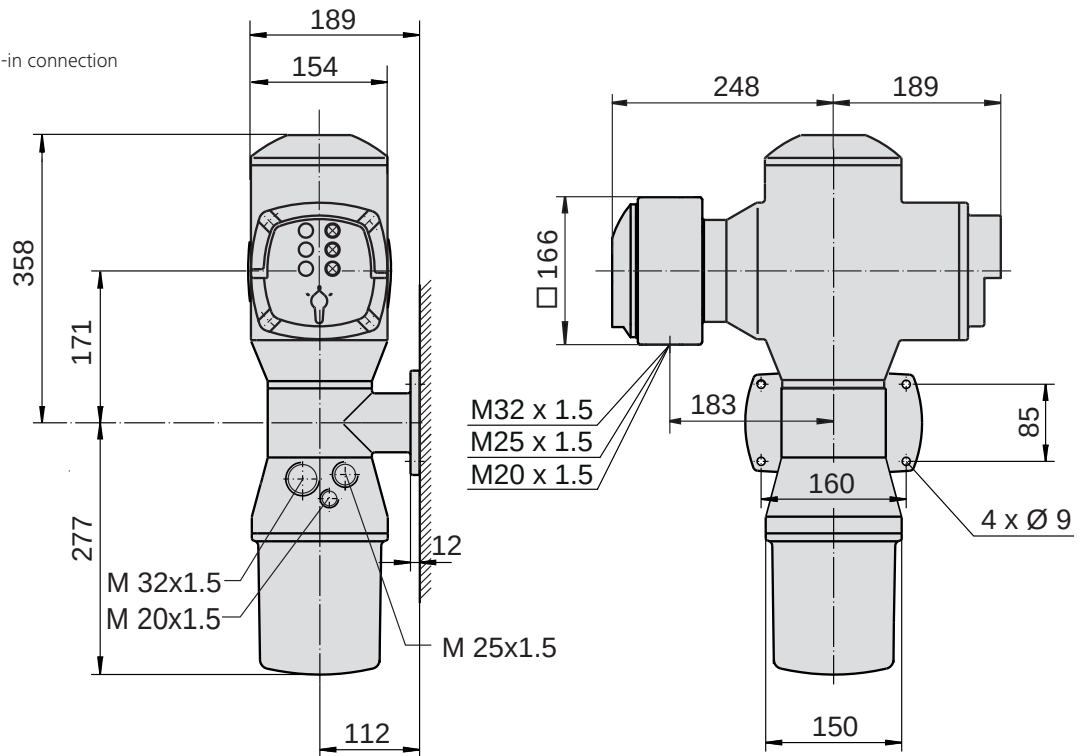


Dimensions AMExC 01.1 wall bracket

Ex plug/socket connector with terminal block (KT/KM)

Standard:

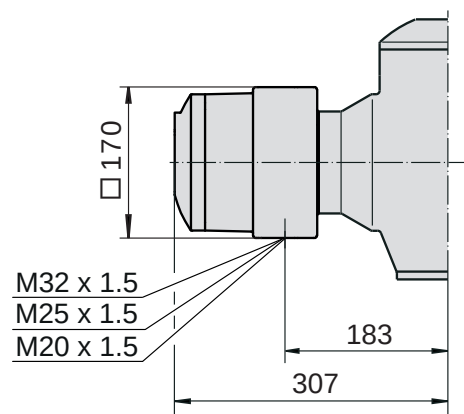
KT-Ex e with push-in connection

**Option:**

KT-Ex d with push-in connection

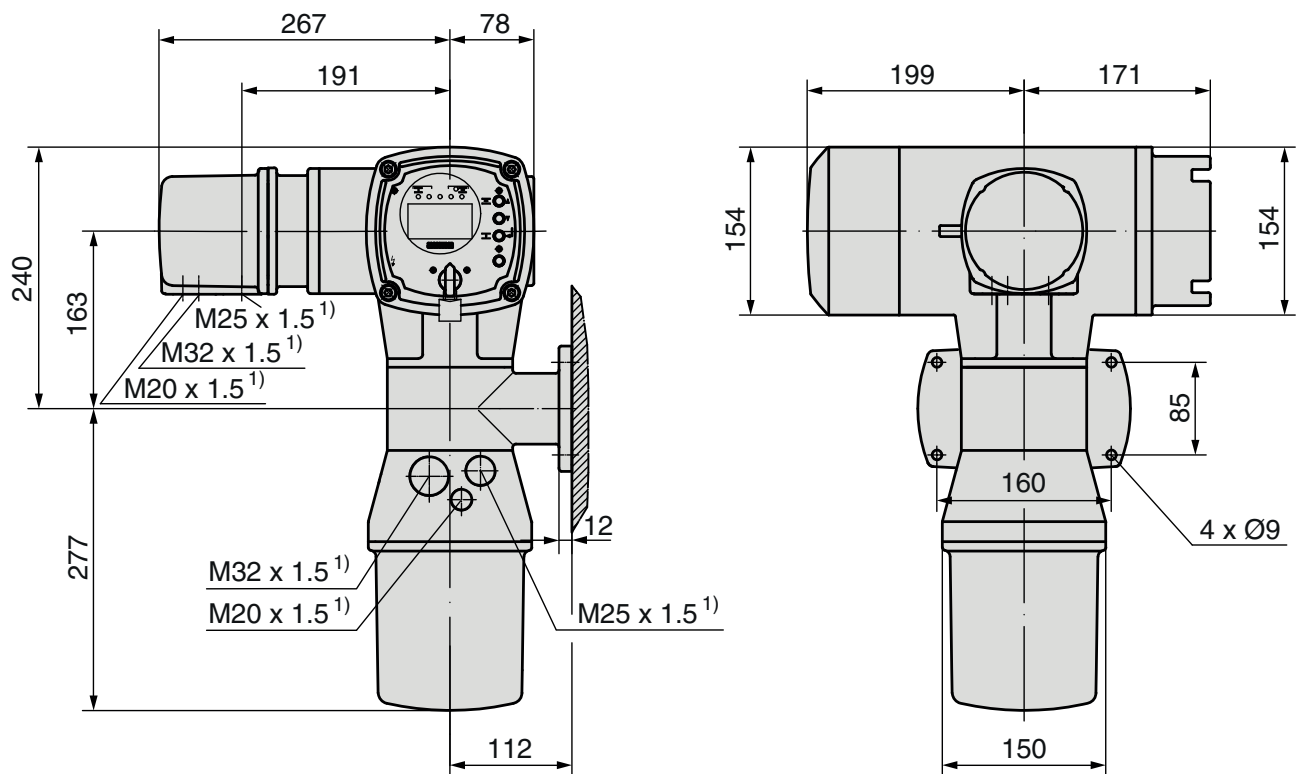
KM-Ex e with terminals

KM-Ex d with terminals

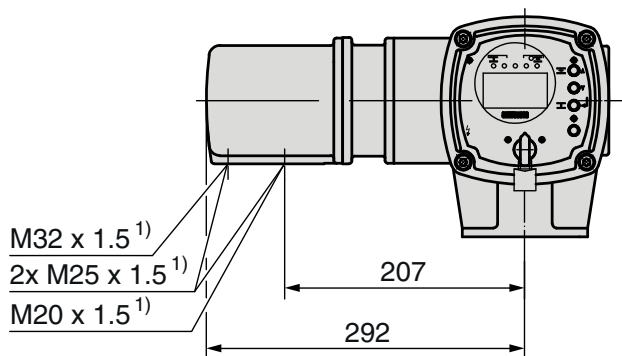


Dimensions ACExC 01.2 wall bracket

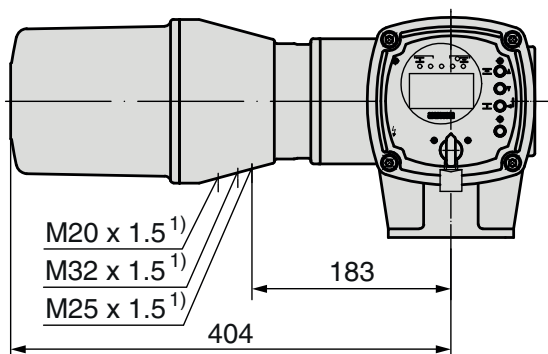
Standard version KP



Version KPH



Version KES



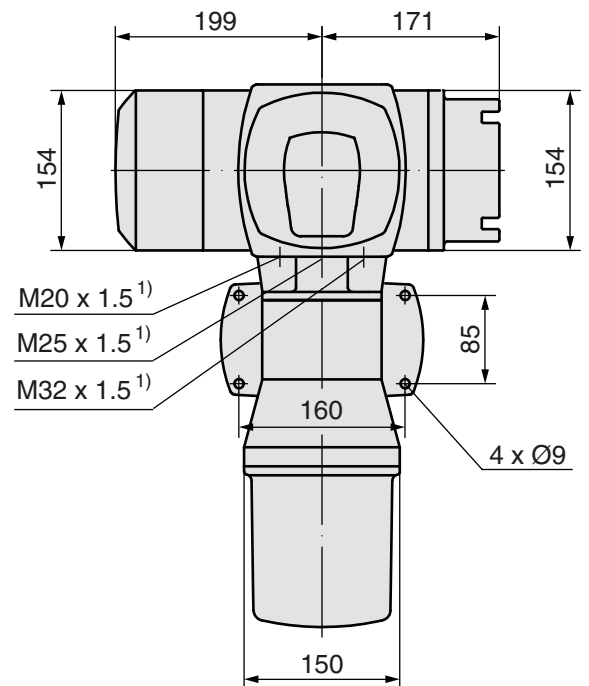
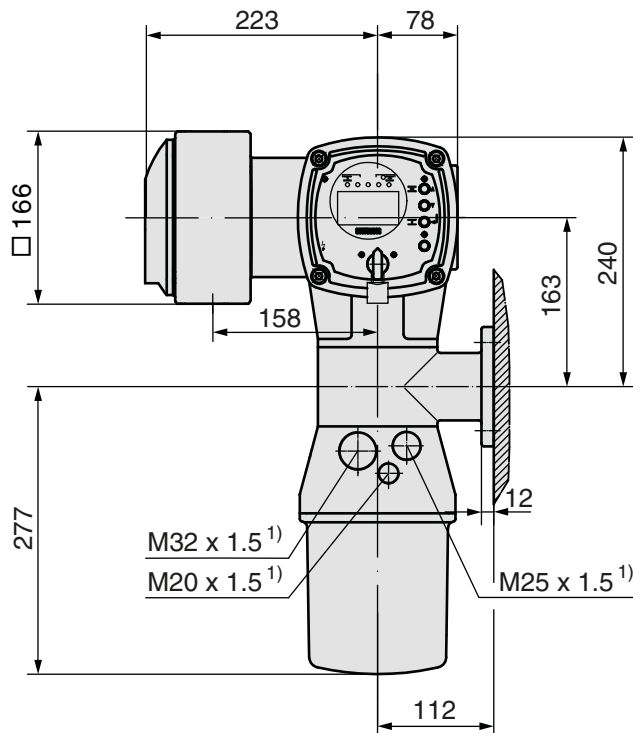
1) Steel conduit thread subject to explicit order.

Dimensions ACEXC 01.2 wall bracket

Ex plug/socket connector with terminal block (KT/KM)

Standard:

KT-Ex e with push-in connection

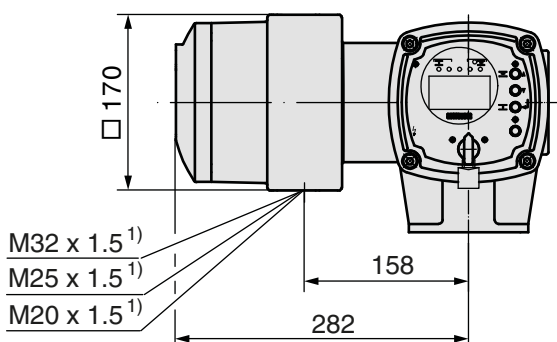


Option:

KT-Ex d with push-in connection

KM-Ex e with terminals

KM-Ex d with terminals



1) Steel conduit thread subject to explicit order.

Electrical connection Standard KP

SAEx 07.2 – SAE16.2/SAREx 07.2 – SAREx 16.2

SQEx 05.2 – SQEx 14.2/SQREx 05.2 – SQREx 14.2

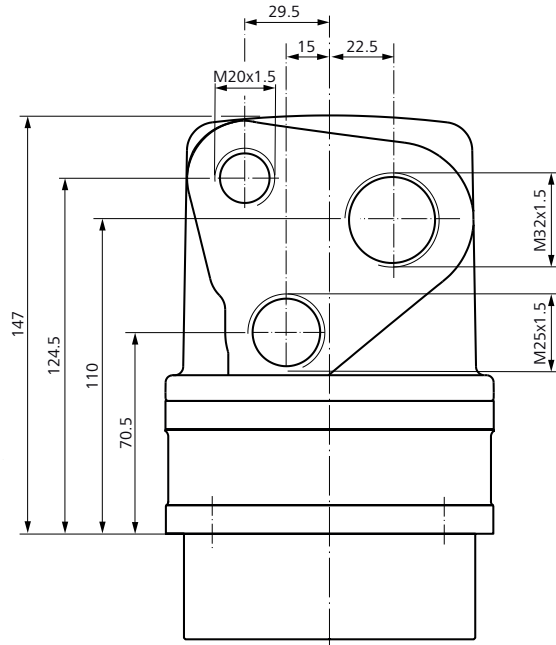
SAExC 07.1 – SAE16.1/SARExC 07.1 – SARExC 16.1

SGExC 05.1 – SGExC 12.1

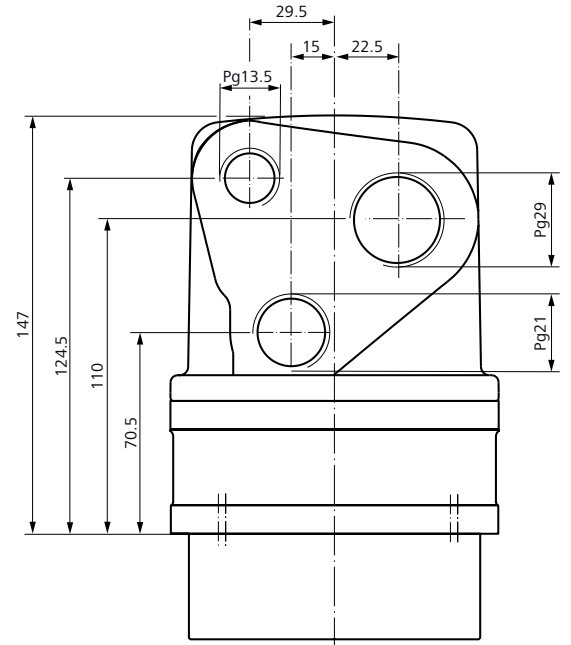
ACExC 01.2

ACExC 01.1

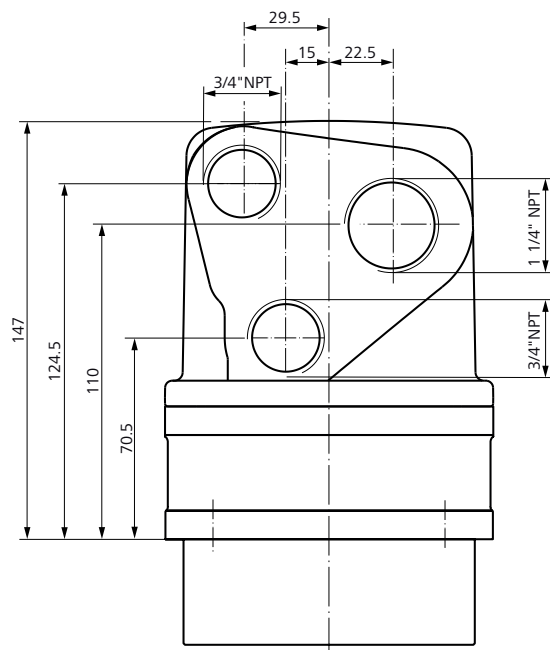
AMExC 01.1



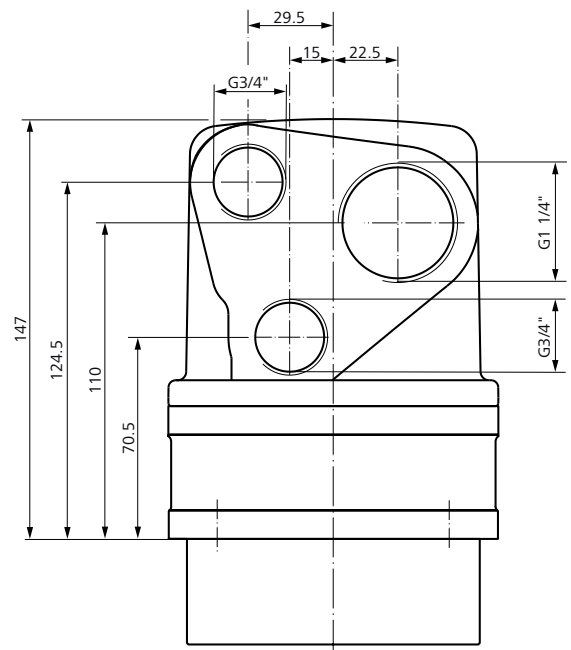
KP-105



KP-003



KP-080



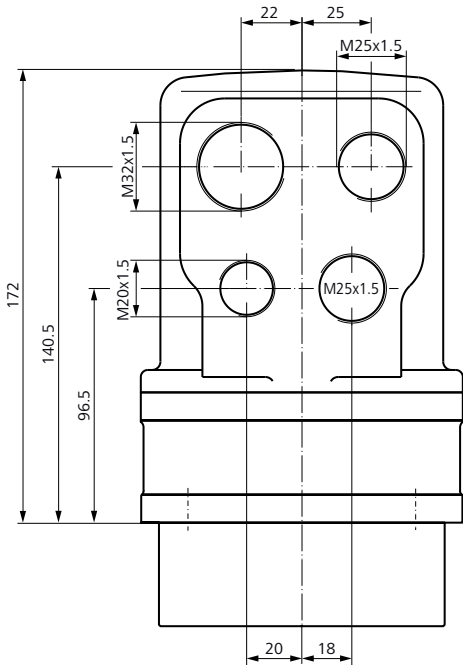
KP-179

Note: AUMA order codes KP

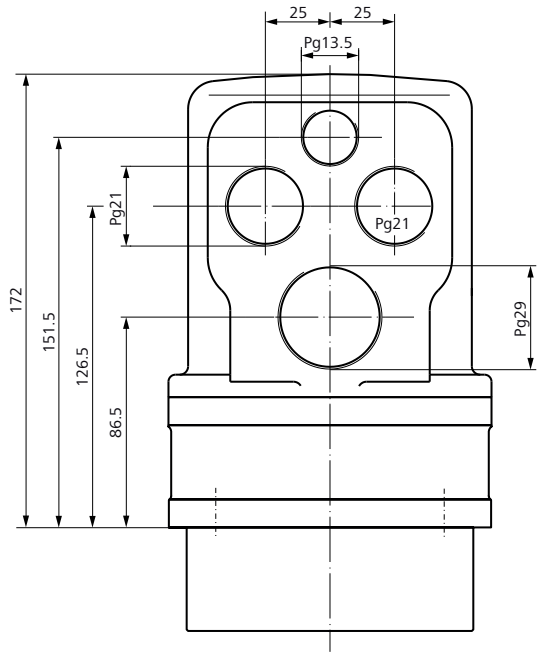
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Electrical connection with elevated terminal compartment KPH

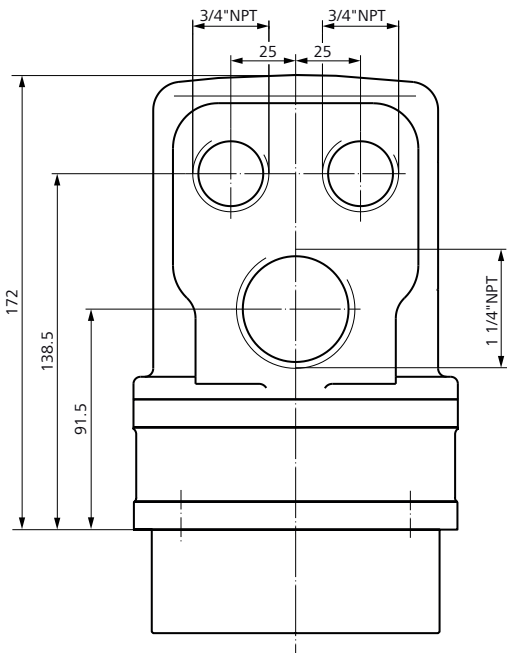
SAEx 07.2 – SAEx16.2/SAREx 07.2 – SAREx 16.2
SQEx 05.2 – SQEx 14.2/SQREx 05.2 – SQREx 14.2
SAExC 07.1 – SAExC 16.1/SARExC 07.1 – SARExC 16.1
SGExC 05.1 – SGExC 12.1
ACExC 01.2
ACExC 01.1
AMExC 01.1



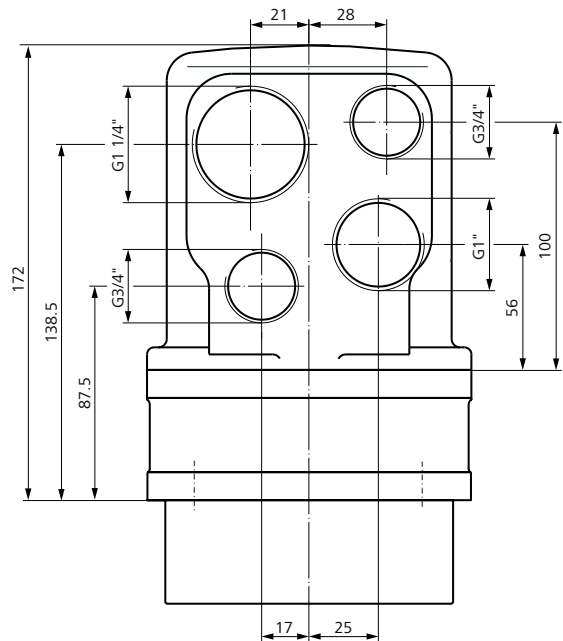
KPH-148



KPH-026



KPH-080

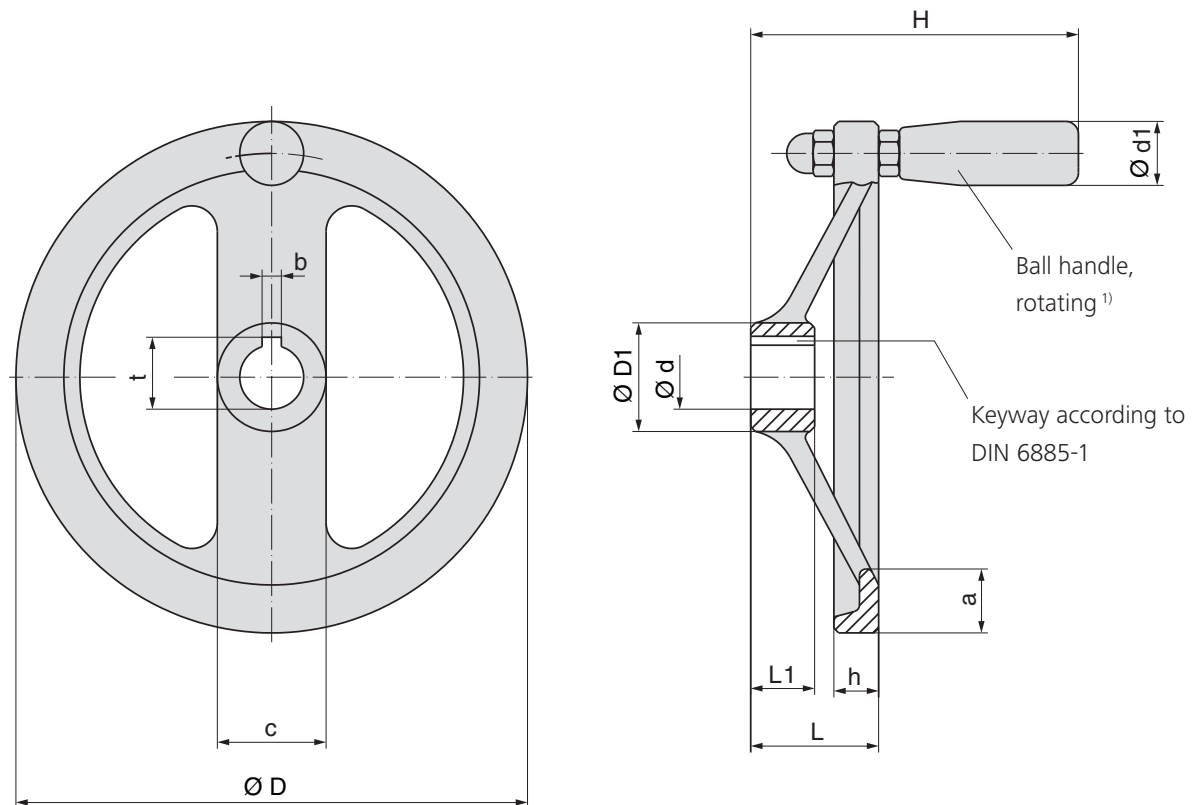


KPH-178

Note: AUMA order code KH

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

Dimensions Handwheels



AHR types made of cast aluminium alloy; colour: black

1) Ball handle

Material: Polyamide

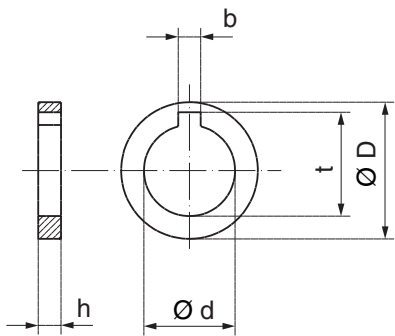
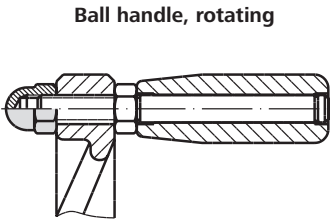
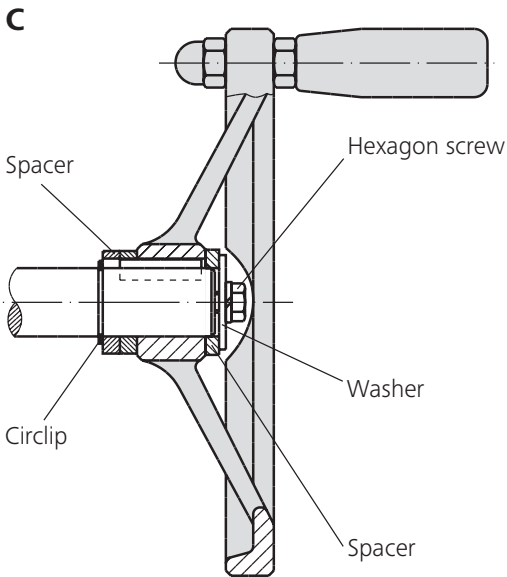
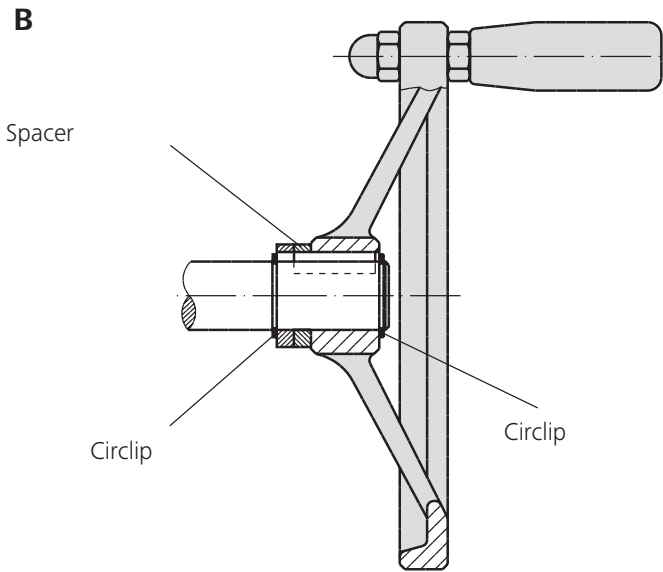
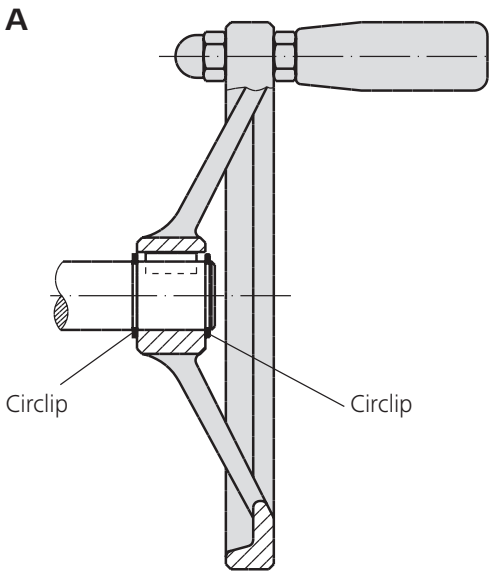
Bearing pin and mounting fixtures made of stainless steel

Dimensions (in mm)													Weight
Ø D		Ø d H9	Ø D1	H	L	L1	a	b	C	Ø d1	h	t	kg
mm	inch												
125	5	12	34	83	36	18	19	4	34	15	13	13.8	0.25
125	5	16	34	83	36	18	19	5	34	15	13	18.3	0.25
160	6	12	34	103	40	20	20	4	34	20	14	13.8	0.40
160	6 ½	16	34	103	40	20	20	5	34	20	14	18.3	0.40
160	6 ½	20	34	103	40	20	20	6	34	20	14	22.8	0.40
200	8	16	40	108	45	24	25	5	40	20	17	18.3	1.1
200	8	20	40	108	45	24	25	6	40	20	17	22.8	1.1
250	10	16	48	113	50	28	30	5	48	20	21	18.3	1.4
250	10	20	48	113	50	28	30	6	48	20	21	22.8	1.4
315	12 ½	20	56	150	56	33	33	6	56	25	23	22.8	1.8
315	12 ½	30	56	150	56	33	33	8	56	25	23	33.3	1.7
400	16	20	70	157	63	38	37	6	70	25	26	22.8	2.9
400	16	30	70	157	63	38	37	8	70	25	26	33.3	2.8
500	20	30	82	166	72	45	40	8	82	25	28	33.3	4.5
500	20	40	82	166	72	45	40	12	82	25	28	43.3	4.5
630	25	30	98	169	75	45	45	8	98	25	31	33.3	7.7
630	25	40	98	169	75	45	45	12	98	25	31	43.3	7.5
800	31 ½	30	98	185	90	55	45	8	130	25	31	33.3	10.5
800	31 ½	40	98	185	90	55	45	12	130	25	31	43.3	10.5

Please state handwheel type and Ø D/d in mm when ordering (e.g. AHR 160-20).

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Mounting proposals



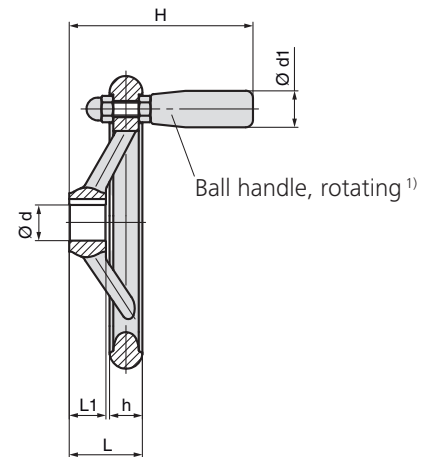
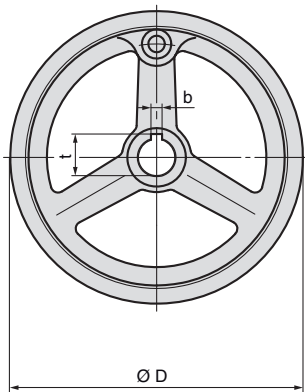
Material: Polyamide Colour: black

Spacer dimensions (in mm)					
Type	Ø D	b	Ø d	h	t
DS	20	4	12	3	13.8
DS	20	4	12	4	13.8
DS	30	5	16	2	18.3
DS	30	5	16	4	18.3
DS	30	6	20	2	22.8
DS	30	6	20	4	22.8
DS	30	6	20	5	22.8
DS	50	8	30	2	33.3
DS	50	8	30	5	33.3
DS	60	12	40	10	43.3

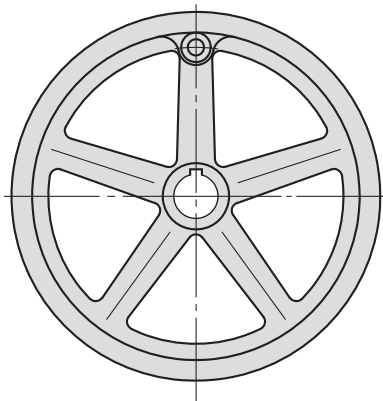
Please state spacer type, Ø d and height h in mm when ordering (e.g. DS 20x5).

Dimensions Handwheels according to DIN 950

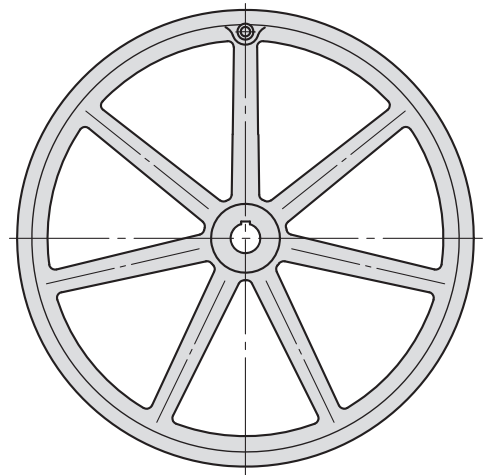
GHR 160 – GHR 200



GHR 250 – GHR 500



GHR 630 – GHR 800



GHR types made of cast iron; colour: black

1) Ball handle

Material: Polyamide

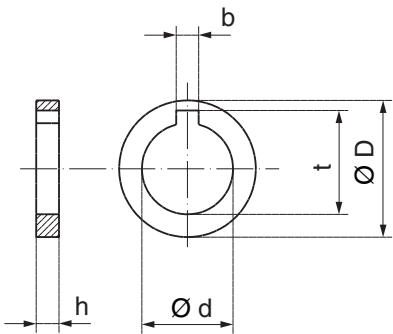
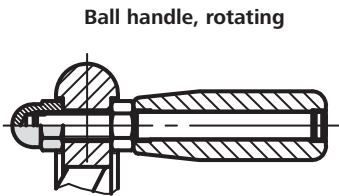
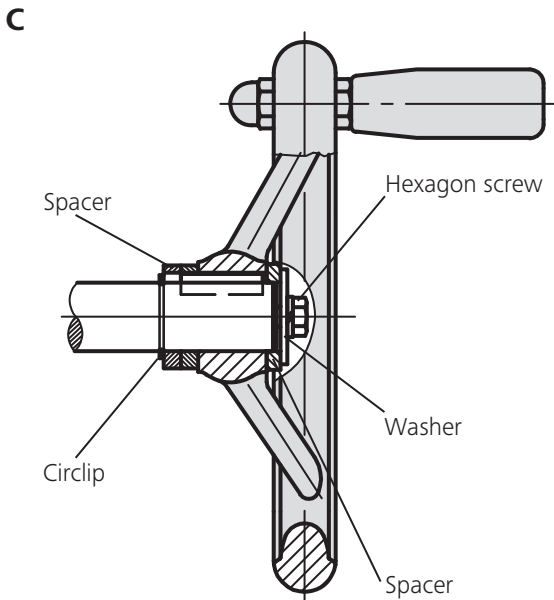
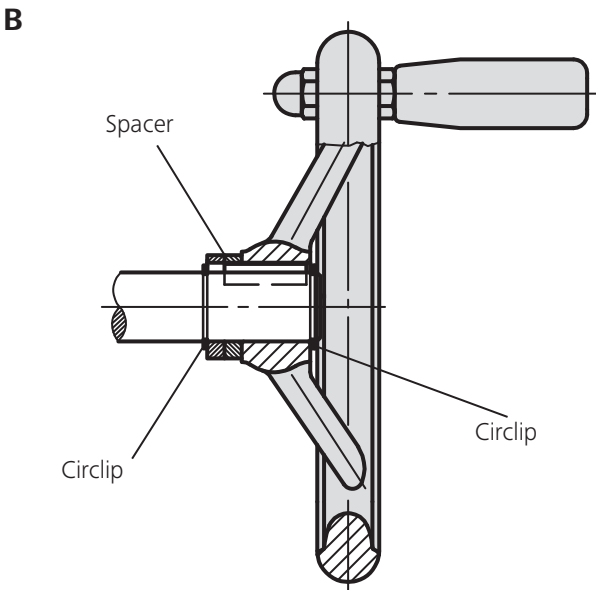
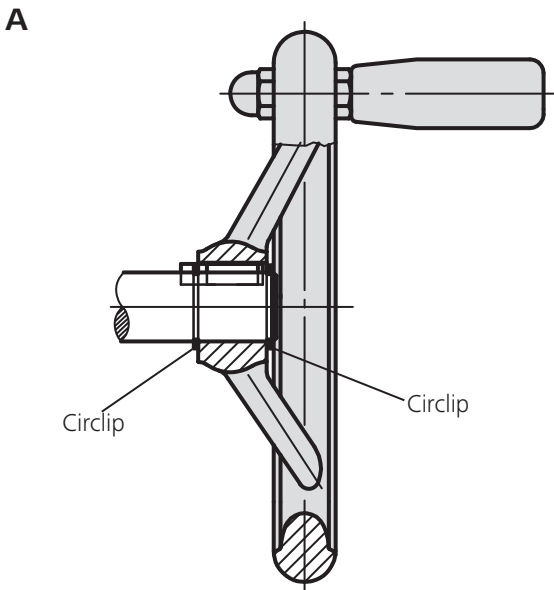
Bearing pin and mounting fixtures made of stainless steel

Dimensions (in mm)											Weight [kg]
Ø D		Ø d D9	H	L	L1	b	Ø d1	h	t		
mm	inch										
160	6 ½	16	100	40	20	5	20	18	18.3	1.35	
160	6 ½	20	100	40	20	6	20	18	22.8	1.35	
200	8	20	101	41	20	6	20	22	22.8	2.5	
250	10	20	102	42	20	6	20	26	22.8	3.9	
250	10	30	110	50	28	8	20	26	33.3	3.9	
315	12 ½	20	148	56	33	6	25	28	22.8	6.3	
315	12 ½	30	148	56	33	8	25	28	33.3	6.2	
400	16	30	154	63	38	8	25	32	33.3	9.7	
400	16	40	154	63	38	12	25	32	43.3	9.6	
500	20	30	156	65	38	8	25	34	33.3	15.6	
500	20	40	156	65	38	12	25	34	43.3	15.5	
630	25	30	161	70	38	8	25	36	33.3	21.7	
630	25	40	161	70	38	12	25	36	43.3	21.6	
800	31 ½	30	183	92	55	8	25	36	33.3	29.4	

Please state handwheel type and diameters Ø D/d in mm when ordering (e.g. GHR 160-20).

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

Mounting proposals



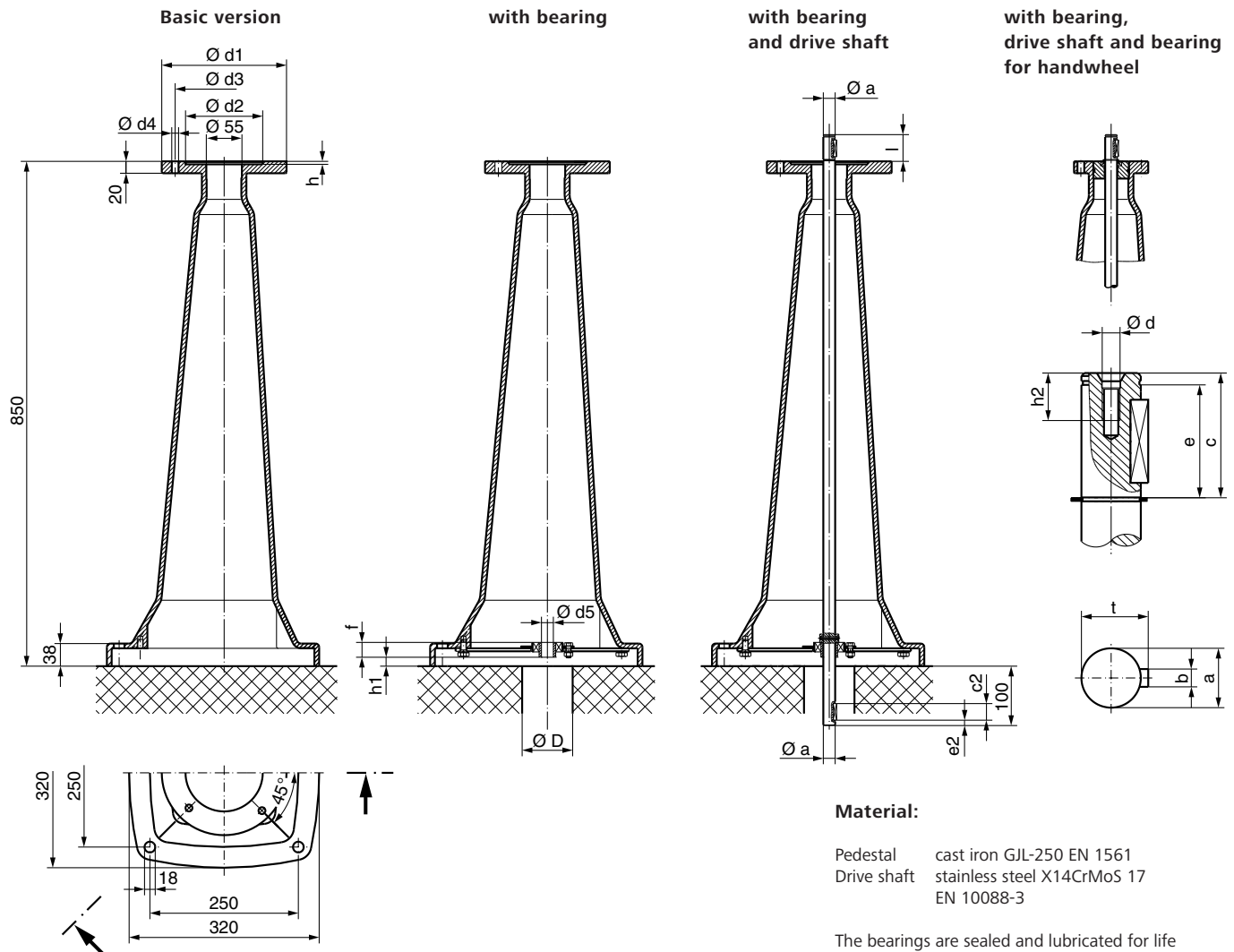
Material: Polyamide

Colour: black

Spacer dimensions (in mm)					
Type	Ø D	b	Ø d	h	t
DS	20	4	12	3	13.8
DS	20	4	12	4	13.8
DS	30	5	16	2	18.3
DS	30	5	16	4	18.3
DS	30	6	20	2	22.8
DS	30	6	20	4	22.8
DS	30	6	20	5	22.8
DS	50	8	30	2	33.3
DS	50	8	30	5	33.3
DS	60	12	40	10	43.3

Please state spacer type, Ø d and height h in mm when ordering (e.g. DS 20x5).

Dimensions Floor pedestals



Dimensions EN ISO 5210/DIN 3210	SF 10.2		SF 14.2		SF 16.2	
	F10	G0	F14	G1/2	F16	G3
Ø a h9	20		30		40	
b	6		8		12	
c	41.9		59.9		72.75	
c2	28		45		63	
d	M6		M8		M16	
Ø d1	125		175		210	
Ø d2 H9	70	60	100		130	
Ø d3	102		140		165	
Ø d4	11.5		18		22	
Ø d5	20		30		40	
e	38		55		65	
e2	9		7		9	
Ø f	31		36		44	
Ø h	5		5		5	
Ø h1	8		6		1	
Ø h2	16		16.5		32	
l	45		64		80	
t	22.5		33		43	
Ø D min.	85		100		120	
Weight kg	28 ¹⁾		30 ¹⁾		32 ¹⁾	

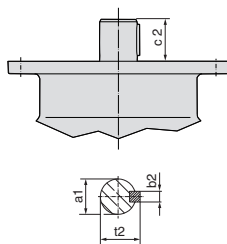
1) Basic version

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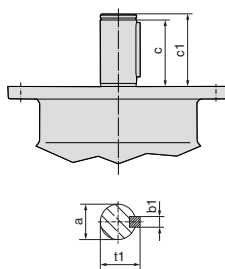
Dimensions Anti-backdrive devices

Variant with shaft

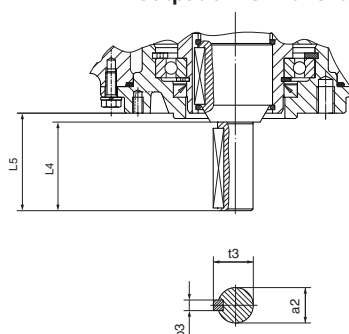
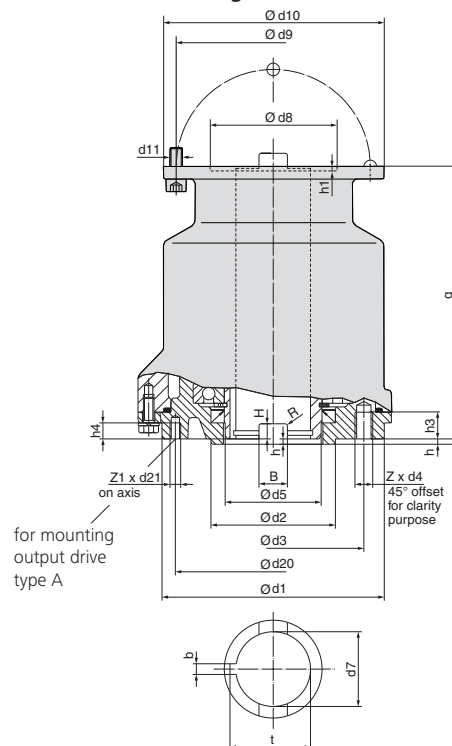
Option: Input shaft for B1
Hollow shaft connection SA.1/GK/
GST



Option: Input shaft for
handwheel assembly



Output drive with shaft end

Standard version with hollow shaft/flange
for mounting to multi-turn actuator

Dimensions	LMS 07.1		LMS 10.1		LMS 14.1			LMS 16.1	
EN ISO 5210	F10		F10		F14			F16	
Torque max. Nm	60		120		500			1000	
B E9	16		16		32			36	
H	8		8.5		17			18.5	
R	1.2		1.2		1.6			1.6	
Ø a	20	30	20	30	30	40	50	40	50
Ø a1	42		42		60			80	
Ø a2 g6	20		20		30			40	
b Js9	12		12		18			22	
b1	6	8	6/8		8	12	14	12	14
b2	12		12		18			22	
b3	6		6		8			12	
c	36	55	36	55	55	72	92	72	92
c1	40	60	40	60	60	80	100	80	100
c2	44		44		64			78	
Ø d1	125		125		175			210	
Ø d2 f8	70		70		100			130	
Ø d3	102		102		140			165	
d4	M10		M10		M16			M20	
Ø d5	54		54		79			99	
Ø d7 H9	42		42		60			80	
Ø d8 H8	70		70		100			130	
Ø d9	110		110		140			165	
Ø d10	125		125		175			210	
d11	4 x M6		4x M6		4 x M16			4 x M20	
Ø d20	110		110		155			185	
d21	M6		M6		M10			M12	
g	145		145		235			304	
h	3		3		4			5	
h1	3.5		3.5		5			6	
h3	15		15		25			25	
h4	9		9		16			20	
L4	50		50		70			90	
L5	55		55		76			97	
t	45.3		45.3		64.4			85.4	
t1	22.8	33.3	22.8	33.3	33.3	43.3	53.8	43.3	53.8
t2	45.3		45.3		64.4			85.4	
t3	22.5		22.5		33			43	
Z	4		4		4			4	
Z1	4		4		4			4	
Weight kg	10		10		30			54	

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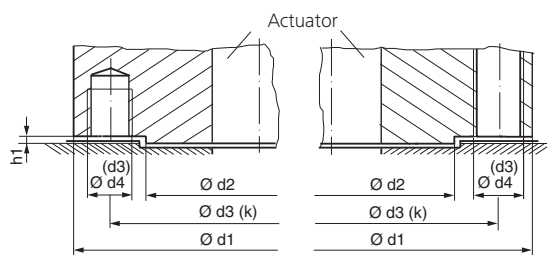
6 Dimensions Output drive types

Valve attachments for actuators and gearboxes	338
Multi-turn actuators SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2	
Output drive type B1 with output drive plug sleeve	340
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Output drive type B3D/ED bore with keyway bottom, shaft end top	343
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Output drive type A stem nut standard version	345
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Couplings (standard), square bore according to ISO 5211	357

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

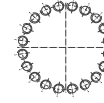
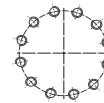
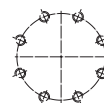


Designations deviating from EN ISO are indicated in brackets

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

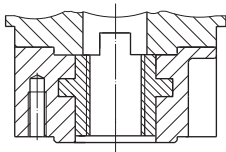
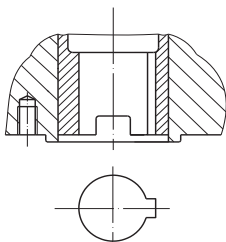
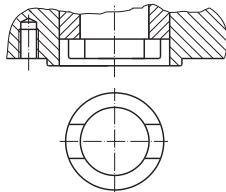
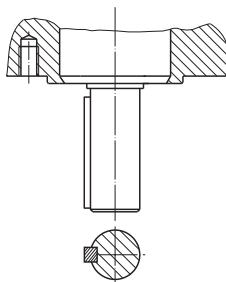
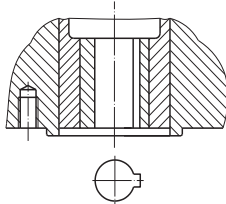
Arrangement of bores for screws Ø d4 (d3)



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.

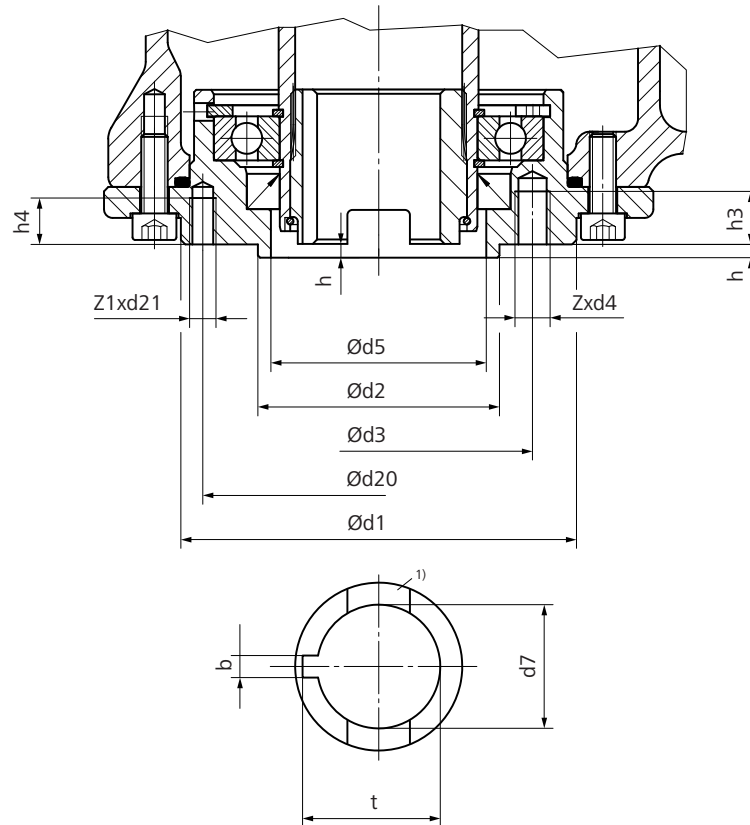
EN ISO 5210/DIN 3210/DIN3338

stem nut	EN ISO 5210	Designation		Torque transmission	Thrust possible	Application
	A	A	—	X	X	rising, non-rotating valve stem
Output drive plug sleeve 	B 1 B 2	B	—	X	—	rotating, non-rising valve stem or rising, non-rotating valve stem
Dog coupling 	—	C	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	E	—	X	—	rotating, non-rising valve stem

Dimension Output drive plug sleeve type B1

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2
SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2

Output drive type
EN ISO 5210 B1
DIN 3210 B



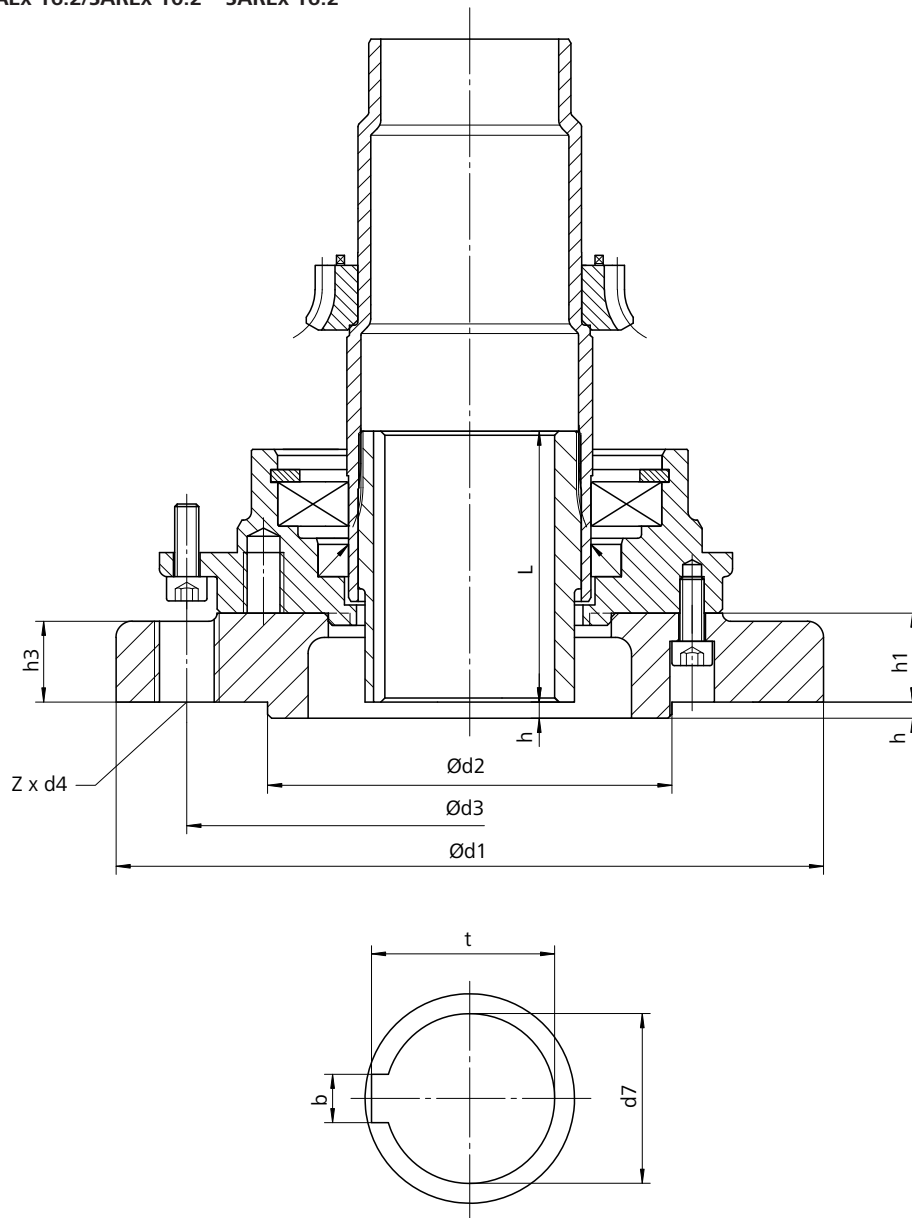
1) Prepared for fitting output drive type A

Dimensions	B1 07.2			B1 10.2		B1 14.2		B1 16.2	
EN ISO 5210/DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b JS9	8	12		12		18		22	
Ø d1	90	125		125		175		210	
Ø d2 f8	55	70	60	70	60	100		130	
Ø d3	70	102		102		140		165	
d4	M8	M10		M10		M16		M20	
Ø d5	49	64	57	64	57	90		115	
Ø d7 H9 max	28	42		42		60		80	
Ø d20	80	110		110		155		185	
d21	M6			M6		M10		M12	
h	3			3		4		5	
h3	12	13		15		25		30	
h4	10	13		9		16		20	
t	31.3	45.3		45.3		64.4		85.4	
Z	4			4		4		4	
Z1	4			4		4		4	

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

Dimensions Output drive type B1/B with extension fange

for SA 10.2 – SA 16.2/SAR 10.2 – SAR 16.2
SAEx 10.2 – SAEx 16.2/SAREx 10.2 – SAREx 16.2



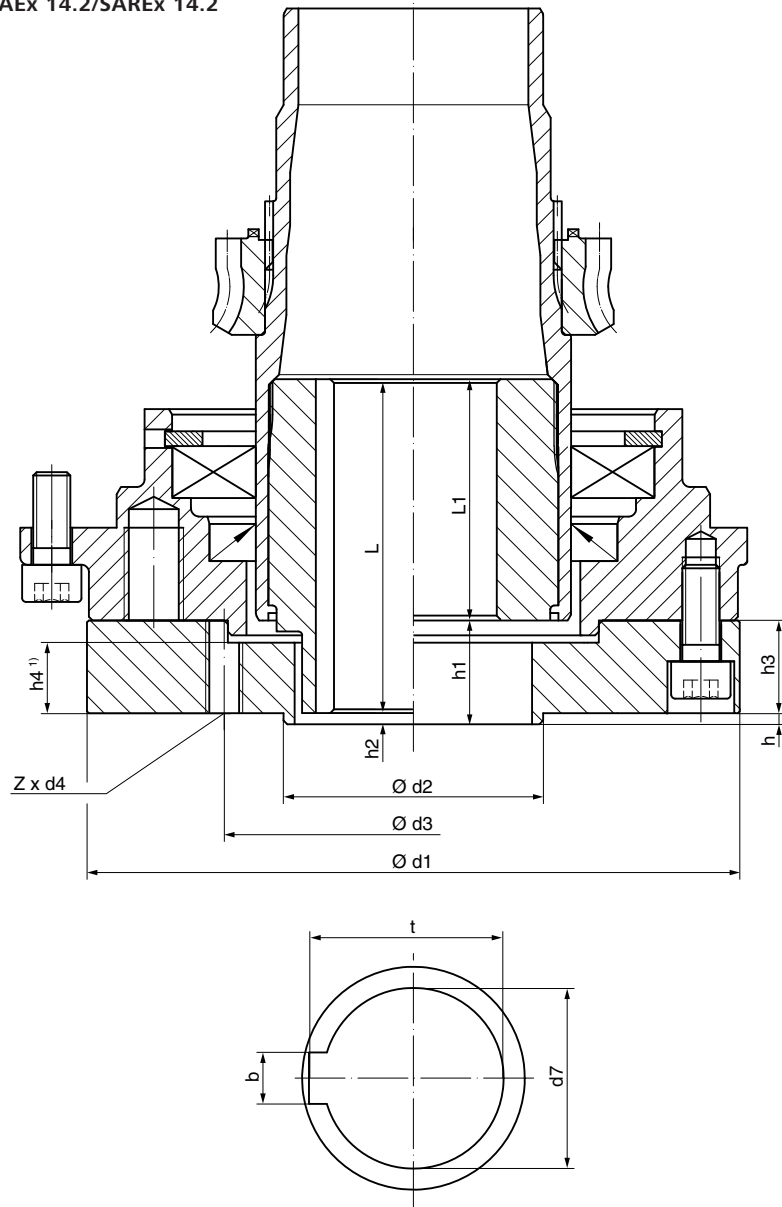
Dimensions	B1 10.2	B1 14.2	B1 16.2
Extension flange EN ISO 5210/DIN 3210	F14 / G1/2	F16 / G3	F25 / G4
b	12	18	22
Ø d1	175	210	300
Ø d2 f8	100	130	200 / 160
Ø d3	140	165	254
d4	M 16	M 20	M 16
Ø d7 max.	42	60	80
h	4	5	5
h1	22	25	28
h3	20	23	20
t	45.3	64.4	85.4
L	67	90	108
Z	4	4	8

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

Dimensions Output drive type B1/B with reduction flange

for SA 14.2/SAR 14.2/SAEx 14.2/SAREx 14.2

Output drive type
EN ISO 5210 B1
DIN 3210 B

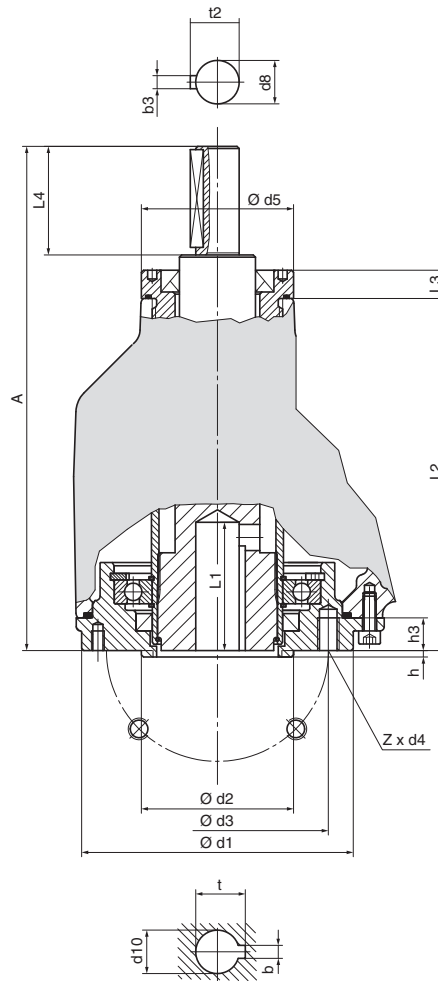


1) Usable thread length

Dimensions	B1 14.2	
Reduction flange EN ISO 5210/DIN 3210	F10	G0
b	14	14
Ø d1	176	
Ø d2 f8	70	60
Ø d3	102	
d4	M10	
Ø d7 max.	45	50
h	3	
h1	–	28
h2	3	–
h3	25	
h4 1)	19	
t	48.8	53.8
L	90	–
L1	–	65
Z	4	

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

Output drive type
ISO 5210 B3D
DIN 3210 ED



1) Dimensions depend on $\varnothing d_{10}$, refer to DIN 6885-1

Dimensions	SA 07.2/SA 07.6		SA 10.2		SA 14.2/SA 14.6			SA 16.2	
ISO 5210/DIN 3210	F07	F10/G0	F10/G0	F10/G0	F14/G1/2			F16/G3	
A	210 220	220	232	252	275	295	298	335	355
b JS9 ¹⁾	6	8	8	8	14			18	
b ₃	5 6	6	6	8	6	8	12	8	12
$\varnothing d_1$	90	125	125	125	175			210	
$\varnothing d_2$	55	70/60	70/60	70/60	100			130	
$\varnothing d_3$	70	102	102	102	140			165	
d ₄	M8	M10	M10	M10	M16			M20	
$\varnothing d_5$	55		70	70	90			105	
$\varnothing d_8$ g6	16 20	20	20	30	20	30	40	30	40
$\varnothing d_{10}$ H9 max.	20	30	30	30	45			60	
h	3		3	3	4			5	
h ₃	12	13	15	15	25			30	
L ₁	49	58	59	59	84			105	
L ₂	153		162	162	188			227	
L ₃	13		13	13	13			15	
L ₄	40 50	50	50	70	50	70	90	70	90
t ¹⁾	22.8	33.3	33.3	33.3	48.8			64.4	
t ₂	18.0 22.5	22.5	22.5	33	22.5	33	43	33	43
Z	4		4	4	4			4	

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

Dimensions Output drive type IB/IE - insulated output drive

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2

SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2

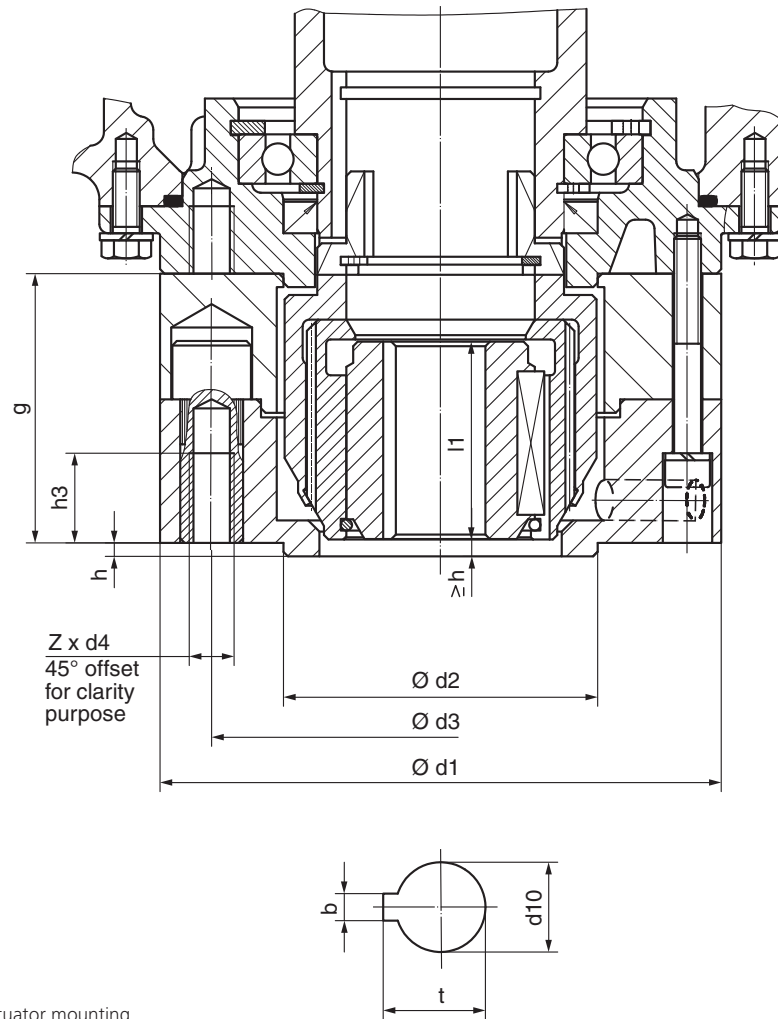
Output drive type

ISO 5210

IB3/IB1

DIN 3210

IE/IB



1) with intermediate flange for actuator mounting

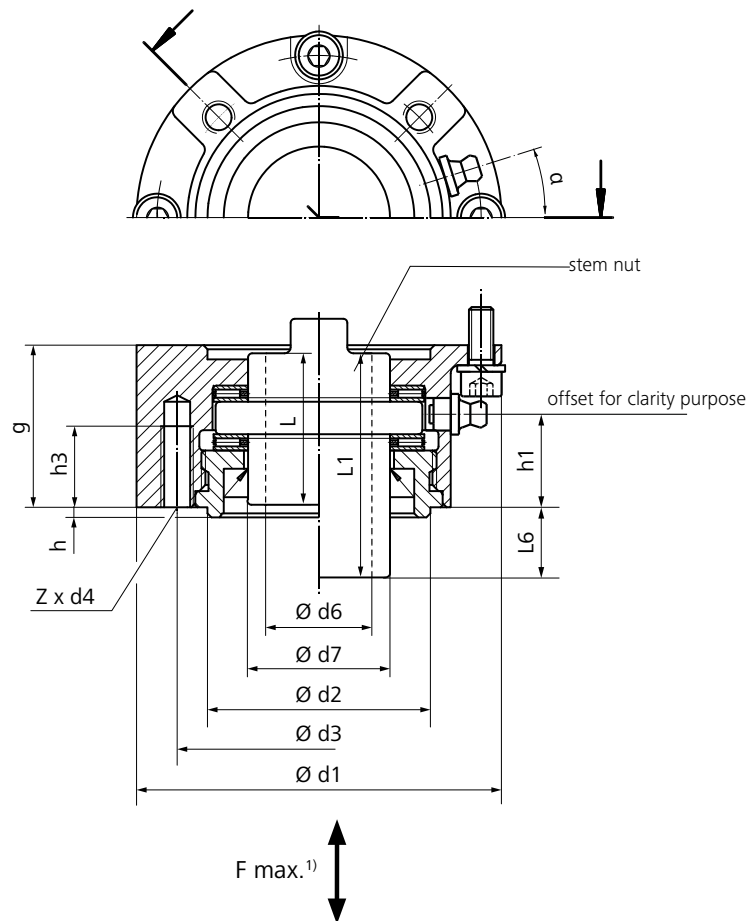
Dimensions	IB3 07.2	IB3 10.2	IE 10.2	IB3 14.2	IE 14.2	IB3 16.2	IE 16.2
ISO 5210/DIN 3210	F07 ¹⁾	F10	G0	F14	G1/2	F16	G3
b JS9	5	6		8		12	
Ø d1	90	125		180		210	
Ø d2 f8	55	70	60	100		130	
Ø d3	70	102		140		165	
d4	M8	M10		M16		M20	
Ø d10 H9	16	20		30		40	
g	60	60		90		110	
h	3	3		4		5	
h3	16	20		30		35	
l1	28	36		55		65	
t	18.3	22.8		33.3		43.3	
Z	4	4		4		4	
Deviating dimensions IB1/IB	IB1 07.2	IB1 10.2	IB 10.2	IB1 14.2	IB 14.2	IB1 16.2	IB 16.2
ISO 5210/DIN 3210	F07 ¹⁾	F10	G0	F14	G1/2	F16	G3
b JS9	8	12		18		22	
Ø d10 H9	28	42		60		80	
t	31.3	45.3		64.4		85.4	

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

Dimensions Output drive stem nut type A

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2
 SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2
 GK 10.2 – GK 16.2/GST 10.1 – GST 16.1

Output drive type
 EN ISO 5210 A
 DIN 3210 A



1) permissible axial load

2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

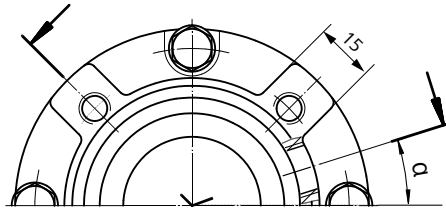
3) when mounting to multi-turn actuator sizes 07.2/07.6, refer to Dimensions Multi-turn actuators for max. nominal diameter

Dimensions	A 07.2	A 10.2	A 14.2	A 16.2
EN ISO 5210/DIN 3210	F07	F10 G0	F14 G1/2	F16 G3
F max. [kN] ¹⁾	40	70	160	250
Ø d1	90	125	175	210
Ø d2 f8	55	70 60	100	130
Ø d3	70	102	140	165
d4	M8	M10	M16	M20
Ø d6 max. ²⁾	Tr 26 ACME 1"	Tr 40 ³⁾ ACME 1½" ³⁾	Tr 55 ACME 2¼"	Tr 75 ACME 3"
Ø d7	35	50	75	99
g	40	50	65	80
h	3	3	4	5
h1	23	30	38	45
h3	12	15	25	35
L	37.5	47.5	61.5	76.5
L1	55.5	70.5	90	112.5
L6	18	23	28.5	36
Z	4	4	4	4
α	17.5°	17.5°	22.5°	22.5°
Weight: Standard Version [kg]	1.1	2.8	6.8	11.7
Weight: Extended Version [kg]	1.3	3.2	7.8	14.2

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

Dimensions Output drive stem nut type A for stem lubrication

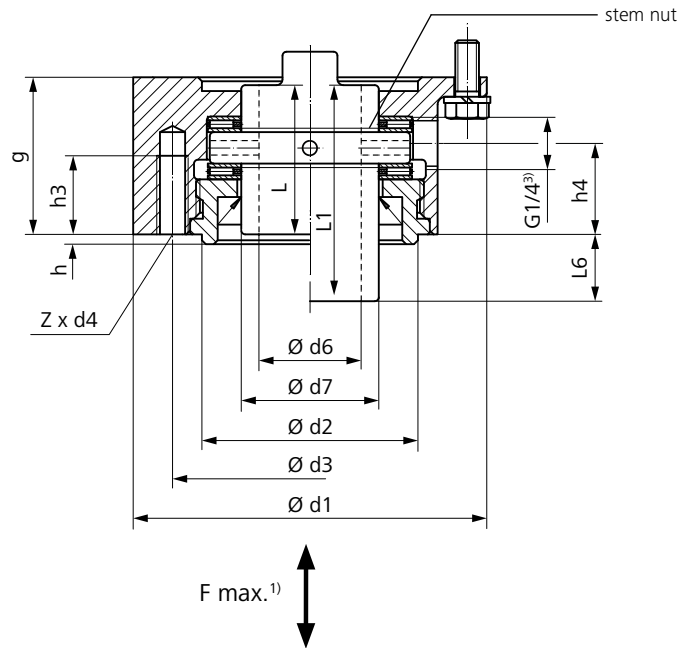
for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2
 SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2
 GK 10.2 – GK 16.2/GST 10.1 – GST 16.1



Output drive type

EN ISO 5210 A

DIN 3210 A



1) permissible axial load

2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

3) G 1/4 internal thread for the connection of grease nipple or permanent lubricator.

AUMA recommend: Simalube single point lubricator SL01 (distributed by: Grützner GmbH; www.simalube.de)

4) when mounting to multi-turn actuator sizes 07.2/07.6, refer to Dimensions Multi-turn actuators for max. nominal diameter

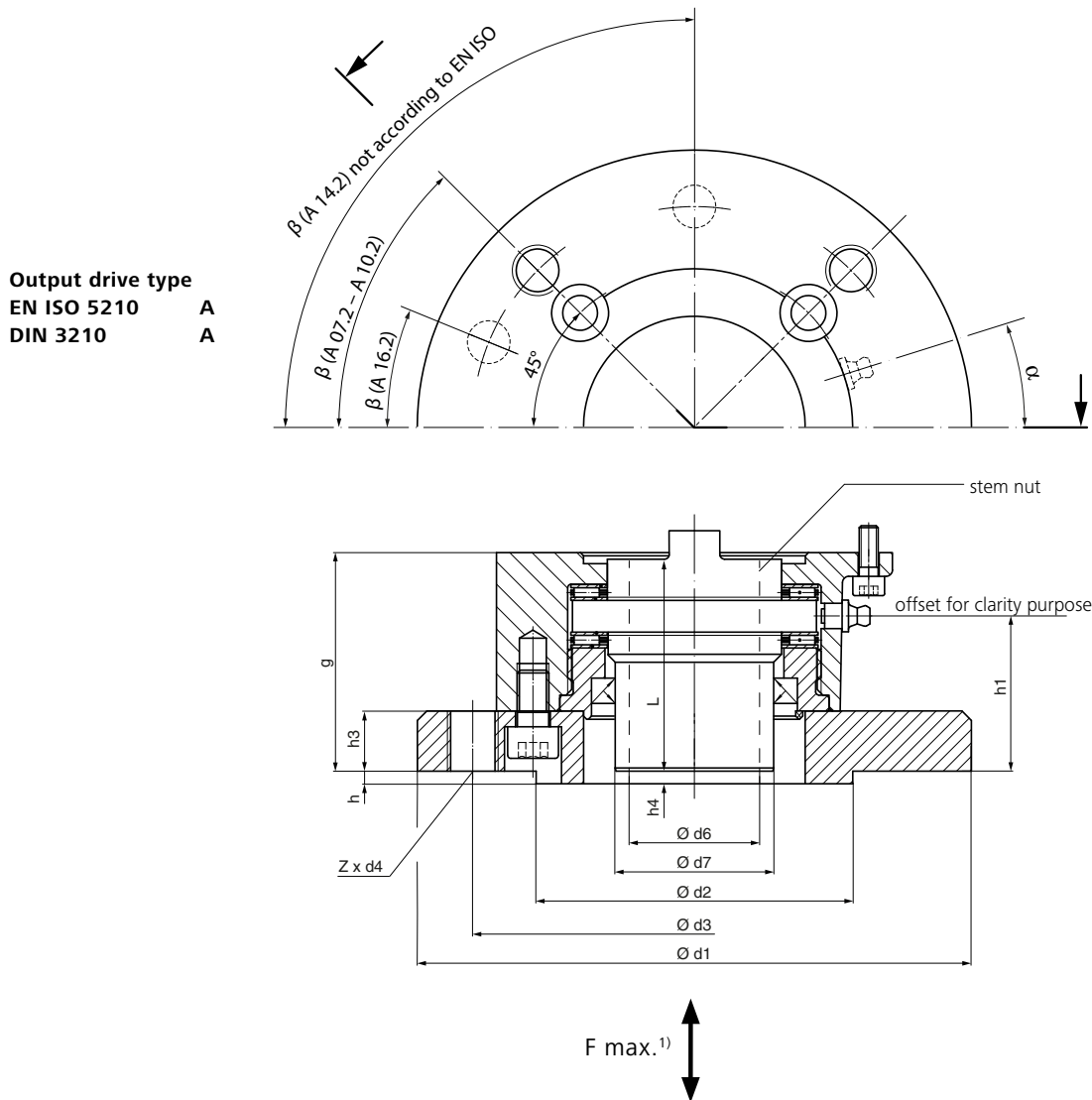
Dimensions	A 07.2	A 10.2	A14.2	A 16.2
EN ISO 5210/DIN 3210	F07	F10 G0	F14 G1/2	F16 G3
F max. [kN] ¹⁾	40	70	160	250
Ø d1	90	125	175	210
Ø d2 f8	55	70 60	100	130
Ø d3	70	102	140	165
d4	M8	M10	M16	M20
Ø d6 max. ²⁾	Tr 26 ACME 1"	Tr 40 ⁴⁾ ACME 1½" ⁴⁾	Tr 55 ACME 2¼"	Tr 75 ACME 3"
Ø d7	35	50	75	99
g	40	50	65	80
h	3	3	4	5
h3	12	15	25	35
h4	23	30	38	45
L	37.5	47.5	61.5	76.5
L1	55.5	70.5	90	112.5
L6	18	23	28.5	36
Z	4	4	4	4
α	17.5°	17.5°	22.5°	22.5°
Weight: Standard version [kg]	1.1	2.8	6.8	11.7
Weight: Extended version [kg]	1.3	3.2	7.8	14.2

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

Dimensions Output drive stem nut type A with extension flang

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2

SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2



1) permissible axial load

2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

3) when mounting to multi-turn actuator sizes 07.2/07.6, refer to Dimensions Multi-turn actuators for max. nominal diameter

Dimensions	A 10.2		A 14.2		A 16.2	
EN ISO 5210/DIN 3210	F14	G1/2	F16	G3	F25	G4
F max. [kN] ¹⁾	70		160		250	
Ø d1	175		210		300	
Ø d2 f8	100		130		200	
Ø d3	140		165		254	
d4	M16		M20		M16	
Ø d6 max. ²⁾	Tr 40 ³⁾		Tr 55		Tr 75	
	ACME 1½" ³⁾		ACME 2¼"		ACME 3"	
Ø d7	50		75		99	
g	69		92.5		118	
h	4		5		5	
h1	49		65.5		83	
h3	19		27.5		36	
h4	0		4		7	
L	70.5		90		112.5	
Z	4		4		8	
α	17.5°		22.5°		22.5°	
β	45°		90°		22.5°	
Weight [kg]	8.7		13.5		31.5	

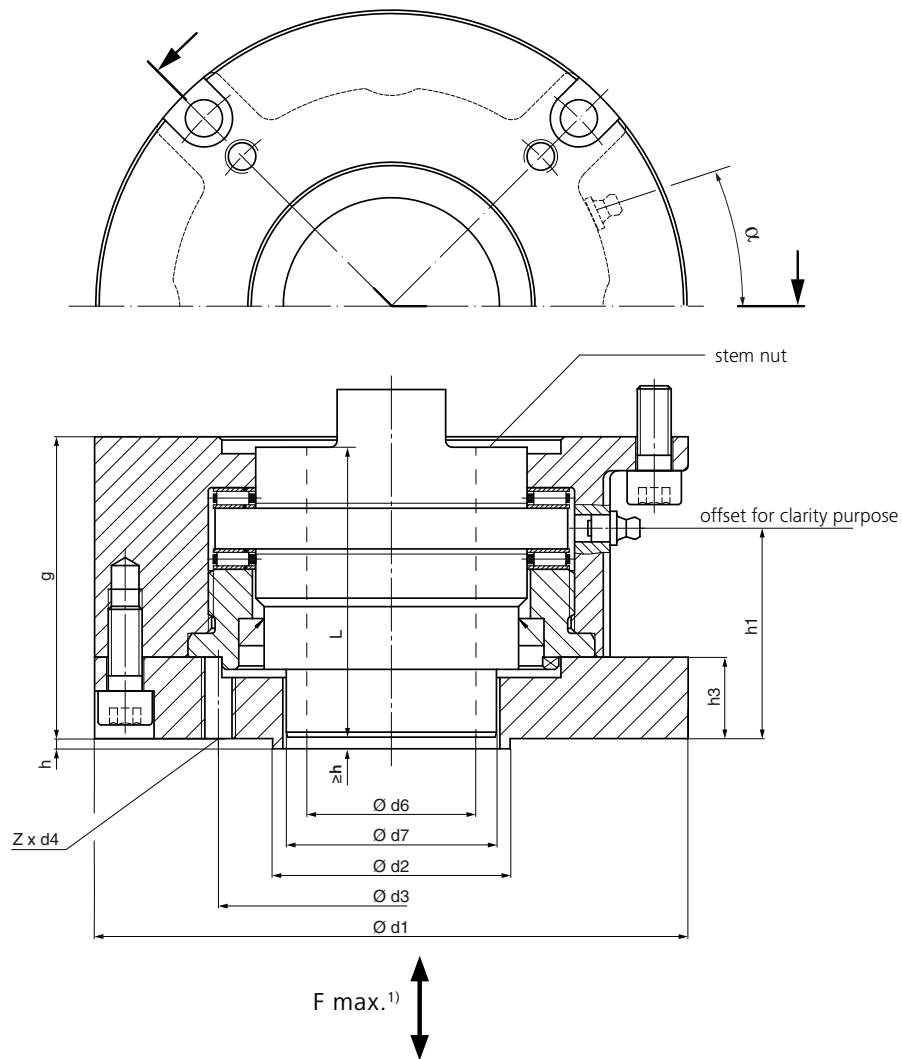
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Dimensions Output drive stem nut type A with reduction flang

for SA 14.2 – SA 16.2/SAR 14.2 – SAR 16.2

SAEx 14.2 – SAEx 16.2/SAREx 14.2 – SAREx 16.2

Output drive type
EN ISO 5210 A
DIN 3210 A



1) permissible axial load

2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

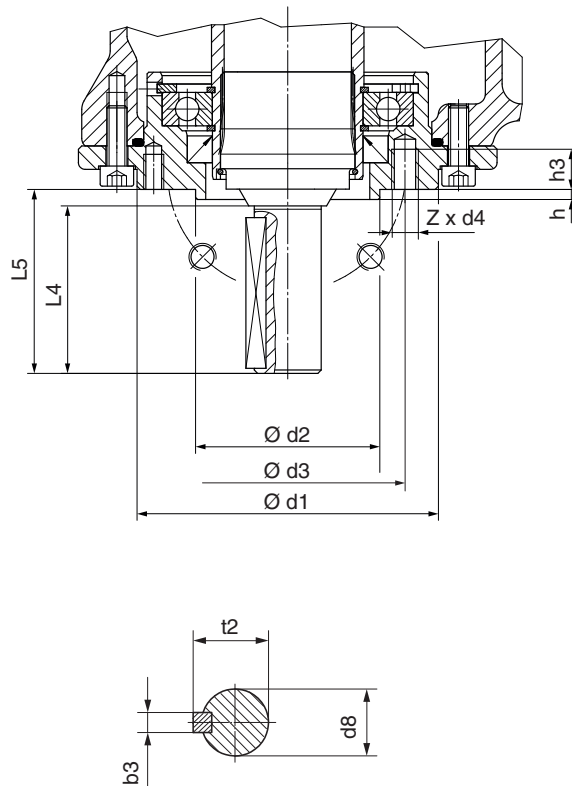
Dimensions	A 14.2			A 16.2
EN ISO 5210/DIN 3210	F10	G0	F12	F14
F max. [kN] ¹⁾		160		250
Ø d1		175		210
Ø d2 f8	70	60	85	100
Ø d3	102		125	140
d4	M10		M12	M16
Ø d6 max. ²⁾	Tr 48 ACME 1 3/4"	Tr 40 ACME 1 1/2"	Tr 48 ACME 1 3/4"	Tr 65 ACME 2 1/2"
Ø d7	62	52	62	88
g		89		111
h		3		4
h1		62		76
h3		24		31
L		85.5		108
Z		4		4
α		22.5°		22.5°
Weight [kg]	12.2	12.2	12.4	14.5

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

Dimensions output drive type shaft end D

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2

SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2

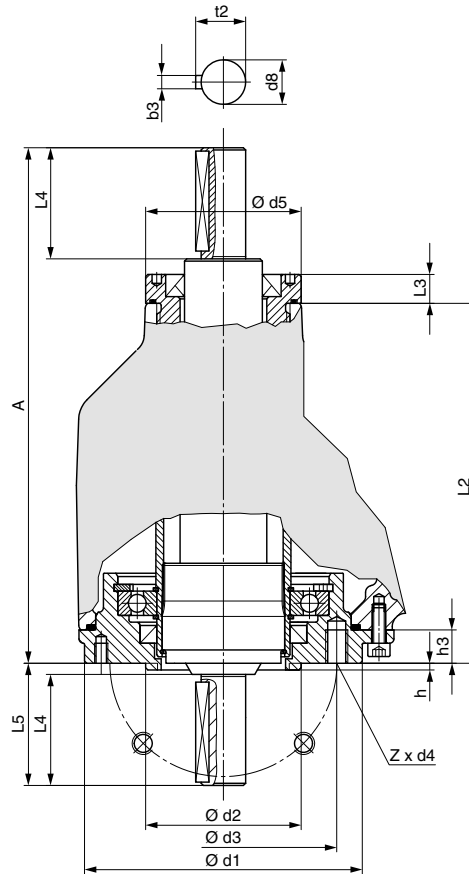
Output drive type
DIN 3210 D

Dimensions	D 07.2			D 10.2		D 14.2		D 16.2	
ISO 5210/DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
b3	6			6		8		12	
Ø d1	90	125		125		175		210	
Ø d2 f8	55	70	60	70	60	100		130	
Ø d3	70	102		102		140		165	
d4	M8	M10		M10		M16		M20	
d8 g6	20			20		30		40	
h	3			3		4		5	
h3	12	13		15		25		30	
L4	50			50		70		90	
L5	55			55		76		97	
t2	22.5			22.5		33		43	
Z	4			4		4		4	

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

SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2
SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2
Dimensions output drive type DD, shaft end bottom and top

Output drive type
DIN 3210 DD



Dimensions	SA 07.2/SA 07.6			SA 10.2		SA 14.2/SA 14.6		SA 16.2	
ISO 5210/DIN 3210	F07	F10	G0	F10	G0	F14	G1/2	F16	G3
A	220			232		295		335/355	
b3	6			6		8		8/12	
Ø d1	90	125		125		175		210	
Ø d2	55	70	60	70	60	100		130	
Ø d3	70	102		102		140		165	
d4	M8	M10		M10		M16		M20	
Ø d5	55			70		90		105	
d8 g6	20			20		30		30/40	
h	3			3		4		5	
h3	12	13		15		25		30	
L2	153			162		188		227	
L3	13			13		13		15	
L4	50			50		70		70/90	
L5	55			55		76		77/97	
t2	22.5			22.5		33		33/43	
Z	4			4		4		4	

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

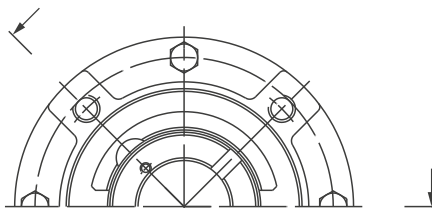
Dimensions Output drive type AF - with spring-loaded stem nut

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2

SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2

GK 10.2 – GK 16.2

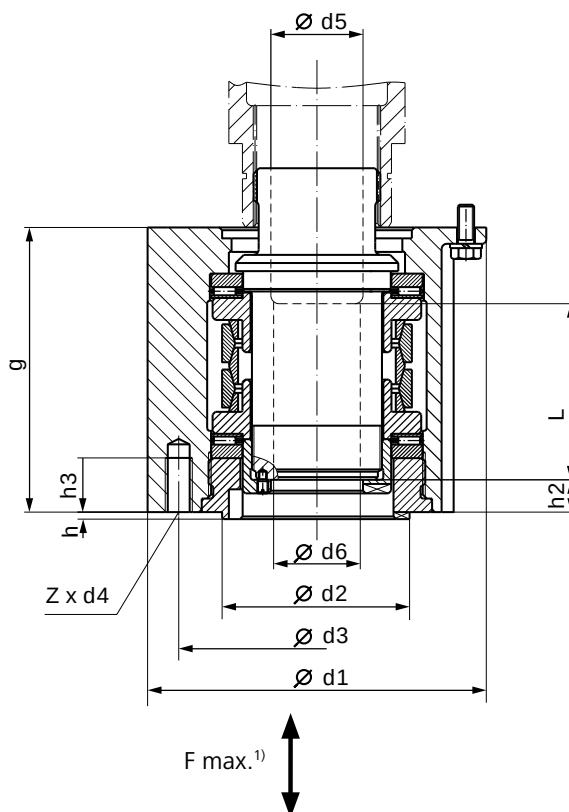
GST 10.1 – GST 16.1



Output drive type

ISO 5210 AF

DIN 3210 AF



1) permissible axial load

2) Only for SA/SAR 07.2, 07.6

3) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

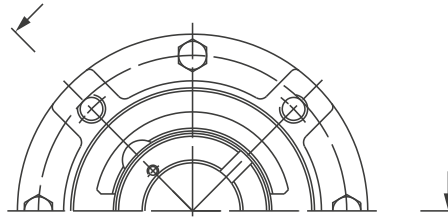
4) For stem protection tube made of PMMA max. Tr 30 or ACME 1 1/8"

Dimensions	AF 07.2 ²⁾		AF 07.6 ²⁾		AF 10.2		AF 14.2		AF 16.2	
ISO 5210/DIN 3210	F10	G0	F10	G0	F10	G0	F14	G1/2	F16	G3
F max. [kN] ¹⁾	16		33		52		100		160	
Ø d1	125				125		175		210	
Ø d2 f8	70	60	70	60	70	60	100		130	
Ø d3	102				102		140		165	
d4	M10				M10		M16		M20	
Ø d5	34				34		53		67	
Ø d6 max. ³⁾	Tr 32 ⁴⁾ ACME 1¼" ⁴⁾				Tr 32 ACME 1¼"		Tr 50 ACME 2"		Tr 65 ACME 2½"	
g	105				105		135		165	
h	3				3		4		4	
h2	12				12		13		15	
h3	20				20		25		35	
L	65				65		90		110	
Z	4				4		4		4	
Weight [kg]	5.2				5.5		13.7		23	

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

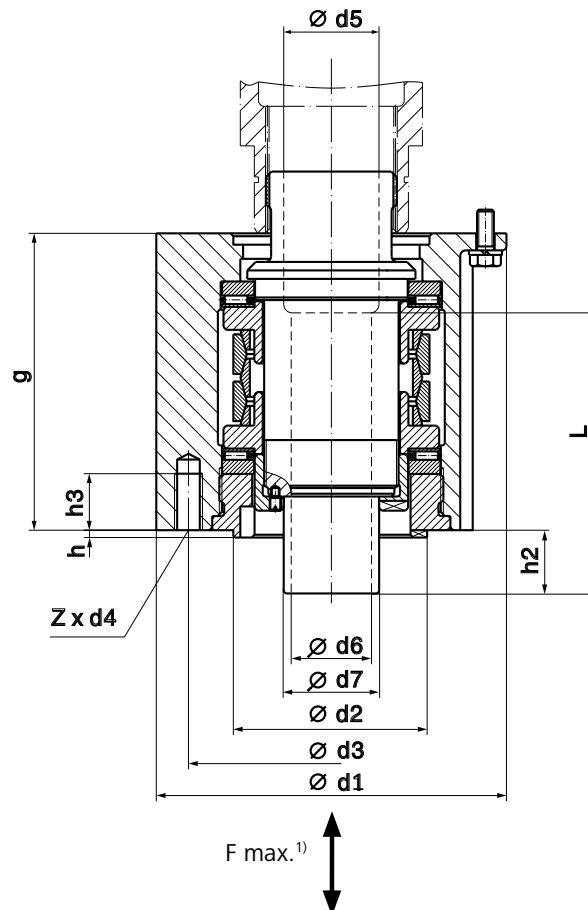
Dimensions Output drive type AF - with extended spring loaded stem nut

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2
SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2



Output drive type

ISO 5210 AF
DIN 3210 AF



1) permissible axial load

2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

Dimensions	AF 07.2		AF 07.6		AF 10.2		AF 16.2	
ISO 5210/DIN 3210	F10	G0	F10	G0	F10	G0	F16	G3
F max. [kN] ¹⁾	16		33		52		160	
Ø d1	125		125		125		210	
Ø d2 f8	70	60	70	60	70	60	130	
Ø d3	102		102		102		165	
d4	M10		M10		M10		M20	
Ø d5	34		34		34		67	
Ø d6 max. ²⁾	Tr 26 ACME 1"		Tr 26 ACME 1"		Tr 26 ACME 1"		Tr 52 ACME 2"	
Ø d7	33		33		33		65	
g	105		105		105		165	
h	3		3		3		4	
h2	23.5		23.5		23.5		49	
h3	20		20		20		35	
L	100		100		100		110	
Z	4		4		4		4	
Weight [kg]	5.4		5.7		5.7		25.5	

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

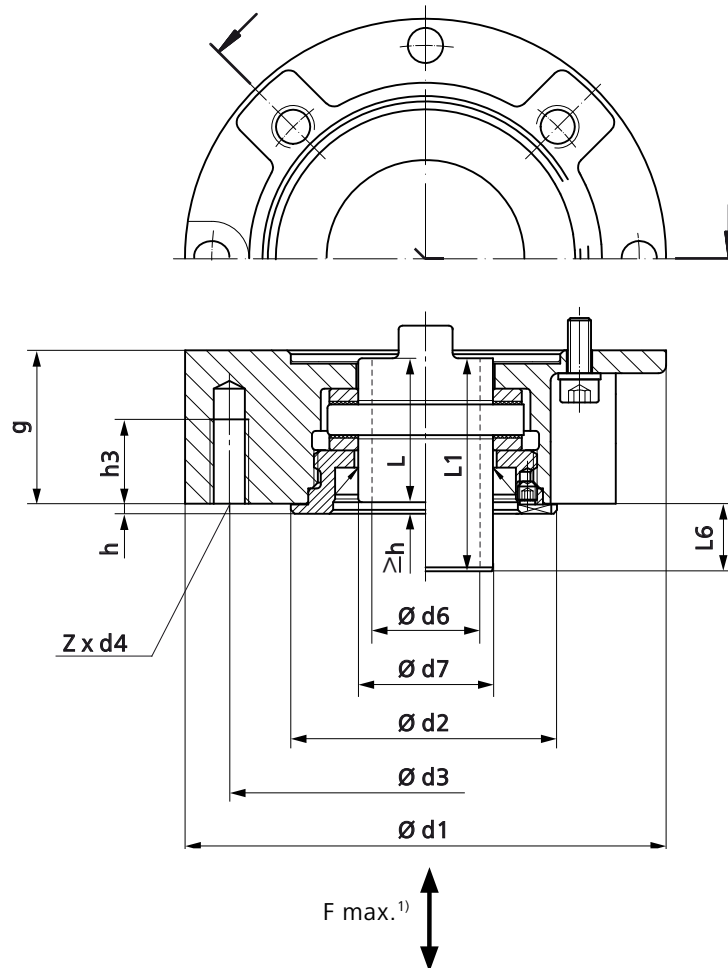
Dimensions Output drive AG stem nut for oxygen application

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2

SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2

GK 10.2 – GK 16.2

GST 10.1 – GST 16.1

Output drive
EN ISO 5210 AG

1) permissible axial load

2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

3) when mounting to multi-turn actuator sizes 07.2/07.6, refer to Dimensions Multi-turn actuators for max. nominal diameter

Dimensions	AG 10.2	AG 14.2	AG 16.2
EN ISO 5210	F10	F14	F16
F max. [kN] ¹⁾	70	160	250
Ø d1	125	175	210
Ø d2 f8	70	100	130
Ø d3	102	140	165
d4	M10	M16	M20
Ø d6 max. ²⁾	Tr 40 ³⁾	Tr 55	Tr 75
	ACME 1½" ³⁾	ACME 2¼"	ACME 3"
Ø d7	50	75	99
g	50	65	80
h	3	4	5
h3	22	25	35
L	47.5	61.5	76.5
L1	70.5	90	112.5
L6	23	28.5	36
Z	4	4	4
Weight: Standard Version [kg]	2.8	6.8	11.7
Weight: Extended Version [kg]	3.2	7.8	14.2

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

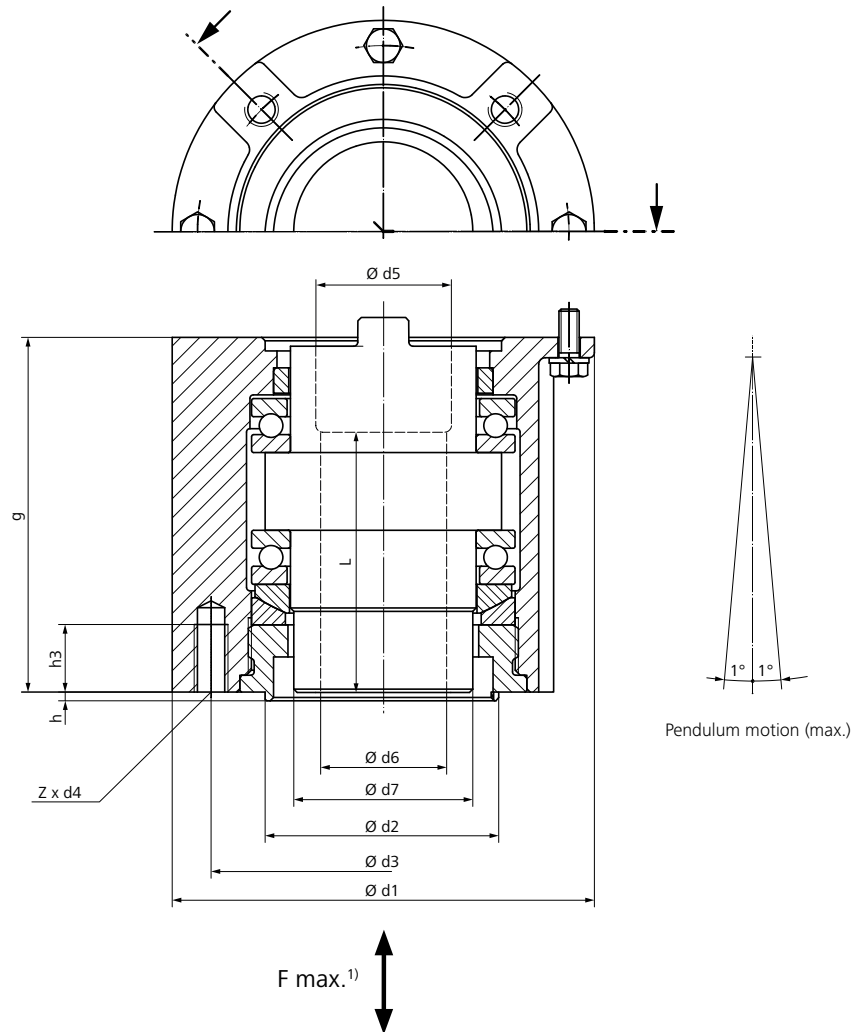
Dimensions Output drive type AK

for SA 07.2 – SA 16.2/SAR 07.2 – SAR 16.2

SAEx 07.2 – SAEx 16.2/SAREx 07.2 – SAREx 16.2

GK 10.2 – GK 16.2

GST 10.1 – GST 16.1

Output drive type
EN ISO 5210 AK

1) permissible axial load

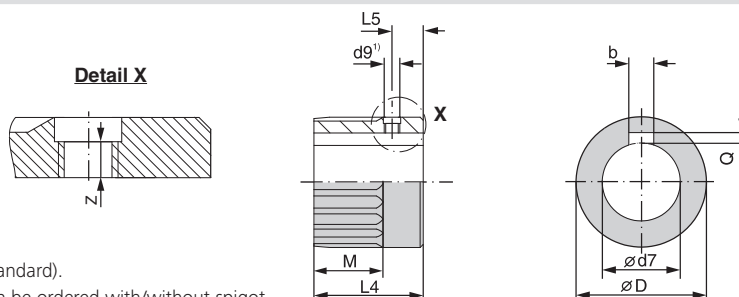
2) nominal diameter for trapezoidal thread Tr according to DIN 103 or ACME according to ANSI/ASME B 1.5

3) when mounting to multi-turn actuator sizes 07.2/07.6, refer to Dimensions Multi-turn actuators for max. nominal diameter

Dimensions	AK 10.2		AK 14.2		AK 16.2	
	F10	G0	F14	G1/2	F16	G3
EN ISO 5210/DIN 3210						
F max. [kN] ¹⁾		70		160		250
Ø d1		125		175		210
Ø d2 f8	70	60	100		130	
Ø d3		102	140		165	
d4		M10	M16		M20	
Ø d5		41	58		76	
Ø d6 max. ²⁾		Tr 40 ³⁾ ACME 1½" ³⁾	Tr 55 ACME 2¼"		Tr 75 ACME 3¼"	
Ø d7		53	78		97	
g		105	135		165	
h		3	4		4	
h3		20	25		35	
L		65	90		110	
Z		4	4		4	
Weight kg		5.5	13.7		23	

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



1) Thread with grub screw made of A2

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

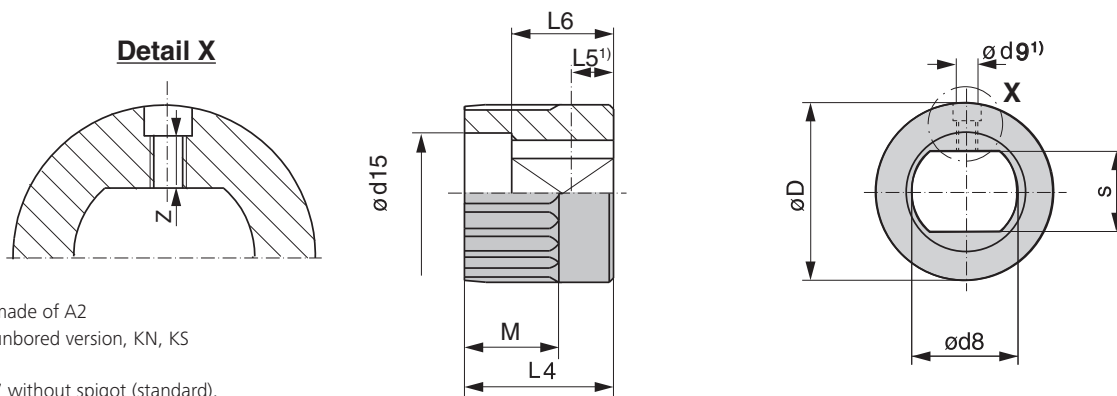
3) Combined f ange F05/F07 without spigot (standard).

As an alternative an individual f ange F07 can be ordered with/without spigot

Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	Ø d7 max.	Ø d7 H8		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	Z009.977	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	Z009.992	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 04.1/05.1 SVC/SVM 05.1 SG 05.2 SG 05.3 GS 50.3 F05 GHE 05.1 SGM 04.1/05.1	Z010.132	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 GHE 07.1 SVC/SVM 07.1/5	Z010.369	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
							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	Z010.169	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	Z010.658	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	Z010.302	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	Z010.328	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	Z044.911	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	Z010.368	67.6	55	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 ..				
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 ..				

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-f at 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

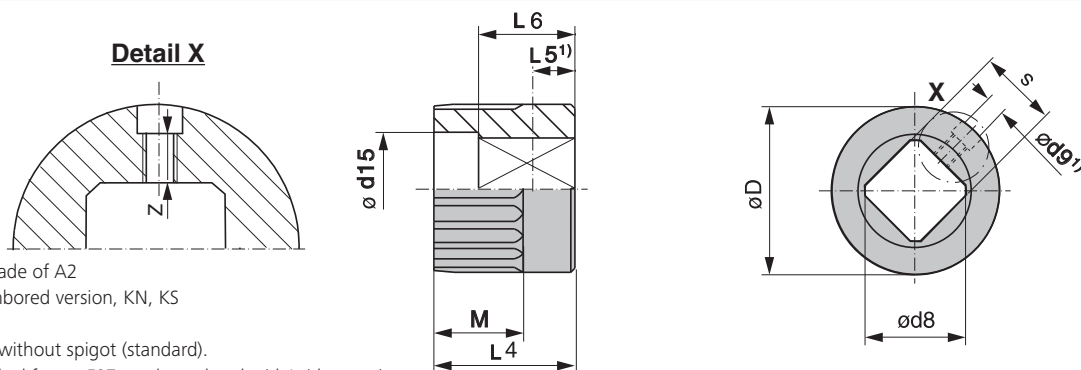
4) Combined fange F05/F07 without spigot (standard).

As an alternative an individual fange F07 can be ordered with/without spigot

Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	S H11 over	S H11 to	Ø d8 max.	L6	Ø d9 ¹⁾	Ø d15	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SG 03.3/SG 04.3	Z009.977	24.8	25	17	25x1x24	11	11	14.1	25	M4	16	5	M4 x 4	6
SG 04.2	Z009.992	24.8	35	17	25x1x24	11	11	14.1	25	M4	16	8	M4 x 4	6
SGC 04.1/05.1 SVC/SVM 05.1 SG 05.2 SG 05.3 GS 50.3 F05 GHE 05.1 SGM 04.1/05.1	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 GHE 07.1 SVC/SVM 07.1/5	Z010.369	41.75	35	20	42x1.25x32	11	16 ³⁾	18 ³⁾	25	M5	22.5	8	M5 x 5	7.5
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
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
SGC/SGM 10.1 SQ 10.2 – F10 GS 50.3 GHE 10.1 SG 10.2	Z010.302	51.75	45	30	52x1.25x40	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SG 10.1	Z010.328	51.75	65	35	52x1.25x40	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SQ 10.2 – F12	Z044.911	51.75	75	30	52x1.25x40	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SQ 12.2 – F12 GS 63.3 GHE 12.1	Z010.368	67.6	55	40	68x2x32	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SG 12.1	Z010.184	67.6	75	40	68x2x32	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SQ 12.2 – F14	Z006.070	67.6	95	40	68x2x32	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SQ 12.2 – F16	Z006.071	67.6	105	40	68x2x32	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SQ 14.2 – F14 GS 80.3	Z010.394	81.6	65	47	82x2x40	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
SQ 14.2 – F16	Z111.676	81.6	115	40	82x2x40	11	16 ³⁾	18 ³⁾	25	M6	31	10	M6 x 6	9
GS 100.3	Z015.955	105.8	80	50	106x2x52	11	16 ³⁾	18 ³⁾	25	M8	64	18	M8 x 8	12
GS 125.3	Z017.441	119.6	110	70	120x2x60	11	16 ³⁾	18 ³⁾	25	M8	64	18	M8 x 8	12

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



1) Thread with grub screw made of A2

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

3) DIN 79

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

As an alternative an individual fange F07 can be ordered with/without spigot

Type	Article no. ²⁾	Ø D	L4	M	Splined coupling DIN 5480	S H11 over	S H11 to	Ø d8 max.	L6	Ø d9 ¹⁾	Ø d15	L5 ¹⁾	Grub screw ¹⁾ ISO 4029	Z
SG 03.3/SG 04.3	Z009.977	24.8	25	17	25x1x24	11	11	14.1	25	M4	16	5	M4 x 4	6
SG 04.2	Z009.992	24.8	35	17	25x1x24	11	11	14.1	30	M4	16	8	M4 x 4	6
SGC 04.1/05.1 SVC/SVM 05.1 SG 05.2 SG 05.3 GS 50.3 F05 GHE 05.1 SGM 04.1/05.1	Z010.132	31.75	35	20	32x1.25x24	11	14	18.1	30	M4	20	8	M4 x 4	6
SGC/SGM 07.1 SQ 05.2 – F05/F07 ⁴⁾ SQ 07.2 – F05/F07 ⁴⁾ SG 07.2 GHE 07.1 SVC/SVM 07.1/5	Z010.369	41.75	35	20	42x1.25x32	11	14	18.1	30	M5	20	8	M5 x 5	7.5
SG 05.1/SG 07.1	Z010.169	41.75	40	20	42x1.25x32	14	17	22.2	30	M5	24	8	M5 x 5	7.5
SQ 07.2 – F10	Z010.658	41.75	60	20	42x1.25x32	11	14	18.1	30	M5	20	8	M5 x 5	7.5
SGC/SGM 10.1 SQ 10.2 – F10 GS 50.3 GHE 10.1 SG 10.2	Z010.302	51.75	45	30	52x1.25x40	14	17	22.2	30	M6	24	10	M6 x 6	9
SG 10.1	Z010.328	51.75	65	35	52x1.25x40	17	22	28.2	30	M6	31.5	10	M6 x 6	9
SQ 10.2 – F12	Z044.911	51.75	75	30	52x1.25x40	14	17	22.2	30	M6	24	10	M6 x 6	9
SQ 12.2 – F12 GS 63.3 GHE 12.1	Z010.368	67.6	55	40	68x2x32	17	22	28.2	30	M6	31.5	10	M6 x 6	9
SG 12.1	Z010.184	67.6	75	40	68x2x32	22	30 ³⁾	40.2 ³⁾	40	M6	41.5	10	M6 x 6	9
SQ 12.2 – F14	Z006.070	67.6	95	40	68x2x32	17	22	28.2	30	M6	31.5	10	M6 x 6	9
SQ 12.2 – F16	Z006.071	67.6	105	40	68x2x32	22	30 ³⁾	40.2 ³⁾	40	M6	41.5	10	M6 x 6	9
SQ 14.2 – F14 GS 80.3	Z010.394	81.6	65	47	82x2x40	22	30 ³⁾	40.2 ³⁾	40	M6	50	10	M6 x 6	9
SQ 14.2 – F16	Z111.676	81.6	115	40	82x2x40	30 ³⁾	36	48.2	50	M6	64	10	M6 x 6	9
GS 100.3	Z015.955	105.8	80	50	106x2x52	36	46	60.2	50	M8	82	18	M8 x 8	12
GS 125.3	Z017.441	119.6	110	70	120x2x60	36	46	60.2	50	M8	82	18	M8 x 8	12

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7 Spare parts lists

Multi-turn actuators

SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2 KES	360
SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2 KP	362
SAEx 07.2 – SAEx 16.2 / SAREx 07.2 – SAREx 16.2 KT	364
SAEx 07.2-UW – SAEx 16.2-UW / SAREx 07.2-UW – SAREx 16.2-UW	366

SAVEx 07.2 – SAVEx 16.2 / SARVEx 07.2 – SARVEx 16.2 KES	368
SAVEx 07.2 – SAVEx 16.2 / SARVEx 07.2 – SARVEx 16.2 KP	370
SAVEx 07.2 – SAVEx 16.2 / SARVEx 07.2 – SARVEx 16.2 KT	372

Part-turn actuators

SQEx 05.2 – SQEx 14.2 KES	374
SQEx 05.2 – SQEx 14.2 KP	376
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Actuator controls

AMExC 01.1 KES	380
AMExC 01.1 KP	382
AMExC 01.1 KT	384

ACExC 01.2 KES	386
ACExC 01.2 KES Modbus TCP/IP	388
ACExC 01.2 KP	390
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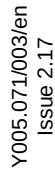
ACVExC 01.2 KES	394
ACVExC 01.2 KP	396
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Accessories

SA 07.2 – SA 16.2 handwheel extension	400
SA 07.2 – SA 16.2 power tool emergency operation	402
SA 07.2 – SA 16.2 power tool emergency operation for pit application	404

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SAEx 07.2 – SAE_x 16.2 KES
SAREx 07.2 – SARE_x 16.2 KES
AUMA NORM



Spare parts list Multi-turn actuators AUMA NORM

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	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	549.0	Output drive types B/B1/B2/B3/B4/C/E	Sub-assembly
003.0	Hollow shaft	Sub-assembly	549.1	Output drive sleeve B/B1/B2/B3/B4/C/E	
005.0	Drive shaft	Sub-assembly	551.1	Parallel key	Sub-assembly
005.1	Motor coupling		553.0	Mechanical position indicator	Sub-assembly
005.3	Manual drive coupling		554.0	Socket carrier for motor plug/socket connect- or with cable harness	Sub-assembly
006.0	Worm wheel		556.0	Potentiometer for position transmitter	Sub-assembly
009.0	Manual gearing	Sub-assembly	556.1	Potentiometer without slip clutch	Sub-assembly
017.0	Torque lever	Sub-assembly	557.0	Heater	Sub-assembly
018.0	Gear segment		558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
019.0	Crown wheel		559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	560.0-1	Switch stack for direction OPEN	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	560.0-2	Switch stack for direction CLOSE	Sub-assembly
025.0	Locking plate	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	560.2	Switch case	
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
155.0	Reduction gearing	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
500.0	Cover	Sub-assembly	566.3	Cable set for RWG	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
505.0	Pin for controls	Sub-assembly	568.1	Stem protection tube (without cap)	
506.0	Pin for motor	Sub-assembly	568.2	Protective cap for stem protection tube	
511.0	Threaded plug	Sub-assembly	568.3	V-seal	
514.0	Output drive type A (without stem nut)	Sub-assembly	568.4	Threaded sleeve	
514.1	Axial needle roller bearing	Sub-assembly	573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
514.2	Radial seal for output drive type A		575.1	Stem nut A (without thread)	
516.0	Output drive type D	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
516.1	Output drive shaft D	Sub-assembly	583.1	Pin for motor coupling	
528.0	Terminal frame (without terminals)	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
529.0	End clamp	Sub-assembly	607.0	Cover	Sub-assembly
533.0	Terminals for motor/controls	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
535.1	Snap ring		627.0	MWG 05.03 cover	
539.0	Screw plug	Sub-assembly	S1	Seal kit, small	Set
542.0	Handwheel with ball handle	Sub-assembly	S2	Seal kit, large	Set

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SAEx 07.2 – SAEx 16.2 KP

AUMA NORM



SAEx 07.2 – SAEx 16.2 KP
SAREx 07.2 – SAREx 16.2 KP
Spare parts list Multi-turn actuators AUMA NORM



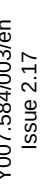
Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

Ref. no.	Designation	Type	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	539.0	Screw plug	Sub-assembly
003.0	Hollow shaft	Sub-assembly	542.0	Handwheel with ball handle	Sub-assembly
005.0	Drive shaft	Sub-assembly	549.0	Output drive types B/B1/B2/B3/B4/C/E	Sub-assembly
005.1	Motor coupling		549.1	Output drive sleeve B/B1/B2/B3/B4/C/E	
005.3	Manual drive coupling		551.1	Parallel key	
006.0	Worm wheel		553.0	Mechanical position indicator	Sub-assembly
009.0	Manual gearing	Sub-assembly	554.0	Socket carrier for motor plug/socket connect- or with cable harness	Sub-assembly
017.0	Torque lever	Sub-assembly	556.0	Potentiometer as position transmitter	Sub-assembly
018.0	Gear segment		556.1	Potentiometer without slip clutch	Sub-assembly
019.0	Crown wheel		557.0	Heater	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
025.0	Locking plate	Sub-assembly	560.0-1	Switch stack for direction OPEN	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	560.0-2	Switch stack for direction CLOSE	Sub-assembly
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	560.2	Switch case	
155.0	Reduction gearing	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
500.0	Cover	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
501.0	Ex plug/socket connector with screw-type terminals (KP, KPH)	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
501.1	Screw for control terminal		566.3	Cable set for RWG	Sub-assembly
501.2	Washer for control terminal		567.1	Slip clutch for potentiometer	Sub-assembly
501.3	Screw for power terminal		568.1	Stem protection tube (without cap)	
501.4	Washer for power terminal		568.2	Protective cap for stem protection tube	
502.0	Pin carrier without pins	Sub-assembly	568.3	V-seal	
505.0	Pin for controls	Sub-assembly	568.4	Threaded sleeve	
506.0	Pin for motor	Sub-assembly	575.1	Stem nut A (without thread)	
507.0	Cover for electrical connection	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
511.0	Threaded plug	Sub-assembly	583.1	Pin for motor coupling	
514.0	Output drive type A (without stem nut)	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
514.1	Axial needle roller bearing	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
514.2	Radial seal for output drive type A		627.0	MWG 05.03 cover	
516.0	Output drive type D	Sub-assembly	S1	Seal kit, small	Set
516.1	Output drive shaft D		S2	Seal kit, large	Set
535.1	Snap ring				

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SAEx 07.2 – SAEx 16.2 KT

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Spare parts list Multi-turn actuators AUMA NORM



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Ref. no.	Designation	Type	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	549.1	Output drive sleeve	
003.0	Hollow shaft	Sub-assembly	551.1	Parallel key	Sub-assembly
005.0	Drive shaft	Sub-assembly	553.0	Mechanical position indicator	Sub-assembly
005.1	Motor coupling		554.0	Socket carrier for motor plug/socket connector with cable harness	Sub-assembly
005.3	Manual drive coupling		556.0	Potentiometer as position transmitter	Sub-assembly
006.0	Worm wheel		556.1	Potentiometer without slip clutch	Sub-assembly
009.0	Manual gearing	Sub-assembly	557.0	Heater	Sub-assembly
017.0	Torque lever	Sub-assembly	558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
018.0	Gear segment		559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
019.0	Crown wheel		559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	560.0-1	Switch stack for direction OPEN	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	560.0-2	Switch stack for direction CLOSE	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
025.0	Locking plate	Sub-assembly	560.2	Switch case	
058.0	Cable for protective earth	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
155.0	Reduction gearing	Sub-assembly	566.3	Cable set for RWG	Set
500.0	Cover	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	568.1	Stem protection tube (without cap)	
505.0	Pin for controls	Sub-assembly	568.2	Protective cap for stem protection tube	
506.0	Pin for motor	Sub-assembly	568.3	V-seal	
511.0	Threaded plug	Sub-assembly	568.4	Threaded sleeve	
514.0	Output drive type A (without stem nut)	Sub-assembly	575.1	Stem nut A (without thread)	
514.1	Axial needle roller bearing	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
514.2	Radial seal for output drive type A		583.1	Pin for motor coupling	
516.0	Output drive type D	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
516.1	Output drive shaft D	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
535.1	Snap ring		627.0	Blanking cover	
539.0	Screw plug	Sub-assembly	628.0	Ex plug/socket connector (KT, KM)	
542.0	Handwheel with ball handle	Sub-assembly	S1	Seal kit, small	Set
549.0	Output drive type B (C/E) with output drive sleeve	Sub-assembly	S2	Seal kit, large	Set

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SAEx 07.2-UW – SAEx 16.2-UW
SAREx 07.2-UW – SAREx 16.2-UW
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SAEx 07.2-UW – SAEx 16.2-UW
SAREx 07.2-UW – SAREx 16.2-UW
Spare parts list Multi-turn actuators AUMA NORM



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Ref. no.	Designation	Type	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	504.0	Socket for motor	Sub-assembly
003.0	Output drive type B1/B2/DD/B3D	Sub-assembly	505.0	Pin for controls	Sub-assembly
003.1	Solid shaft DD/B3D		506.0	Pin for motor	Sub-assembly
005.0	Drive shaft	Sub-assembly	507.0	Cover for electrical connection	Sub-assembly
005.1	Motor coupling		511.0	Threaded plug	Sub-assembly
006.0	Worm wheel		516.0	Output drive type D	Sub-assembly
009.0	Manual gearing	Sub-assembly	516.1	Output drive shaft D	
017.0	Torque lever	Sub-assembly	534.0	Retaining ring (size 16.2 only)	
018.0	Gear segment		535.1	Snap ring	
019.0	Crown wheel		539.0	Screw plug	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	549.0	Output drive type B3/E/B4	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	549.1	Output drive sleeve B3/E/B4	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	551.1	Parallel key	
025.0	Locking plate	Sub-assembly	554.0	Socket carrier for motor plug/socket connect- or with cable harness	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	557.0	Heater	
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	559.0	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
500.0	Cover	Sub-assembly	583.1	Pin for motor coupling	
501.0	Socket carrier (complete with sockets)	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
501.1	Screw for control terminal		627.0	MWG 05.03 cover	
501.2	Washer for control terminal		634.0	Shim washer (size 16.2 only)	
501.3	Screw for power terminal		635.0	Ball bearing	
501.4	Washer for power terminal		S1	Seal kit, small	Set
502.0	Pin carrier without pins	Sub-assembly	S2	Seal kit, large	Set

Spare parts list

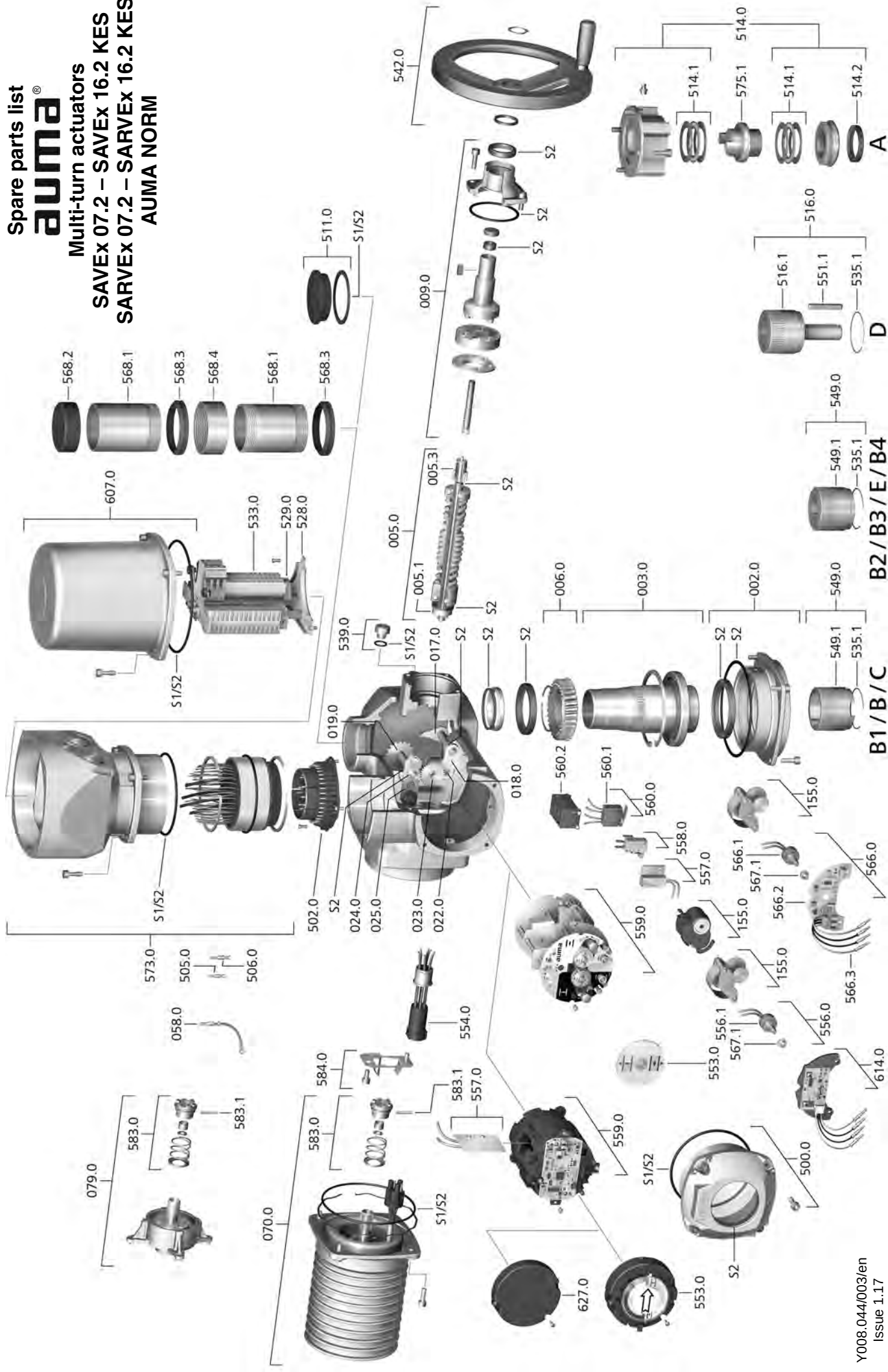
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Multi-turn actuators

SAVEx 07.2 – SAVEx 16.2 KES

SARVEx 07.2 – SARVEx 16.2 KES

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SAVEx 07.2 – SAVEx 16.2 KES
SARVEx 07.2 – SARVEx 16.2 KES
Spare parts list Multi-turn actuators AUMA NORM

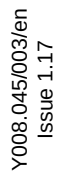


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Ref. no.	Designation	Type	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	549.0	Output drive types B/B1/B2/B3/B4/C/E	Sub-assembly
003.0	Hollow shaft	Sub-assembly	549.1	Output drive sleeve B/B1/B2/B3/B4/C/E	
005.0	Drive shaft	Sub-assembly	551.1	Parallel key	Sub-assembly
005.1	Motor coupling		553.0	Mechanical position indicator	Sub-assembly
005.3	Manual drive coupling		554.0	Socket carrier for motor plug/socket connect- or with cable harness	Sub-assembly
006.0	Worm wheel		556.0	Potentiometer for position transmitter	Sub-assembly
009.0	Manual gearing	Sub-assembly	556.1	Potentiometer without slip clutch	Sub-assembly
017.0	Torque lever	Sub-assembly	557.0	Heater	Sub-assembly
018.0	Gear segment		558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
019.0	Crown wheel		559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	560.0-1	Switch stack for direction OPEN	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	560.0-2	Switch stack for direction CLOSE	Sub-assembly
025.0	Locking plate	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	560.2	Switch case	
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
155.0	Reduction gearing	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
500.0	Cover	Sub-assembly	566.3	Cable set for RWG	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
505.0	Pin for controls	Sub-assembly	568.1	Stem protection tube (without cap)	
506.0	Pin for motor	Sub-assembly	568.2	Protective cap for stem protection tube	
511.0	Threaded plug	Sub-assembly	568.3	V-seal	
514.0	Output drive type A (without stem nut)	Sub-assembly	568.4	Threaded sleeve	
514.1	Axial needle roller bearing	Sub-assembly	573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
514.2	Radial seal for output drive type A		575.1	Stem nut A (without thread)	
516.0	Output drive type D	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
516.1	Output drive shaft D	Sub-assembly	583.1	Pin for motor coupling	
528.0	Terminal frame (without terminals)	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
529.0	End clamp	Sub-assembly	607.0	Cover	Sub-assembly
533.0	Terminals for motor/controls	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
535.1	Snap ring		627.0	MWG 05.03 cover	
539.0	Screw plug	Sub-assembly	S1	Seal kit, small	Set
542.0	Handwheel with ball handle	Sub-assembly	S2	Seal kit, large	Set

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SAVEx 07.2 – SAVEx 16.2 KP
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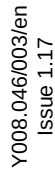
Spare parts list Multi-turn actuators AUMA NORM

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Ref. no.	Designation	Type	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	539.0	Screw plug	Sub-assembly
003.0	Hollow shaft	Sub-assembly	542.0	Handwheel with ball handle	Sub-assembly
005.0	Drive shaft	Sub-assembly	549.0	Output drive types B/B1/B2/B3/B4/C/E	Sub-assembly
005.1	Motor coupling		549.1	Output drive sleeve B/B1/B2/B3/B4/C/E	
005.3	Manual drive coupling		551.1	Parallel key	
006.0	Worm wheel		553.0	Mechanical position indicator	Sub-assembly
009.0	Manual gearing	Sub-assembly	554.0	Socket carrier for motor plug/socket connect- or with cable harness	Sub-assembly
017.0	Torque lever	Sub-assembly	556.0	Potentiometer as position transmitter	Sub-assembly
018.0	Gear segment		556.1	Potentiometer without slip clutch	Sub-assembly
019.0	Crown wheel		557.0	Heater	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
025.0	Locking plate	Sub-assembly	560.0-1	Switch stack for direction OPEN	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	560.0-2	Switch stack for direction CLOSE	Sub-assembly
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	560.2	Switch case	
155.0	Reduction gearing	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
500.0	Cover	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
501.0	Ex plug/socket connector with screw-type terminals (KP, KPH)	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
501.1	Screw for control terminal		566.3	Cable set for RWG	Sub-assembly
501.2	Washer for control terminal		567.1	Slip clutch for potentiometer	Sub-assembly
501.3	Screw for power terminal		568.1	Stem protection tube (without cap)	
501.4	Washer for power terminal		568.2	Protective cap for stem protection tube	
502.0	Pin carrier without pins	Sub-assembly	568.3	V-seal	
505.0	Pin for controls	Sub-assembly	568.4	Threaded sleeve	
506.0	Pin for motor	Sub-assembly	575.1	Stem nut A (without thread)	
507.0	Cover for electrical connection	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
511.0	Threaded plug	Sub-assembly	583.1	Pin for motor coupling	
514.0	Output drive type A (without stem nut)	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
514.1	Axial needle roller bearing	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
514.2	Radial seal for output drive type A		627.0	MWG 05.03 cover	
516.0	Output drive type D	Sub-assembly	S1	Seal kit, small	Set
516.1	Output drive shaft D		S2	Seal kit, large	Set
535.1	Snap ring				

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SAVEx 07.2 – SAVEx 16.2 KT
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Spare parts list Multi-turn actuators AUMA NORM

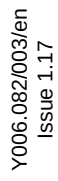
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Ref. no.	Designation	Type	Ref. no.	Designation	Type
002.0	Bearing flange	Sub-assembly	549.1	Output drive sleeve B/B1/B2/B3/B4/C/E	
003.0	Hollow shaft	Sub-assembly	551.1	Parallel key	Sub-assembly
005.0	Drive shaft	Sub-assembly	553.0	Mechanical position indicator	Sub-assembly
005.1	Motor coupling		554.0	Socket carrier for motor plug/socket connector with cable harness	Sub-assembly
005.3	Manual drive coupling		556.0	Potentiometer as position transmitter	Sub-assembly
006.0	Worm wheel		556.1	Potentiometer without slip clutch	Sub-assembly
009.0	Manual gearing	Sub-assembly	557.0	Heater	Sub-assembly
017.0	Torque lever	Sub-assembly	558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
018.0	Gear segment		559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
019.0	Crown wheel		559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
022.0	Drive pinion II for torque switching	Sub-assembly	560.0-1	Switch stack for direction OPEN	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	560.0-2	Switch stack for direction CLOSE	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
025.0	Locking plate	Sub-assembly	560.2	Switch case	
058.0	Cable for protective earth	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
070.0	Motor (only for V... motors incl. ref. no. 079.0)	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
079.0	Planetary gearing for motor drive (only for V... motors)	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
155.0	Reduction gearing	Sub-assembly	566.3	Cable set for RWG	Set
500.0	Cover	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	568.1	Stem protection tube (without cap)	
505.0	Pin for controls	Sub-assembly	568.2	Protective cap for stem protection tube	
506.0	Pin for motor	Sub-assembly	568.3	V-seal	
511.0	Threaded plug	Sub-assembly	568.4	Threaded sleeve	
514.0	Output drive type A (without stem nut)	Sub-assembly	575.1	Stem nut A (without thread)	
514.1	Axial needle roller bearing	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
514.2	Radial seal for output drive type A		583.1	Pin for motor coupling	
516.0	Output drive type D	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
516.1	Output drive shaft D	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
535.1	Snap ring		627.0	Blanking cover	
539.0	Screw plug	Sub-assembly	628.0	Ex plug/socket connector (KT, KM)	
542.0	Handwheel with ball handle	Sub-assembly	S1	Seal kit, small	Set
549.0	Output drive types B/B1/B2/B3/B4/C/E	Sub-assembly	S2	Seal kit, large	Set

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SQEx 05.2 – SQEx 14.2 KES

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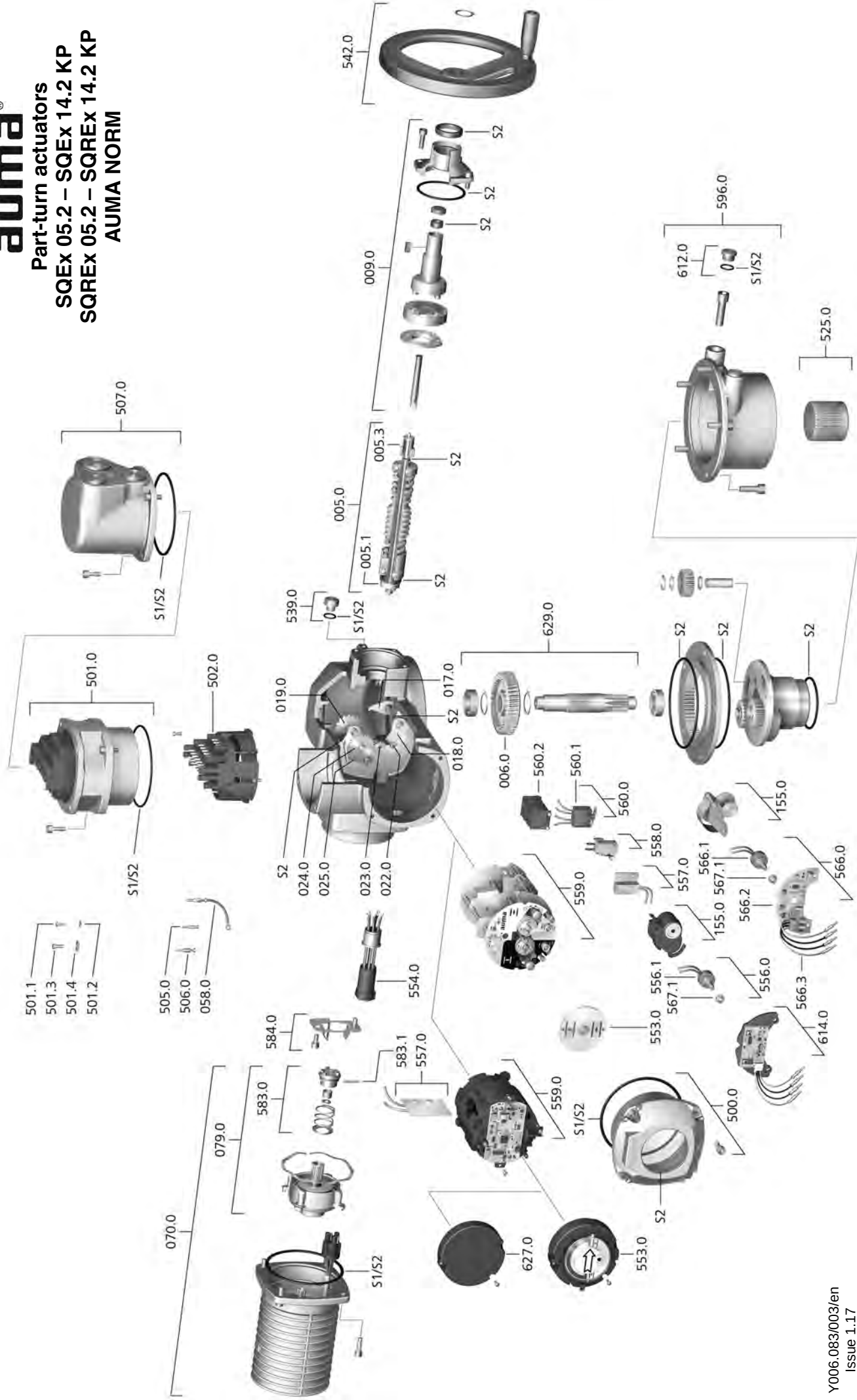


Spare parts list Part-turn actuators AUMA NORM

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	Ref. no.	Designation	Type
005.0	Drive shaft	Sub-assembly	556.0	Potentiometer as position transmitter	Sub-assembly
005.1	Motor coupling	Sub-assembly	556.1	Potentiometer without slip clutch	Sub-assembly
005.3	Manual drive coupling	Sub-assembly	557.0	Heater	Sub-assembly
006.0	Worm wheel		558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
009.0	Manual gearing	Sub-assembly	559.0-1	Electromechanical control unit with switches, including torque switching heads and switches	Sub-assembly
017.0	Torque lever	Sub-assembly	559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
018.0	Gear segment		560.0	Switch stack for direction OPEN	Sub-assembly
019.0	Crown wheel	Sub-assembly	560.0	Switch stack for direction CLOSE	Sub-assembly
022.0	Drive pinion II for torque switching		560.1	Switch for limit/torque	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	560.2	Switch case	
024.0	Drive wheel for limit switching	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
025.0	Locking plate	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
070.0	Motor (incl. ref. no. 079.0)	Sub-assembly	566.3	Cable set for RWG	Sub-assembly
079.0	Planetary gearing for motor drive	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
155.0	Reduction gearing	Sub-assembly	573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
500.0	Cover	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	583.1	Pin for motor coupling	
505.0	Pin for controls	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
506.0	Pin for motor	Sub-assembly	596.0	Output drive flange with end stop	Sub-assembly
525.0	Coupling	Sub-assembly	607.0	Cover	Sub-assembly
528.0	Terminal frame (without terminals)		612.0	Screw plug for end stop	Sub-assembly
529.0	End clamp	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
533.0	Terminals for motor/controls	Sub-assembly	627.0	MWG 05.03 cover	
539.0	Screw plug	Sub-assembly	629.0	Pinion shaft	Sub-assembly
542.0	Handwheel with ball handle	Sub-assembly	S1	Seal kit, small	Set
553.0	Mechanical position indicator	Sub-assembly	S2	Seal kit, large	Set
554.0	Socket carrier for motor plug/socket connector with cable harness				

Spare parts list
auma[®]
 Part-turn actuators
 SQEx 05.2 – SQEx 14.2 KP
 SQREx 05.2 – SQREx 14.2 KP
 AUMA NORM



Spare parts list Part-turn actuators AUMA NORM

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Ref. no.	Designation	Type	Ref. no.	Designation	Type
005.0	Drive shaft	Sub-assembly	542.0	Handwheel with ball handle	Sub-assembly
005.1	Motor coupling	Sub-assembly	553.0	Mechanical position indicator	Sub-assembly
005.3	Manual drive coupling	Sub-assembly	554.0	Socket carrier for motor plug/socket connector with cable harness	Sub-assembly
006.0	Worm wheel		556.0	Potentiometer as position transmitter	Sub-assembly
009.0	Manual gearing	Sub-assembly	556.1	Potentiometer without slip clutch	Sub-assembly
017.0	Torque lever	Sub-assembly	557.0	Heater	Sub-assembly
018.0	Gear segment		558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
019.0	Crown wheel	Sub-assembly	559.0-1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
022.0	Drive pinion II for torque switching		559.0-2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
023.0	Output drive wheel for limit switching	Sub-assembly	560.0	Switch stack for direction OPEN	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	560.0	Switch stack for direction CLOSE	Sub-assembly
025.0	Locking plate	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	560.2	Switch case	
070.0	Motor (incl. ref. no. 079.0)	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
079.0	Planetary gearing for motor drive	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
155.0	Reduction gearing	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
500.0	Cover	Sub-assembly	566.3	Cable set for RWG	Sub-assembly
501.0	Ex plug/socket connector with screw-type terminals (KP, KPH)	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
501.1	Screw for control terminal	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
501.2	Washer for control terminal	Sub-assembly	583.1	Pin for motor coupling	Sub-assembly
501.3	Screw for power terminal	Sub-assembly	584.0	Retaining spring for motor coupling	
501.4	Washer for power terminal		596.0	Output drive flange with end stop	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	612.0	Screw plug for end stop	Sub-assembly
505.0	Pin for controls	Sub-assembly	614.0	EWGposition transmitter	Sub-assembly
506.0	Pin for motor	Sub-assembly	627.0	MWG 05.03 cover	
507.0	Cover for electrical connection	Sub-assembly	629.0	Pinion shaft	Sub-assembly
525.0	Coupling	Sub-assembly	S1	Seal kit, small	Set
539.0	Screw plug		S2	Seal kit, large	Set

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AUMA NORM



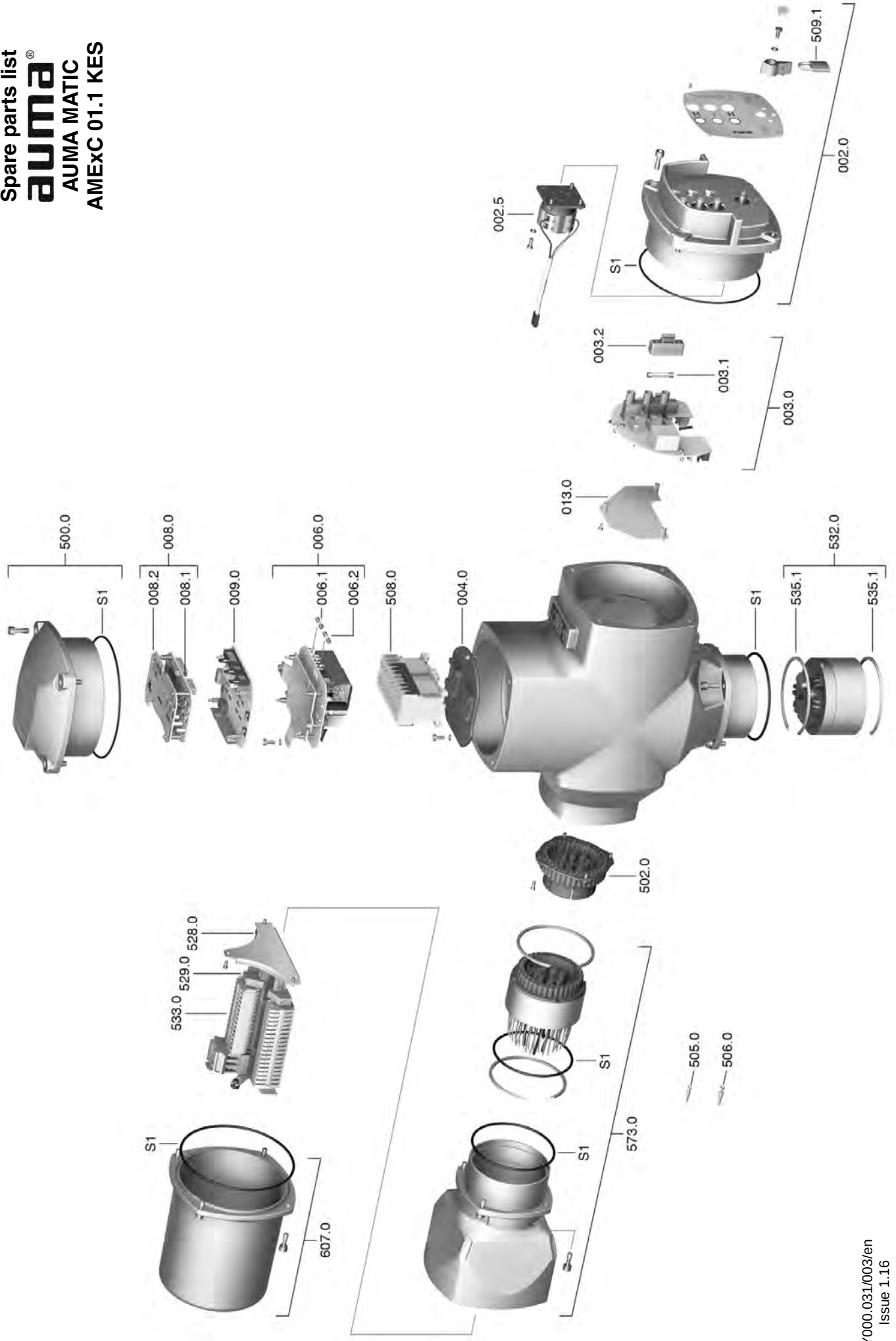
SQEx 05.2 – SQEx 14.2 KT
SQREx 05.2 – SQREx 14.2 KT
Spare parts list Part-turn actuators AUMA NORM



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	Ref. no.	Designation	Type
005.0	Drive shaft	Sub-assembly	556.1	Potentiometer without slip clutch	Sub-assembly
005.1	Motor coupling	Sub-assembly	557.0	Heater	Sub-assembly
005.3	Manual drive coupling	Sub-assembly	558.0	Blinker transmitter including pins at wires (without impulse disc and insulation plate)	Sub-assembly
006.0	Worm wheel		559.0–1	Electromechanical control unit with switches, including torque switching heads	Sub-assembly
009.0	Planetary gearing for manual drive	Sub-assembly	559.0–2	Electronic control unit with magnetic limit and torque transmitter (MWG)	Sub-assembly
017.0	Torque lever	Sub-assembly	560.0	Switch stack for direction OPEN	Sub-assembly
018.0	Gear segment		560.0	Switch stack for direction CLOSE	Sub-assembly
019.0	Crown wheel	Sub-assembly	560.1	Switch for limit/torque	Sub-assembly
022.0	Drive pinion II for torque switching		560.2	Switch case	
023.0	Output drive wheel for limit switching	Sub-assembly	566.0	RWG position transmitter	Sub-assembly
024.0	Drive wheel for limit switching	Sub-assembly	566.1	Potentiometer for RWG without slip clutch	Sub-assembly
025.0	Locking plate	Sub-assembly	566.2	Position transmitter board for RWG	Sub-assembly
058.0	Cable for protective earth	Sub-assembly	566.3	Cable set for RWG	Set
070.0	Motor (incl. ref. no. 079.0)	Sub-assembly	567.1	Slip clutch for potentiometer	Sub-assembly
079.0	Planetary gearing for motor drive	Sub-assembly	583.0	Motor coupling on motor shaft	Sub-assembly
155.0	Reduction gearing	Sub-assembly	583.1	Pin for motor coupling	
500.0	Cover	Sub-assembly	584.0	Retaining spring for motor coupling	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly	596.0	Output drive flange with end stop	Sub-assembly
505.0	Pin for controls	Sub-assembly	612.0	Screw plug for end stop	Sub-assembly
506.0	Pin for motor	Sub-assembly	614.0	EWG position transmitter	Sub-assembly
525.0	Coupling	Sub-assembly	627.0	MWG 05.3 cover	
539.0	Screw plug	Sub-assembly	628.0	Ex plug/socket connector	
542.0	Handwheel with ball handle	Sub-assembly	629.0	Pinion shaft	Sub-assembly
553.0	Mechanical position indicator	Sub-assembly	S1	Seal kit, small	Set
554.0	Socket carrier for motor plug/socket connector with cable harness		S2	Seal kit, large	Set
556.0	Potentiometer for position transmitter	Sub-assembly			

Spare parts list
auma[®]
 AUMA MATIC
 AMExC 01.1 KES

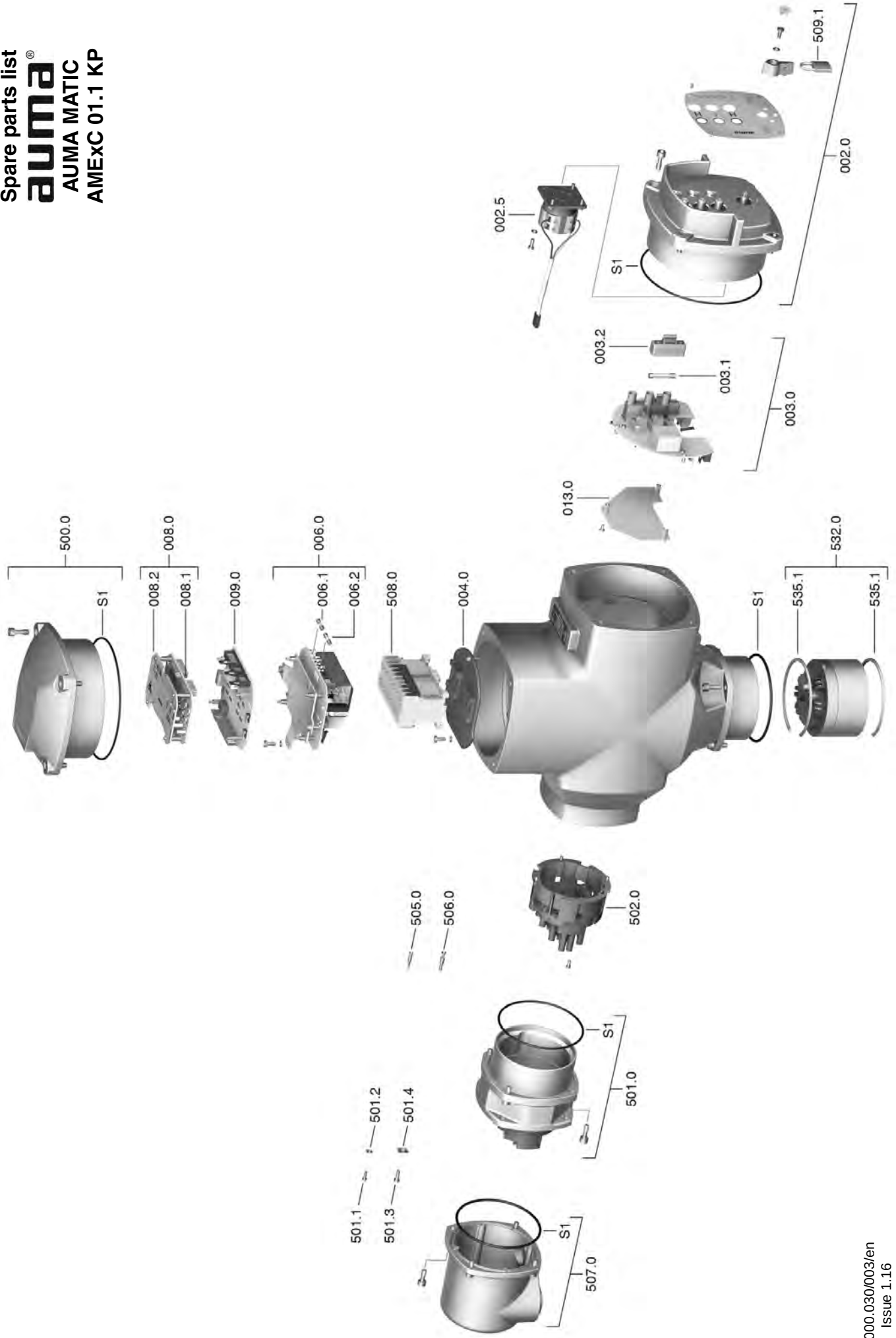


Spare parts list AUMA MATIC

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.5	Selector switch	Sub-assembly
003.0	Signal and control board	Sub-assembly
003.1	Primary fuse F1/F2	
003.2	Fuse cover	
004.0	Carrier for contactors	Sub-assembly
006.0	Power supply	Sub-assembly
006.1	Secondary fuse F3	
006.2	Secondary fuse F4	
008.0	Interface board	Sub-assembly
008.1	Interface board	Sub-assembly
008.2	Cover plate for interface board	
009.0	Logic board	Sub-assembly
013.0	Adapter board	Sub-assembly
500.0	Cover	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	
528.0	Terminal frame (without terminals)	Sub-assembly
529.0	End clamp	
532.0	Line bushing (actuator connection)	Sub-assembly
533.0	Terminals for motor/controls	
535.1	Retaining ring	
573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
607.0	Cover	Sub-assembly
S	Seal kit	Set

Spare parts list
auma[®]
 AUMA MATIC
 AMExC 01.1 KP

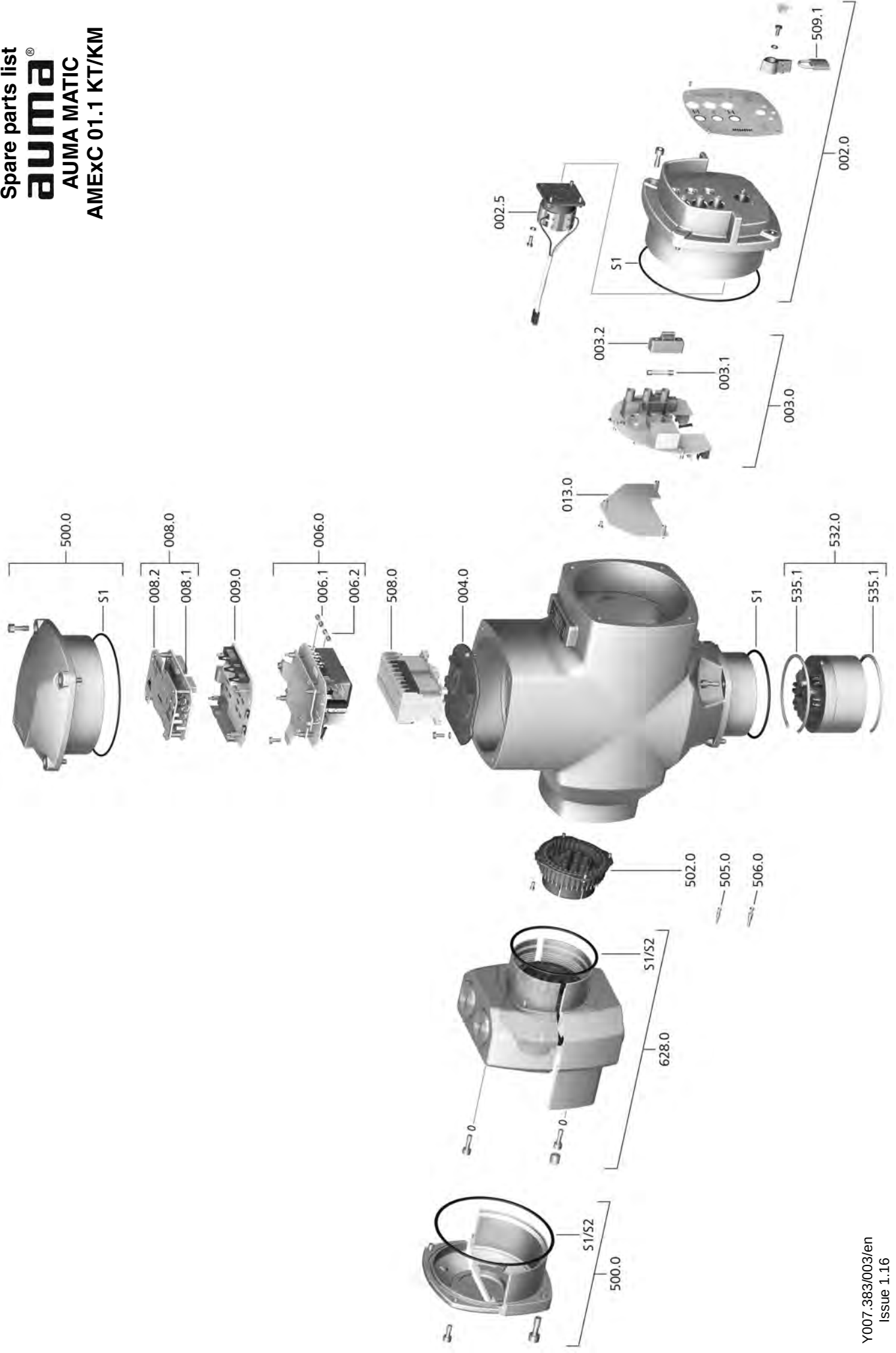


Spare parts list AUMA MATIC

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.5	Selector switch	Sub-assembly
003.0	Signal and control board	Sub-assembly
003.1	Primary fuse F1/F2	Sub-assembly
003.2	Fuse cover	Sub-assembly
004.0	Carrier for contactors	Sub-assembly
006.0	Power supply	Sub-assembly
006.1	Secondary fuse F3	
006.2	Secondary fuse F4	
008.0	Interface board	Sub-assembly
008.1	Interface board	
008.2	Cover plate for interface board	
009.0	Logic board	Sub-assembly
013.0	Adapter board	Sub-assembly
500.0	Cover	Sub-assembly
501.0	Ex plug/socket connector with screw-type terminals (KP, KPH)	Sub-assembly
501.1	Screw for control terminal	
501.2	Washer for control terminal	
501.3	Screw for power terminal	
501.4	Washer for power terminal	
502.0	Pin carrier without pins	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	
532.0	Line bushing (actuator connection)	Sub-assembly
535.1	Retaining ring	
S	Seal kit	Set

Spare parts list
auma[®]
 AUMA MATIC
 AMExC 01.1 KT/KM

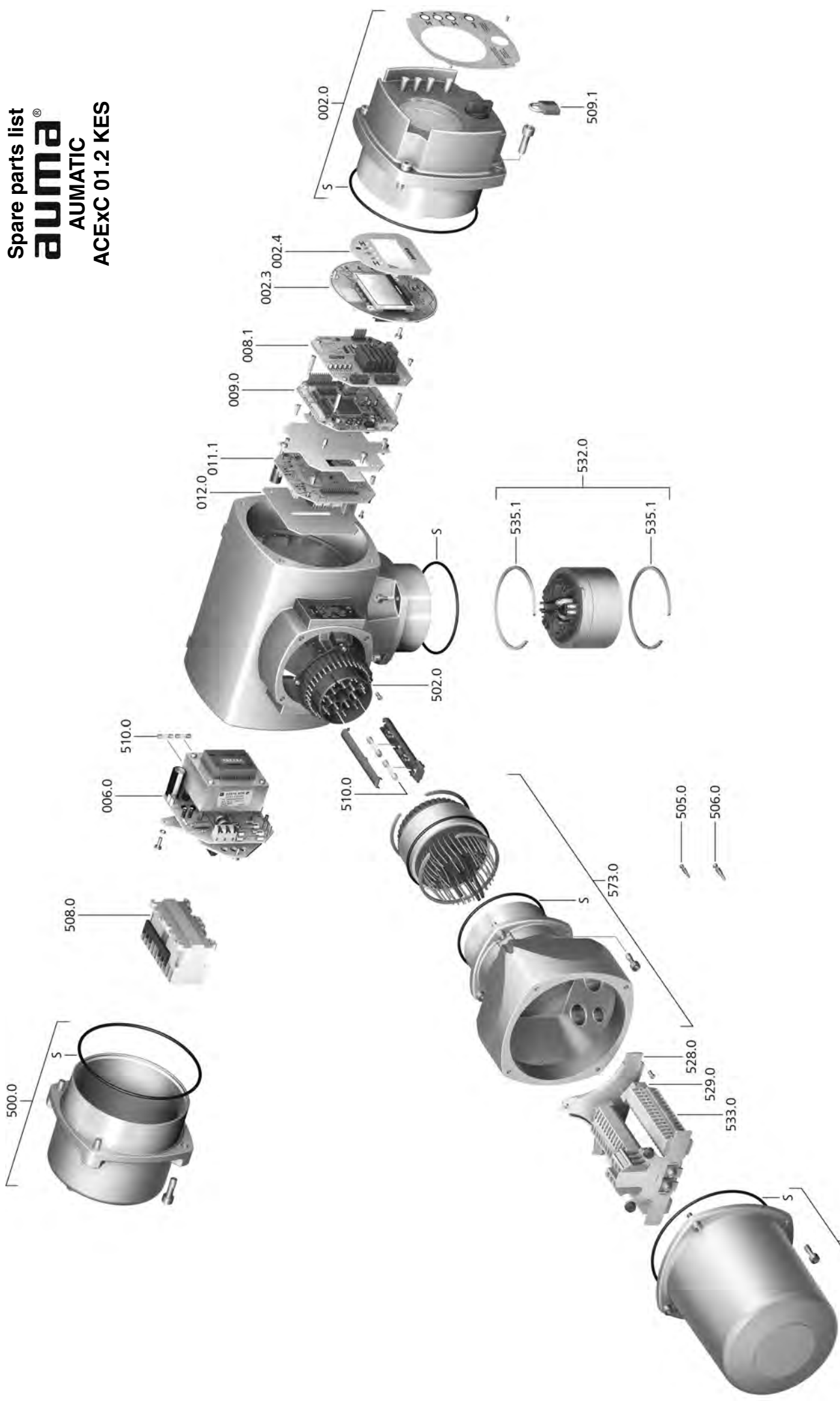


Spare parts list AUMA MATIC

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.5	Selector switch	Sub-assembly
003.0	Signal and control board	Sub-assembly
003.1	Primary fuse F1/F2	Sub-assembly
003.2	Cover for fuse	Sub-assembly
004.0	Carrier for contactors	Sub-assembly
006.0	Power supply unit	Sub-assembly
006.1	Secondary fuse F3	
006.2	Secondary fuse F4	
008.0	Interface board	Sub-assembly
008.1	Interface board	
008.2	Interface cover plate	
009.0	Logic board	Sub-assembly
013.0	Adapter board	Sub-assembly
500.0	Cover	Sub-assembly
502.0	Pin carrier without pins	Sub-assembly
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	
532.0	Cable conduit (actuator connection)	Sub-assembly
535.1	Retaining ring	
628.0	Ex plug/socket connector (KT, KM)	
S	Seal kit	Set

Spare parts list
auma[®]
 AUMATIC
 ACExC 01.2 KES

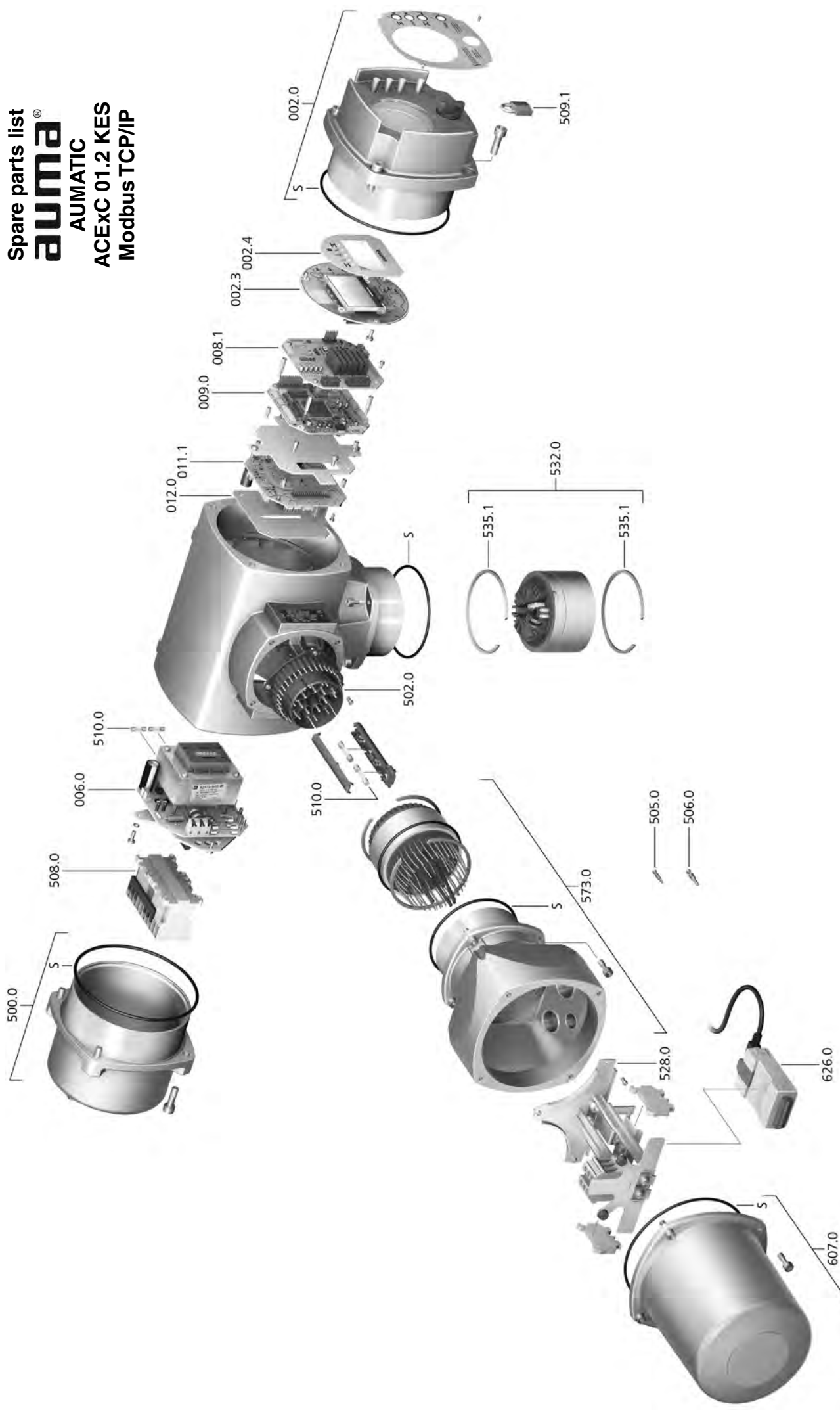


Spare parts list AUMATIC

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
006.0	Power supply unit	Sub-assembly
008.1	I/O board	
008.1	Fieldbus board	Sub-assembly
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
012.0	Option board	
500.0	Cover	Sub-assembly
502.0	Pin carrier (without pins)	
505.0	Pin for controls	
506.0	Pin for motor	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	
510.0	Fuse kit	Sub-assembly
528.0	Terminal frame (without terminals)	Sub-assembly
529.0	End clamp	
532.0	Cable conduit (actuator connection)	Sub-assembly
533.0	Terminals for motor/controls	
535.1	Retaining ring	
573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
607.0	Cover	
S	Seal kit	Set

Spare parts list
auma[®]
 AUMATIC
 ACExC 01.2 KES
 Modbus TCP/IP

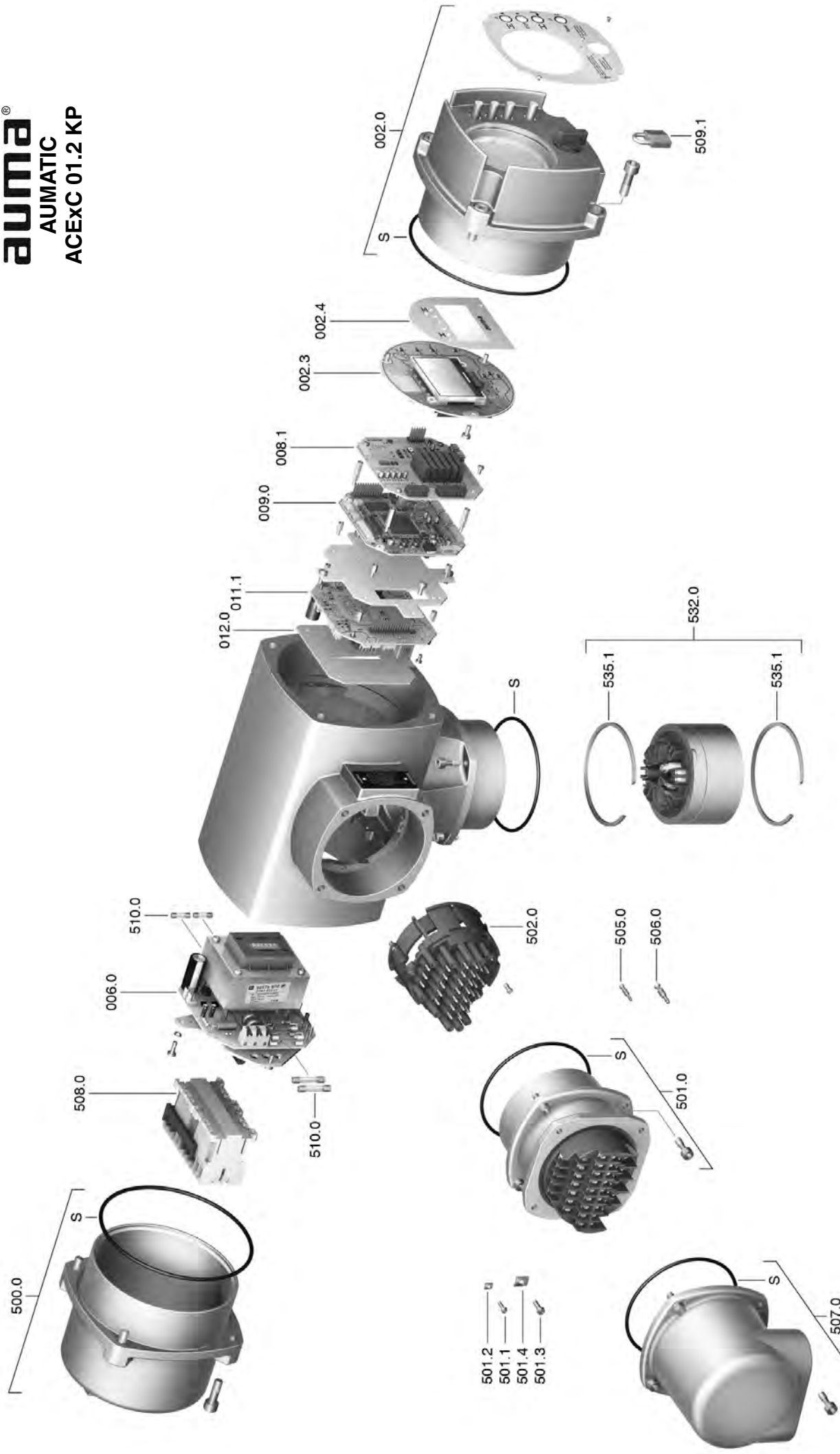


Spare parts list AUMATIC Modbus TCP/IP

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
006.0	Power supply unit	Sub-assembly
008.1	I/O board	
008.1	Fieldbus board	Sub-assembly
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
012.0	Option board	
500.0	Cover	Sub-assembly
502.0	Pin carrier without pins	
505.0	Pin for controls	
506.0	Pin for motor	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	
510.0	Fuse kit	Sub-assembly
528.0	Terminal frame (without terminals)	Sub-assembly
532.0	Cable conduit (actuator connection)	Sub-assembly
535.1	Retaining ring	
573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
607.0	Cover	
626.0	Modbus TCP-RTU Gateway	
S	Seal kit	Set

Spare parts list
auma[®]
 AUMATIC
 ACExC 01.2 KP

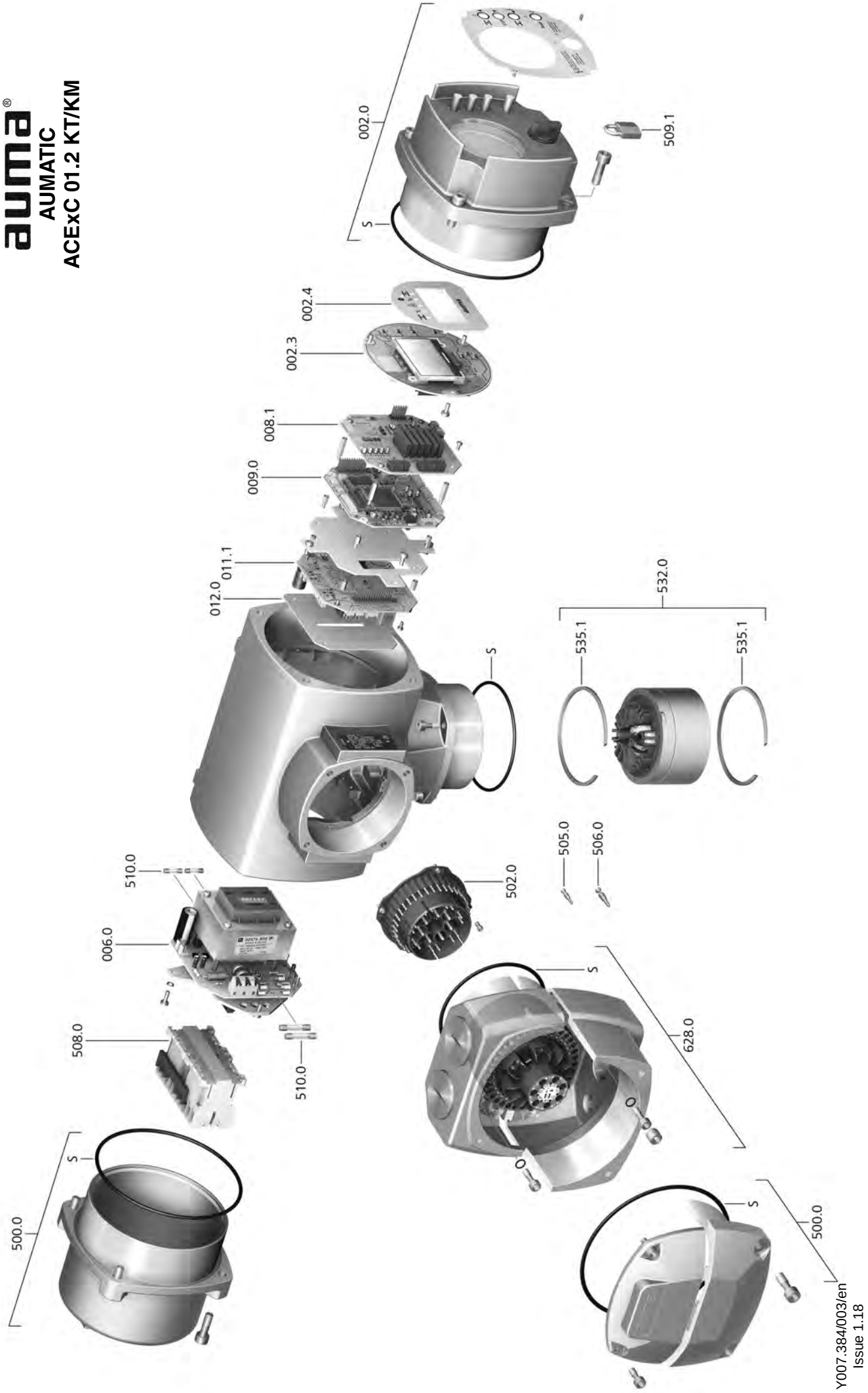


Spare parts list AUMATIC

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
006.0	Power supply unit	Sub-assembly
008.1	I/O board	
008.1	Fieldbus board	
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
012.0	Option board	
500.0	Cover	Sub-assembly
501.0	Ex plug/socket connector with screw-type terminals (KP, KPH)	Sub-assembly
501.1	Screw for control terminal	
501.2	Washer for control terminal	
501.3	Screw for power terminal	
501.4	Washer for power terminal	
502.0	Pin carrier (without pins)	
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	Sub-assembly
510.0	Fuse kit	Set
532.0	Cable conduit (actuator connection)	Sub-assembly
535.1	Retaining ring	
S	Seal kit	Set

Spare parts list
auma[®]
 AUMATIC
 ACExC 01.2 KT/KM

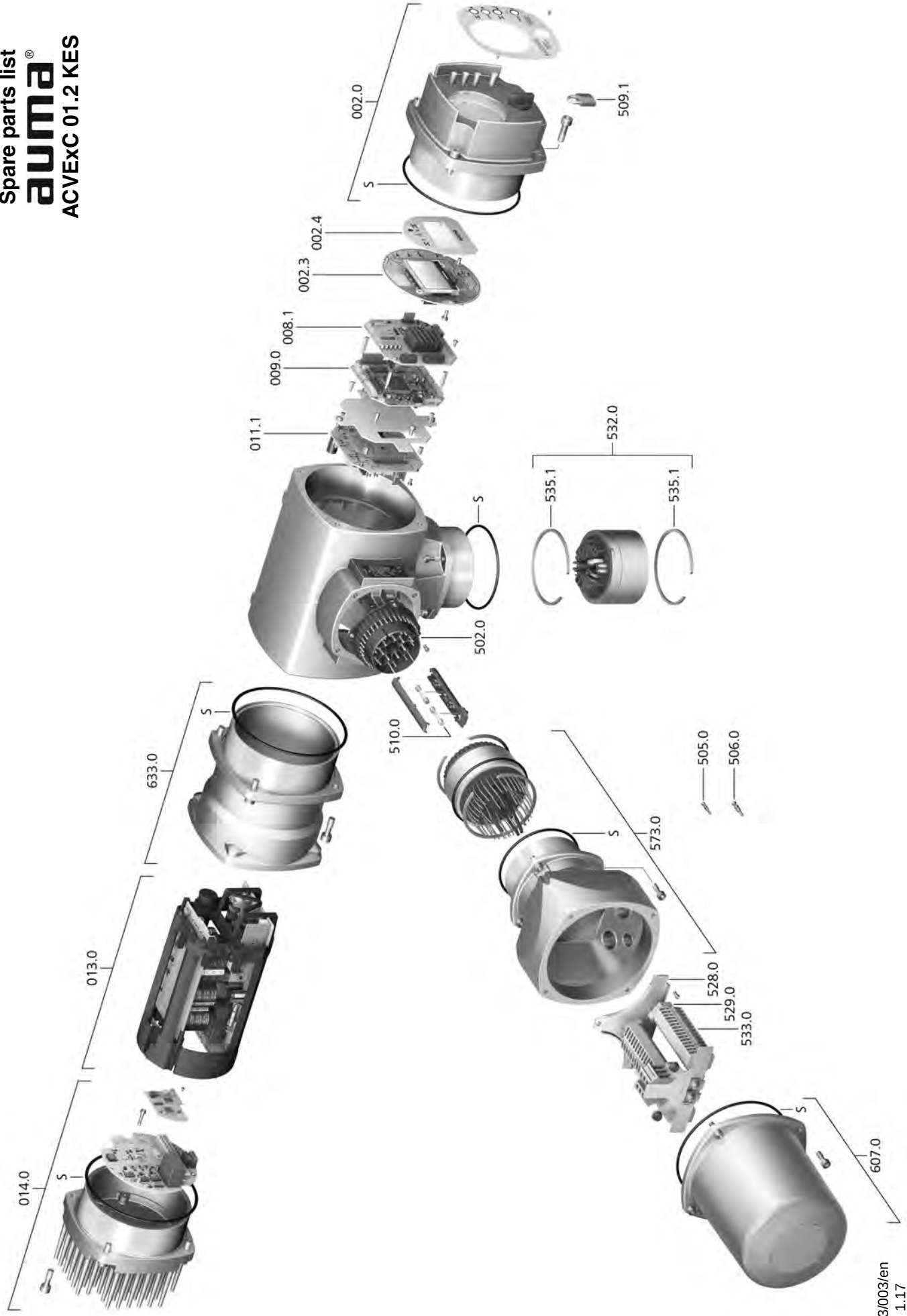


Spare parts list AUMATIC

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	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
006.0	Power supply unit	Sub-assembly
008.1	I/O board	
008.1	Fieldbus board	
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
012.0	Option board	
500.0	Cover	Sub-assembly
502.0	Pin carrier without pins	
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
508.0	Switchgear	Sub-assembly
509.1	Padlock	Sub-assembly
510.0	Fuse kit	Kit
532.0	Line bushing (actuator connection)	
535.1	Retaining ring	
628.0	Ex plug/socket connector (KT, KM)	
S	Seal kit	Set

Spare parts list
auma®
 ACVExC 01.2 KES

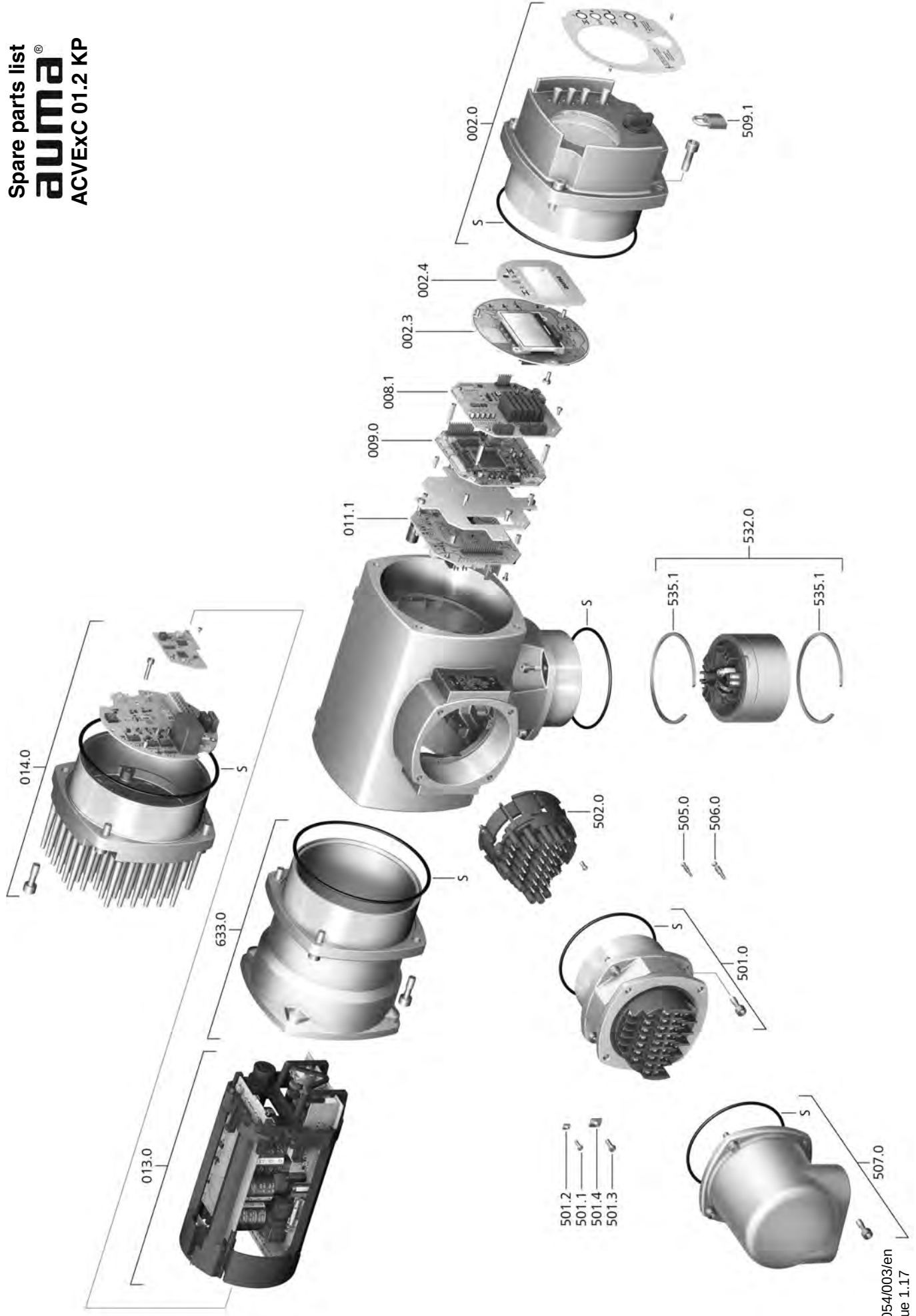


Spare parts list

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
008.1	I/O board	
008.1	Fieldbus board	Sub-assembly
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
013.0	Power supply unit/DC link	
014.0	Motor controller/switchgear	Sub-assembly
502.0	Pin carrier without pins	
505.0	Pin for controls	
506.0	Pin for motor	Sub-assembly
509.1	Padlock	
510.0	Fuse kit	Sub-assembly
528.0	Terminal frame (without terminals)	Sub-assembly
529.0	End clamp	
532.0	Cable conduit (actuator connection)	Sub-assembly
533.0	Terminals for motor/controls	
535.1	Retaining ring	
573.0	Ex plug/socket connector with terminal blocks (KES)	Sub-assembly
607.0	Cover	
633.0	Switchgear housing	Sub-assembly
S	Seal kit	Set

Spare parts list
auma[®]
 ACVExC 01.2 KP

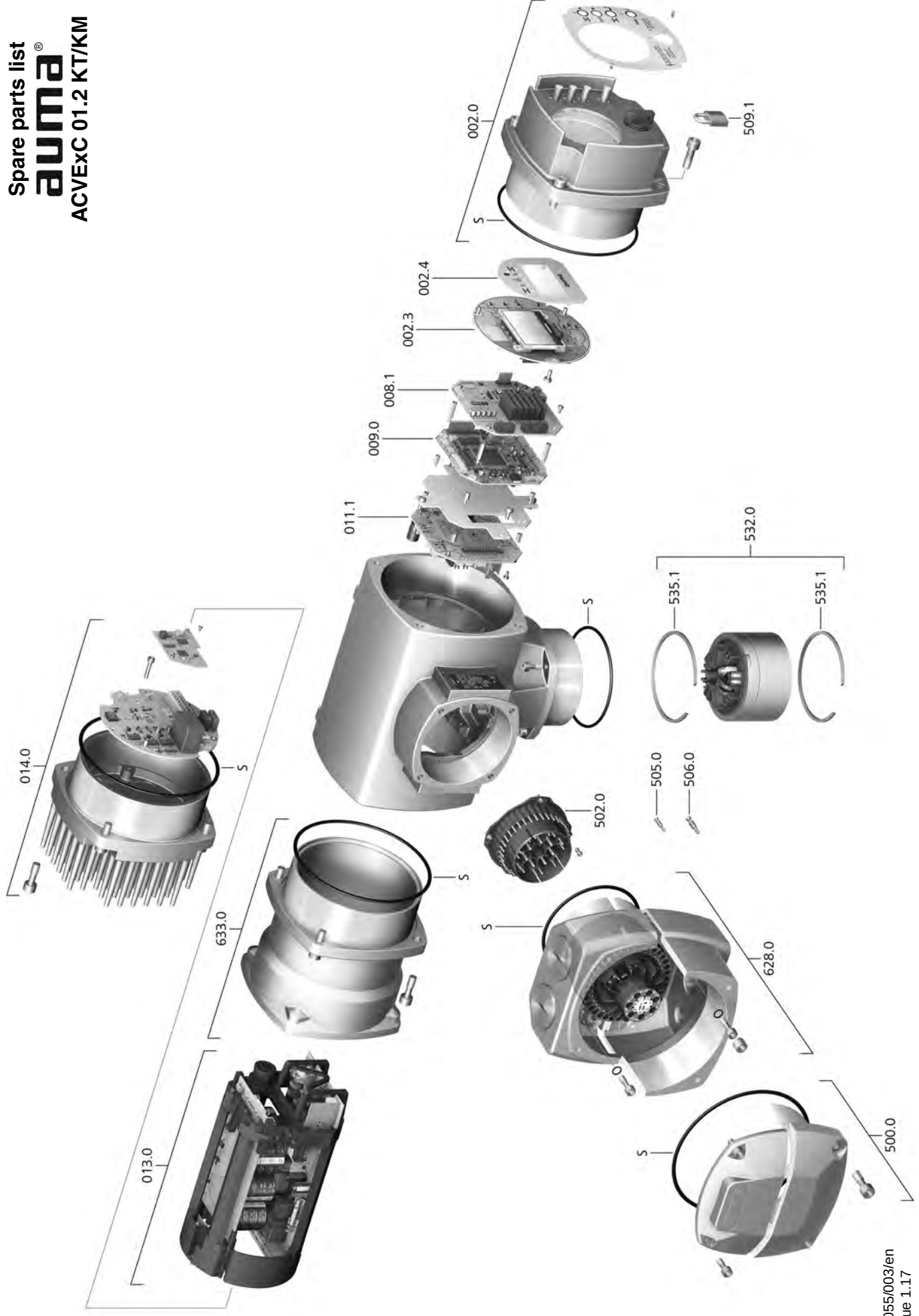


Spare parts list

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Ref. no.	Designation	Type
002.0	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
008.1	I/O board	
008.1	Fieldbus board	
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
013.0	Power supply unit/DC link	
014.0	Motor controller/switchgear	Sub-assembly
501.0	Ex plug/socket connector with screw-type terminals (KP, KPH)	Sub-assembly
501.1	Screw for control terminal	
501.2	Washer for control terminal	
501.3	Screw for power terminal	
501.4	Washer for power terminal	
502.0	Pin carrier without pins	
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
507.0	Cover for electrical connection	Sub-assembly
509.1	Padlock	Sub-assembly
532.0	Cable conduit (actuator connection)	Sub-assembly
535.1	Retaining ring	
633.0	Switchgear housing	Sub-assembly
S	Seal kit	Set

Spare parts list
auma®
 ACVExC 01.2 KT/KM



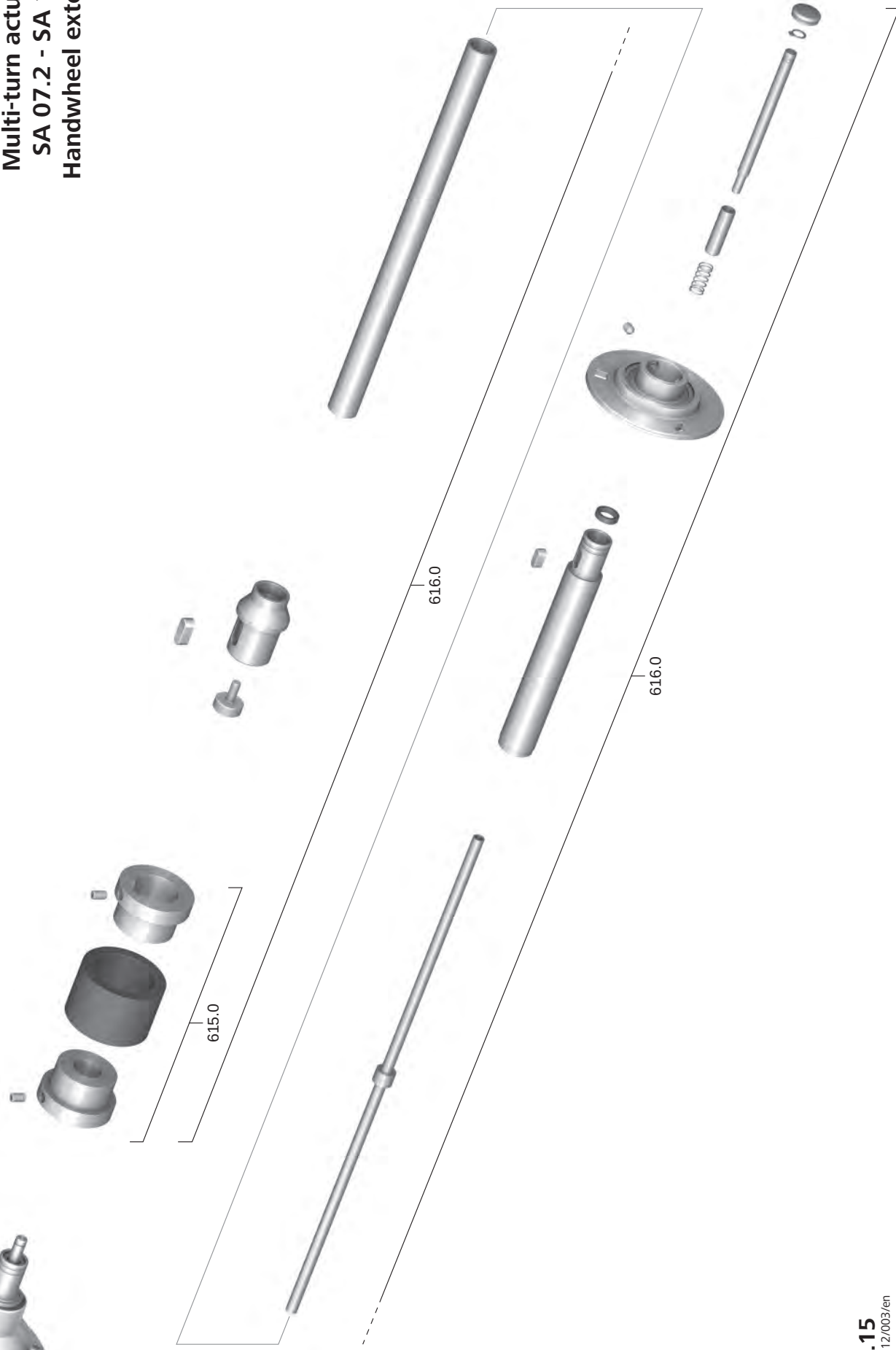
Spare parts list

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	Local controls	Sub-assembly
002.3	Local controls board	Sub-assembly
002.4	Face plate for display	
008.1	I/O board	
008.1	Fieldbus board	
009.0	Logic board	Sub-assembly
011.1	Relay board	Sub-assembly
013.0	Power supply unit/DC link	
014.0	Motor controller/switchgear	Sub-assembly
500.0	Cover	Sub-assembly
502.0	Pin carrier without pins	
505.0	Pin for controls	Sub-assembly
506.0	Pin for motor	Sub-assembly
509.1	Padlock	Sub-assembly
532.0	Cable conduit (actuator connection)	
535.1	Retaining ring	
628.0	Ex plug/socket connector (KT, KM)	
633.0	Switchgear housing	Sub-assembly
S	Seal kit	Set



Spare parts list
auma[®]
Multi-turn actuators
SA 07.2 - SA 16.2
Handwheel extension



SA 07.2 - SA 16.2
Handwheel extension



Spare parts list Multi-turn actuators

Please state type and order no. of the device (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. Delivered spare parts may slightly vary from the representation.

Ref. No.	Designation	Type
615.0	Coupling assy	Sub-assembly
616.0	Stem extension	Sub-assembly

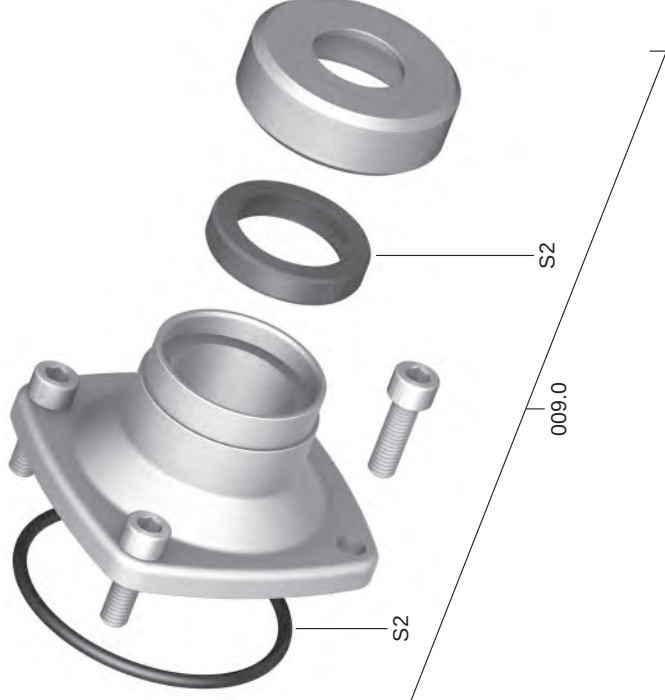
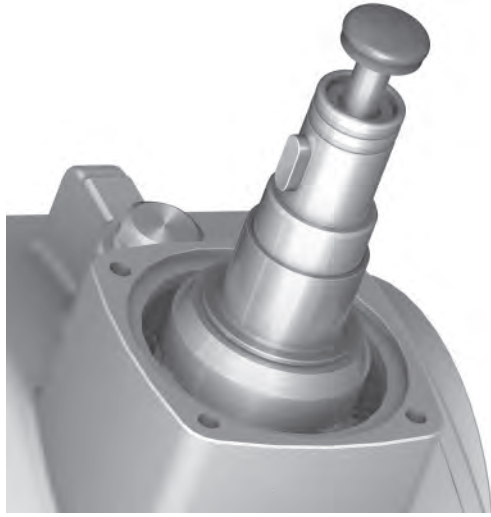
Spare parts list

auma[®]

Multi-turn actuators

SA 07.2 - SA 16.2

Power tool emergency operation



SA 07.2 - SA 16.2

Power tool emergency operation

Spare parts list Multi-turn actuators



Please state type and order no. of the device (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. Delivered spare parts may slightly vary from the representation.

Ref. No.	Designation	Type
009.0	Manual gearing for power tool emergency operation	Sub-assembly
597.0	Adapter for power tool emergency operation	Sub-assembly
S2	Seal kit, large	Set

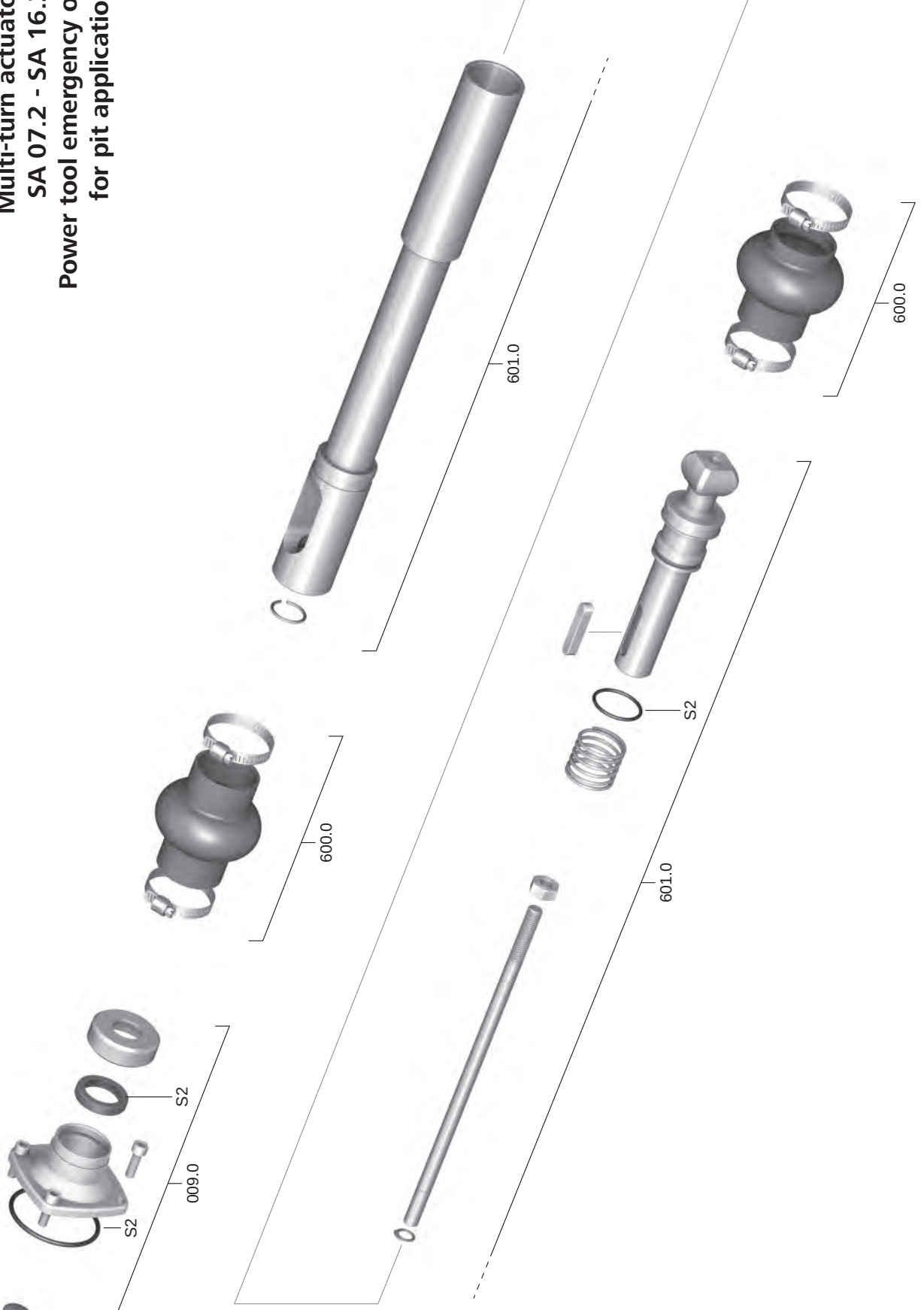


Spare parts list

auma®

Multi-turn actuators
SA 07.2 - SA 16.2

Power tool emergency operation
for pit application



SA 07.2 - SA 16.2
Power tool emergency operation for pit application
Spare parts list Multi-turn actuators



Please state type and order no. of the device (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. Delivered spare parts may slightly vary from the representation.

Ref. No.	Designation	Type
009.0	Manual gearing for power tool emergency operation	Sub-assembly
600.0	Bellows	Sub-assembly
601.0	Square head for pit application	Sub-assembly
S2	Seal kit, large	Set

8 Mounting positions

AMExC Actuator controls

SA 07.2 – SA 16.2 / SQ 05.2 – SQ 14.2 – AM 01.1

408

ACExC Actuator controls

SA 07.2 – SA 16.2 / SQ 05.2 – SQ 14.2 – AC 01.2

411

SA 07.2 – SA 16.2 / SQ 05.2 – SQ 14.2 – AC 01.2 with electrical connection directed to the right

415

SAV 07.2 – SAV 16.2 – ACV 01.2

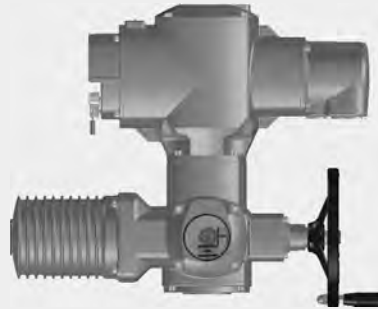
418

1. Mounting positions Actuator controls on actuator¹⁾

Mounting position A

Mounting position B²⁾

Mounting position C

Mounting position D²⁾

Please consider possible space constraints on site when selecting the mounting position.

Mounting positions may easily be changed at a later date.

1) Mounting positions apply for the following actuators:
Multi-turn actuators in all sizes: SA, SAR, SAEx, SAREx
Part-turn actuators in all sizes: SQ, SQR, SQEx, SQREx
Actuator controls in all versions: AM, AMEx

2) **Attention:** For SA multi-turn actuators with rising valve stems, mounting positions B and D are not possible.

2. Mounting positions Local controls

Mounting position A-1 (standard)
Selector switch pointing in actuator direction



Actuator

Mounting position B-1
Selector switch pointing lateral left



Actuator

Mounting position C-1
Selector switch opposite the actuator



Actuator

Mounting position D-1
Selector switch pointing lateral right



Actuator

Please consider possible space constraints on site when selecting the mounting position.
Mounting positions may easily be changed at a later date.

3. Mounting positions Electrical connection

Mounting position A-1 (standard)

Cable entries in actuator direction



Actuator

Mounting position B-1

Cable entries located lateral left



Actuator

Mounting position C-1

Cable entries located opposite the actuator



Actuator

Mounting position D-1

Cable entries located lateral right

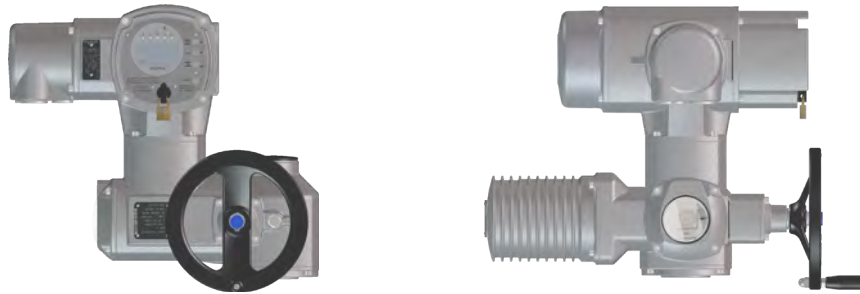
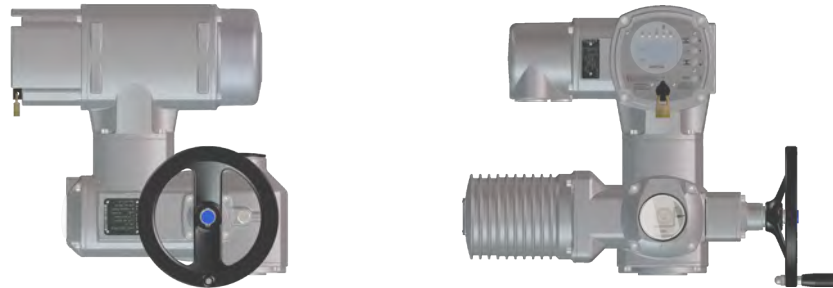
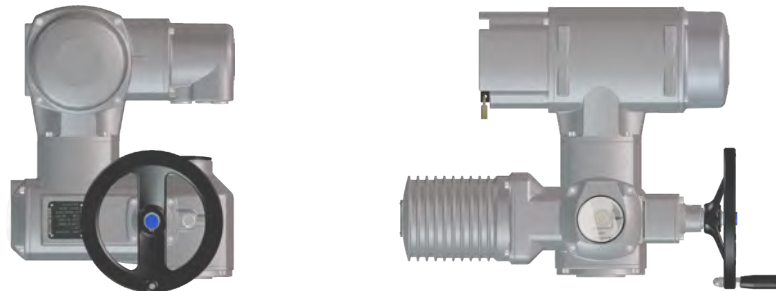
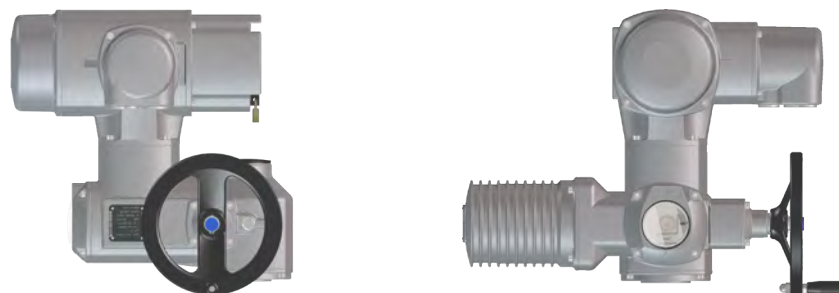


Actuator

Mounting positions may easily be changed at a later date.

The mounting positions shown apply for all types of electrical connections.

Attention: For outdoor installation, make sure that the cable entries are located in downward or lateral position to prevent ingress of water.

1. Mounting positions Actuator controls on actuator¹⁾**Mounting position A****Mounting position B²⁾****Mounting position C²⁾****Mounting position D²⁾**

Please consider possible space confinements on site when selecting the mounting position.

Mounting positions may easily be changed at a later date.

1) Mounting positions apply for the following actuators:
 Multi-turn actuators in all sizes: SA, SAR, SAE_x, SARE_x
 Part-turn actuators in all sizes: SQ, SQR, SQE_x, SQRE_x
 Actuator controls in all versions: AC, ACE_xC

2) **Caution:** For SA multi-turn actuators with rising valve stems, mounting positions B, C and D are not possible.

Mounting positions Actuator controls on SA and SQ actuators

2. Mounting positions Local controls

Mounting position A-1 (standard)	Mounting position B-1

Selector switch pointing in actuator direction

Selector switch pointing lateral left



Actuator



Actuator

Mounting position C-1	Mounting position D-1

Selector switch opposite the actuator

Selector switch pointing lateral right



Actuator



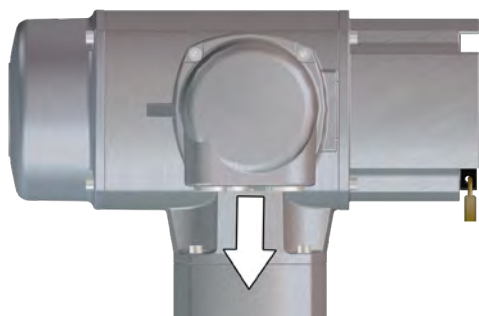
Actuator

Please consider possible space confinements on site when selecting the mounting position.
Mounting positions may easily be changed at a later date.

3. Mounting positions Electrical connection

Mounting position A-1 (standard)

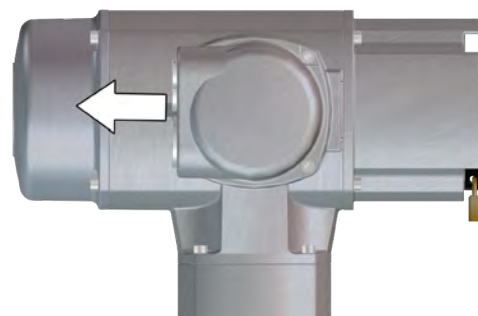
Cable entries in actuator direction



Actuator

Mounting position B-1

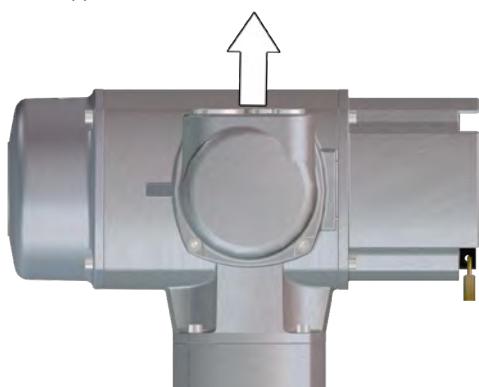
Cable entries located lateral left



Actuator

Mounting position C-1

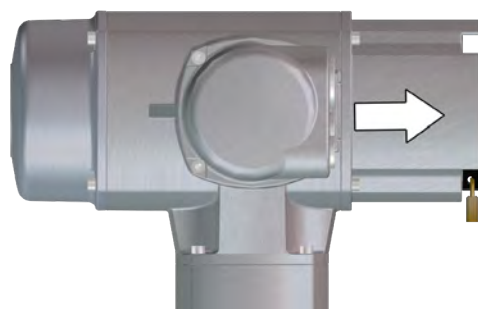
Cable entries located opposite the actuator



Actuator

Mounting position D-1

Cable entries located lateral right



Actuator

Mounting positions may easily be changed at a later date.

The mounting positions shown apply for all types of electrical connections (except KT).

Caution: For outdoor installation, make sure that the cable entries are located in downward or later position to prevent ingress of water.

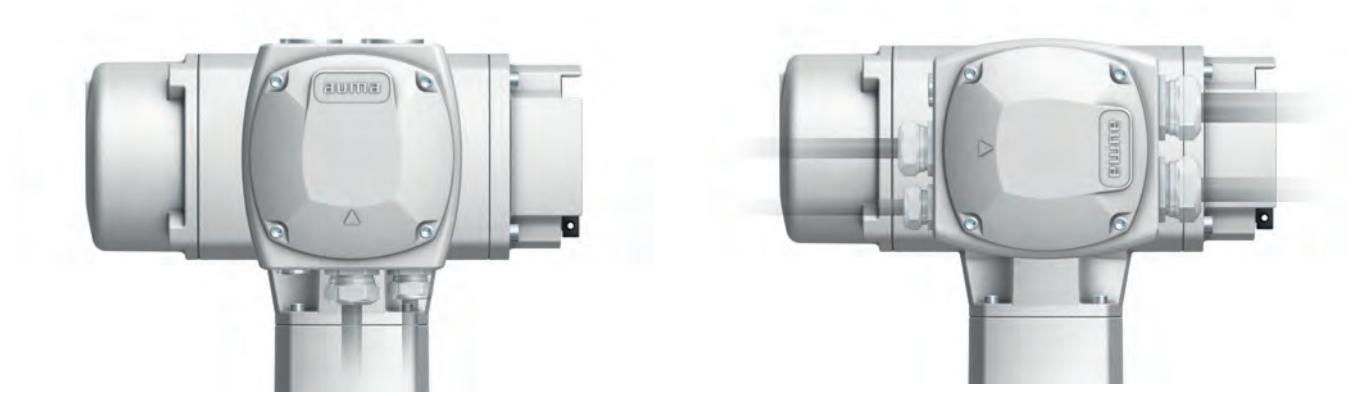
Mounting positions Actuator controls on SA and SQ actuators

4. Mounting positions for KT electrical connection (for explosion-proof applications)

Mounting position A-1 (standard)	Mounting position B-1

Cable entries in actuator direction

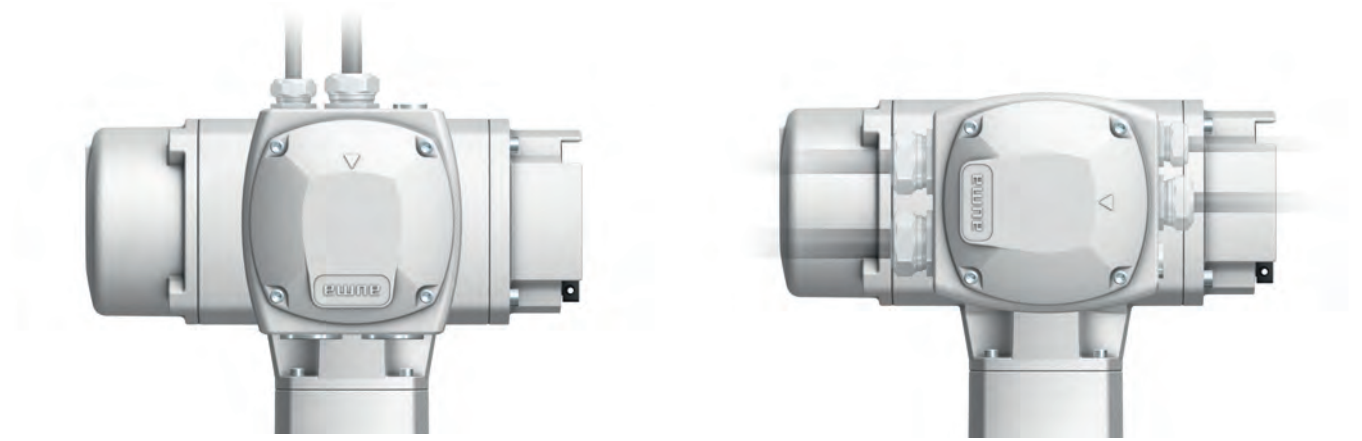
Lateral cable entries both on the left and on the right



Mounting position C-1 (on request)	Mounting position D-1

Cable entries located opposite the actuator

Lateral cable entries both on the right and the left side

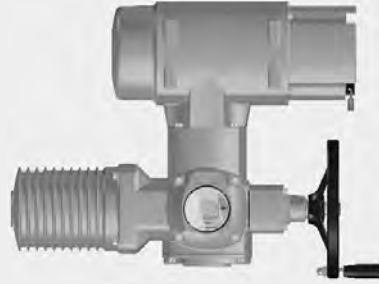


Mounting positions may easily be changed at a later date.
The mounting positions shown apply for KT electrical connection.

Caution: For outdoor installation, make sure that the cable entries are located in downward or later position to prevent ingress of water.

1. Mounting positions Actuator controls on actuator¹⁾

Mounting position E



Mounting position F²⁾



Mounting position G²⁾



Mounting position H²⁾



Please consider possible space constraints on site when selecting the mounting position.

Mounting positions may easily be changed at a later date.

1) Mounting positions apply for the following actuators:
 Multi-turn actuators in all sizes: SA, SAR, SAEx, SAREx
 Part-turn actuators in all sizes: SQ, SQR, SQEx, SQREx
 Actuator controls: AC, ACEx with electrical connection directed to the right

2) **Attention:** For SA multi-turn actuators with rising valve stems, mounting positions E and H are not possible.

2. Mounting positions Local controls

Mounting position A-1 (standard)
Selector switch pointing in actuator direction



Actuator

Mounting position B-1
Selector switch pointing lateral left



Actuator

Mounting position C-1
Selector switch opposite the actuator



Actuator

Mounting position D-1
Selector switch pointing lateral right



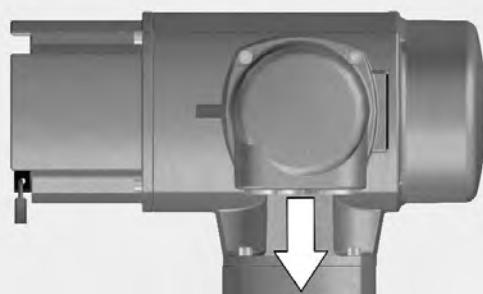
Actuator

Please consider possible space constraints on site when selecting the mounting position.
Mounting positions may easily be changed at a later date.

3. Mounting positions Electrical connection

Mounting position A-1 (standard)

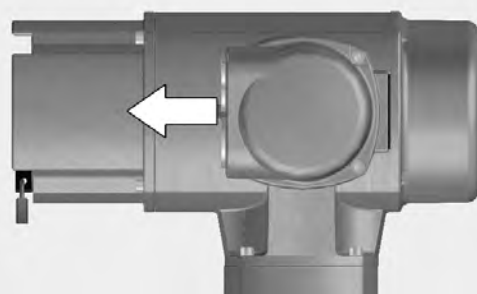
Cable entries in actuator direction



Actuator

Mounting position B-1

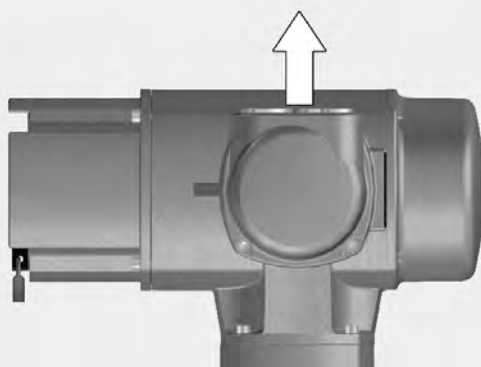
Cable entries located lateral left



Actuator

Mounting position C-1

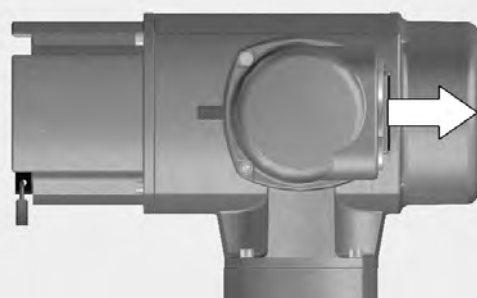
Cable entries located opposite the actuator



Actuator

Mounting position D-1

Cable entries located lateral right



Actuator

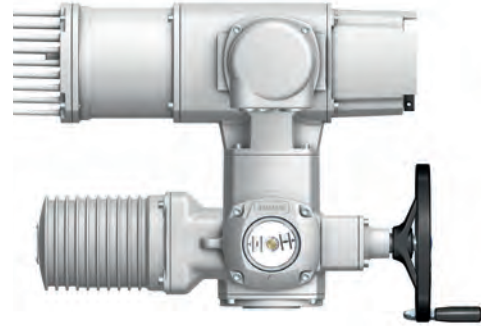
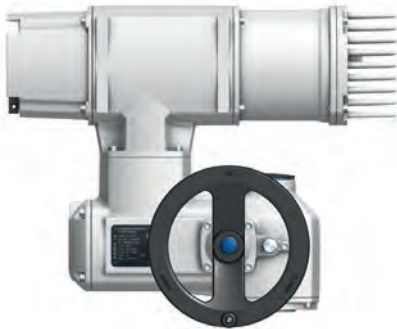
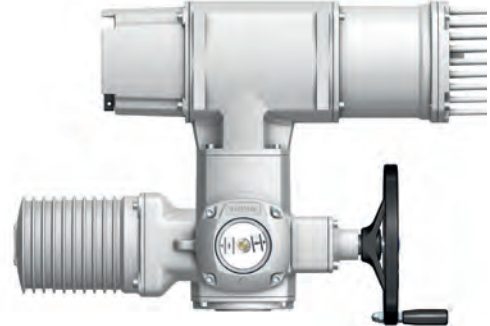
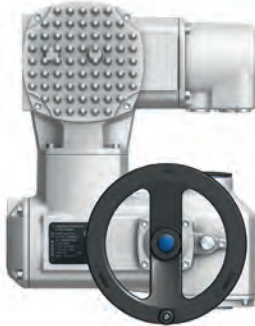
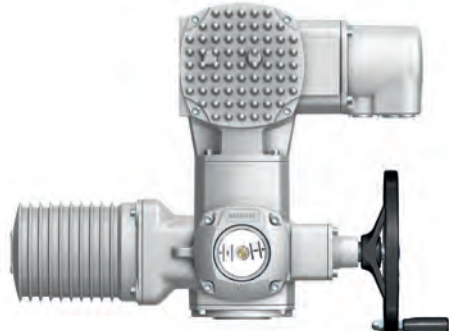
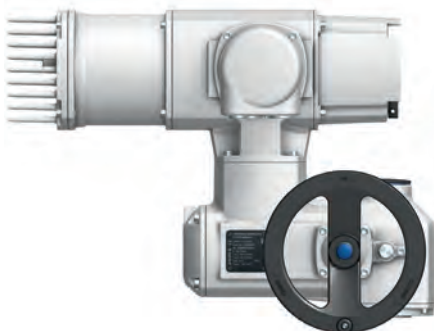
Mounting positions may easily be changed at a later date.

The mounting positions shown apply for all types of electrical connections.

Note: For outdoor installation, make sure that the cable entries are located in downward or lateral position to prevent ingress of water.

1. Mounting positions ACV actuator controls on SAV actuators¹⁾

Mounting position A

Mounting position B²⁾Mounting position C²⁾Mounting position D²⁾

Please consider possible space confinements on site when selecting the mounting position.

Mounting positions may easily be changed at a later date.

1) Mounting positions apply for the following actuators:
 SAV, SARV, SAVEx, SARVEx multi-turn actuators in all sizes
 ACV, ACVExC actuator controls

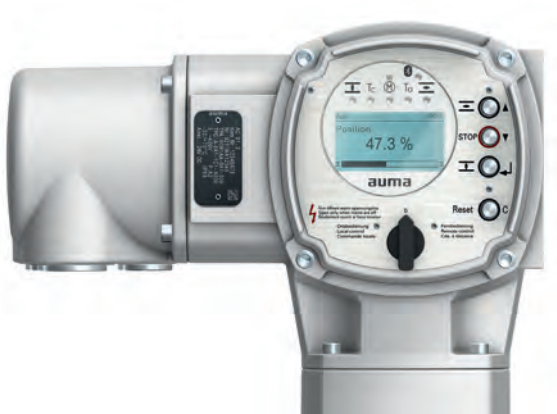
2) **Caution:** For SAV multi-turn actuators with rising valve stems, mounting positions B, C and D are not possible.

Mounting positions ACV Actuator controls on SAV actuators

2. Mounting positions Local controls

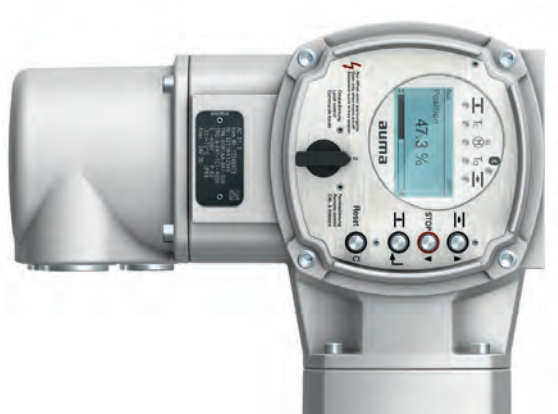
Mounting position A-1 (standard)	Mounting position B-1

Selector switch pointing in actuator direction



Actuator

Selector switch pointing lateral left



Actuator

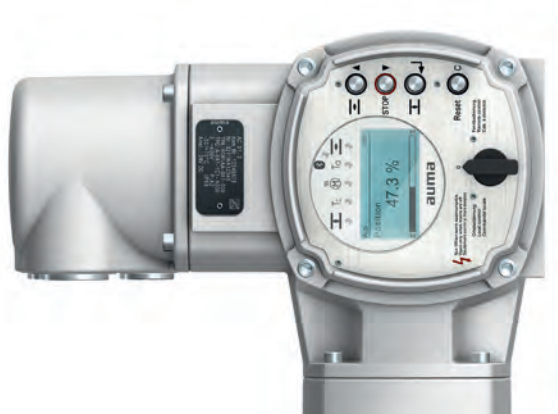
Mounting position C-1	Mounting position D-1

Selector switch opposite the actuator



Actuator

Selector switch pointing lateral right



Actuator

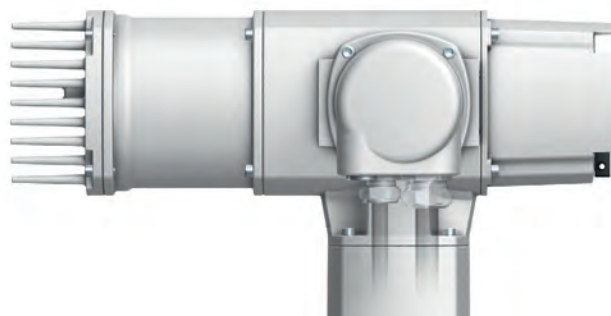
Please consider possible space confinements on site when selecting the mounting position.
Mounting positions may easily be changed at a later date.

Mounting positions ACV Actuator controls on SAV actuators

3. Mounting positions Electrical connection

Mounting position A-1 (standard)

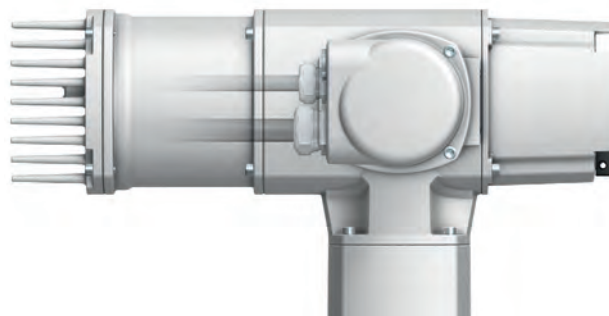
Cable entries in actuator direction



Actuator

Mounting position B-1

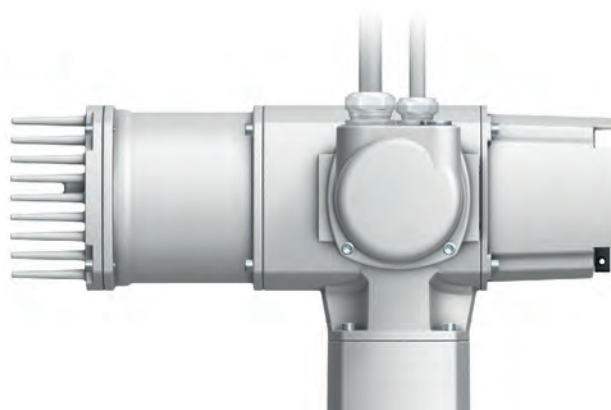
Cable entries located lateral left



Actuator

Mounting position C-1

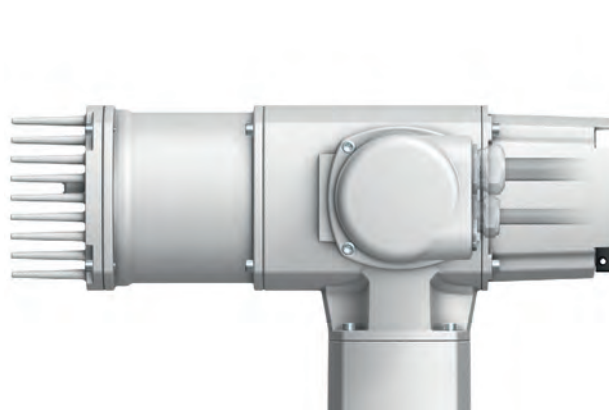
Cable entries located opposite the actuator



Actuator

Mounting position D-1

Cable entries located lateral right



Actuator

Mounting positions may easily be changed at a later date.

The mounting positions shown apply for all types of electrical connections (except KT).

Caution: For outdoor installation, make sure that the cable entries are located in downward or lateral position to prevent ingress of water.

Mounting positions ACV Actuator controls on SAV actuators

4. Mounting positions for KT electrical connection (for explosion-proof applications)

Mounting position A-1 (standard)	Mounting position B-1

Cable entries in actuator direction

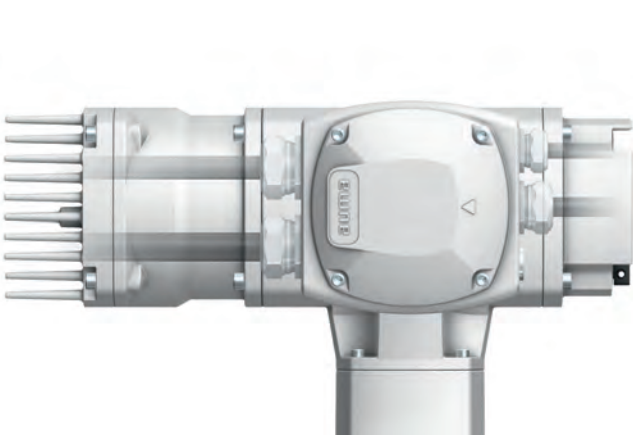
Lateral cable entries both on the left and on the right



Mounting position C-1 (on request)	Mounting position D-1

Cable entries located opposite the actuator

Lateral cable entries both on the right and on the left



Mounting positions may easily be changed at a later date.
The mounting positions shown apply for KT electrical connection.

Caution: For outdoor installation, make sure that the cable entries are located in downward or later position to prevent ingress of water.

9 Wiring diagrams

Actuators

Selection of terminal plans TPA	424
Wiring diagram code for terminal plans TPA	428

Actuator controls AMExC 01.1

Selection of wiring diagrams for AMExC 01.1	429
Legend for wiring diagrams AMExC 01.1	433
Wiring diagram code MSP for AMExC 01.1	435

Actuator controls ACExC 01.2 / ACVExC 01.2

Selection of wiring diagrams for ACExC 01.2	436
Legend for wiring diagrams AC 01.2/ACExC 01.2	455

Selection of wiring diagrams for ACVExC 01.2	457

Wiring diagram code TPC for AC 01.2/ACExC 01.2/ACV 01.2	461

TPA

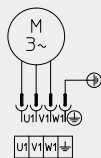
Motor connections

Separate terminal plans are available for DC, brake and two-speed motors.

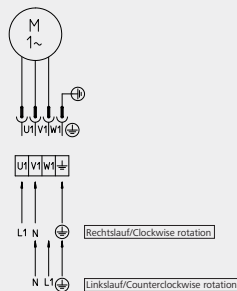
ATTENTION!

Complete protection of AUMA pot-type motors is only achieved when correctly wiring the thermoswitches, embedded in the winding

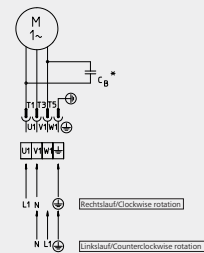
3-phase AC motor
TPA00R... (TP.../...)



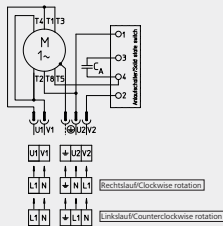
1-phase AC motor
for SG 05.1 – SG 12.1
TPA16R... (1TP.../...)



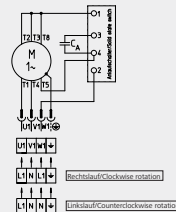
1-phase AC motor with
integral operating capacitor
TPA01R... (60TP.../...)



1-phase AC motor 115 V AC with integral
start-up capacitor and start-up contact
TPA02R... (61TP.../...)



1-phase AC motor 230 V AC with integral
start-up capacitor and start-up contact
TPA03R... (62TP.../...)

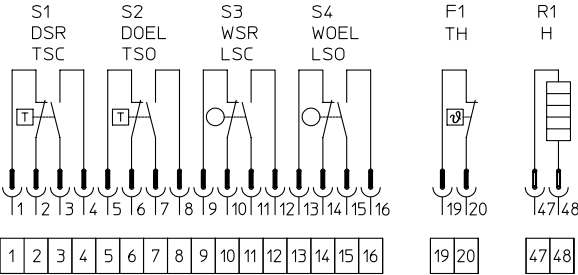


S1	DSR	Torque switch, closing, clockwise rotation
S2	DOEL	Torque switch, opening, counterclockwise rotation
S1/2	DSR1	Torque switch in tandem arrangement with DSR/DOEL (TSC/TSO)
S2/2	DOEL1	
S3	WSR	Limit switch, closing, clockwise rotation
S4	WOEL	Limit switch, opening, counterclockwise rotation
S3/2	WSR1	Limit switch in tandem arrangement with WSR/WOEL (LSC/LSO)
S4/2	WOEL1	
S6	WDR	Limit switch, DUO, for 2 intermediate positions, adjustable
S7	WDL	
S6/2	WDR1	Limit switch, DUO, for 2 intermediate positions in tandem arrangement with WDR/WDL (LSA/LSB), adjustable
S7/2	WDL1	
S5	BI	Blinker transmitter
S17	HA	Handwheel activation switch
F1	TH	Thermoswitch (motor protection); thermoswitch as standard for 1-phase and 3-phase motors only. Contacts open at 140 °C and close automatically once they have cooled down.
B1	IWG	Inductive position transmitter 3-wire or 4-wire system
B2	EWG/RWG	
B3	IWG	Inductive position transmitter 2-wire system
B4	EWG/RWG	
R1	H	Heater in switch compartment
R2	f1	Potentiometer
R2/2	f2	Potentiometer in tandem arrangement with R2
R3-	PTC1	PTC thermistor (motor protection)
R4	H	Motor heater

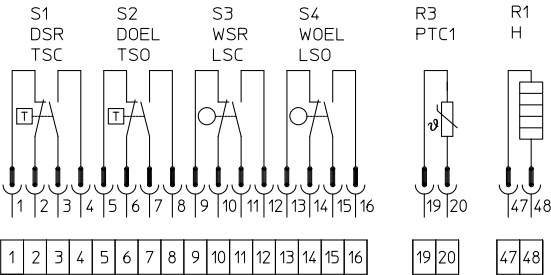
We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

TPA

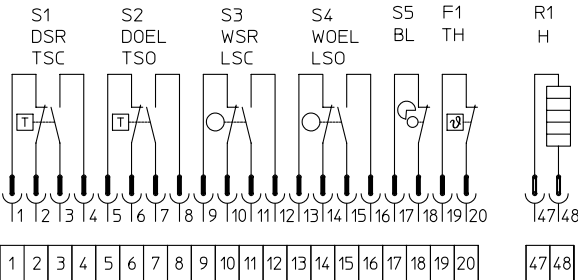
TPA00R1AA-001-000 (KMS TP100/001)



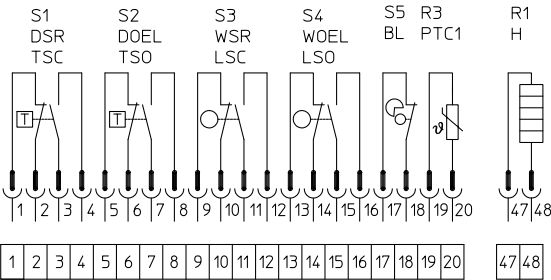
TPA00R2AA-001-000 (KMS TP200/001)



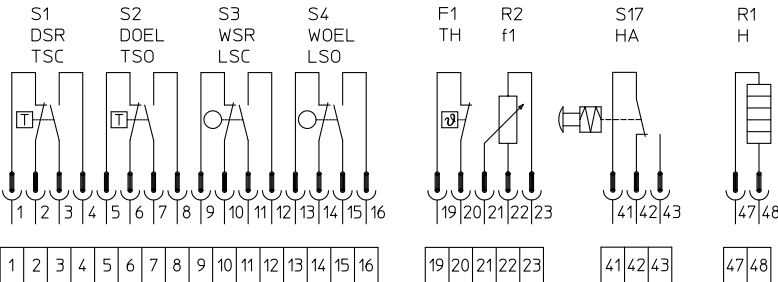
TPA00R1AA-101-000 (KMS TP110/001)



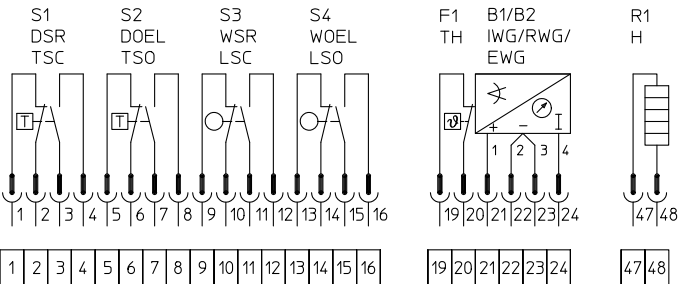
TPA00R2AA-101-000 (KMS TP210/001)



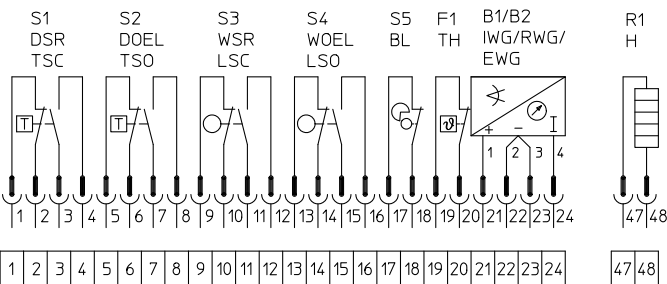
TPA00R1AA-3A1-000



TPA00R1AA-0E1-000 (KMS TP104/001)

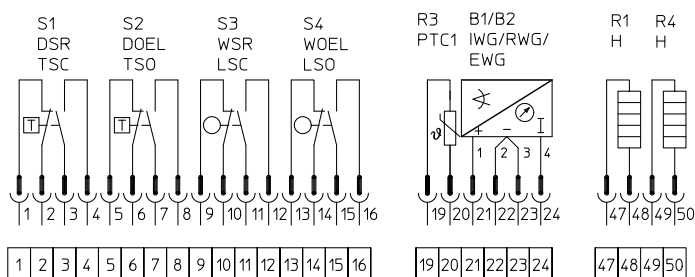


TPA00R1AA-1E1-000 (KMS TP114/001)

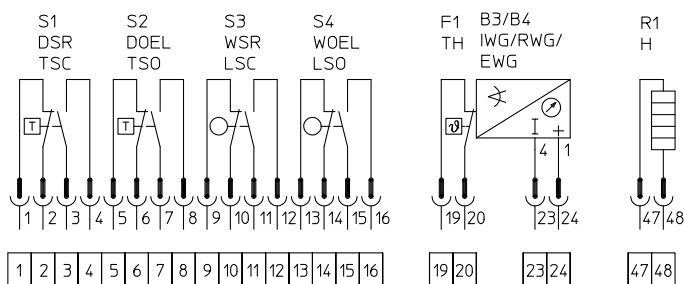


TPA

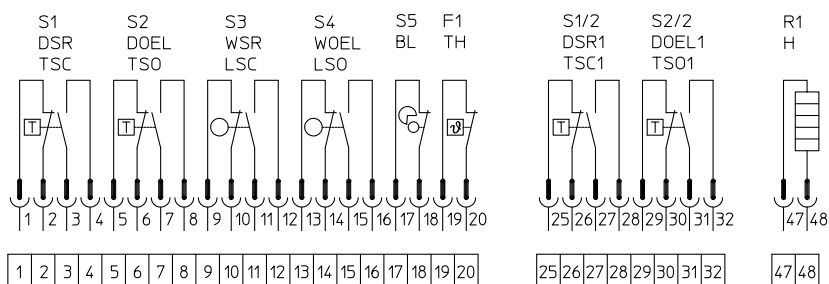
TPA00R2AA-0EA-000 (KMS TP204/009)



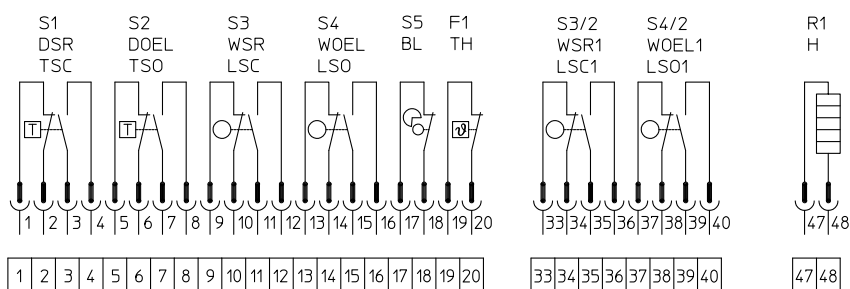
TPA00R1AA-0C1-000 (KMS TP140/001)



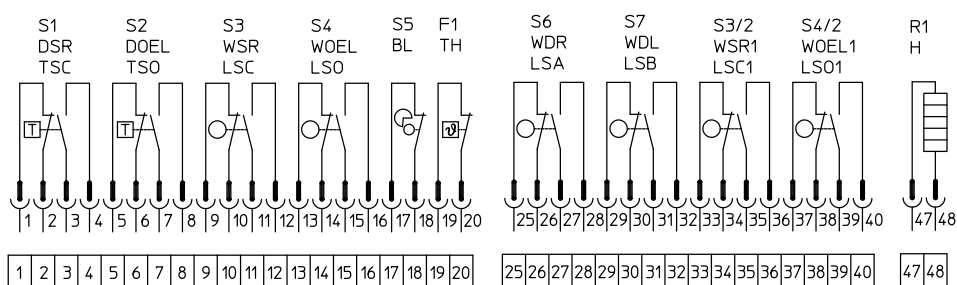
TPA00R1BA-101-000 (KMS TP110/101)



TPA00R1AB-101-000 (KMS TP110/201)

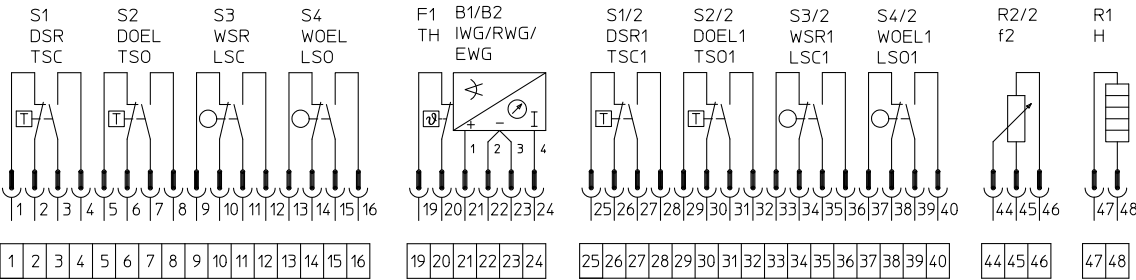


TPA00R1AF-101-000 (KMS TP110/211)

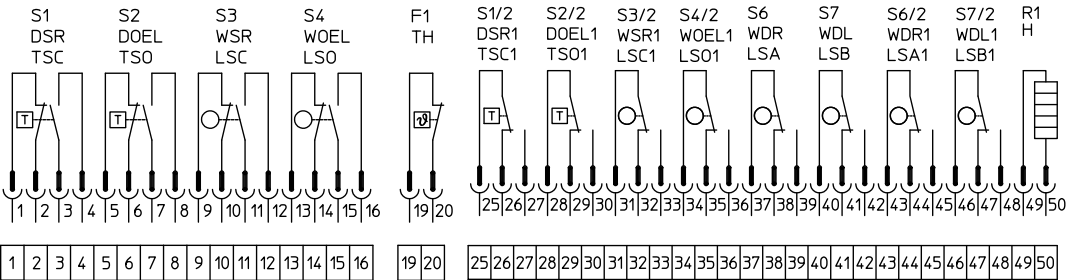


TPA

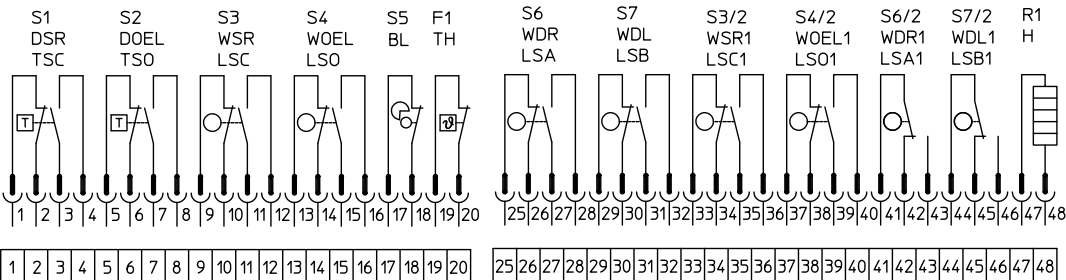
TPA00R1BB-0H1-000 (KMS TP104/341)



TPA00R1BH-001-A30 (KMS 9TP100/331)



TPA00R1AH-101-A30 (KMS 9TP110/231)



TPA

This data applies to:

Multi-turn actuators 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
 SA 25.1 – SA 48.1; SAR 25.1 – SAR 30.1
 SAEx 07.2 – SAEx 16.2; SAREx 07.2 – SAREx 16.2
 SAVEx 07.2 – SAVEx 16.2; SARVEx 07.2 – SARVEx 16.2
 SAEx 25.1 – SAEx 40.1; SAREx 25.1 – SAREx 30.1

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 05.1 – SG 12.1; SGR 05.1 – SGR 12.1
 SGExC 05.1 – SGExC 12.1

		Extract of wiring diagram code														
		Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Position		TPA	0	0	R	1	A	A	-	1	0	1	-	0	0	0
1 + 2	00	AUMA 3-ph AC motor														
	01	AUMA 1-ph AC motor for SA .2/SQ .2														
	16	1-ph AC motor for SG .1														
3	R	Clockwise closing														
	L	Counterclockwise closing														
4	1	1 thermoswitch 140 ° C (NC)														
	2	1 Kaltleiter														
5	0	Without torque switches (MWG)														
	A	2 single switches (standard)														
	B	2 tandem switches														
6	0	Without limit/intermediate switches (MWG)														
	A	2 single switches (standard) for end positions														
	B	2 tandem switches for end positions														
7	-	Reserve														
8	0	Without signalling														
	1	With blinker transmitter														
	2	Manual operation switch with blinker transmitter														
	3	Manual operation switch without blinker transmitter														
9	0	Without position transmitter														
	A	Precision potentiometer														
	C ¹⁾	Electronic position transmitter 2-wire system (EWG/RWG)														
	E ¹⁾	Electronic position transmitter 3-wire or 4-wire system (EWG/RWG)														
10	I ²⁾	Absolute encode for limit and torque sensing (MWG)														
	0	Without heater														
11	1	110 V – 250 V (without controls)														
		24 V (with controls)														
12 – 14	000	Without special units														

Notes on table

- 1) C, E When combined with SAEx 25.1 – SAEx 40.1; SAREx 25.1 – SAREx 30.1, valid for 2-wire RWG 5020 (Ex i) only
 2) I Only possible for SAEx 25.1 – SAEx 40.1/SAREx 25.1 – SAREx 30.1 in FM (US) version

AMExC 01.1/AMExC 01.2

Information on wiring diagram selection

General information

This data sheet is used as supplement to wiring diagram selection for AMExC 01.1/AMExC 01.2 (Y005.539/001)

Notes

The wiring diagrams listed in the wiring diagram selection can be downloaded from our website (www.auma.com). This manual includes examples of wiring diagrams for all control types in their basic version.

Wiring diagram selection

The short designations (AMExC1 etc.) are "descriptive" numberings.
The following listed wiring diagrams can be provided with KP electrical connection

AMExC1: Basic version

Reversing contactors, OPEN - STOP - CLOSE (24 V DC)
MSPE310KC3--FF8EC TPA00R2AA-101-000

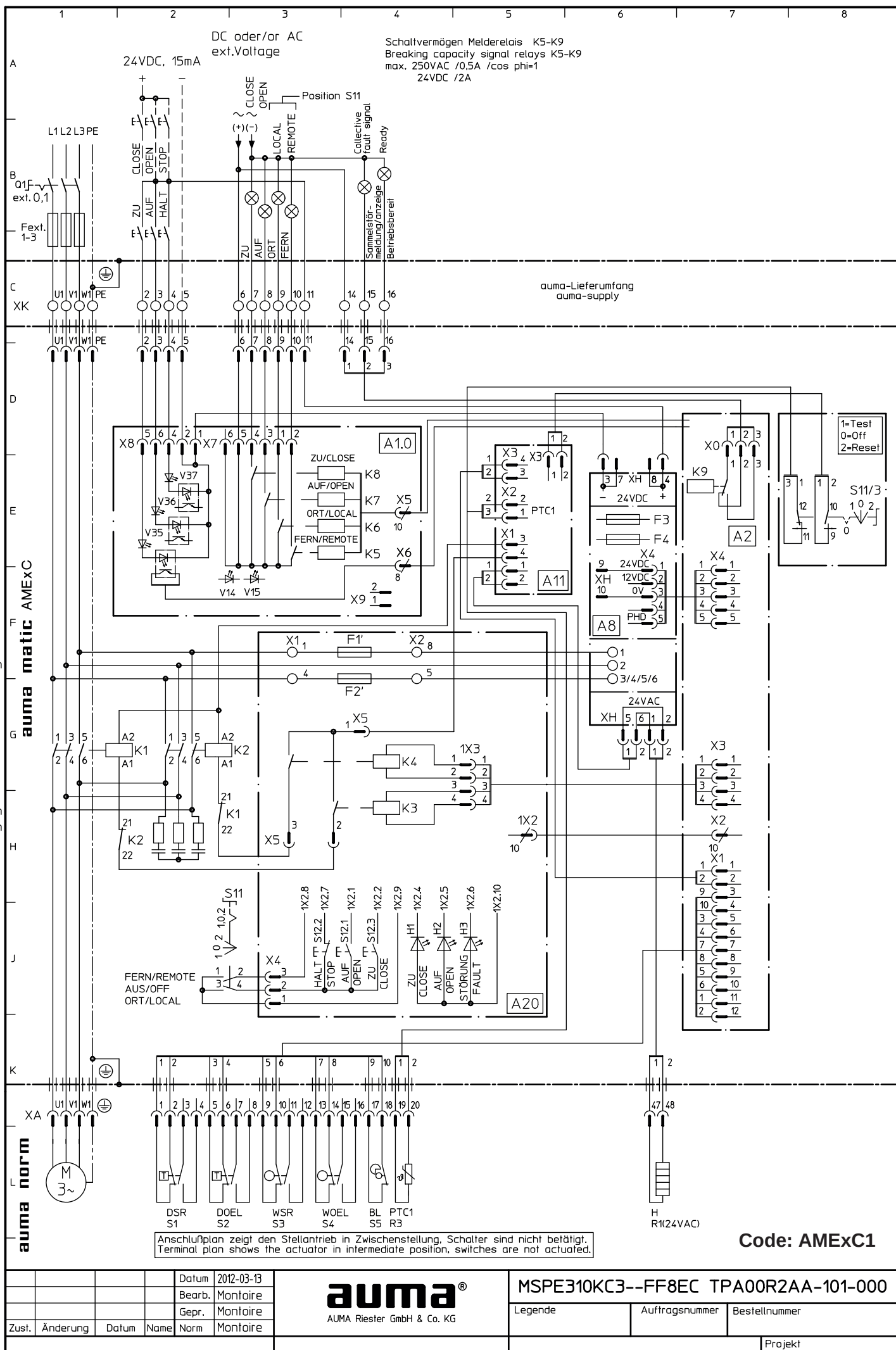
AMExC2: With position feedback signal (0/4 – 20mA) internally supplied (EWG/RWG within actuator)

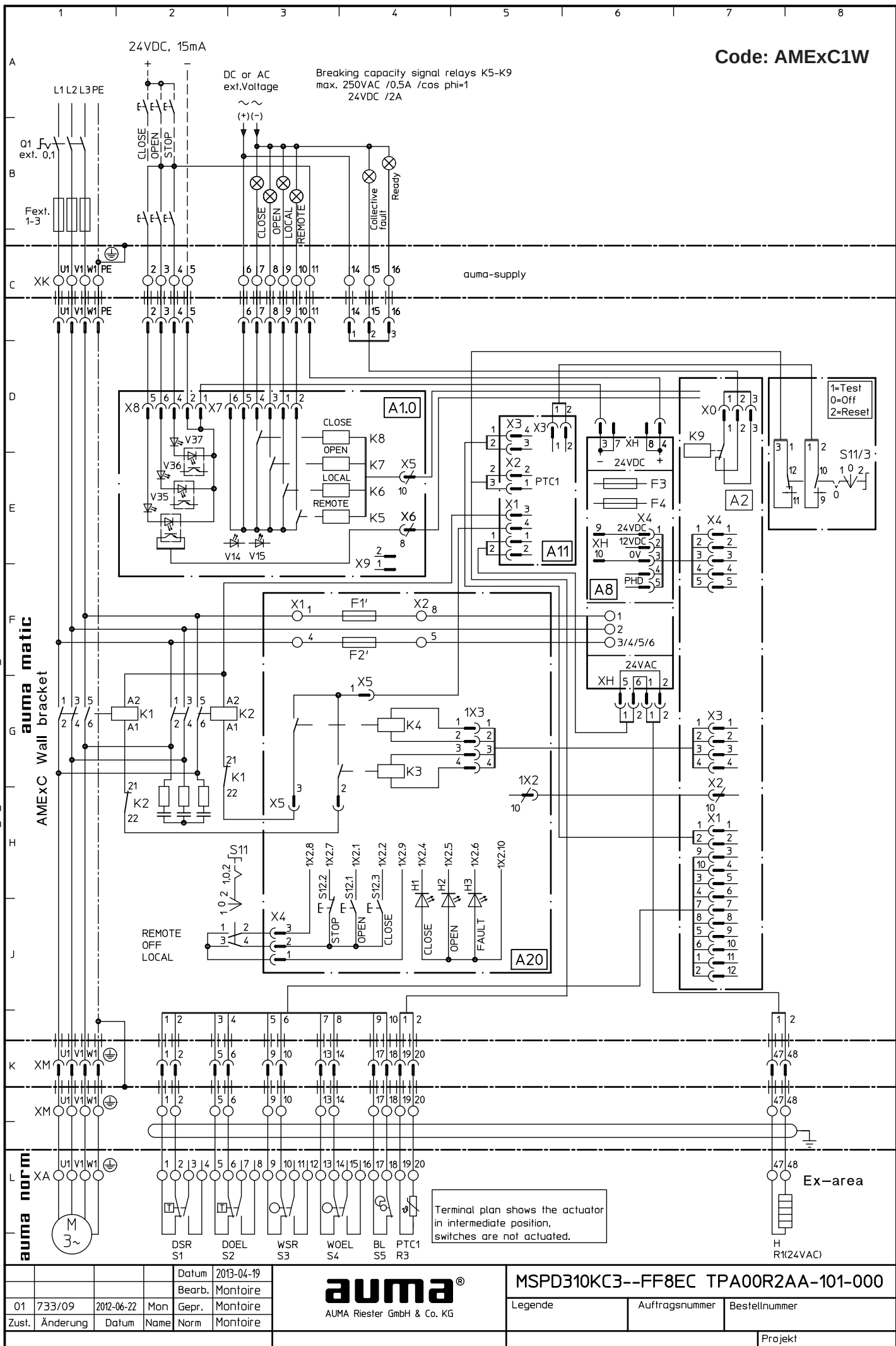
Reversing contactors, OPEN - STOP - CLOSE (24 V DC)
MSPE310KC3--FF8EC TPA00R2AA-1E1-000

AMExC1W: Basic version on wall bracket

Reversing contactors, OPEN - STOP - CLOSE (24 V DC)
MSPD310KC3--FF8EC TPA00R2AA-101-000

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





Code: AMExC1W

24VDC, 15mA

Breaking capacity signal relays K5-K9
max. 250VAC /0,5A /cos phi=1
24VDC /2A

auma-supply

Ex-area

Projekt

Datum	2013-04-19

Bearb.	Montoire

Gepr.	Montoire

Norm	Montoire

auma®

AUMA Riester GmbH & Co. KG

MSPD310KC3--FF8EC TPA00R2AA-101-000

Legende

Auftragsnummer

Bestellnummer	

Legend for AUMA MATIC

Legend for actuator		
S1	DSR	Torque switch, closing, clockwise rotation
S2	DOEL	Torque switch, opening, counterclockwise rotation
S3	WSR	Limit switch, closing, clockwise rotation
S4	WOEL	Limit switch, opening, counterclockwise rotation
S1/2 S2/2	DSR 1 DOEL 1	Torque switches in tandem arrangement with DSR/DOEL (TSC/TSO)
S3/2 S4/2	WSR 1 WOEL 1	Limit switches in tandem arrangement with WSR/WOEL (LSC/LSO)
S3/3 S4/3	WSR 2 WOEL 2	Limit switches in triple arrangement with WSR/WOEL (LSC/LSO)
S3/4 S4/4	WSR 3 WOEL 3	Limit switches in quadruple arrangement with WSR/WOEL (LSC/LSO)
S5	BL	Blinker transmitter
S6 S7	WDR WDL	Limit switches, DUO, for 2 intermediate positions, adjustable
S6/2 S7/2	WDR 1 WDL 1	Limit switches, DUO, for 2 intermediate positions in tandem arrangement with WDR/WDL (LSA/LSB)
B1/B2	EWG/RWG IWG	3- or 4-wire system/electronic position transmitter 3- or 4-wire system/inductive position transmitter
B3/B4	EWG/RWG IWG	2-wire system/electronic position transmitter 2-wire system/inductive position transmitter
F1	TH	Thermoswitches
F1/2	TH	Thermoswitches (signalisation)
R1	H	Heater in switch compartment
R2	f1	Potentiometer
R2/2	f2	Potentiometer in tandem arrangement with R 2
R2/3	f3	Potentiometer in triple arrangement with R 2
R3	PTC 1	PTC thermistor
R3/2	PTC 2	PTC thermistor (indication)
R4	H	Motor heater

Legend for AUMA MATIC		
A1.0		Interface board
K5 - 8		Output contact; running indication via output contacts (opening and closing) in combination with blinker (S5) and signal board for running indication (A91)
A1.1		Special interface board
A1.6		Timer board
R10		Direction OPEN, pause time
R11		Direction OPEN, running time
R12		Direction CLOSE, pause time
R13		Direction CLOSE, running time
A1.8		Profibus board, Modbus board
A2		Logic board
K9		Output contact/collective fault
A4		Overvoltage protection thyristors
A5		Thyristor board
A7		Positioner board
A8		Power supply board
F3, F4		Secondary fuses
A9		REMOTE change-over MANUAL-AUTOMATIC
A9.1		External release of local operation

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

Legend for AUMA MATIC

A11	Thermistor tripping board
A13	Bus connection board
A13.1	Profibus DP and PTC tripping device
A13.2	Profibus DP and PTC tripping device and reset contact
A17	Galvanic isolator
A20/A21	Signal and control board
S11/S11/2	Selector switch LOCAL - OFF - REMOTE
S11/3	Selector switch LOCAL - OFF - REMOTE 3 rd level with spring return for test/reset/PTC tripping device
S12.1	Push button OPEN
S12.2	Push button STOP
S12.3	Push button CLOSE
S12.5	Push button EMERGENCY - STOP
H1	Indication light CLOSE
H2	Indication light OPEN
H3	Indication light FAULT
K3, K4	Control relay for reversing contactors
F1, F2	FF fuse for semiconductors
A22	Galvanic isolator and REMOTE change-over MANUAL-AUTOMATIC
A24	Board for storing the collective fault signal 3 s
A25	Signal and control board with EMERGENCY-STOP
A32	Overvoltage board for Profibus/Modbus
A33	External change-over LOCAL-REMOTE, without selector switch
A35	Heater monitoring
A66	REMOTE change-over for MANUAL-BUS
A67	Profibus with electronic blinker
A88	Heater system board
A91	Signal board for running indication
K10, K11	Output contacts for running indication (NC and NO) in combination with blinker (S5)
B5	Adjustment board for position transmitter
C _B	Capacitor (1 to 3 pieces)
F1', F2'	Primary fuses for power supply
F7	Thermal overload relay
K1, K2	Reversing contactors
Q1	Disconnect switch
Q2	Motor protection switch
R5	Heater in AUMA MATIC
U1 - U4	Semiconductors (thyristors)
V14	LED, (phase sequence), phase failure, motor protection tripped
V15	LED, torque switch operated in mid-travel
V21	Stepping mode active in direction CLOSE
V22	Stepping mode active in direction OPEN
V35	LED, command CLOSE available from control room
V36	LED, command OPEN available from control room
V37	LED, command STOP available from control room
V38	LED, command EMERGENCY available from control room
XK	Customer connection
XA	Connection to actuator
XM	Connection for AUMA MATIC (wall bracket)

Wiring diagram code

		Extract of wiring diagram code														
Position		Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		MSP	E	3	1	0	K	C	3	-	-	F	F	8	E	C
1	Housing															
	E	Basic version														
	D	AM on wall bracket														
2	Connector type, connector version															
	3	Plug/socket connector (basic version)														
3	Motor type															
	1	3-phase AC motor														
4	Control version															
	0	Interface board in basic version														
	7	In combination with positioner														
	-	Fieldbus														
5	Input signals of interface board															
	K	Alternatively remote commands OPEN - STOP - CLOSE/OPEN - CLOSE														
	0	In combination with positioner or fieldbus														
6	Output signals of interface board															
	C	Potential-free end position signal OPEN - CLOSE and signal LOCAL - REMOTE - COLLECTIVE FAULT SIGNAL														
	0	In combination with positioner or fieldbus														
7	Input level at interface board															
	3	Alternatively internal/external control voltage 24 V DC														
	-	Input level in combination with positioner or fieldbus														
8	Programming of control logic and blinker transmitter															
	-	Standard														
	1	Profibus DP														
	7	Modbus RTU														
9	Power supply unit															
	-	Standard														
10	Switchgear															
	F	Reversing contactors														
	3	Thyristor unit for AUMA power classes B1/B2														
11	Selector switch															
	F	Selector switch with reset impulse Ex PTC tripping device (2 nd level)														
	G	Selector switch with reset impulse Ex PTC tripping device (3 rd level)														
12	Control elements															
	8	Push-buttons OPEN, STOP, CLOSE and indication light OPEN – FAULT – CLOSED														
13	Heater and blinker transmitter															
	E	Basic version heater														
14	Motor protection															
	C	Basic version motor protection evaluation (PTC thermistor with tripping device)														

ACExC 01.2

Information on wiring diagram selection

General information

This data sheet is used as supplement to wiring diagram selection for ACExC 01.2 (Y005.360/001)

Notes

The wiring diagrams listed in the wiring diagram selection can be downloaded from our website (www.auma.com). This manual includes examples of wiring diagrams for all control types in their basic version.

Wiring diagram selection

The short designations (A1 etc.) are descriptive numberings.

I/O interface	
A1:	With position feedback signal 0/4 – 20 mA (potentiometer in actuator), basic version Reversing contactors CLOSE, OPEN, STOP, EMERGENCY (24 V DC), 6 programmable output contacts ¹⁾ TPCA-0A1-1C1-AA20 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A2:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator), Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY (24 V DC), setpoint (0/4 – 20 mA), 6 programmable output contacts ¹⁾ TPCA-1B1-1C1-AA20 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator), Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY (24 V DC), setpoint (0/4 – 20 mA), 6 programmable output contacts ¹⁾ TPCA-1B1-1C4-AA20 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCA-1B1-1C5-AA20 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A1N:	With position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors CLOSE, OPEN, STOP, EMERGENCY (24 V DC), 6 programmable output contacts ¹⁾ TPCA-0A1-1C1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A2N:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY (24 V DC), 6 programmable output contacts ¹⁾ TPCA-1B1-1C1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3N:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY (24 V DC), setpoint (0/4 – 20 mA), 6 programmable output contacts ¹⁾ TPCA-1B1-1C4-AA20 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCA-1B1-1C5-AA20 TPA00R200-0I1-000, AUMA power class B3 ³⁾
A4N:	With PID process controller and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY (24 V DC), setpoint (0/4 – 20 mA), actual value (0/4 – 20 mA), 6 programmable output contacts ¹⁾ TPCA-2B1-1C4-AA20 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾
A5N:	With position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors CLOSE, OPEN, STOP, EMERGENCY, INTERLOCK CLOSE, INTERLOCK OPEN, 6 programmable output contacts ¹⁾ TPCA-0D1-1C1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾

Prof bus DP	
A2DP:	With position feedback (potentiometer in actuator), basic version Reversing contactors, Profibus TPCAA000-1A1-A410 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3DP:	With position feedback (potentiometer in actuator) Thyristors ²⁾ , Profibus TPCAA000-1A4-A410 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAA000-1A5-A410 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A2NDP:	With position/torque feedback (MWG in actuator) Reversing contactors, Profibus TPCAA000-1A1-A410 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3NDP:	With position/torque feedback (MWG in actuator) Thyristors ²⁾ , Profibus TPCAA000-1A4-A410 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAA000-1A5-A410 TPA00R200-0I1-000, AUMA power class B3 ³⁾

1) – 3) Refer to notes on page 5.

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

Wiring diagram selection

Prof bus DP combined with I/O interface	
A4DP:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAA121-1C1-A460 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A5DP:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator), Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAA121-1C4-A460 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAA121-1C5-A460 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A4NDP:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAA121-1C1-A460 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A5NDP:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAA121-1C4-A460 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAA121-1C5-A460 TPA00R200-0I1-000, AUMA power class B3 ³⁾
Modbus RTU	
A2MB:	With position feedback (potentiometer in actuator), basic version Reversing contactors, Modbus TPCAC000-1A1-A410 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3MB:	With position feedback (potentiometer in actuator) Thyristors ²⁾ , Modbus TPCAC000-1A4-A410 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAC000-1A5-A410 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A2NMB:	With position/torque feedback (MWG in actuator) Reversing contactors, Modbus TPCAC000-1A1-A410 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3NMB:	With position/torque feedback (MWG in actuator) Thyristors ²⁾ , Modbus TPCAC000-1A4-A410 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAC000-1A5-A410 TPA00R200-0I1-000, AUMA Leistungsklasse B3 ³⁾
Modbus RTU combined with I/O interface	
A4MB:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1C1-A460 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A5MB:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator), Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1C4-A460 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAC121-1C5-A460 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A4NMB:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1C1-A460 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A5NMB:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1C4-A460 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAC121-1C5-A460 TPA00R200-0I1-000, AUMA power class B3 ³⁾

1) – 3) Refer to notes on page 5.

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

Wiring diagram selection

Modbus TCP/IP	
A2MBTCP:	With position feedback (potentiometer in actuator), basic version Reversing contactors, Modbus TCP/IP TPCAC000-1A1-A5F0 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3MBTCP:	With position feedback (potentiometer in actuator) Thyristors ²⁾ , Modbus TCP/IP TPCAC000-1A4-A5F0 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAC000-1A5-A5F0 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A2NMBTCP:	With position/torque feedback (MWG in actuator) Reversing contactors, Modbus TCP/IP TPCAC000-1A1-A5F0 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3NMBTCP:	With position/torque feedback (MWG in actuator) Thyristors ²⁾ , Modbus TCP/IP TPCAC000-1A4-A5F0 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAC000-1A5-A5F0 TPA00R200-0I1-000, AUMA power class B3 ³⁾

Modbus TCP/IP combined with I/O interface	
A4MBTCP:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1A1-A5F0 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A5MBTCP:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1A4-A5F0 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAC121-1A5-A5F0 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A4NMBTCP:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1A1-A5F0 TPA00R200-0I1-000, AUMA Leistungsklasse A1 – A3 ³⁾
A5NMBTCP:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAC121-1A4-A5F0 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAC121-1A5-A5F0 TPA00R200-0I1-000, AUMA power class B3 ³⁾
Only available in Ex d version	

Foundation Fieldbus FF	
A2FF:	With position feedback (potentiometer in actuator), basic version Reversing contactors, Foundation Fieldbus FF TPCAF000-1A1-A410 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3FF:	With position feedback (potentiometer in actuator) Thyristors ²⁾ , Foundation Fieldbus FF TPCAF000-1A4-A410 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAF000-1A5-A410 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A2NFF:	With position/torque feedback (MWG in actuator) Reversing contactors, Foundation Fieldbus FF TPCAF000-1A1-A410 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3NFF:	With position/torque feedback (MWG in actuator) Thyristors ²⁾ , Foundation Fieldbus FF TPCAF000-1A4-A410 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAF000-1A5-A410 TPA00R200-0I1-000, AUMA power class B3 ³⁾

1) – 3) Refer to notes on page 5.

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

Wiring diagram selection

Foundation Fieldbus FF combined with I/O interface	
A4FF:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAF121-1C1-A460 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A5FF:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAF121-1C4-A460 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAF121-1C5-A460 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A4NFF:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAF121-1C1-A460 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A5NFF:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAF121-1C4-A460 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAF121-1C5-A460 TPA00R200-0I1-000, AUMA power class B3 ³⁾
HART actuator	
A2HRT:	With position feedback (potentiometer in actuator), basic version Reversing contactors, HART actuator TPCAI000-1A1-AA20 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3HRT:	With position feedback (potentiometer in actuator) Thyristors ²⁾ , HART actuator TPCAI000-1A4-AA20 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAI000-1A5-AA20 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A2NHRT:	With position/torque feedback (MWG in actuator) Reversing contactors, HART actuator TPCAI000-1A1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3NHRT:	With position/torque feedback (MWG in actuator) Thyristors ²⁾ , HART actuator TPCAI000-1A4-AA20 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAI000-1A5-AA20 TPA00R200-0I1-000, AUMA power class B3 ³⁾
HART actuator combined with I/O interface	
A4HRT:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAI041-1C1-AA20 TPA00R2AA-0A1-000, AUMA power class A1 – A3 ³⁾
A5HRT:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAI041-1C4-AA20 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAI041-1C5-AA20 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A4NHRT:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAI041-1C1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A5NHRT:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAI041-1C4-AA20 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAI041-1C5-AA20 TPA00R200-0I1-000, AUMA power class B3 ³⁾

1) – 3) Refer to notes on page 5.

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

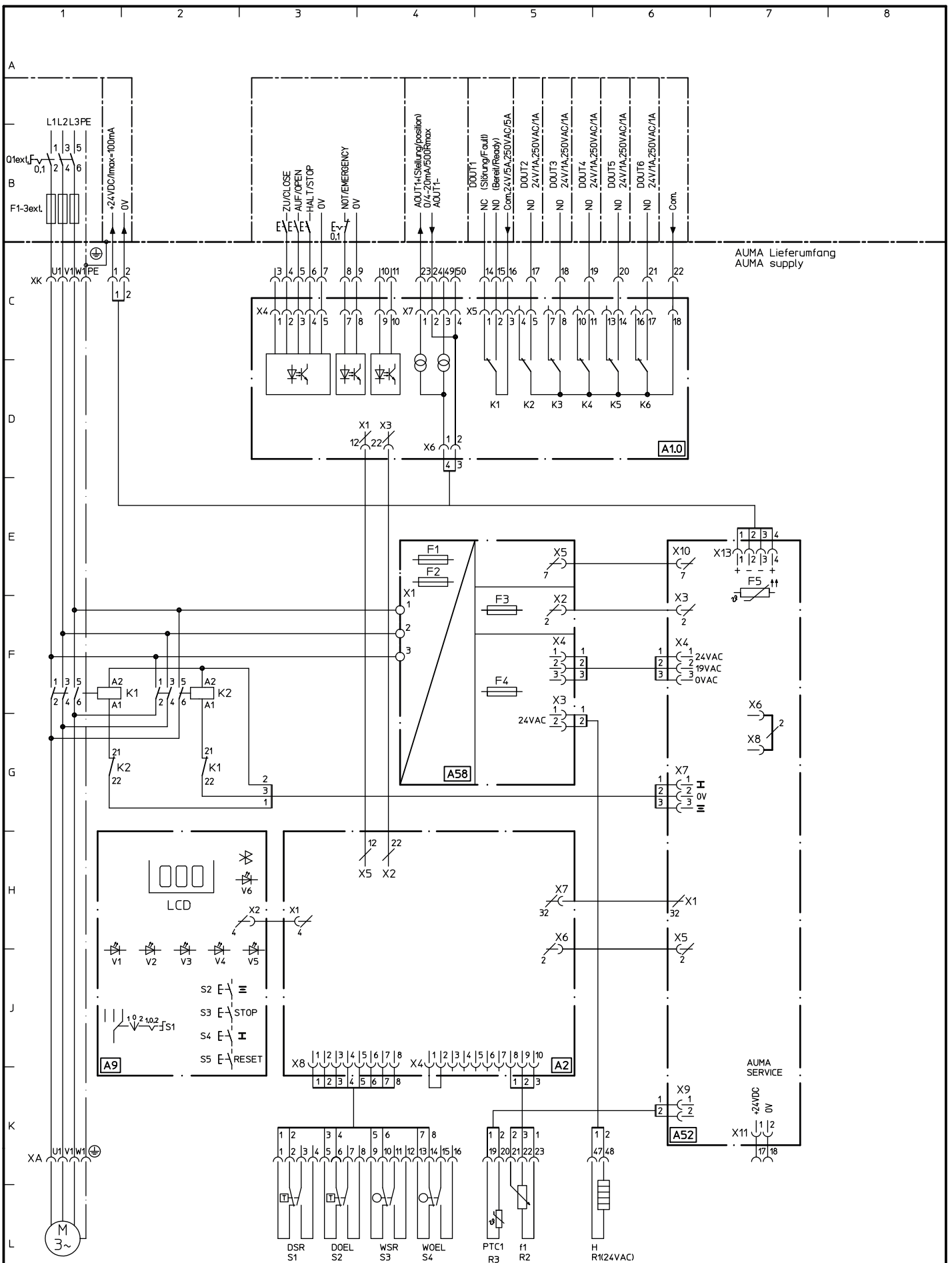
Wiring diagram selection

HART Current Output	
A2HRTCO:	With position feedback (potentiometer in actuator), basic version
	Reversing contactors, HART Current Output TPCAJ000-1A1-AA20 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A3HRTCO:	With position feedback (potentiometer in actuator)
	Thyristors ²⁾ , HART Current Output TPCAJ000-1A4-AA20 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAJ000-1A5-AA20 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A2NHRTCO:	With position/torque feedback (MWG in actuator)
	Reversing contactors, HART Current Output TPCAJ000-1A1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A3NHRTCO:	With position/torque feedback (MWG in actuator)
	Thyristors ²⁾ , HART actuator TPCAJ000-1A4-AA20 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAJ000-1A5-AA20 TPA00R200-0I1-000, AUMA power class B3 ³⁾

HART Current Output with I/O interface	
A4HRTCO:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version
	Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAJ14D-1C1-AA20 TPA00R2AA-0A1-000, AUMA power classes A1 – A3 ³⁾
A5HRTCO:	With position feedback (potentiometer in actuator)
	Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAJ14D-1C4-AA20 TPA00R2AA-0A1-000, AUMA power class B1/B2 ³⁾ TPCAJ14D-1C5-AA20 TPA00R2AA-0A1-000, AUMA power class B3 ³⁾
A4NHRTCO:	With position/torque feedback (MWG in actuator)
	Reversing contactors MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAJ14D-1C1-AA20 TPA00R200-0I1-000, AUMA power classes A1 – A3 ³⁾
A5NHRTCO:	With position/torque feedback (MWG in actuator)
	Thyristors ²⁾ MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCAJ14D-1C4-AA20 TPA00R200-0I1-000, AUMA power class B1/B2 ³⁾ TPCAJ14D-1C5-AA20 TPA00R200-0I1-000, AUMA power class B3 ³⁾

- 1) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN
- 2) Thyristor unit (recommended for modulating actuators)
- 3) Refer to Electrical data SAEx .2/SAREx .2 and SQEx .2/SQREx .2 with 3-phase AC motors

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

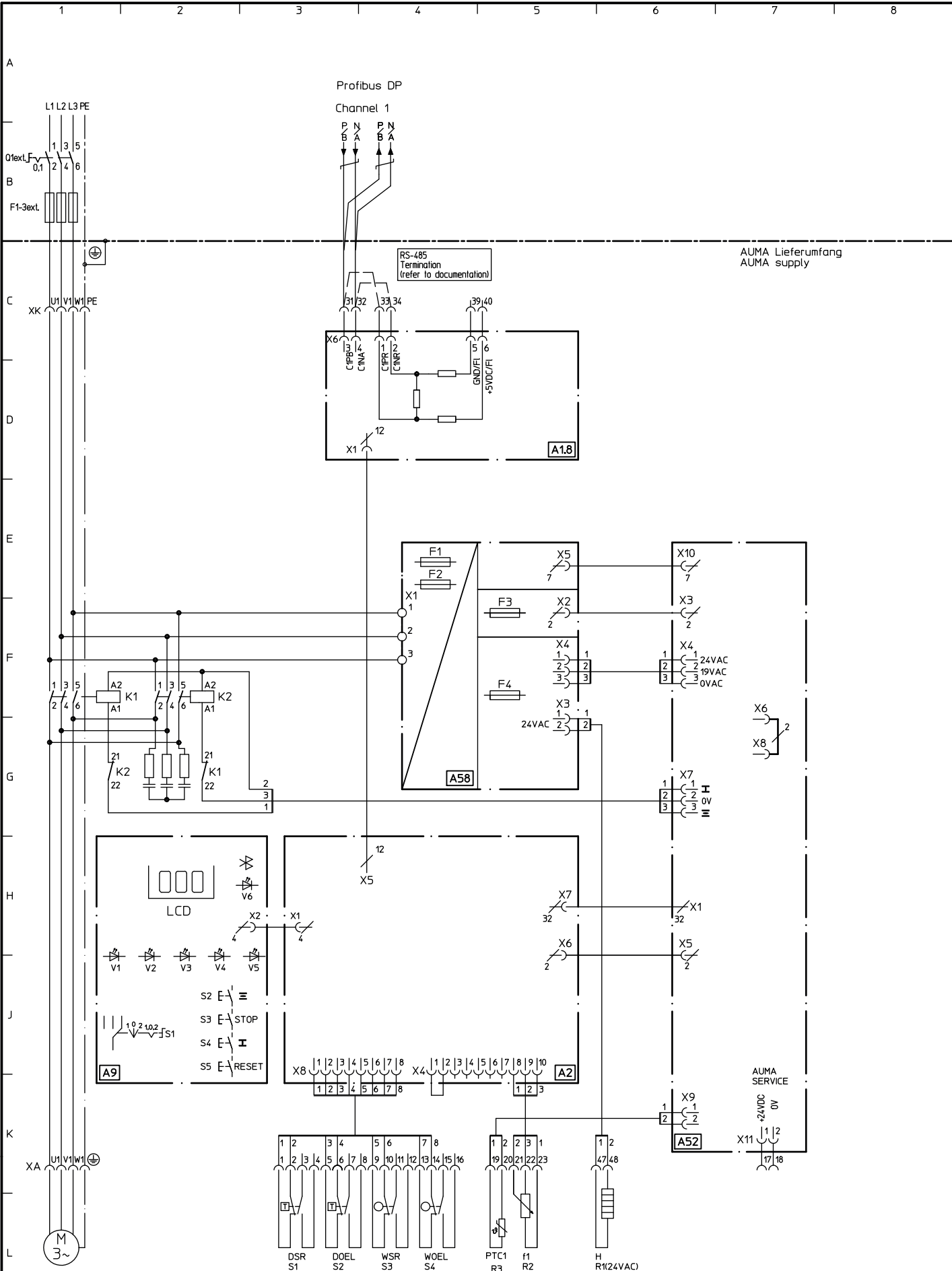


Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käftzugfederklemmen verwendet!
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector!

Code: A1

			Datum	2012-08-17	auma [®] AUMA Riester GmbH & Co. KG	TPCA-0A1-1C1-AA20 TPA00R2AA-0A1-000		
			Bearb.	Montaire		Legende	Auftragsnummer	Bestellnummer
01	733/09	2012-08-17	Mon	Gepr.	Montaire			
Zust.	Änderung	Datum	Name	Norm	Montaire			
						Projekt		



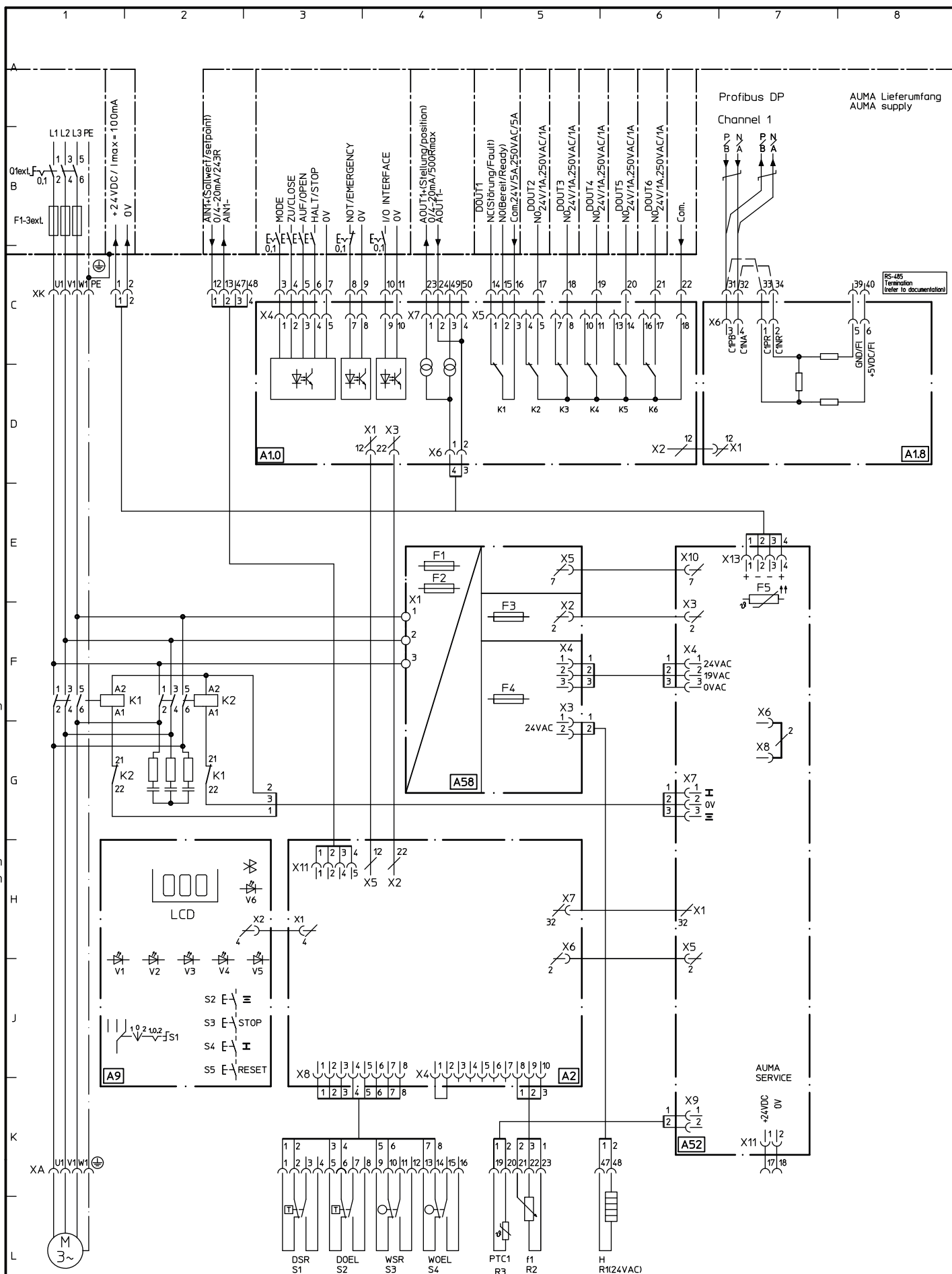
Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käfigzugfederklemmen verwendet !
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector !

Code: A2DP

				Datum	2013-11-12	 AUMA Riester GmbH & Co. KG	TPCAA000-1A1-A410 TPA00R2AA-0A1-000		
02	733/09	2013-11-12	Mon	Bearb.	Montoire		Legende	Auftragsnummer	Bestellnummer
01	2011-184	2011-10-17	Mon	Gepr.	Montoire				
Zust.	Änderung	Datum	Name	Norm	Montoire				
							Projekt		

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



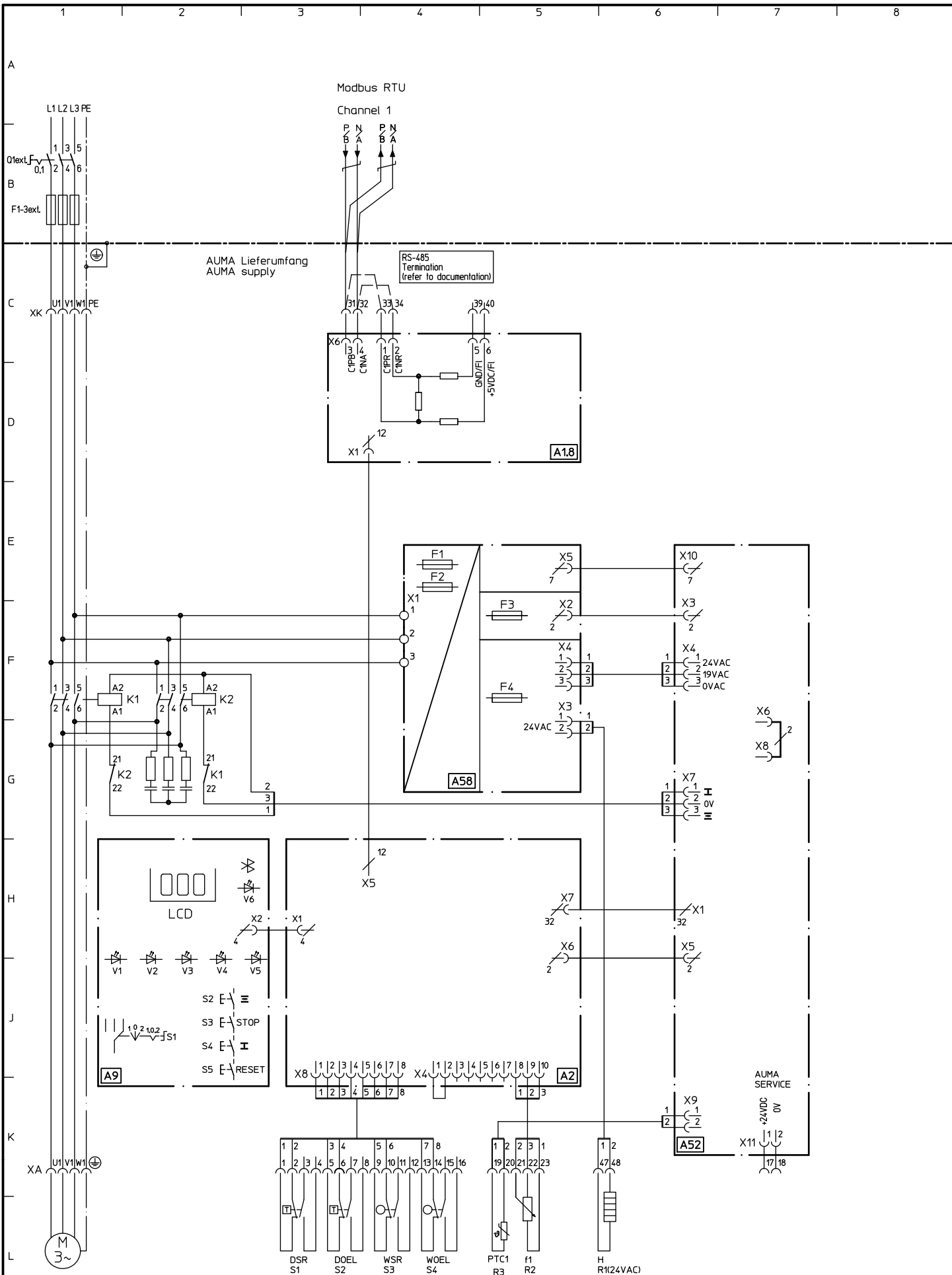
Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käftigzugfederklemmen verwendet!
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector!

Code: A4DP

				Datum	2013-06-14	auma [®] AUMA Riester GmbH & Co. KG		TPCAA121-1C1-A460 TPA00R2AA-0A1-000	
02	2012-122	2012-09-05	Mey	Bearb.	Montaire			Legende	Auftragsnummer
01	2011-184	2011-10-18	Mey	Gepr.	Montaire			Bestellnummer	
Zust.	Änderung	Datum	Name	Norm	Montaire			Projekt	

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



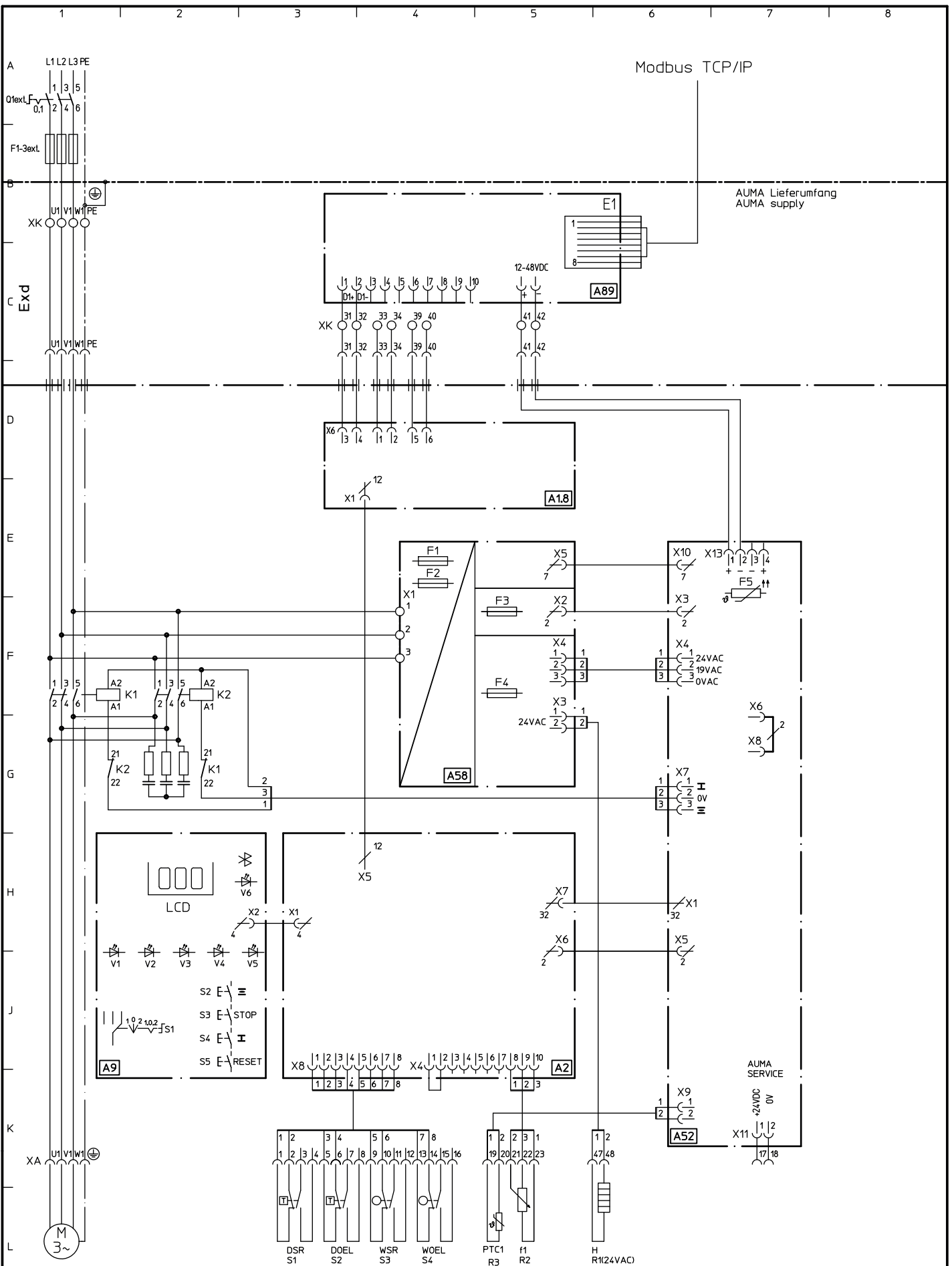
Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käfigzugfederklemmen verwendet !
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector !

Code: A2MB

			Datum	2014-06-30	 AUMA Riester GmbH & Co. KG	TPCAC000-1A1-A410 TPA00R2AA-0A1-000		
			Bearb.	Montoire		Legende	Auftragsnummer	Bestellnummer
01	2011-184	2011-10-17	Mon	Gepr.				
Zust.	Änderung	Datum	Name	Norm		Montoire	Projekt	

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



Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käfigzugfederklemmen verwendet!
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector!

Code: A2MBTCP

				Datum	2016-11-24	 AUMA Riester GmbH & Co. KG	TPCAC000-1A1-A5F0 TPA00R2AA-0A1-000		
				Bearb.	Meyer				
				Gepr.	Roemer				
Zust.	Änderung	Datum	Name	Norm	Roemer		Legende	Auftragsnummer	Bestellnummer
							Projekt		

The diagram illustrates the electrical wiring for an AUMA actuator system. It includes the following components and connections:

- Power Supply:** L1, L2, L3, PE lines entering from the top left, connected to a 3-phase motor (M 3~) and the actuator's power input.
- Foundation Fieldbus H1:** IN and OUT lines for digital communication, connected to the actuator's fieldbus terminals.
- Actuator Components:**
 - A1.8:** Termination block for the fieldbus.
 - A58:** Main actuator control unit.
 - A9:** Control unit with LCD display and buttons (V1-V6, S1-S5).
 - A2:** Motor control unit with multiple output terminals (DSR, DOEL, WSR, WOEL, PTC, f1, H).
- Motor:** 3-phase motor (M 3~) connected to the actuator's motor terminals.
- Wiring Details:**
 - Terminals X1 through X11 are used for various connections, including fieldbus, power, and control signals.
 - Resistors (F1-F4) and capacitors (C1-C4) are shown for signal conditioning.
 - Diodes (V1-V6) and switches (S1-S5) are used for control and protection.

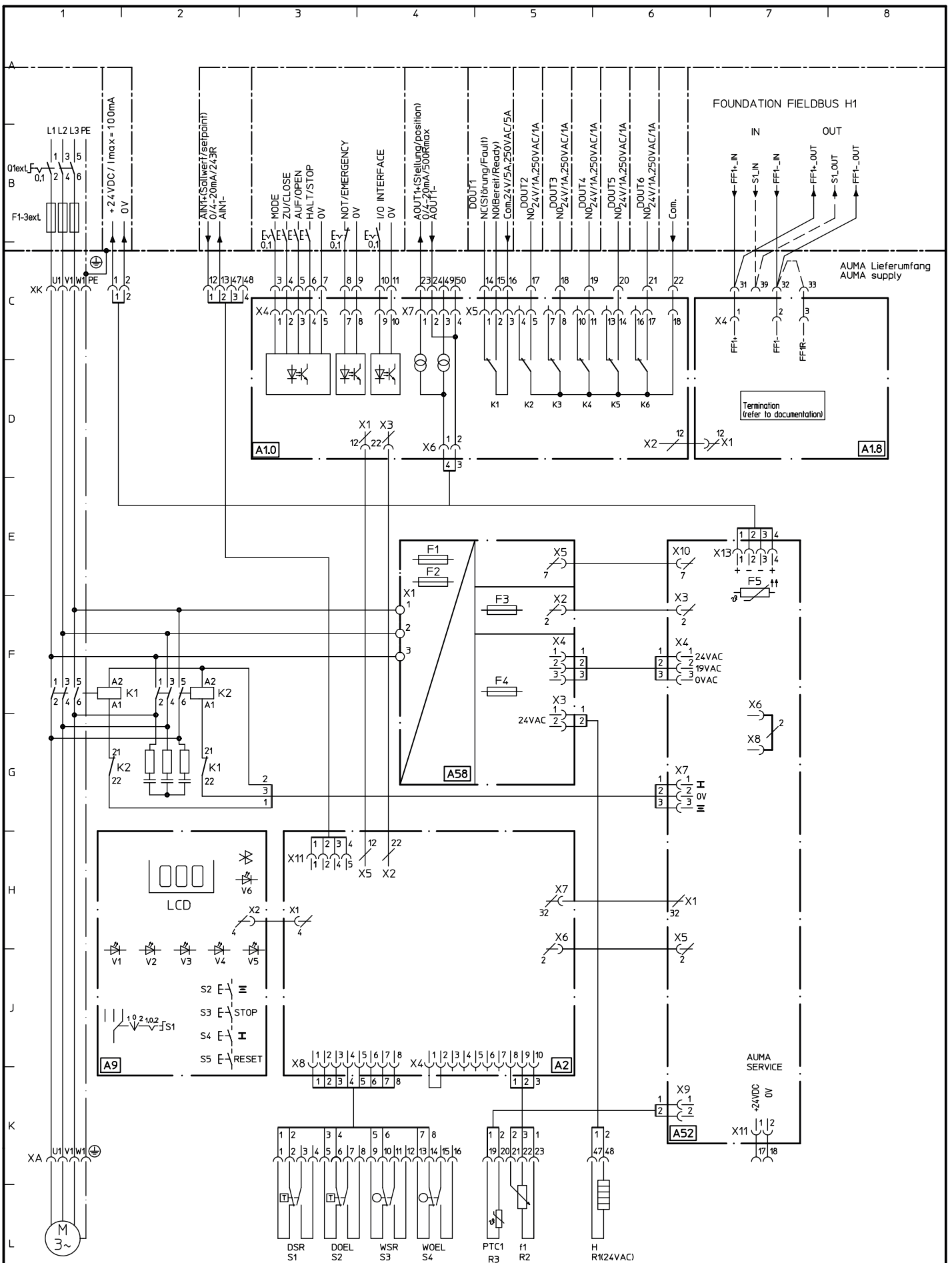
Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käfigzugfederklemmen verwendet !
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector !

Code: A2FF

			Datum	2013-11-04	 AUMA Riester GmbH & Co. KG	TPCAF000-1A1-A410 TPA00R2AA-0A1-000		
			Bearb.	Meyer		Legende	Auftragsnummer	Bestellnummer
			Gepr.	Montaire				
Zust.	Änderung	Datum	Name	Norm		Montaire	Projekt	

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



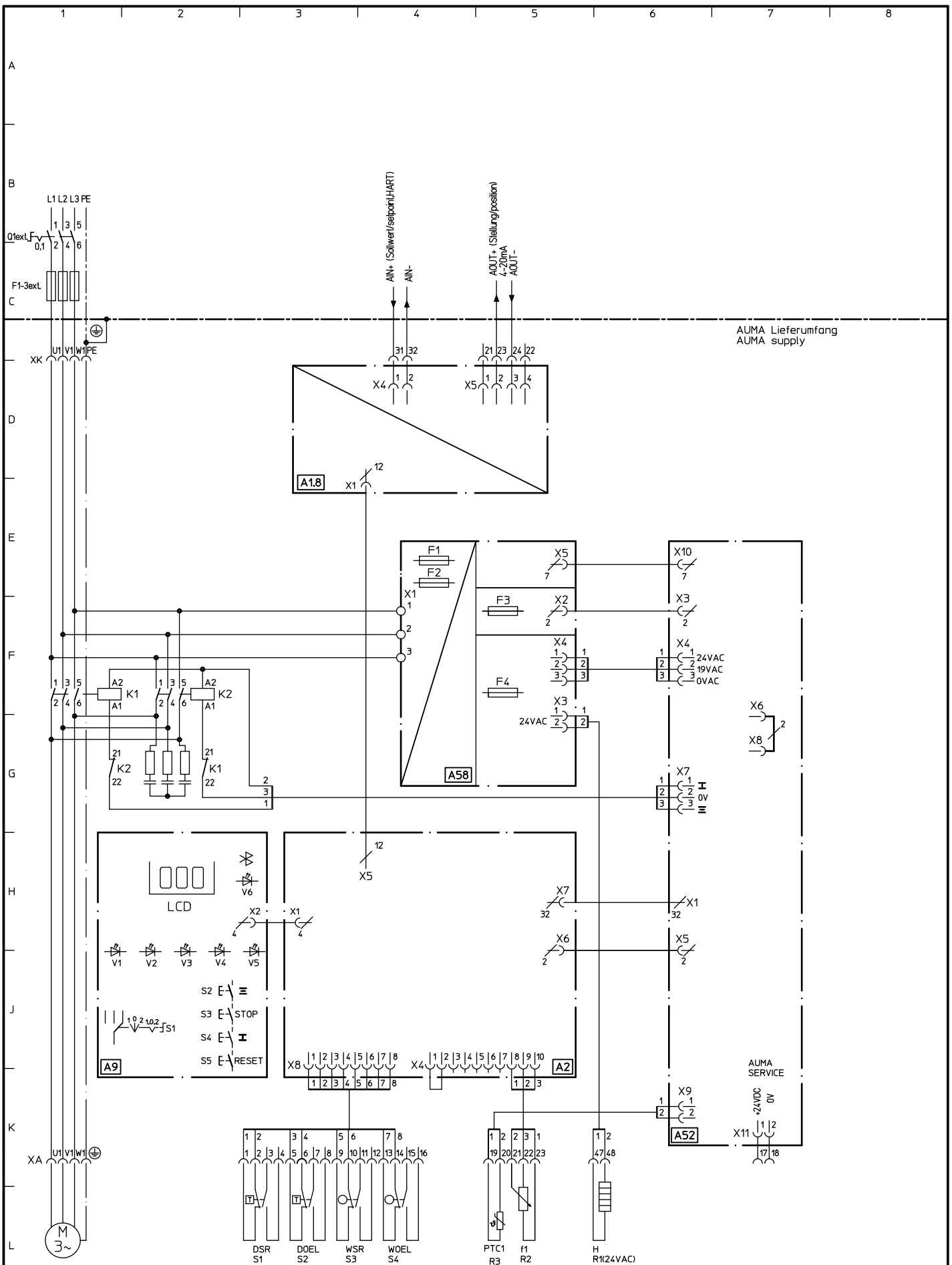
Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käftzugfederklemmen verwendet!
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector!

Code: A4FF

			Datum	2016-11-23	auma® AUMA Riester GmbH & Co. KG	TPCAF121-1C1-A460 TPA00R2AA-0A1-000		
			Bearb.	Roemer		Legende	Auftragsnummer	Bestellnummer
			Gepr.	Meyer				
Zust.	Änderung	Datum	Name	Norm	Meyer	Projekt		

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



AUMA Lieferumfang
AUMA supply

Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käftzugfederklemmen verwendet!
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector!

Code: A2HRT

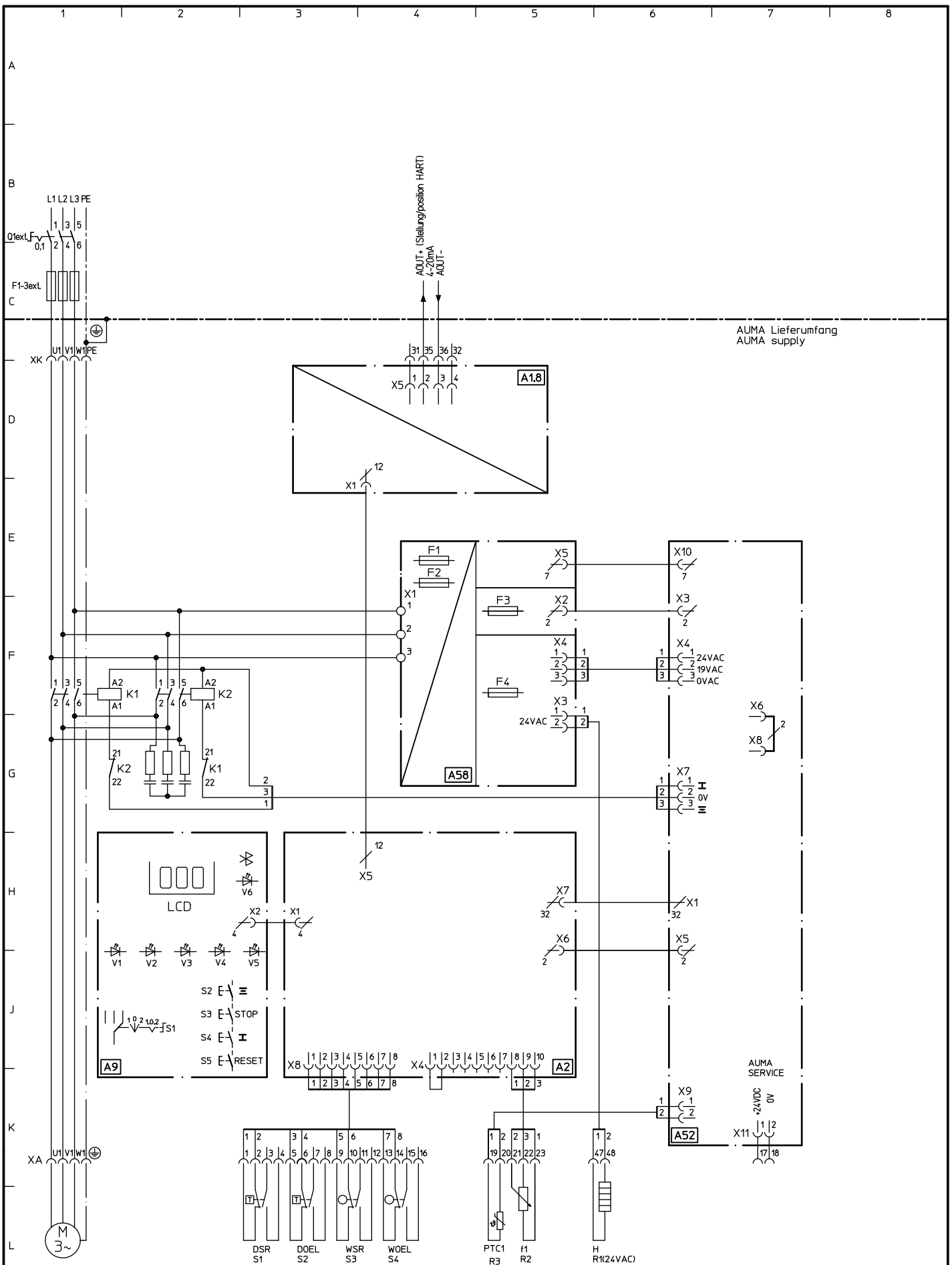
				Datum	2015-03-26	auma [®] AUMA Riester GmbH & Co. KG		TPCAI000-1A1-AA20 TPA00R2AA-0A1-000	
03	2015-086	2015-03-26	Mey	Bearb.	Meyer			Legende	Auftragsnummer
02	2014-270	2014-11-07	Mon	Gepr.	Montaire			Bestellnummer	
Zust.	Änderung	Datum	Name	Norm	Montaire			Projekt	

[illegible]

Code: A4HRT

				Datum	2016-11-22	 AUMA Riester GmbH & Co. KG	TPCAI041-1C1-AA20 TPA00R2AA-0A1-000		
				Bearb.	Meyer		Legende	Auftragsnummer	Bestellnummer
				Gepr.	Roemer				
Zust.	Änderung	Datum	Name	Norm	Roemer		Projekt		

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



AUMA Lieferumfang
AUMA supply

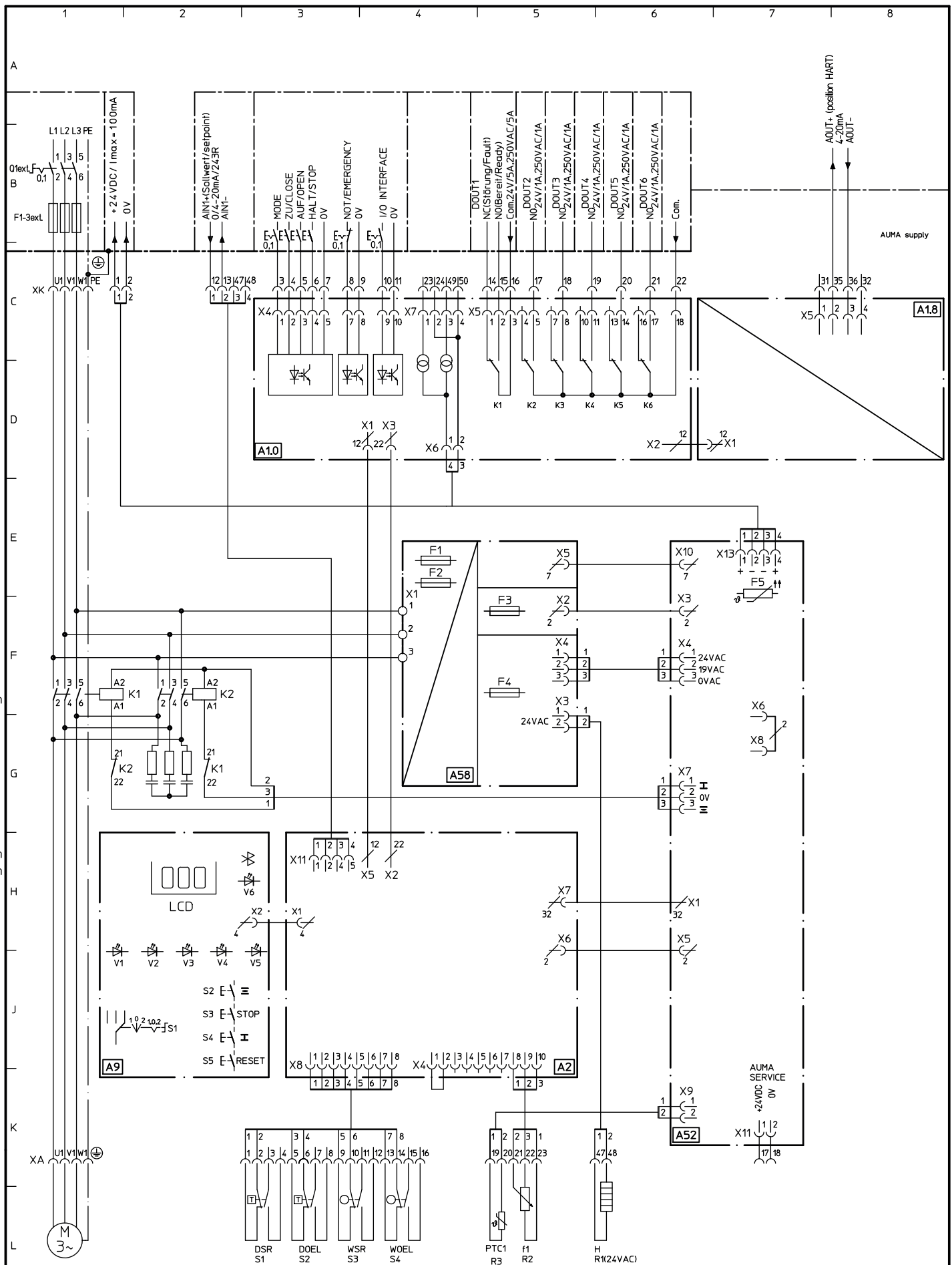
Anschlussplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen / Käftzugfederklemmen verwendet!
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector!

Code: A2HRTCO

				Datum	2016-11-22	auma [®] AUMA Riester GmbH & Co. KG		TPCAJ000-1A1-AA20 TPA00R2AA-0A1-000		
				Bearb.	Meyer			Legende	Auftragsnummer	Bestellnummer
				Gepr.	Roemer					
Zust.	Änderung	Datum	Name	Norm	Roemer	Projekt				

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



Terminal plan shows the actuator in intermediate position, switches are not actuated.
For explosion-proof actuators terminals / cage clamps are used instead of plug / socket connector !

Code: A4HRTCO

				Datum	2016-11-23	auma[®] AUMA Riester GmbH & Co. KG	TPCAJ14D-1C1-AA20 TPA00R2AA-0A1-000		
				Bearb.	Meyer		Legende	Auftragsnummer	Bestellnummer
				Gepr.	Roemer				
Zust.	Änderung	Datum	Name	Norm	Roemer				
									Projekt

Legend AUMATIC

A1.0		Interface board
K1 - 6		Output contacts
A1.1		Interface board
K7 - K12		Output contacts
A1.8		Fieldbus board
A2		Logic board
A4		Overvoltage protection thyristors
R1 - R4		Varistors
A9		Local controls
S1		Selector switch LOCAL - OFF - REMOTE
S2		Push button OPEN
S3		Push button STOP
S4		Push button CLOSE
S5		Push button RESET
V1 - V5		Indication lights
V6		Bluetooth
LCD		Graphic display
A13		Fieldbus connection board
A32		Overvoltage protection board for fieldbus
A52		Control board
F5		Fuse (for external supply 24 V DC)
A52.1		Option board
A58		Power supply unit
F3, F4		Secondary fuses
A88		Heater system board
A88.1		Motor heater fuse
A90		WirelessHART Adapter
B2/B4	EWG/RWG	Electronic position transmitter
B6	MWG	Magnetic limit and torque transmitter
F1, F2		Primary fuses for power supply
F1	TH	Thermoswitches
F7		Thermal overload relay
K0		Contactors for all-pole disconnection of thyristors
K1, K2		Reversing contactors
Q1		Disconnect switch
Q2		Motor protection switch
R1	H	Heater in switch compartment
R2	f1	Potentiometer
R2/2	f2	Potentiometer in tandem arrangement with R2
R3	PTC1	PTC thermistor
R4	H	Motor heater
R5	H	Heater in AUMATIC
S0		EMERGENCY stop button (latching)
S1	TSC	Torque switch, closing, clockwise rotation
S2	TSO (DOEL)	Torque switch, opening, counterclockwise rotation
S3	LSC (WSR)	Limit switch, closing, clockwise rotation
S4	LSO (WOEL)	Limit switch, opening, counterclockwise rotation
S1/2	DSR 1	Torque switches
S2/2	DOEL 1	in tandem arrangement with DSR/DOEL (TSC/TSO)

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

Legend AUMATIC

S3/2	WSR 1	Limit switches
S4/2	WOEL 1	in tandem arrangement with WSR/WOEL (LSC/LSO)
S3/3	WSR 2	Limit switches
S4/3	WOEL 2	in triple arrangement with WSR/WOEL (LSC/LSO)
S6	WDR	Limit switches, DUO, for 2 intermediate positions,
S7	WDL	adjustable
S6/2	WDR 1	Limit switches, DUO, for 2 intermediate positions
S7/2	WDL 1	in tandem arrangement with WDR/WDL (LSA/LSB)
S17	HA	Handwheel activation switch
XK		Customer connection
XA		Actuator connection

ACVExC 01.2

Information on wiring diagram selection

General information

This data sheet is used as supplement to wiring diagram selection for ACVExC 01.2 (Y007.371/001)

Notes

The wiring diagrams listed in the wiring diagram selection can be downloaded from our website (www.auma.com).

Wiring diagram selection

The short designations (AV1 etc.) are descriptive numberings.

I/O interface	
AV1:	With position feedback signal 0/4 – 20 mA (potentiometer in actuator), basic version CLOSE, OPEN, STOP, EMERGENCY (24 V DC), 6 programmable output contacts ¹⁾ TPCH-0A1-1CF-AA20 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCH-0A1-1CE-AA20 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer in actuator) CLOSE, OPEN, STOP, EMERGENCY (24 V DC), 6 programmable output contacts ¹⁾ TPCH-1B1-1CF-AA20 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCH-1B1-1CE-AA20 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV1N:	With position/torque feedback signal 0/4 – 20 mA (MWG in actuator) CLOSE, OPEN, STOP, EMERGENCY (24 V DC), 6 programmable output contacts ¹⁾ TPCH-0A1-1CF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCH-0A1-1CE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V
AV2N:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) MODE, CLOSE, OPEN, STOP, EMERGENCY (24 V DC), setpoint (0/4 – 20 mA), 6 programmable output contacts ¹⁾ TPCH-1B1-1CF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCH-1B1-1CE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V
AV5N:	With position/torque feedback signal 0/4 – 20 mA (MWG in actuator) CLOSE, OPEN, STOP, EMERGENCY, INTERLOCK CLOSE, INTERLOCK OPEN, 6 programmable output contacts ¹⁾ TPCH-0D1-1CF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCH-0D1-1CE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

Profibus D	
AV2DP:	With position feedback (potentiometer in actuator), basic version Profibus TPCHA000-1AF-A410 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHA000-1AE-A410 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2NDP:	With position/torque feedback (MWG in actuator) Profibus TPCHA000-1AF-A410 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHA000-1AE-A410 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

Profibus DP combined with I/O interface	
AV4DP:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHA121-1CF-A460 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHA121-1CE-A460 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV4NDP:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHA121-1CF-A460 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHA121-1CE-A460 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

¹⁾ Refer to notes on page 3.

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Wiring diagram selection

Modbus RTU	
AV2MB:	With position feedback (potentiometer in actuator), basic version
	Modbus TPCHC000-1AF-A410 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHC000-1AE-A410 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2NMB:	With position/torque feedback (MWG in actuator)
	Modbus TPCHC000-1AF-A410 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHC000-1AE-A410 TPA00R200-0I1-000, 1-ph; 220 V – 240 V
Modbus RTU combined with I/O interface	
AV4MB:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version
	MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHC121-1CF-A460 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHC121-1CE-A460 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV4NMB:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator)
	MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHC121-1CF-A460 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHC121-1CE-A460 TPA00R200-0I1-000, 1-ph; 220 V – 240 V
Modbus TCP/IP	
AV2MBTCP:	With position feedback (potentiometer in actuator), basic version
	Modbus TCP/IP TPCHC000-1AF-A5F0 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHC000-1AE-A5F0 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2NMBTCP:	With position/torque feedback (MWG in actuator)
	Modbus TCP/IP TPCHC000-1AF-A5F0 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHC000-1AE-A5F0 TPA00R200-0I1-000, 1-ph; 220 V – 240 V
Modbus TCP/IP combined with I/O interface	
AV4MBTCP:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version
	MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHC121-1AF-A5F0 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHC121-1AE-A5F0 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV4NMBTCP:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator)
	MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHC121-1AF-A5F0 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHC121-1AE-A5F0 TPA00R200-0I1-000, 1-ph; 220 V – 240 V
Foundation Fieldbus FF	
AV2FF:	With position feedback (potentiometer in actuator), basic version
	Foundation Fieldbus FF TPCHF000-1AF-A410 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHF000-1AE-A410 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2NFF:	With position/torque feedback (MWG in actuator)
	Foundation Fieldbus FF TPCHF000-1AF-A410 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHF000-1AE-A410 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

1) 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.

Wiring diagram selection

Foundation Fieldbus FF combined with I/O interface	
AV4FF:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHF121-1CF-AA60 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHF121-1CE-AA60 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV4NFF:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHF121-1CF-AA60 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHF121-1CE-AA60 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

HART Actuator	
AV2HRT:	With position feedback (potentiometer in actuator), basic version HART Actuator TPCHI000-1AF-AA20 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHI000-1AE-AA20 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2NHRT:	With position/torque feedback (MWG in actuator) HART Actuator TPCHI000-1AF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHI000-1AE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

HART Actuator combined with I/O interface	
AV4HRT:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHIO41-1CF-AA20 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHIO41-1CE-AA20 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV4NHRT:	With positioner and position/torque feedback signal 0/4 – 20 mA (MWG in actuator) MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHIO41-1CF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHIO41-1CE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

HART Current Output	
AV2HRTCO:	With position feedback (potentiometer in actuator), basic version HART Current Output TPCHJ000-1AF-AA20 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHJ000-1AE-AA20 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV2NHRTCO:	With position/torque feedback (MWG in actuator) HART Current Output TPCHJ000-1AF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHJ000-1AE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

HART Current Output with I/O interface	
AV4HRTCO:	With positioner and position feedback signal 0/4 – 20 mA (potentiometer within actuator), basic version MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHJ14D-1CF-AA20 TPA00R2AA-0A1-000, 3-ph; 380 V – 480 V TPCHJ14D-1CE-AA20 TPA00R2AA-0A1-000, 1-ph; 220 V – 240 V
AV4NHRTCO:	With position/torque feedback (MWG in actuator) MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O (24 V DC), 6 programmable output contacts ¹⁾ TPCHJ14D-1CF-AA20 TPA00R200-0I1-000, 3-ph; 380 V – 480 V TPCHJ14D-1CE-AA20 TPA00R200-0I1-000, 1-ph; 220 V – 240 V

- 1) Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN

Wiring diagram code

		Extract of wiring diagram code													
Position	I/O interface	TPC	A	–	0	A	1	–	1	C	1	–	A	0	0
	Profibus DP	TPC	A	A	0	0	0	–	1	A	1	–	A	0	0
1	Controls type A AC 01.2/ACExC 01.2 H ACV 01.2/ACVExC														
2	Interface to the distributed control system – I/O interface A Profibus DP C Modbus RTU/Modbus TCP/IP F Foundation Fieldbus I HART Connection Type: Actuator J HART Current Output N Profinet														
3	Analogue inputs 0 Without 1 4 – 20 mA for positioner A With 2 free analogue inputs														
4	Digital inputs A CLOSE, OPEN, STOP, EMERGENCY B With positioner: MODE, CLOSE, OPEN, STOP, EMERGENCY 0 Without 1 With 4 free digital inputs 2 With 6 inputs: MODE, CLOSE, OPEN, STOP, EMERGENCY, I/O interface 4 With 5 inputs: CLOSE, OPEN, STOP, EMERGENCY, I/O interface														
5	Output contacts, position and torque feedback signals (0/4 – 20 mA) 1 / D 5 NO contacts, 1 change-over contact, position feedback signal torque feedback signal (in combination with MWG) 0 Without														
6	Additional equipment – Without K Profinet, 2xIEEE 802.3														
7	Local controls 1 Push buttons OPEN, STOP, CLOSE, RESET, selector switch LOCAL - OFF - REMOTE, display, 5 indication lights														
8	Auxiliary voltage for supply of digital inputs A Without C 24 V DC														
9	Switchgear 1 Reversing contactors max. AUMA power class A3 (refer to Electrical data SA .2/SAR .2 with 3-phase AC motor) 2 Thyristors max. AUMA power class A3 (refer to Electrical data SA .2/SAR .2 with 3-phase AC motor) 3 Thyristors max. AUMA power class B3 (refer to Electrical data SA .2/SAR .2 with 3-phase AC motor) 4 Thyristors with additional tripping max. AUMA power class B2 (refer to Electrical data SA .2/SAR .2 with 3-phase AC motor) 5 Thyristors with additional tripping max. AUMA power class B3 (refer to Electrical data SA .2/SAR .2 with 3-phase AC motor) E Power electronics 1-ph ¹⁾ F Power electronics 3-ph ¹⁾														

1) Refer to notes on page 2.

Wiring diagram code

		Extract of wiring diagram code														
		Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Position	I/O interface	TPC	A	–	0	A	1	–	1	C	1	–	A	0	0	0
	Profibus DP	TPC	A	A	0	0	0	–	1	A	1	–	A	0	0	0
10	Motor protection evaluation															
	–	Thermoswitches (standard for AC 01.2), refer to wiring diagram TPA														
	1	Thermoswitch with thermal overload relay														
	–	PTC thermistors with tripping device (standard for ACExC), refer to TPA terminal plan														
11	Heater															
	A	Internally supplied within the switch compartment of the actuator														
12 – 14	Control elements															
	000	Without														
	A20	KP suitable wiring														
	5E0	Modbus TCP/IP														
	5EF	Modbus TCP/IP Ex														
	410	Profibus Ex														
	460	Profibus Ex, KP suitable wiring														

Notes on tables on page 1

1)	In combination with ACV 01.2 only.

ACExC

01.2 Actuator controls. KX

KS . Selector switch LOCAL - OFF -

REMOTE . (lockable in all three positions)

AUMA ToolSuite . Chip AUMA CDT Profi-

bus DP 0/4 – 20 mA . Explosion protection

Standard: II2G Ex de IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x. Option: II2G Ex d IIC T4 . DEKRA 11ATEX0008 X . Thyristor-unit . Category III according to IEC 60364-4-443 . PTB 01 ATEX 1119 . IP 68 . Pg-threads, NPT-threads, G-threads. 380 to 500 V AC = max.

250 mA . approx. 12 kg. Profibus DP 0/4 – 20 mA . IP 68 . Chip AUMA CDT . Bluetooth class II chip, version 2.0 with a range up to 10 m in industrial environments . Supports the SPP Bluetooth profile (Serial Port Profile) . KX

Interlock . Overvoltage category: Category III according to IEC 60364-4-443 . 6 programmable output contacts: 5 potential-free NO contacts with one common, max. 250 V AC, 1 A (resistive load), default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, torque fault CLOSE, torque fault OPEN, 1 potential-free change-over contact, max. 250 V AC, 5 A (resistive load), default configuration: Collective fault signal (torque fault, phase failure, motor protection tripped) . TPCA-0A1-1C1-A000 TPA00R2AA-0A1-000 . KX

coating: Powder paint . PID controller . Standard voltages: 3-phase AC current voltages/frequencies.

Volt 380, 400, 415, 440, 460, 480, 500 . Hz 50, 50, 50, 60, 60, 60, 50.

AUMA

Grafic LC display

KS . Interlock . Bluetooth class II

IP 68 . Finish coating: Powder paint . KX

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Fax +49 7631-809-1250

info@auma.com

SAEx 07.2, SAEx 10.2, SAEx 14.2, SAEx 16.2

Multi-turn actuators for modulating

duty with 3-phase AC motors . IP 68

Weight approx. 22 kg . DEKRA

11 ATEX 0008 X. Min. 15 [Nm].

Max. 710 [Nm]. Finish coating:

Powder paint. Blinking signal via

controls. Reduction ratio 11:1 8:1

Max. Ø rising. stem 26 mm. AUMA.

Handwheel Ø 160 mm . Motor protection: PTC

thermistors (according to DIN 44082). KX-G.

SAEx 07.2, SAEx 10.2, SAEx 14.2, SAEx 16.2

tropicalized. Option: H, tropicalized.

PTC thermistors additionally require a

suitable tripping device in the controls.

Valve attachment Standard: B1 according to EN 5210 . Options:

A, B2, B3, B4 according to EN ISO 5210. A, B, D, E according to DIN 3210. C according to DIN 3338. AUMA. Overvoltage category: Category III according to IEC 60364-4-443.

Vibration resistance according to IEC 60068-2-6: 2 g, from 10 Hz to 200 Hz. Explosion

protection Standard: II2G Ex de IIC T4 or T3. II2G c IIC T4 or T3 II2D Ex tb IIIC T130 °C

or T190 °C Db IP6x. Options: II2G Ex d IIC T4 or T3. II2G c IIC T4 or T3. KS KX KX-G.

EC type examination certificate DEKRA 11 ATEX 0008 X . AUMA . Type of duty

IP 68. Standard: Intermittent duty S4-25 % . Option: Intermittent duty

S4-50 % . For nominal voltage and 40 °C ambient temperature and at

modulating torque load . Pollution degree 4 (when closed) according

to EN 50178 . KS KX KX-G . Ambient temperature Standard: -40 °C

to +40 °C/+60 °C. Motors 3-ph AC asynchronous motor, type IM B9

according to IEC 60034. AUMA. Enclosure protection according to

EN 60529: IP 68 . Mounting position: Any position . Standard:

Ex plug/socket connector with screw-type

terminals (KP). Use Indoor

and outdoor

ACExC 01.2

Actuator controls . Push

buttons OPEN, STOP, CLOSE, RESET .

Selector switch LOCAL - OFF - REMOTE

(lockable in all three positions) . 380 to 500 V AC = max. 250 mA . Chip AUMA CDT

Profibus DP 0/4 – 20 mA. Thyristor unit. Category III according to IEC 60364-4-443 . KX

IP 68 . Bluetooth Class II . Permissible variation of mains voltage: ±10 % . Permissible

variation of mains voltage: ±30 % (option) . AUMA . Permissible variation of mains

frequency: ±5 % . Weight approx. 12 kg. Explosion protection Standard: II2G Ex de

IIC T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x . Option: II2G Ex d

IIC T4 or T3. KS KX KX-G. EMERGENCY operation, programmable

behaviour . AUMA . Graphical LC Display.

IP 68. Local Stop . PTB 01 ATEX 1119.

External supply of the electronics

(option) 24 V DC +20 %/-15 %.

DEKRA 11ATEX0008 X . KS.

Mounting position: Any

position . Thyristor unit

AUMA plug/socket con-

connector KP with screw-

type terminals. KS KX KX-G

IP 68 . Ambient temperature

Standard: -20 °C to +40 °C/+60 °C

SAEx 07.2, SAEx 10.2, SAEx 14.2,

SAEx 16.2 Multi-turn actuators for

modulating duty with 3-phase AC motors

IP 68 . Weight approx. 22 kg . Reduction

ratio 11:1 8:1 . Max. Ø rising. stem 26 [mm]

AUMA . Min. 15 [Nm] . Max. 710 [Nm] . KS

KX-G . Handwheel Ø 160 mm . Category III

according to IEC 60364-4-443. AUMA . KS

Explosion protection Standard: II2G Ex de

IIC T4 or T3 II2G c IIC T4 or T3 . II2D Ex tb IIIC

T130 °C or T190 °C Db IP6x . Options: II2G

Ex d IIC T4 or T3. II2G c IIC T4 or T3. KX-G

Intermittent duty S4 - 25 % . IP 68

Valve attachment Standard:

B1 according to EN 5210.

Options: A, B2, B3, B4

according to EN 5210 A,

B, D, E according to DIN

3210. C according to

DIN 3338

Graphic Display . Ex de IIC T4 or

T3 II2D Ex tb IIIC T130 °C or T190 °C

Db IP6x. Options: II2G Ex d IIC T4 or T3

II2G Ex d IIC T4 or T3. KS KX KX-G. EMERGENCY operation, programmable

behaviour . AUMA . Graphical LC Display.

IP 68. Local Stop . PTB 01 ATEX 1119.

External supply of the electronics

(option) 24 V DC +20 %/-15 %.

DEKRA 11ATEX0008 X . KS.

Mounting position: Any

position . Thyristor unit

AUMA plug/socket con-

connector KP with screw-

type terminals. KS KX KX-G

IP 68 . Ambient temperature

Standard: -20 °C to +40 °C/+60 °C

SAEx 07.2, SAEx 10.2, SAEx 14.2,

SAEx 16.2 Multi-turn actuators for

modulating duty with 3-phase AC motors

IP 68 . Weight approx. 22 kg . Reduction

ratio 11:1 8:1 . Max. Ø rising. stem 26 [mm]

AUMA . Min. 15 [Nm] . Max. 710 [Nm] . KS

KX-G . Handwheel Ø 160 mm . Category III

according to IEC 60364-4-443. AUMA . KS

Explosion protection Standard: II2G Ex de

IIC T4 or T3 II2G c IIC T4 or T3 . II2D Ex tb IIIC

T130 °C or T190 °C Db IP6x . Options: II2G

Ex d IIC T4 or T3. II2G c IIC T4 or T3. KX-G

Intermittent duty S4 - 25 % . IP 68

Valve attachment Standard:

B1 according to EN 5210.

Options: A, B2, B3, B4

according to EN 5210 A,

B, D, E according to DIN

3210. C according to

DIN 3338

