

General information

AUMA NORM multi-turn actuators require electric controls. For the SAEx type range, AUMA offers AMExC and ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

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]		Standard EN ISO 5210	Option DIN 3210	Max. Ø rising Stem [mm]	Ø [mm]	Reduction ratio	
SAEx 25.1	4 ⁵⁾	4,8 ⁵⁾	630	2,000	1,400	700	350	40	F25	G4	95	400	45 : 1	155
	5,6 ⁵⁾	6,7 ⁵⁾											32 : 1	
	8	9.6											45 : 1	
	11	13											32 : 1	
	16	19				600	300						45 : 1	165
	22	26											32 : 1	
	32	38											45 : 1	
	45	54				500	250						32 : 1	
	63	75											45 : 1	
	90	108											32 : 1	
	125	150		1,700	1,200	400	200						22,5 : 1	
180	216	1,400	1,000	380	190	16 : 1								
SAEx 30.1	4	4.8	1,250	4,000	2,800	1,400	700	40	F30	G5	115	500	44 : 1	195
	5.6	6.7											33 : 1	
	8	9.6											44 : 1	
	11	13											33 : 1	
	16	19				1,200	600						44 : 1	265
	22	26											33 : 1	
	32	38				900	450						44 : 1	
	45	54											33 : 1	
	63	75				700	350						44 : 1	
	90	108											33 : 1	
	125	150		3,200	2,200	500	250						22 : 1	
180	216	2,800	2,000	460	230	16,5 : 1								
SAEx 35.1	4	4.8	2,500	8,000	5,700	2,800	1,400	30	F35	G6	155	400	184 : 1	415
	5.6	6.7											132 : 1	
	8	9.6											184 : 1	
	11	13											132 : 1	
	16	19				2,400	1,200						184 : 1	430
	22	26											132 : 1	
	32	38				2,000	1,000						92 : 1	
	45	54											66 : 1	
	63	75		46 : 1										
90	108	5,500	3,800	1,500	750	33 : 1								
SAEx 40.1	4	4.8	5,000	16,000	11,200	5,600	2,800	20	F40	G7	175	500	184 : 1	515
	5.6	6.7											128 : 1	
	8	9.6											184 : 1	
	11	13											128 : 1	
	16	19				4 800	2,400						184 : 1	
	22	26											128 : 1	
	32	38				14,000	9,800						4,000	
	45	54		10,000	7,000	3,000	1,500						64 : 1	

1) The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.

2) Maximum permissible torque for 15 min. or 30 min. running time.

3) Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.

4) 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) On request

Features and functions	
Explosion protection	Standard: II 2G Ex db eb IIB T4 or T3 Gb II 2G Ex h IIB T4 or T3 Gb II 2D Ex tb IIIC T130°C or T190°C Db Options: II 2G Ex db eb [ib] IIB T4 or T3 Gb II 2G Ex h IIB T4 or T3 Gb
Product certificates	TÜV 14 ATEX 7542 X
Type of duty	Standard: Short-time duty S2 - 15 min, classes A and B according to EN ISO 22153 Option: Short-time duty S2 - 30 min, classes A and B according to EN ISO 22153 For nominal voltage and +40 °C ambient temperature and at run torque load.
Motors	3-phase AC asynchronous squirrel-cage motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6
Mains voltage, mains frequency	Standard voltages: Refer to table: 3-phase AC standard voltages [► 2] Special voltages: Refer to table: 3-phase AC special voltages [► 2] Further voltages on request Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %
Overvoltage category	Category III according to IEC 60364-4-44
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) and from size SAEx 35.1 for output speeds up to 22 rpm (50Hz) or 26 (60Hz) NOT self-locking: SAEx 25.1 and SAEx 30.1 for output speeds from 125 rpm (50 Hz) or 150 rpm (60 Hz) and from size SAEx 35.1 for output speeds from 32 rpm (50Hz) or 38 (60Hz) 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
Electrical connection	Actuator controls: Terminal connection Motor: Terminals within motor connection compartment
Threads for cable entries	Standard: Metric threads Option: Pg threads, NPT threads, G threads
Wiring diagram	TPA00R2AA-101-000 (basic version in combination with PTC thermistors) TPA00R1AA-101-000 (basic version in combination with thermoswitches)
Valve attachment	Standard: B1 in accordance with ISO 5210 Options: A, B2, B3, B4, C, D according to 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 or IB3 for size 25.1 only, larger sizes on request) A prepared for permanent lubrication of stem

Table 1: 3-phase AC standard voltages

Voltages/frequencies											
Volt [3~]	220	230	380	380	400	400	415	440	460	480	500
Hz	60	50	50	60	50	60	50	60	60	60	50

Table 2: 3-phase AC special voltages

Voltages/frequencies							
Volt [3~]	220	440	525	575	600	660	690

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

Voltages/frequencies							
Hz	50	50	50	50	60	50	50
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 (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					
		Resistance type heater, 6 W, 220 – 240 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.						
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 for explosion protection in accordance with IECEx/ATEX and TR CU 012/2011 (Russia)					
		–60 °C to +40 °C/+60 °C for explosion protection in accordance with IECEx/ATEX and TR CU 012/2011 (Russia)					
Humidity	Up to 100 % relative humidity across the entire permissible temperature range						
Enclosure protection in accordance with IEC 60529	Standard:	IP67 with AUMA 3-phase AC motor					
	Option:	IP68 with AUMA 3-phase AC motor					
	According to AUMA definition, enclosure protection IP68 meets the following requirements:						
	<ul style="list-style-type: none">Depth of water: maximum 8 m head of waterContinuous immersion in water: maximal 96 hoursUp to 10 operations during 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 actuator controls)						
	Resistant to vibration during start-up or for failures of the plant. Valid for multi-turn actuators-turn actuators in version AUMA NORM and in version with 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						
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 ISO 22153. Detailed information can be provided on request.						

Further information

EU Directives

ATEX Directive 2014/34/EU
Machinery Directive 2006/42/EC
Low Voltage Directive 2014/35/EU
EMC Directive 2014/30/EU
RoHS Directive 2011/65/EU

Reference documents

Dimensions SAEx 25.1 – SAEx 40.1/SAREx 25.1 – SAREx 30.1
Electrical data SAEx 25.1 – SAEx 40.1