SAEx 07.2 – SAEx 16.2
AUMA NORM

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

Type	Speed rpm		Torque range[1]			Running torque [2]		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]	Reduct. ratio	approx. [kg]
SAEx 07.2	4	4.8	10	30	20	12	6	F07	–	26	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	
	32	38						F10	G0	34		11 : 1	23
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125	150										5.5 : 1	
	180	216		25		10						4 : 1	
SAEx 07.6	4	4.8	20	60	40	24	12	F07	–	26	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	
	32	38						F10	G0	34		11 : 1	24
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125	150										5.5 : 1	
	180	216		50	30	20	10					4 : 1	
SAEx 10.2	4	4.8	40	120	90	48	24	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	
	32	38										11 : 1	28
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125	150										5.5 : 1	
	180	216		100	70	40	20					4 :1	
SAEx 14.2	4	4.8	100	250	180	100	50	F14	G1/2	57	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	
	32	38										11 : 1	52
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125	150										5.5 : 1	
	180	216		200	140	80	40					4 : 1	
SAEx 14.6	4	4.8	200	500	360	175	90	F14	G1/2	57	400	11 : 1	50
	5.6	6.7										8 : 1	
	8	9.6										11 : 1	
	11	13										8 : 1	
	16	19				150	75					11 : 1	
	22	26										8 : 1	
	32	38				125	65					11 : 1	56
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125	150				110	55					5.5 : 1	
	180	216		400	290	100	50					4 : 1	
SAEx 16.2	4	4.8	400	1,000	710	330	170	F16	G3	75	500	11 : 1	72
	5.6	6.7										8 : 1	
	8	9.6										11 : 1	
	11	13										8 : 1	
	16	19				300	150					11 : 1	
	22	26										8 : 1	
	32	38				200	110					11 : 1	83
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	88
	125	150		800	570	160	80					5.5 : 1	
	180	216										4 : 1	

1) – 4) Refer to notes on page 2.

General information
AUMA NORM multi-turn actuators require electric controls. For sizes SAEx 07.2 – SAEx 16.2, AUMA offer AMExC or ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Notes on table on page 1	
1) Torque range	The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
2) Running torque	Permissible average torque for 15 min or 30 min running time at an ambient temperature of +40 °C
3) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to dimension sheets for further output drive types.
4) Weight	Indicated weight includes AUMA NORM multi-turn actuator with 3-phase AC motor, standard electrical connection, output drive type B1 and handwheel.

Features and functions		
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
EC type examination certificate	DEKRA 11 ATEX 0008 X	
Type of duty	Standard:	Short-time duty S2 - 15 min
	Option:	Short-time duty S2 - 30 min
	For nominal voltage and 40 °C ambient temperature and at average running torque load	
Motors	3-ph AC asynchronous motor, type IM B9 according to IEC 60034	
Mains voltage, mains frequency	Standard voltages:	

3-phase AC current - voltages/frequencies

Volt	220	230	240	380	400	415	440	460	480	500
Hz	50	50	50	50	50	50	60	60	60	50

Special voltages:

3-phase AC current - voltages/frequencies

Volt	525	575	660	690
Hz	50	50	50	50

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 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 400 V AC (externally supplied)
	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:	Ex plug/socket connector with screw-type terminals (KP)
	Options:	Ex plug/socket connector with terminal blocks (KES)
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Terminal plan	TPA00R2AA-101-000 (basic version in combination with PTC thermistors) TPA00R1AA-101-000 (basic version in combination with thermoswitches)	
Valve attachment	Standard:	B1 according to EN ISO 5210
	Options:	A, B2, B3, B4 according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special output drive types: AF, 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 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 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 switches (1 NC and 1 NO) for each direction, not galvanically isolated
	Options:	Tandem switches (2 NC and 2 NO) for each direction, switches galvanically isolated
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (RWG)	
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.	

Electronic control unit (only in combination with ACExC actuator controls)	
Non-intrusive setting (option)	Magnetic limit and torque transmitter MWG for 1 to 500 turns per stroke or 10 to 5,000 turns per stroke
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 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, please contact AUMA	
Ambient temperature	Standard:	–40 °C to +40 °C/+60 °C
	Option:	–60 °C to +40 °C/+60 °C

Enclosure protection according to EN 60529	IP68 with AUMA 3-phase AC motor Terminal compartment additionally sealed against interior (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	Pollution degree 4 (when closed) according to EN 50178		
Vibration resistance according to IEC 60068–2–6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for multi-turn actuators in version AUMA NORM (with AUMA plug/socket connector, without actuator controls). Not valid in combination with gearboxes.		
Corrosion protection	Standard:	KS	Suitable for installation in industrial units, in water or power plants with a low pollutant concentration as well as for installation in occasionally or permanently aggressive atmosphere with a moderate pollutant concentration (e.g. wastewater treatments plants, chemical industry)
	Options:	KX	Suitable for installation in extremely aggressive atmospheres with high humidity and high pollutant concentration
		KX-G	Same as KX, however aluminium-free version (outer parts)
Finish coating	Powder paint Two-component iron-mica combination		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Other colours are possible on request.	
Lifetime	AUMA multi-turn actuators meet or even exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.		

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 multi-turn actuators with integral controls for applications in the oil and gas industry Dimensions SAEx 07.2 – SAExC 16.2/SAREx 07.2 – SAREx 16.2 Electrical data SAEx 07.2 – SAEx 16.2 with 3-phase AC motors Technical data Handwheel rim pull at multi-turn actuators Technical data for switches Technical data Electronic position transmitter/potentiometer Technical data Output speeds, motors, reduction ratios and blinker transmitters