

AUMA NORM

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

Type	Speed rpm		Torque range ¹⁾		Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Backlash	Valve attachment ⁴⁾			Handwheel		Weight ⁵⁾	
	50 Hz	60 Hz	Min. [Nm]	S4-25 % Max. [Nm]	S4-25 % Max. [Nm]	S4-50 % Max. [Nm]				Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduct. ratio		
SAREx 07.2	4	4.8	10	30	15	8	600	50	275	F07	–	26	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	F10	G0		34	8 : 1	31
	45	54							70	8 : 1						
SAREx 07.6	4	4.8	20	60	30	15	600	50	260	F07	–	26	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	F10	G0		34	8 : 1	31
	45	54							70	8 : 1						
SAREx 10.2	4	4.8	40	120	60	30	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	100	250	120	60	600	70	280	F14	G1/2	57	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	200	500	200	100	600	70	280	F14	G1/2	57	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 offer 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 in modulating duty for nominal voltage and 40 °C ambient temperature
3) Pulse duration	For identical direction of rotation
4) Valve attachment	Indicated flange sizes apply for output drive types A and B1. Refer to dimension sheets for further output drive types.
5) Weight	Indicated weight includes for AUMA NORM multi-turn actuator with 1-phase AC motor, standard electrical connection, output drive type B1 and handwheel.

Features and functions

Explosion protection	Standard:	II2G Ex de IIB T4 or T3 II2G c IIB T4 or T3 II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Options:	II2G Ex d IIB T4 or T3 II2G c IIB T4 or T3
EC type examination certificate	DEKRA 11 ATEX 0008 X	
Type of duty	Standard:	Intermittent duty S4 - 25 %
	Option:	Intermittent duty S4 - 50 %
	For nominal voltage and 40 °C ambient temperature and at modulating torque load.	
Motors	1-phase AC motor, type IM B9 according to IEC 60034	

Mains voltage, mains frequency	Standard voltages:		
	1-phase AC current voltages/frequencies		
	Volt	110 – 120	220 – 240
	Hz	60	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	F, tropicalized		
Motor protection	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the 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		
	Option:	Handwheel lockable	
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 plans (basic version)	TPA01R1AA-101-000 TPA02R1AA-101-000 TPA03R1AA-101-000		
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
	Option:	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:	−50 °C to +40 °C/+60 °C	
Enclosure protection according to EN 60529	IP 68 with 1-phase AC motors of types AE..., VE..., AC..., VC...		
	Terminal compartment additionally sealed against interior (double sealed)		
	According to AUMA definition, enclosure protection IP 68 meets the following requirements: <ul style="list-style-type: none">• 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	Pollution degree 4 (when closed) according to EN 50178		
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)
	Option:	KX	Suitable for installation in extremely aggressive atmospheres with high humidity and high pollutant concentration
Finish coating	Standard:	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 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 Output speeds, motors, reduction ratios and blinker transmitters