

Technical data Multi-turn actuators for modulating duty with 3-phase AC motor										SAREx 07.2 – SAREx 16.2 AUMA NORM						
Type	Output speed rpm		Torque range ¹⁾			Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Backlash	Valve attachment		Valve stem diameter for a rising valve stem ⁴⁾	Handwheel		approx. kg ⁵⁾
	50 Hz	60 Hz	min. Nm	S4-25% S5-25% max. Nm	S4-50% max. Nm	S4-25% max. Nm	S4-50% max. Nm				Standard EN ISO 5210	Option DIN 3210		max. mm	Ø mm	
SAREx 07.2	4	4.8	15	30	20	15	8	1,200	50		F07	G0	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													11 : 1	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 07.6	4	4.8	30	60	40	30	15	1,200	50		F07	G0	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													11 : 1	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 10.2	4	4.8	60	120	90	60	30	1,000	50		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	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 14.2	4	4.8	120	250	180	120	60	900	70		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	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 14.6	4	4.8	250	500	360	200	100	900	70		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													11 : 1	
	22	26													8 : 1	
	32	38													11 : 1	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 16.2	4	4.8	500	1,000	710	400	200	600	100		F16	G3	75	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	
	32	38													11 : 1	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 16.2	4	4.8	500	1,000	710	300	150	300	100		F16	G3	75	500	11 : 1	83
	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	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	
SAREx 16.2	4	4.8	500	1,000	710	150	80	150	100		F16	G3	75	500	11 : 1	88
	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	
	45	54													8 : 1	
	63	75													11 : 1	
	90	108													8 : 1	

1) Tripping torque adjustable for both directions

2) Maximum torque for modulating duty

3) For identical direction of rotation

4) For output drive types A and B1

5) Weight for multi-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, output drive type B1 and handwheel

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General information

Multi-turn actuators AUMA NORM require electric controls. AUMA offers the actuator controls AUMA MATIC AMExC or AUMATIC ACExC for the sizes SAREx 07.2 – SAREx 16.2. These can also easily be mounted to the actuator at a later date.

Features and functions

Explosion protection	Standard: I I2G Ex de IIC T4 or T3 I I2G c IIC T4 oder T3 I I2D Ex tD A21 IP6x T130 °C or T190 °C Options: I I2G Ex d IIC T4 or T3 I I2G c IIC 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 (according to page 1)																																																
Motors	3-ph AC asynchronous motor, type IM B9 according to IEC 60034																																																
Mains voltage, mains frequency	Standard voltages: <table border="1" style="margin-left: 20px;"> <tr> <td colspan="11">3-phase AC voltages/frequencies</td> </tr> <tr> <td>Volt</td> <td>220</td> <td>230</td> <td>240</td> <td>380</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>50</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>60</td> <td>60</td> <td>60</td> <td>50</td> </tr> </table> Special voltages: <table border="1" style="margin-left: 20px;"> <tr> <td colspan="5">3-phase AC voltages/frequencies</td> </tr> <tr> <td>Volt</td> <td>525</td> <td>575</td> <td>660</td> <td>690</td> </tr> <tr> <td>Hz</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> </tr> </table> Permissible variation of the mains voltage: ±10 % Permissible variation of the mains frequency: ±5 %	3-phase AC voltages/frequencies											Volt	220	230	240	380	400	415	440	460	480	500	Hz	50	50	50	50	50	50	60	60	60	50	3-phase AC voltages/frequencies					Volt	525	575	660	690	Hz	50	50	50	50
3-phase AC voltages/frequencies																																																	
Volt	220	230	240	380	400	415	440	460	480	500																																							
Hz	50	50	50	50	50	50	60	60	60	50																																							
3-phase AC voltages/frequencies																																																	
Volt	525	575	660	690																																													
Hz	50	50	50	50																																													
Overvoltage category	Category III according to IEC 60364-4-443																																																
Insulation class	Standard: F, tropicalized Option: H, tropicalized																																																
Motor protection	PTC-thermistors (PTC according to DIN 44082) ⁶⁾																																																
Self-locking	Output speeds up to 90 rpm (50 Hz) or 108 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 – 220 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. Option: Handwheel lockable Handwheel stem extension Power tool adapter for emergency operation																																																
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 NC and 1 NO) For further information, refer to separate data sheet																																																
Electrical connection	Standard: Plug/socket connector with screw-type terminals (KP) Option: Plug/socket connector with terminal blocks (KES)																																																
Threads for cable entries	Standard: Metric threads Options: Pg-threads, NPT-threads, G-threads																																																
Terminal plan	TPA 00R2AA-001-000 (basic version)																																																
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																																																

⁶⁾ PTC thermistors additionally require a suitable tripping device in the controls.

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Technical data Multi-turn actuators for modulating duty with 3-phase AC motor		SAREx 07.2 – SAREx 16.2 AUMA NORM
Electromechanical control unit		
Limit switching	Counter gear mechanism for end positions CLOSED and OPEN 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 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 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	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 (5 W, 24 V AC) is installed in the actuator in combination with the actuator controls AUMA MATIC AMExC or AUMATIC ACExC.	
Electronic control unit (only in combination with actuator controls AUMATIC AC 01.1/AC 01.2)		
Non-intrusive settings (option)	Magnetic limit and torque transmitter (MWG) for 1 to 500 turns per stroke or for 10 to 5,000 turns per stroke	
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 controls	
Heater in switch compartment	Resistance type heater with 5 W, 24 V DC	
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	Standard: –20 °C to +40 °C/+60 °C	
Enclosure protection according to EN 60529	Standard: IP 68 with AUMA 3-ph AC motor For special motors differing enclosure protection: refer to name plate Option: Terminal compartment additionally sealed against interior (double sealed) According to AUMA definition, enclosure protection IP 68 meets the following requirements: Depth of water: maximum 8 m head of water Duration of continuous immersion in water: maximum 96 hours Up to 10 operations during flooding Modulating duty is not possible during continuous immersion.	
Pollution degree	Within multi-turn actuator: Pollution degree 2 Outside multi-turn actuator: Pollution degree 4	
Vibration resistance according to EN 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. Applies to actuator with 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. in waste water treatment 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	Standard: Two-component iron mica combination Powder paint	
Colour	Standard: AUMA silver-grey (similar to RAL 7037) Option: Other colours are possible on request.	
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SAREx 07.2 – SAREx 16.2 AUMA NORM	Technical data Multi-turn actuators for modulating duty with 3-phase AC motor
Lifetime ⁷⁾	SAREx 07.2 – 10.2 7.5 million modulating steps SAREx 14.2 – 16.2: 5.0 million modulating steps A modulating step is based on a 90° movement at an average modulating torque of 35 % of the maximum torque
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” Dimension sheets SAEEx .2 Electrical data SAEEx .2 Technical data for switches Technical data Electronic position transmitter/potentiometer
7) The lifetime in operation hours (h) depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as possible for the process.	
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