SQREx 05.2 – SQREx 14.2
AUMA NORM

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

Type	Operating time for 90° in seconds		Torque range[1]		Modulating torque[2]	Number of starts	Valve attachment		Valve shaft			Handwheel		Weight[3]
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Max. c/h	Standard EN 5211	Option EN 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø mm	Turns for 90°	approx. [kg]
SQREx 05.2	8	6	50	150	75	1,200	F05	F07	25.4	22	22	160	11	27
	11	9											16	
	16	12											11	
	22	17											16	
	32	25											11	
SQREx 07.2	8	6	100	300	150	1,200	F07	F10	25.4	22	22	160	11	27
	11	9											16	
	16	12											11	
	22	17											16	
	32	25											11	
SQREx 10.2	11	9	200	600	300	1,200	F10	F12	38	30	27	200	11	31
	16	12											15	
	22	17											11	
	32	25											15	
	45	35											11	
	63	50											15	
SQREx 12.2	16	12	600	900	450	1,200	F12	F14	50	36	41	200	22	43
	22	17		1200	600								30	
	32	25											22	
	45	35											30	
	63	50											22	
SQREx 14.2	36	30	1,200	1,800	900	1,200	F14	F16	60	46	46	200	70	55
	48	40		2,400	1,200								51	
	72	60											70	
	100	85											51	

General information

Part-turn actuators AUMA NORM require external controls.
For sizes SQREx 05.2 – SQREx 14.2, 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 torque for modulating duty
3) Weight	Indicated weight includes part-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, unbored coupling and handwheel

Features and functions

Explosion protection	Standard:	II2G Ex de IIC T4 oder T3 Gb II2G c IIC T4 oder T3 II2D Ex tb IIIC T130 °C oder T190 °C Db IP6x
	Options:	II2G Ex d IIC T4 oder T3 Gb
EC type examination certificate	DEKRA 13 ATEX 0016 X	
Type of duty	Intermittent duty S4 - 25 %	
	For nominal voltage, 40 °C ambient temperature and at average load with 35 % of the max. torque	
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: 380 / 400 / 415 / 440 / 460 / 480 / 500 Hz: 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	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the controls.	
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC or 400 V AC (externally supplied)
	Power:	12.5 W:
Swing angle	Standard:	Adjustable between 75° and < 105°
	Options:	15° to < 45°, 45° to < 75°, 105° to < 135°
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
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact) For further information refer to separate data sheet Technical data for switches.	
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)	
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 5211
Valve attachment	Dimensions according to EN 5211 without spigot	

Electromechanical control unit		
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED	
	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	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 the AM or AC actuator controls.	

Electronic control unit (only in combination with ACExC actuator controls)	
Non-intrusive setting (option)	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 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:	for > 2,000 m above sea level, please contact AUMA	
Ambient temperature	Standard:	–40 °C to +60 °C	
	Option:	–60 °C to +60 °C	
Enclosure protection according to EN 60529	Standard:	IP68 with AUMA 3-phase AC motor	
	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	Pollution degree 4 (when closed) according to IEC 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 part-turn actuators in version AUMA NORM (with AUMA plug/socket connector, without actuator controls).		
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 coating		
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)	
	Option:	Other colours are possible on request.	
Lifetime	AUMA part-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	Electrical data Part-turn actuators SQREx 05.2 – SQREx 14.2 with 3-phase AC motors Dimension sheet Part-turn actuators SQREx 05.2 – SQREx 14.2 Technical data Electronic position transmitter/potentiometer Technical data for switches