SQEx 05.2 – SQEx 14.2
AUMA NORM

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

Type	Operating time for 90° in seconds		Torque range[1]		Running torque[2]	Valve attachment		Valve shaft			Handwheel		Weight[3]
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Standard EN 5211	Option EN 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø mm	Turns for 90°	approx. [kg]
SQEx 05.2	4	3	50	150	52.5	F05	F07	25.4	22	22	160	11	29
	5.6	4.5										16	
	8	6										11	
	11	9										16	
	16	12										11	
	22	17										16	
	32	25										11	
SQEx 07.2	4	3	100	300	105	F07	F10	25.4	22	22	160	11	29
	5.6	4.5										16	
	8	6										11	
	11	9										16	
	16	12										11	
	22	17										16	
	32	25										11	
SQEx 10.2	8	6	200	450	157.5	F10	F12	38	30	27	200	11	34
	11	9										15	
	16	12		600	210							11	
	22	17										15	
	32	25										11	
	45	35										15	
	63	50										11	
SQEx 12.2	16	12	400	900	315	F12	F14	50	36	41	200	22	42
	22	17		1200	420							30	
	32	25										22	
	45	35										30	
	63	50										22	
SQEx 14.2	24	20	800	1800	630	F14	F16	60	46	46	200	70	51
	36	30										51	
	48	40		2400	840							70	
	72	60										51	
	100	85										70	

General information

Part-turn actuators AUMA NORM require external controls.
For sizes SQEx 05.2 – SQEx 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) Running torque	Permissible average torque for 15 min running time at an ambient temperature of +40 °C
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	Short-time duty S2 - 15 min	
	For nominal voltage and 40 °C ambient temperature and at average running torque load (refer to table).	
Motors	3-ph AC asynchronous motor, type IM B9 according to IEC 60034	

<table>
<tr><td>Mains voltage, mains frequency</td><td colspan="2">Standard voltages:
<table>
<tr><td colspan="8">3-phase AC current - voltages/frequencies</td></tr>
<tr><td>Volt</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>60</td><td>60</td><td>60</td><td>50</td></tr>
</table>
Special voltages:
<table>
<tr><td colspan="5">3-phase AC current - 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 mains voltage: ±10 %
Permissible variation of mains frequency: ±5 %</td></tr>
<tr><td>Overvoltage category</td><td colspan="2">Category III according to IEC 60364-4-443</td></tr>
<tr><td rowspan="2">Insulation class</td><td>Standard:</td><td>F, tropicalized</td></tr>
<tr><td>Option:</td><td>H, tropicalized</td></tr>
<tr><td rowspan="2">Motor protection</td><td>Standard:</td><td>PTC thermistors (according to DIN 44082)
PTC thermistors additionally require a suitable tripping device in the controls.</td></tr>
<tr><td>Option:</td><td>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.</td></tr>
<tr><td rowspan="2">Motor heater (option)</td><td>Voltages:</td><td>110 – 120 V AC, 220 – 240 V AC or 400 V AC (externally supplied)</td></tr>
<tr><td>Power:</td><td>12.5 W:</td></tr>
<tr><td rowspan="2">Swing angle</td><td>Standard:</td><td>Adjustable between 75° and < 105°</td></tr>
<tr><td>Options:</td><td>15° to < 45°, 45° to < 75°, 105° to < 135°</td></tr>
<tr><td>Self-locking</td><td colspan="2">Yes (Part-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.)</td></tr>
<tr><td rowspan="2">Manual operation</td><td colspan="2">Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation</td></tr>
<tr><td>Options:</td><td>Handwheel lockable
Handwheel stem extension</td></tr>
<tr><td>Indication for manual operation (option)</td><td colspan="2">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.</td></tr>
<tr><td rowspan="2">Electrical connection</td><td>Standard:</td><td>Plug/socket connector with screw-type terminals (KP)</td></tr>
<tr><td>Option:</td><td>Plug socket connector with terminal blocks (KES)</td></tr>
<tr><td rowspan="2">Threads for cable entries</td><td>Standard:</td><td>Metric threads</td></tr>
<tr><td>Options:</td><td>Pg-threads, NPT-threads, G-threads</td></tr>
<tr><td>Terminal plan</td><td colspan="2">TPA00R2AA-101-000 (basic version in combination with PTC thermistors)
TPA00R1AA-101-000 (basic version in combination with thermoswitches)</td></tr>
<tr><td rowspan="2">Splined coupling for connection to the valve shaft</td><td>Standard:</td><td>Coupling without bore</td></tr>
<tr><td>Options:</td><td>Machined coupling with bore and keyway, square bore or bore with two-flats according to EN 5211</td></tr>
<tr><td>Valve attachment</td><td colspan="2">Dimensions according to EN ISO 5211 without spigot</td></tr>
<tr><td colspan="3">Electromechanical control unit</td></tr>
<tr><td rowspan="3">Limit switching</td><td colspan="2">Counter gear mechanism for end positions OPEN and CLOSED</td></tr>
<tr><td>Standard:</td><td>Single switches (1 NC and 1 NO) for each end position, not galvanically isolated</td></tr>
<tr><td>Options:</td><td>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</td></tr>
<tr><td rowspan="3">Torque switching</td><td colspan="2">Torque switching adjustable for directions OPEN and CLOSE</td></tr>
<tr><td>Standard:</td><td>Single switches (1 NC and 1 NO) for each direction, not galvanically isolated</td></tr>
<tr><td>Options:</td><td>Tandem switches (2 NC and 2 NO) for each direction, switches galvanically isolated</td></tr>
<tr><td>Position feedback signal, analogue (options)</td><td colspan="2">Potentiometer or 0/4 – 20 mA (RWG)</td></tr>
</table>

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 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		
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 SQEx 05.2 – SQEx 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