SQEx 05.2 – SQEx 14.2
AUMA NORM
Technical data Part-turn actuators for open-close duty with 3-phase AC motors

General information

AUMA NORM part-turn actuators require external controls. For the SQEx type range, AUMA offers AMExC and ACExC actuator controls. These can also easily be mounted to the actuator at a later date.

Type	Operating times for 90° in seconds		Torque range[1]		Run torque[2]	Number of starts	Valve attachment		Valve shaft			Handwheel		Weight
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Starts Max. [1/h]	Standard EN ISO 5211	Option EN ISO 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	60	F05/F07	F10	25.4	22	22	160	11	25[3] 30[4]
	5.6	4.5											16	
	8	6											11	
	11	9											16	
	16	12											11	
	22	17											16	
	32	25											11	
	63	50											11	
SQEx 07.2	4	3	100	300	105	60	F05/F07	F10	25.4	22	22	160	11	25[3] 30[4]
	5.6	4.5											16	
	8	6											11	
	11	9											16	
	16	12											11	
	22	17											16	
	32	25											11	
	63	50											11	
SQEx 10.2	8	6	200	450	157.5	60	F10	F12	38	30	27	200	11	30[3] 34[4]
	11	9		600	210								15	
	16	12											11	
	22	17											15	
	32	25											11	
	42	35											15	
	63	50											11	
SQEx 12.2	11	9	400	900	315	60	F12	F14	50	36	41	200	30	38[3] 46[4]
	16	12											22	
	22	17		1,200	420								30	
	32	25											22	
	45	35											30	
	63	50											22	
	84	70											30	
	125	108											22	
SQEx 14.2	24	20	800	1,800	630	60	F14	F16	60	46	46	200	70	47[3] 58[4]
	36	30											51	
	48	40		2,400	840								70	
	72	60											51	
	100	85											70	

1) The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.

2) Maximum permissible torque for 15 min. running time.

3) Indicated weight includes AUMA NORM part-turn actuator with 3-phase AC motor, electrical connection in standard version, unbored coupling and handwheel

4) Indicated weight includes AUMA NORM part-turn actuator with 3-phase AC motor electrical connection in standard version, unbored coupling and handwheel, including base and lever.

Features and functions

Explosion protection	Standard:	II 2G Ex db eb IIC T4 or T3 Gb II 2G Ex h IIC T4 or T3 Gb II 2D Ex tb IIIC T130 °C or T190 °C Db
	Option:	II 2G Ex db IIC T4 or T3 Gb
Product certificates	DEKRA 13ATEX0016 X	
Type of duty	Short-time duty S2 - 15 min, classes A and B according to EN ISO 22153	
	For nominal voltage and +40 °C ambient temperature and at run torque load.	
Motors	3-phase AC asynchronous squirrel-cage motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	

Features and functions		
Mains voltage, mains frequency	Standard voltages: Refer to table: 3-phase AC standard voltages [▶ 2] Special voltages: Refer to table: 3-phase AC special voltages [▶ 2] Further voltages on request Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %	
Overvoltage category	Category III according to IEC 60364-4-44	
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 actuator 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	Yes (actuator 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 380 – 480 V AC
	Power 12.5 W	
Swing angle	Standard:	Adjustable between 75° and < 105°
	Options:	15° to < 45°, 45° to < 75°, 105° to < 135°, 135° to < 165°, 165° to < 195°, 195° to < 225°
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:	AUMA Ex plug/socket connector (KT); screw-type motor terminals; control terminals in spring clamp terminal technology
	Option:	AUMA Ex plug/socket connector with terminal blocks (KES)
Threads for cable entries	Standard:	Metric threads
	Option:	Pg threads, NPT threads, G threads
Wiring diagram	TPA00R2AA-101-000 (basic version in combination with PTC thermistors) TPA00R1AA-101-000 (basic version in combination with thermoswitches)	
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 ISO 5211
Valve attachment	Dimensions according to EN ISO 5211 without spigot	

Table 1: 3-phase AC standard voltages

Voltages/frequencies											
Volt [3~]	220	230	380	380	400	400	415	440	460	480	500
Hz	60	50	50	60	50	60	50	60	60	60	50

Table 2: 3-phase AC special voltages

Voltages/frequencies							
Volt [3~]	220	440	525	575	600	660	690
Hz	50	50	50	50	60	50	50

With base and lever (option)	
Swing lever	Made of spheroidal cast iron with two or three bores for fixing a lever arrangement. Considering the installation conditions, the lever may be mounted to the output shaft in any desired position.
Ball joints (option)	Two ball joints matching the lever, including lock nuts and two welding nuts, suitable for pipe according to dimension sheet.
Fixing	Base and four holes for fastening screws

Electromechanical control unit		
Limit switching	Counter gear mechanism for end positions OPEN and CLOSED	
	Standard:	Single switch (1 NC and 1 NO) for each end position, not galvanically isolated
	Options:	Tandem switch (2 NC and 2 NO) for each end position, switch galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switch galvanically isolated Intermediate position switches (DUO limit switching), adjustable for each direction of operation
Torque switching	Torque switching adjustable for directions OPEN and CLOSE	
	Standard:	Single switch (1 NC and 1 NO) for each direction, not galvanically isolated
	Option:	Tandem switch (2 NC and 2 NO) for each direction, switch galvanically isolated
Switch contact materials	Standard:	Silver (Ag)
	Option:	Gold (Au), recommended for low voltage actuator controls
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20mA (electronic position transmitter)	
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 (option, only in combination with ACExC actuator controls)		
Non-intrusive settings	Magnetic limit and torque transmitter (MWG)	
Position feedback signal	Via actuator controls	
Torque feedback signal	Via actuator controls	
Mechanical position indicator	Continuous self-adjusting indication with symbols OPEN and CLOSED	
Running indication	Blinking signal via actuator 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 on request	
Ambient temperature	Standard:	–30 °C to +40 °C/+60 °C
	Options:	–40 °C to +40 °C/+60 °C –60 °C to +40 °C/+60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection in accordance with IEC 60529	IP68 with AUMA 3-phase AC motor Terminal compartment additionally sealed against interior of actuator (double sealed)	
	According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Continuous immersion in water: maximal 96 hours • Up to 10 operations during immersion	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	
Vibration resistance according to IEC 60068-2-6	2 g, 10 to 200 Hz (AUMA NORM), 1 g, 10 to 200 Hz (for actuators with AMExC or ACExC actuator controls) Resistant to vibration during start-up or for failures of the plant. Valid for part-turn actuators in version AUMA NORM and in version with actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.	
Corrosion protection	Standard:	KS: Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX: Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution. KX-G: Same as KX, however aluminium-free version (outer parts)
Coating	Double layer powder coating	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request

Service conditions	
Lifetime	AUMA part-turn actuators meet or exceed the lifetime requirements of EN ISO 22153. Detailed information can be provided on request.
Sound pressure level	< 72 dB (A)
Further information	
EU Directives	ATEX Directive 2014/34/EU Machinery Directive 2006/42/EC Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU RoHS Directive 2011/65/EU
Reference documents	Dimensions SQEx 05.2 – SQEx 14.2/SQREx 05.2 – SQREx 14.2 Electrical data SQEx 05.2 – SQEx 14.2