SQREx 05.2 – SQREx 14.2
AUMA NORM
Technical data Part-turn actuators for modulating duty with 1-phase AC motor

General information

AUMA NORM part-turn actuators require external controls. For sizes SQREx 05.2 – SQREx 14.2, AUMA offers AMExC or 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]		Modulating torque[2]	Number of starts	Pulse duration[3]	Pulse duration on reversal[4]	Valve attachment		Valve shaft			Handwheel		Weight
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Max. [Nm]	Starts Max. [1/h]	[ms]	[ms]	Standard EN ISO 5211	Option EN ISO 5211	Cylindrical Max. [Nm]	Square Max. [Nm]	Two-flat Max. [Nm]	Ø [mm]	Turns for 90°	approx. [kg]
SQREx 05.2	8	6	75	150	75	1,200	50	160	F05/F07	F10	25.4	22	22	160	11	25[5] 30[6]
	11	9						200							16	
	16	12						265							11	
	22	17						350							16	
	32	25						480							11	
	63	50						800							11	
SQREx 07.2	8	6	150	300	150	1,200	50	160	F05/F07	F10	25.4	22	22	160	11	25[5] 30[6]
	11	9						200							16	
	16	12						265							11	
	22	17						350							16	
	32	25						480							11	
	63	50						800							11	
SQREx 10.2	11	9	300	600	300	1,200	50	200	F10	F12	38	30	27	200	11	30[5] 34[6]
	16	12						265							15	
	22	17						350							11	
	32	25						480							15	
	42	35						650							11	
	63	50						900							15	
SQREx 12.2	16	12	600	900	450	1,200	50	180	F12	F14	50	36	41	200	22	38[5] 46[6]
	22	17		1,200	600			230							30	
	32	25						320							22	
	45	35						430							30	
	63	50						580							22	
	84	70						800							30	
	125	108						1,100							22	
SQREx 14.2	36	30	1,200	1,800	900	1,200	50	250	F14	F16	60	46	46	200	51	47[5] 58[6]
	48	40		2,400	1,200			315							70	
	72	60						450							51	
	100	85						600							70	

1) The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range
2) Maximum permissible torque for modulating duty
3) For identical direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
4) For reversal of direction of rotation: time during which the motor must be electrically supplied until there is a movement at the output drive.
5) Indicated weight includes part-turn actuator AUMA NORM with 1-phase AC motor, electrical connection in standard version, unbored coupling and handwheel
6) Indicated weight includes AUMA NORM part-turn actuator with 1-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	Intermittent duty S4 - 20 %, class C according to EN 15714-2	
	For nominal voltage and +40 °C ambient temperature and at modulating torque load.	
Motors	1-phase AC motor with integral permanent split capacitor (PSC), 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: **1-phase AC** Voltages/frequencies Volt: 110 – 120 | 110 – 120 | 220 – 240 | 220 – 240 Hz: 50 | 60 | 50 | 60 Further voltages on request Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %	
Overvoltage category	Category III according to IEC 60364-4-443	
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 actuator controls.	
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.)	
Motor heater (option)	Voltages:	110 – 120 V AC, 220 – 240 V AC
	Power depending on the size 12.5 W	
Swing angle	Standard:	Adjustable between 75° and < 105°
	Options:	15° to < 45°, 45° bis < 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; push-in type control terminals
	Options:	AUMA Ex plug/socket connector with screw-type terminals (KP) AUMA Ex plug/socket connector with terminal blocks (KES)
Threads for cable entries	Standard:	Metric threads
	Option:	Pg threads, NPT threads, G threads
Terminal plan	TPA01R2AA-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 ISO 5211
Valve attachment	Dimensions according to EN ISO 5211 without spigot	

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 Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)	
	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, switches galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switches 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, switches 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 – 20 mA (electronic position transmitter)	
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
	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 setting	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 –50 °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 1-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 • Modulating duty is not possible 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 integral actuator controls, each with AUMA plug/socket connector. Not valid in combination with gearboxes.	

Service conditions		
Corrosion protection	Standard:	KS: Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX: Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Coating	Double layer powder coating Two-component iron-mica combination	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request
Lifetime	AUMA part-turn actuators meet or exceed the lifetime requirements of EN 15714-2. Detailed information can be provided on request.	

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