

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

Type	Operating time for 90° in seconds		Torque range <sup>1)</sup>		Valve attachment		Valve shaft			Handwheel		Weight <sup>2)</sup>
	50 Hz	60 Hz	min. [Nm]	max. [Nm]	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]
SQ 05.2	4	3	50	150	F05	F07	25.4	22	22	160	11	23
	5.6	4.5									16	
	8	6									11	
	11	9									16	
	16	12									11	
	22	18									16	
SQ 07.2	32	25	100	300	F07	F10	25.4	22	22	160	11	23,5
	4	3									16	
	5.6	4.5									11	
	8	6									16	
	11	9									11	
	16	12									16	
SQ 10.2	22	18	200	600	F10	F12	38	30	27	200	11	27
	32	25									15	
	45	35									11	
	63	50									15	
	8	6									11	
	11	9									15	
SQ 12.2	16	12	400	900	F12	F14	50	36	41	200	22	32
	22	18									30	
	32	25									22	
	45	35									30	
	63	50									22	
	1,200										30	
SQ 14.2	24	20	800	1,800	F14	F16	60	46	46	200	70	43
	36	30									51	
	48	40									70	
	72	60									51	
	2,400										70	
	100	85									70	

**General information**

AUMA NORM Part-turn actuators require electrical controls.

For sizes SQ 05.2 – SQ 14.2, AUMA offer AM or AC 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) Weight	Indicated weight includes AUMA NORM part-turn actuator with 3-phase AC motor, standard electrical connection, unbored coupling and handwheel.

**Features and functions**

Type of duty	Short-time duty S2 - 15 min 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: <table border="1"> <thead> <tr> <th colspan="12">3-phase AC current - voltages/frequencies</th> </tr> <tr> <th>Volt</th> <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> <td></td> </tr> <tr> <th>Hz</th> <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> <td></td> </tr> </thead> </table> Special voltages: <table border="1"> <thead> <tr> <th colspan="5">3-phase AC current - voltages/frequencies</th> </tr> <tr> <th>Volt</th> <td>525</td> <td>575</td> <td>660</td> <td>690</td> </tr> <tr> <th>Hz</th> <td>50</td> <td>50</td> <td>50</td> <td>50</td> </tr> </thead> </table> Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %	3-phase AC current - 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 current - voltages/frequencies					Volt	525	575	660	690	Hz	50	50	50	50
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Hz	50	50	50	50																																																
Overvoltage category	Category III according to IEC 60364-4-443																																																			

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Insulation class	Standard:	F, tropicalized
	Option:	H, tropicalized
Motor protection	Standard:	Thermoswitches (NC)
	Option:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in controls.
Motor heater (option)	Voltages:	110 – 220 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	37.5° – 45°, 45° – 60°, 60° – 75°, 75° – 105°, 105° – 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 operation 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:	AUMA plug/socket connector with screw-type connection
	Options:	Terminals or crimp connection Gold-plated control plug (sockets and plugs)
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Terminal plan	TPA 00R1AA-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	

<b>Electromechanical control unit</b>		
Limit switching	Counter gear mechanism for end positions CLOSED and OPEN	
	Standard:	Single switches (1 NC and 1 NO) for each direction, 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 switches (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 – 20mA (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 of 5 W, 24 V AC is installed in the actuator in combination with the AUMA MATIC or AUMATIC actuator controls.	

<b>Electronic control unit (only in combination with AC actuator controls)</b>	
Non-intrusive setting (option)	Magnetic limit and torque transmitter (MWG)
Position feedback signal	Via actuator controls
Torque feedback signal	Via actuator controls

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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	≤ 2,000 m above sea level for > 2,000 m above sea level, please contact AUMA
Ambient temperature	Standard: -40 °C to +80 °C
	Options: -60 °C to +60 °C 0 °C to +120 °C
Enclosure protection according to EN 60529	Standard: IP 68 with AUMA 3-phase AC motor Different enclosure protection: for special motors refer to name plate
	Option: DS terminal compartment additionally sealed against interior (double sealed)
	According to AUMA definition, enclosure protection IP 68 meets the following requirements: <ul style="list-style-type: none"> <li>• Depth of water: maximum 8 m head of water</li> <li>• Duration of continuous immersion in water: Max. 96 hours</li> <li>• Up to 10 operations during continuous immersion</li> </ul>
Pollution degree	Pollution degree 4 (when mounted)
Vibration resistance according to EN 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for plant failures. However, a fatigue strength may not be derived from this. Valid for part-turn actuators in AUMA NORM version (with AUMA plug/socket connector, without 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 atmospheres 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
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 exceed the lifetime requirements of EN 15714-2. For further details, please contact AUMA.

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2004/108/EC) Low Voltage Directive: (2006/95/EC) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions Part-turn actuators SQ 05.2 – SQ 14.2/SQR 05.2 – SQR 14.2 Electrical data Part-turn actuators SQ 05.2 – SQ 14.2 with 3-phase AC motor Technical data Electronic position transmitter/potentiometer Technical data Output speeds, motors, reduction ratios and blinker transmitters Technical data for switches