

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⁾		Modul. 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 ISO 5211	Option EN ISO 5211	Cylindrical max. [mm]	Square max. [mm]	Two-flat max. [mm]	Ø mm	Turns for 90°	approx. [kg]
SQR 05.2	8	6	75	150	75	1,200	F05	F07	25.4	22	22	160	11	23
	11	9											16	
	16	12											11	
	22	18											16	
	32	25											11	
SQR 07.2	8	6	150	300	150	1,200	F07	F10	25.4	22	22	160	11	23,5
	11	9											16	
	16	12											11	
	22	18											16	
	32	25											11	
SQR 10.2	11	9	300	600	300	1,200	F10	F12	38	30	27	200	15	27
	16	12											11	
	22	18											15	
	32	25											11	
	45	35											15	
SQR 12.2	16	12	600	900	450	1,200	F12	F14	50	36	41	200	22	32
	22	18		1,200	600								22	
	32	25	1,200	2,400	1,200	1,200	F14	F16	60	46	46	200	22	
	45	35											51	
	63	50											70	
SQR 14.2	36	30	1,200	2,400	1,200	1,200	F14	F16	60	46	46	200	51	43
	48	40											70	
	72	60											51	
	100	85											70	

General information

AUMA NORM part-turn actuators require electrical controls.
 For sizes SQR 05.2 – SQR 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) Modulating torque	Maximum torque in modulating duty
3) 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	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: <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
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																																																
Overvoltage category	Category III according to IEC 60364-4-443																																																			
Insulation class	Standard: F, tropicalized Option: H, tropicalized																																																			

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

AUMA NORM

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

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 (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	

Electromechanical control unit

Limit switching	Counter gear mechanism for end positions CLOSED and OPEN	
	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 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 end position, 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.	

Electronic control unit (only in combination with AC 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	≤ 2,000 m above sea level for > 2,000 m above sea level, please contact AUMA
Ambient temperature	Standard: –40 °C to +60 °C
	Options: –60 °C to +60 °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"> • 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 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 SQR 05.2 – SQR 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