SA 07.2 – SA 14.6
AUMA NORM
Technical data Multi-turn actuators for open-close duty with 1-phase AC motor

General information

AUMA NORM multi-turn actuators require electric controls. For the SA type range, AUMA offers AM and AC actuator controls. These can also easily be mounted to the actuator at a later date.

Type	Output speed rpm		Torque range[1]		Number of starts[2]	Valve attachment[3]			Handwheel		Weight[4]
	50 Hz	60 Hz	Min. [Nm]	Max. [Nm]	Starts Max. [1/h]	Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduction ratio	approx. [kg]
SA 07.2	4	4.8	10	30	60	F07 F10	– G0	26 34[5]	160	11 : 1	21
	5.6	6.7								8 : 1	
	8	9.6								11 : 1	
	11	13								8 : 1	
	16	19								11 : 1	
	22	26								8 : 1	
	32	38								11 : 1	28
	45	54								8 : 1	
	63	75			30					11 : 1	
	90	108								8 : 1	
	125	150								5.5 : 1	
	180	216		25						4 : 1	
SA 07.6	4	4.8	20	60	60	F07 F10	– G0	26 34[5]	160	11 : 1	21
	5.6	6.7								8 : 1	
	8	9.6								11 : 1	
	11	13								8 : 1	
	16	19								11 : 1	
	22	26								8 : 1	
	32	38								11 : 1	28
	45	54								8 : 1	
	63	75			30					11 : 1	37
	90	108								8 : 1	
	125	150								5.5 : 1	
	180	216		50						4 : 1	
SA 10.2	4	4.8	40	120	60	F10	G0	40	200	11 : 1	28
	5.6	6.7								8 : 1	
	8	9.6								11 : 1	31
	11	13								8 : 1	
	16	19								11 : 1	
	22	26								8 : 1	
	32	38								11 : 1	40
	45	54			30					8 : 1	
	63	75								11 : 1	43
	90	108								8 : 1	
	125	150								5.5 : 1	
	180	216		100						4 :1	
SA 14.2	4	4.8	100	250	60	F14	G1/2	58	315	11 : 1	59
	5.6	6.7								8 : 1	
	8	9.6								11 : 1	
	11	13								8 : 1	
	16	19			30					11 : 1	61
	22	26								8 : 1	
	32	38								11 : 1	63
	45	54								8 : 1	
SA 14.6	4	4.8	200	500	60	F14	G1/2	58	400	11 : 1	63
	5.6	6.7								8 : 1	
	8	9.6		400	30					11 : 1	
	11	13								8 : 1	
	16	19								11 : 1	66
	22	26								8 : 1	

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

2) For actuators equipped 1-phase AC motors with integral permanent split capacitors (motor type VE/AE), an off-time (reversing prevention time) of minimum 2.5 seconds is required prior to starting in opposite direction.

3) Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.
4) Indicated weight includes AUMA NORM multi-turn actuator with 1-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.
5) Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm.

Features and functions		
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 load with 35 % of the max. torque.	
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 1-phase AC motor with integral starting capacitor and solid state switch (CSIR), type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	
	Motor type depending on actuator type/output speed. Refer to Electrical data SA 07.2 – SA 14.6 with 1-phase AC motors.	
Mains voltage, mains frequency	Standard voltages: Refer to table: 1-phase AC standard 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	F, tropicalized	
Motor protection	Thermoswitches (NC)	
Self-locking	Self-locking: Output speeds up to 90 rpm (50 Hz), 108 rpm (60 Hz) NOT self-locking: Output speeds from 125 rpm (50 Hz), 150 rpm (60 Hz) Multi-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 12.5 W	
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 plug/socket connector with screw-type connection
	Options:	Terminals or crimp-type connection Gold-plated control plug (sockets and pins)
Threads for cable entries	Standard:	Metric threads
	Option:	Pg threads, NPT threads, G threads
Wiring diagram	TPA01R1AA-101-000, 1-phase AC motor with permanent split capacitor TPA02R1AA-101-000, 1-phase AC motor with starting capacitor and solid state switch 110 – 120 V AC TPA03R1AA-101-000, 1-phase AC motor with starting capacitor and solid state switch 220 – 240 V AC Depending on motor type/output speed. Refer to Electrical data SA 07.2 – SA 14.6 with 1-phase AC motors.	
Valve attachment	Standard:	B1 in accordance with ISO 5210
	Options:	A, B2, B3, B4, C, D according to ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338
	Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3 A prepared for permanent lubrication of stem	

Table 1: 1-phase AC standard voltages

Voltages/frequencies				
Volt [1~]	110 – 120	110 – 120	220 – 240	220 – 240
Hz	50	60	50	60

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, 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
	A resistance type heater of 5 W, 24 V AC is installed in the actuator in combination with AM or AC actuator controls.	
Electronic control unit (option, only in combination with AC actuator controls)		
Non-intrusive settings	Magnetic limit and torque transmitter (MWG) Turns per stroke: 2 to 500 (standard) or 10 to 5,000 (option)	
Position feedback signal	Via actuator controls	
Torque feedback signal	Via actuator controls	
Mechanical position indicator (option)	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 +70 °C
	Options:	–40 °C to +80 °C –60 °C to +60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection in accordance with IEC 60529	Standard:	IP68 with 1-phase AC motors of types VB..., AE..., VE..., AC..., VC... For special motors, differing enclosure protection is possible
	Option:	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: maximum 96 hours • Up to 10 operations during immersion	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	
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	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request
Lifetime	AUMA multi-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	Machinery Directive 2006/42/EC Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU RoHS Directive 2011/65/EU
Reference documents	Dimensions SA 07.2 – SA 14.6/SAR 07.2 – SAR 14.6 Electrical data SA 07.2 – SA 14.6