SA 25.1 – SA 48.1
AUMA NORM
Technical data Multi-turn actuators for open-close duty with 3-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	Valve attachment[2]			Handwheel		Weight[3]
	50 Hz	60 Hz	Min. [Nm]	S2-15 min Max. [Nm]	S2-30 min Max. [Nm]	Starts Max. [1/h]	Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduc-tion ratio	approx. [kg]
SA 25.1	4[4]	4,8[4]	630	2,000	1,400	40	F25	G4	95	400	45 : 1	150
	5,6[4]	6,7[4]									32 : 1	
	8	9.6									45 : 1	
	11	13									32 : 1	
	16	19									45 : 1	
	22	26									32 : 1	
	32	38									45 : 1	160
	45	54									32 : 1	
	63	75									45 : 1	
	90	108									32 : 1	
	125	150		1,700	1,200						22.5 : 1	
	180	216		1,400	1,000						16 : 1	
SA 30.1	4	4.8	1,250	4,000	2,800	40	F30	G5	115	500	44 : 1	190
	5.6	6.7									33 : 1	
	8	9.6									44 : 1	
	11	13									33 : 1	
	16	19									44 : 1	
	22	26									33 : 1	
	32	38									44 : 1	260
	45	54									33 : 1	
	63	75									44 : 1	
	90	108									33 : 1	
	125	150		3,200	2,200						22 : 1	
	180	216		2,800	2,000						16.5 : 1	
SA 35.1	4	4.8	2 500	8,000	5,700	30	F35	G6	155	400	184 : 1	410
	5.6	6.7									132 : 1	
	8	9.6									184 : 1	
	11	13									132 : 1	
	16	19									184 : 1	
	22	26									132 : 1	
	32	38									92 : 1	425
	45	54									66 : 1	
	63	75		6,400	4,500						46 : 1	
	90	108		5,500	3,800						33 : 1	
SA 40.1	4	4.8	5,000	16,000	11,200	20	F40	G7	175	500	184 : 1	510
	5.6	6.7									128 : 1	
	8	9.6									184 : 1	
	11	13									128 : 1	
	16	19									184 : 1	
	22	26									128 : 1	
	32	38		14,000	9,800						90 : 1	
	45	54		10,000	7,000						64 : 1	
SA 48.1	4	4.8	10,000	32,000	22,400	20	F48	–	175	630	180 : 1	750
	5.6	6.7									132 : 1	
	8	9.6									180 : 1	
	11	13									132 : 1	
	16	19									180 : 1	

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

2) Indicated flange sizes apply for output drive types A and B1. Refer to separate dimension sheets for further output drive types.

3) Indicated weight includes AUMA NORM multi-turn actuator with 3-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.

4) On request

Features and functions		
Type of duty	Standard:	Short-time duty S2 - 15 min, classes A and B according to EN ISO 22153
	Option:	Short-time duty S2 - 30 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	3-phase AC asynchronous squirrel-cage motor, type IM B9 according to IEC 60034-7, IC410 cooling procedure according to IEC 60034-6	
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:	Thermoswitches (NC)
	Option:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.
Self-locking	Self-locking: Speeds up to 90 rpm. (50 Hz) or 108 rpm (60 Hz) and from size SA 35.1 for output speeds up to 22 rpm (50Hz) or 26 (60Hz) NOT self-locking: SA 25.1 and SA 30.1 for output speeds from 125 rpm (50 Hz) or 150 rpm (60 Hz) and from size SA 35.1 for output speeds from 32 rpm (50Hz) or 38 (60Hz) 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 or 380 – 480 V AC	
	Power depending on the size 12.5 – 25 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
Electrical connection	Actuator controls:	AUMA plug/socket connector with screw-type connection
	Motor:	Terminals within motor connection compartment
	Options:	Power connection via 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	TPA00R1AA-101-000 (basic version)	
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 or IB3 for size 25.1 only, larger sizes on request) A prepared for permanent lubrication of stem	

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

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 or 380 – 400 V AC
	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 –50 °C to +60 °C –60 °C to +60 °C 0 °C to +120 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection in accordance with IEC 60529	Standard:	IP67 with AUMA 3-phase AC motor For special motors, differing enclosure protection is possible
	Options:	• IP68 with AUMA 3-phase AC motor • DS 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 AM or AC actuator controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Valid for multi-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.
	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	SA 25.1 – SA 40.1: Double layer powder coating SA 48.1: Two-component iron-mica combination	
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.	
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 25.1 – SA 48.1/SAR 25.1 – SAR 30.1 Electrical data SA 25.1 – SA 48.1	