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

SA 07.1 – SA 48.1 AUMA NORM

Type	Output speed rpm		Torque range[1] for type of duty			Running torque[2] for type of duty		Valve attachment		Valve stem diameter	Handwheel		approx. kg[5]
	50 Hz	60 Hz	min. Nm	S2-15 min max. Nm	S2-30 min max. Nm	S2-15 min max. Nm	S2-30 min max. Nm	Standard EN ISO 5210	Option DIN 3210	for a rising valve stem[3] max. mm	Ø mm	Reduction ratio	
SA 07.1	4	4.8	10	30	20	15	10	F07 F10	G0	26	160	11 : 1	19
	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	20
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125[4]	150[4]										5.5 : 1	
	180[4]	216[4]		25								4 : 1	
SA 07.5	4	4.8	20	60	40	30	20	F07 F10	G0	26	160	11 : 1	19
	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	21
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	
	125[4]	150[4]										5.5 : 1	
	180[4]	216[4]		50	30							4 : 1	
SA 10.1	4	4.8	40	120	90	60	45	F10	G0	40	200	11 : 1	23
	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	25
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	26
	125[4]	150[4]										5.5 : 1	
	180[4]	216[4]		100	70							4 : 1	
SA 14.1	4	4.8	100	250	180	125	95	F14	G1/2	57	315	11 : 1	47
	5.6	6.7										8 : 1	
	8	9.6										11 : 1	
	11	13										8 : 1	
	16	19										11 : 1	48
	22	26										8 : 1	
	32	38										11 : 1	51
	45	54										8 : 1	
	63	75										11 : 1	
	90	108										8 : 1	52
	125[4]	150[4]										5.5 : 1	
	180[4]	216[4]		200	140							4 : 1	
SA 14.5	4	4.8	200	500	360	250	180	F14	G1/2	57	400	11 : 1	49
	5.6	6.7										8 : 1	
	8	9.6										11 : 1	
	11	13										8 : 1	
	16	19										11 : 1	50
	22	26										8 : 1	
	32	38										11 : 1	
	45	54										8 : 1	
	63	75										11 : 1	57
	90	108				175	125					8 : 1	
	125[4]	150[4]										5.5 : 1	
	180[4]	216[4]		400	290							4 : 1	
SA 16.1	4	4.8	400	1,000	710	500	355	F16	G3	75	500	11 : 1	75
	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	86
	45	54										8 : 1	
	63	75				500	250					11 : 1	
	90	108										8 : 1	91
	125[4]	150[4]										5.5 : 1	
	180[4]	216[4]		800	570							4 : 1	

1) Tripping torque adjustable for both directions
2) Permissible average torque for the whole travel
3) For output drives type A and B1
4) Not self-locking
5) Weight for multi-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, output drive type B1 and handwheel

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SA 07.1 – SA 48.1 AUMA NORM

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

Type	Output speed rpm		Torque range[1] for type of duty			Running torque[2] for type of duty		Valve attachment		Valve stem diameter	Handwheel		
	50 Hz	60 Hz	min. Nm	S2-15 min max. Nm	S2-30 min max. Nm	S2-15 min max. Nm	S2-30 min max. Nm	Standard EN ISO 5210	Option DIN 3210	for a rising valve stem[3] max. mm	Ø mm	Reduction ratio	approx. kg[5]
SA 25.1	**4**	**4.8**	630	2,000	1,400	700	490	F25	G4	95	400	45 : 1	150
	5.6	**6.7**										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	
SA 30.1	**4**	**4.8**	1,250	4,000	2,800	1,400	980	F30	G5	115	500	45 : 1	190
	5.6	**6.7**										32 : 1	
	8	**9.6**										45 : 1	
	11	**13**										32 : 1	
	16	**19**										45 : 1	
	22	**26**										32 : 1	
	32	**38**										45 : 1	260
	45	**54**										32 : 1	
	63	**75**										45 : 1	
	90	**108**										32 : 1	
SA 35.1	**4**	**4.8**	2,500	8,000	5,700	2,800	2,000	F35	G6	155	400	180 : 1	410
	5.6	**6.7**										125 : 1	
	8	**9.6**										180 : 1	
	11	**13**										125 : 1	
	16	**19**										180 : 1	
	22	**26**										125 : 1	
	32[4]	**38**[4]										90 : 1	425
	45[4]	**54**[4]										64 : 1	
SA 40.1	**4**	**4.8**	5,000	16,000	11,200	5,600	3,920	F40	G7	175	500	180 : 1	510
	5.6	**6.7**										125 : 1	
	8	**9.6**										180 : 1	
	11	**13**										125 : 1	
	16	**19**										180 : 1	
	22	**26**										125 : 1	
	32[4]	**38**[4]		14,000	9,800							90 : 1	
SA 48.1	**4**	**4.8**	10,000	32,000	22,400	11,200	7 840	F48	–	175	400	180 : 1	750
	5.6	**6.7**										125 : 1	
	8	**9.6**										180 : 1	
	11	**13**										125 : 1	
	16	**19**										180 : 1	

General information

Multi-turn actuators AUMA NORM require electric controls. AUMA offers the actuator controls AUMA MATIC AM or AUMATIC AC for the sizes SA 07.1 – SA 16.1. These can also easily be mounted to the actuator at a later date.

Features and functions

Type of duty [6]	Standard: Short-time duty S2 - 15 min Option: Short-time duty S2 - 30 min
Motors	3-ph AC asynchronous motor, type IM B9 according to IEC 34
Insulation class	Standard: F, tropicalized Option: H, tropicalized
Motor protection	Standard: Thermoswitches (NC) Option: PTC thermistors (according to DIN 44082)
Self-locking	Yes; for output speeds 4 to 90 rpm and from size SA 35.1 for output speeds from 4 to 22 rpm
Limit switching	Counter gear mechanism for end positions CLOSED and OPEN for 1 to 500 turns per stroke (optional for 1 to 5,000 turns per stroke) 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 switch (DUO limit switching), available for any intermediate position
Torque switching	Torque switching for direction OPEN and CLOSE, infinitely adjustable Standard: Single switch (1 NC and 1 NO) for each direction, not galvanically isolated Options: Tandem switch (2 NC and 2 NO) for each direction, switches galvanically isolated

1) Tripping torque adjustable for both directions
2) Permissible average torque for the whole travel
3) For output drives types A and B1
4) Not self-locking
5) Weight for multi-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, output drive type B1 and handwheel
6) For nominal voltage and 20 °C ambient temperature at an average load with running torque

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Non-intrusive setting (option)	Magnetic limit and torque transmitter MWG for the sizes SA 07.1 – SA 16.1 (only possible in combination with actuator controls AUMATIC AC) for 1 to 500 turns per stroke or for 10 to 5,000 turns per stroke
Position feedback signal, analogue (options)	Potentiometer or 0/4 – 20 mA (RWG) For further details see separate data sheet
Torque feedback signal, analogue (option)	Only in combination with magnetic limit and torque transmitter MWG and actuator controls AUMATIC AC
Mech. 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 (5 W, 24 V AC) is installed in the actuator in combination with the actuator controls AUMA MATIC AM or AUMATIC AC.
Motor heater (option)	SA 07.1 – SA 10.1: 12.5 W SA 14.1 – SA 16.1: 25 W SA 25.1 – SA 48.1: 50 W
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electric operation. Option: Handwheel lockable
Electrical connection	Standard: SA 07.1 – SA 16.1: AUMA plug/socket connector with screw type connection, SA 25.1 – SA 48.1: Control connections on AUMA plug/socket connector Motor connection on terminals
Threads for cable glands	Standard: Metric threads Options: Pg threads, NPT threads, G threads
Terminal plan	KMS TP110/001 (basic version)
Output drive types	A, B1, B2, B3, B4 according to EN ISO 5210 A, B, D, E according to DIN 3210 C according to DIN 3338 Special output drives: AF, B3D, ED, DD, IB1, IB3
Service conditions	
Mounting position	Any position
Enclosure protection according to EN 60 529 [7]	Standard: IP 67 Options: IP 68 IP 67-DS (Double Sealed) IP 68-DS (Double Sealed) (Double Sealed = Electrical connection compartment additionally sealed against interior)
Corrosion protection	Standard: KN Suitable for installation in industrial units, in water or power plants with a low pollutant concentration Options: KS Suitable for installation in occasionally or permanently aggressive atmosphere with a moderate pollutant concentration (e.g. in wastewater treatment plants, chemical industry) KX Suitable for installation in extremely aggressive atmosphere with high humidity and high pollutant concentration KX-G same as KX, however aluminium-free version (outer parts)
Finish coating	Standard: Two-component iron-mica combination Powder paint
Colour	Standard: AUMA silver-grey (similar to RAL 7037) Option: Other colours are possible on request
Ambient temperature[8]	Standard: – 25 °C to + 80 °C Options: – 40 °C to + 60 °C (low temperature) – 50 °C to + 60 °C (extreme low temperature) – 60 °C to + 60 °C (extreme low temperature) 0 °C to + 120 °C (high temperature)
Vibration resistance according to EN 60068-2-6	2 g, for 10 to 200 Hz Resistant to vibrations 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 (with AUMA plug/socket connector, without actuator controls). Not valid in combination with gearboxes
Lifetime	Operating cycles OPEN - CLOSE - OPEN with 30 turns/stroke: SA 07.1 – SA 10.1: 20,000 SA 14.1 – SA 16.1: 15,000 SA 25.1 – SA 30.1: 10,000 SA 35.1 – SA 48.1: 5,000

7) For version in enclosure protection IP 68 higher corrosion protection KS or KX is strongly recommended. Additionally, for enclosure protection IP 68 we recommend to use the double sealed terminal compartment DS.

8) Version with RWG from – 50 °C to + 80 °C

Further information	
EC directives	Electromagnetic Compatibility (EMC): (2004/108/EC) Low Voltage Directive: (2006/95/EC) Machinery Directive: (98/37/EC)
Reference documents	Product description “Electric Multi-turn actuators SA” Dimension sheets SA Electrical data sheets SA