

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 sizes SAEx 07.2 – SAEx 14.6, AUMA offers AMExC or ACEXC actuator controls. These can also easily be mounted to the actuator at a later date.

Type	Output speed rpm		Torque range ¹⁾		Run torque ²⁾	Number of starts ³⁾	Valve attachment ⁴⁾			Handwheel		Weight ⁵⁾
	50 Hz	60 Hz	Min. [Nm]	Max. [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]
SAEx 07.2	4	4.8	10	30	11	60	F07 F10	– G0	26 34	160	11 : 1	28
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	
	16	19									11 : 1	
	22	26				8 : 1					31	
	32	38				11 : 1						
	45	54				8 : 1						
	63	75				11 : 1						
	90	108				8 : 1						
	125	150				5.5 : 1						
	180	216		4 : 1								
SAEx 07.6	4	4.8	20	60	21	60	F07 F10	– G0	26 34	160	11 : 1	28
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	
	16	19									11 : 1	
	22	26				8 : 1					31	
	32	38				11 : 1						
	45	54				8 : 1						
	63	75				11 : 1						
	90	108				8 : 1						
	125	150				5.5 : 1					40	
	180	216		4 : 1								
SAEx 10.2	4	4.8	40	120	42	60	F10	G0	40	200	11 : 1	32
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	35
	16	19									11 : 1	
	22	26				8 : 1					44	
	32	38				11 : 1						
	45	54				8 : 1						
	63	75				11 : 1						
	90	108				8 : 1						47
	125	150				5.5 : 1						
	180	216		4 : 1								
SAEx 14.2	4	4.8	100	250	100	60	F14	G1/2	58	315	11 : 1	63
	5.6	6.7									8 : 1	
	8	9.6									11 : 1	
	11	13									8 : 1	
	16	19				11 : 1					65	
	22	26				8 : 1						
	32	38				11 : 1						
	45	54				8 : 1						
SAEx 14.6	4	4.8	200	500	175	60	F14	G1/2	58	400	11 : 1	67
	5.6	6.7		400		30					8 : 1	
	8	9.6									11 : 1	
	11	13			150						8 : 1	70
	16	19		11 : 1								
	22	26		8 : 1								

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

2) Maximum permissible torque for 15 min. running time.

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

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

5) Indicated weight includes AUMA NORM multi-turn actuator with 1-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.

Features and functions					
Explosion protection	Standard:	II 2G Ex db eb IIB T4 or T3 Gb II 2G Ex h IIB T4 or T3 Gb II 2D Ex tb IIIC T130°C or T190°C Db			
	Options:	II 2G Ex db IIB T4 or T3 Gb II 2G Ex h IIB T4 or T3 Gb			
Product certificates	DEKRA 11ATEX0008 X				
Type of duty	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2				
	For nominal voltage and +40 °C ambient temperature and at run torque load.				
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 also to Electrical data SAEx 07.2 – SAEx 14.6 with 1-phase AC motors.				
Mains voltage, mains frequency	Standard voltages:				
	1-phase AC current				
	Voltages/frequencies				
	Volt	110 – 120	110 – 120	220 – 240	220 – 240
	Hz	50	60	50	60
	Further voltages on request Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %				
Overvoltage category	Category III according to IEC 60364-4-443				
Insulation class	F, tropicalized				
Motor protection	Standard:	PTC thermistors (according to DIN 44082) PTC thermistors additionally require a suitable tripping device in the actuator controls.			
	Option:	Thermoswitches (NC) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.			
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 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	Standard:	AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals			
	Options:	AUMA Ex plug/socket connector with screw-type terminals (KP) AUMA Ex plug/socket connector with terminal blocks (KES)			
Threads for cable entries	Standard:	Metric threads			
	Option:	Pg-threads, NPT-threads, G-threads			

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Features and functions	
Terminal plan	TPA01R2AA-101-000, 1-phase AC motor with permanent split capacitor 110 – 240 V AC (basic version in combination with PTC thermistors) TPA01R1AA-101-000, 1-phase AC motor with permanent split capacitor 110 – 240 V AC (basic version in combination with thermoswitches) TPA02R2AA-101-000, 1-phase AC motor with permanent split capacitor and solid state switch 110 120 V AC (basic version in combination with PTC thermistors) TPA02R1AA-101-000, 1-phase AC motor with permanent split capacitor and solid state switch 110 120 V AC (basic version in combination with thermoswitches) TPA03R2AA-101-000, 1-phase AC motor with permanent split capacitor and solid state switch 220 240 V AC (basic version in combination with PTC thermistors) TPA03R1AA-101-000, 1-phase AC motor with permanent split capacitor and solid state switch 220 240 V AC (basic version in combination with thermoswitches) Depending on motor type/output speed. Refer also to Electrical data SAEx 07.2 – SAEx 14.6 with 1-phase AC motors.
Valve attachment	Standard: B1 according to EN ISO 5210 Options: A, B2, B3, B4, C, D according to EN 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

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, switches galvanically isolated Triple switch (3 NC and 3 NO) for each end position, switches 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, switches 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 – 20 mA (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 AMExC or ACEXC actuator controls.

Electronic control unit (option, only in combination with ACEXC actuator controls)	
Non-Intrusive setting	Magnetic limit and torque transmitter (MWG) Turns per stroke: 1 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

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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 +40 °C/+60 °C
	Options:	−40 °C to +40 °C/+60 °C −50 °C to +40 °C/+60 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection in accordance with IEC 60529	IP68 with AUMA 1-phase AC motors of types AE..., VE..., AC..., VC... 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)	
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.
Coating	Double layer powder coating 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 15714-2. Detailed information can be provided on request.	
Noise level	< 72 dB (A)	
Further information		
EU Directives	ATEX Directive 2014/34/EU Machinery Directive 2006/42/EC Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU RoHS Directive 2011/65/EU	