

SARV 07.2 – SARV 16.2

Technical data Multi-turn actuators for modulating duty

General information

SARV multi-turn actuators with variable speed. AUMA actuator controls of ACV type are required to change the output speed.

Table 1: Type of duty S4 - 25 %

Type	Output speed rpm	Torque range ¹⁾		Modulating torque ²⁾	Number of starts	Available mains voltage/mains frequency			
						1-phase AC		3-phase AC	
	50 Hz	Min. [Nm]	Max. ³⁾ [Nm]	Max. [Nm]	Starts Max. [1/h]	110 – 120 V/ 50 – 60 Hz	220 – 240 V/ 50 – 60 Hz	220 – 240 V/ 50 – 60 Hz	380 – 480 V/ 50 – 60 Hz
SARV 07.2	6 – 60	15	30	15	1,500	■ ⁴⁾	■	■	■
	12 – 120		■		■	■	■		
	24 – 240		■		■	■	■		
SARV 07.6	6 – 60	30	60	30	1,500	■	■	■	■
	12 – 120		20	■	■	■	■		
	24 – 240			50	1,200	■	■	■	■
SARV 10.2	6 – 60	60	120	60	1,500	● ⁵⁾	■	■	■
	12 – 120		50	—	■	■	■		
	24 – 240			100	1,200	—	■	■	■
SARV 14.2	6 – 60	120	250	120	1,200	—	■	■	■
	12 – 120		100	—	●	●	■		
	24 – 240			200	600	—	—	▲ ⁶⁾	■
SARV 14.6	6 – 60	250	500	175	1,200	—	—	▲	■
	12 – 120		150	—	—	—	●		
	24 – 240			400	600	—	—	—	●
SARV 16.2	6 – 60	500	1,000	350	900	—	—	—	●

- 1) The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
- 2) Maximum permissible torque for modulating duty.
- 3) Maximum torque to approx. 50 % of maximum output speed.
- 4) Square = Without restriction to +70 °C ambient temperature
- 5) For ambient temperatures exceeding +40 °C, restrictions may occur for max. permissible modulating torque, on time and the number of starts. Detailed information on request.
- 6) Triangle = Special sizing on request

Table 2: Type of duty S4 - 50 %

Type	Output speed rpm	Torque range ¹⁾		Modulating torque ²⁾	Number of starts	Available mains voltage/mains frequency			
						1-phase AC		3-phase AC	
	50 Hz	Min. [Nm]	Max. ³⁾ [Nm]	Max. [Nm]	Starts Max. [1/h]	110 – 120 V/ 50 – 60 Hz	220 – 240 V/ 50 – 60 Hz	220 – 240 V/ 50 – 60 Hz	380 – 480 V/ 50 – 60 Hz
SARV 07.2	6 – 60	15	20	10	1,500	■ ⁴⁾	■	■	■
	12 – 120					■	■	■	■
SARV 07.6	6 – 60	30	40	20	1,500	● ⁵⁾	■	■	■
	12 – 120			15		●	■	■	■
SARV 10.2	6 – 60	60	90	45	1,500	▲ ⁶⁾	■	■	■
	12 – 120			35		–	■	■	■
SARV 14.2	6 – 60	120	180	90	1,200	–	■	■	■
	12 – 120			70		–	●	●	■
SARV 14.6	6 – 60	250	360	125	1,200	–	–	▲	■
	12 – 120			105		–	–	–	●
SARV 16.2	6 – 60	500	710	250	900	–	–	–	●

- 1) The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
- 2) Maximum permissible torque for modulating duty.
- 3) Maximum torque to approx. 50 % of maximum output speed.
- 4) Square = Without restriction to +70 °C ambient temperature
- 5) For ambient temperatures exceeding +40 °C, restrictions may occur for max. permissible modulating torque, on time and the number of starts. Detailed information on request.
- 6) Triangle = Special sizing on request

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Table 3: Valve attachments and weights

Type	Output speed rpm	Valve attachment ¹⁾			Handwheel		Weight ²⁾
	50 Hz	Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm] [mm]	Ø [mm]	Reduction ratio	approx. [kg]
SARV 07.2	6 – 60	F07 F10	– G0 ³⁾	26 34 ⁴⁾	160	8 : 1	20
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SARV 07.6	6 – 60	F07 F10	– G0	26 34 ⁴⁾	160	8 : 1	21
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SARV 10.2	6 – 60	F10	G0	40	200	8 : 1	25
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SARV 14.2	6 – 60	F14	G1/2	58	315	8 : 1	48
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SARV 14.6	6 – 60	F14	G1/2	58	400	8 : 1	53
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SARV 16.2	6 – 60	F16	G3	77	500	8 : 1	79

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

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

3) G0 valve attachment is designed without spigot hub.

4) Stem diameter for rising stem in combination with AUMA stem protection tube made of PMMA max. 30 mm.

Features and functions		
Type of duty	Standard:	Intermittent duty S4 - 25 %, class C according to EN ISO 22153
	Option:	Intermittent duty S4 - 50 %, class C according to EN ISO 22153
	For 100 % nominal voltage and +40 °C ambient temperature and at modulating torque load.	
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	For available mains voltage and mains frequency, refer to tables on page 1. 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)
Self-locking	Self-locking: Speed ranges 6 – 60 rpm and 12 – 120 rpm	
	NON-self-locking: Speed range variant 24 – 240 rpm	
	Applications of NON self-locking speed variants with pulling loads (like shutter weirs, fish-belly flap gates and sluice gates, etc.) available on request. 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 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
Indication for manual operation (option)	Power tool for emergency operation with square 30 mm or 50 mm	
	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	TPA00R1AA-001-000 (basic version)	

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Features and functions		
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	
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) silver contact (Ag) 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 (option)	Blinker transmitter	
Heater in switch compartment	Resistance type heater with 5 W, 24 V DC	
Electronic control unit (option)		
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 +70 °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 AUMA 3-phase AC motor 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:	
	<ul style="list-style-type: none">• Depth of water: maximum 8 m head of water• Continuous immersion in water: maximum 96 hours• Up to 10 operations during immersion• Modulating duty is not possible during immersion.	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	

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Service conditions	
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 ACV acuator controls) Resistant to vibration during start-up or for plant failures. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.
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	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 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 SAV 07.2 – SAV 16.2/SARV 07.2 – SARV 16.2 with ACV 01.2 Electrical data SARV 07.2 – SARV 16.2 Technical data ACV 01.2