

## Technical data Multi-turn actuators for open-close duty

## General information

Multi-turn actuators of the SAV .2 type range with variable speeds. AUMA actuator controls of ACV .2 type are required to change the output speed.

## Type of duty S2 - 15 min

Type	Output speed rpm	Torque range <sup>1)</sup>		Run torque <sup>2)</sup>	Number of starts	Available mains voltage/mains frequency			
						1-phase AC		3-phase AC	
	50 Hz	Min. [Nm]	Max. <sup>3)</sup> [Nm]	Max. [Nm]	Starts Max. [1/h]	110 V – 120 V/ 50 – 60 Hz	220 V – 240 V/ 50 – 60 Hz	220 V – 240 V/ 50 – 60 Hz	380 V – 480 V/ 50 – 60 Hz
SAV 07.2	6 – 60	10	30	11	60	■ 4)	■	■	■
	12 – 120					■	■	■	■
	24 – 240					■	■	■	■
SAV 07.6	6 – 60	20	60	21	60	■	■	■	■
	12 – 120					■	■	■	■
	24 – 240					■	■	■	■
SAV 10.2	6 – 60	40	120	42	60	● 5)	■	■	■
	12 – 120					–	■	■	■
	24 – 240					–	■	■	■
SAV 14.2	6 – 60	100	250	88	60	–	■	■	■
	12 – 120					–	●	●	■
	24 – 240					–	–	▲ 6)	■
SAV 14.6	6 – 60	200	500	175	60	–	–	▲	■
	12 – 120					–	–	–	●
	24 – 240					–	–	–	●
SAV 16.2	6 – 60	400	1,000	350	60	–	–	–	●

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

2) Permissible average torque for 15 min or 30 min running time and at maximum output speed.

3) Maximum torque to approx. 50 % of maximum output speed

4) Square = Without restriction to +70 °C ambient temperature

5) Circle = For ambient temperatures exceeding +40 °C, restrictions may occur for Maximum permissible run torque, mode of operation and running time. Detailed information on request.

6) Triangle = Special sizing on request

## Type of duty S2 - 30 min

Type	Output speed rpm	Torque range <sup>1)</sup>		Run torque <sup>2)</sup>	Number of starts	Available mains voltage/mains frequency			
						1-phase AC		3-phase AC	
		50 Hz	Min. [Nm]	Max. <sup>3)</sup> [Nm]	Max. [Nm]	Starts Max. [1/h]	110 V – 120 V/ 50 – 60 Hz	220 V – 240 V/ 50 – 60 Hz	220 V – 240 V/ 50 – 60 Hz
SAV 07.2	6 – 60	10	20	8	60	■ 4)	■	■	■
	12 – 120			■		■	■	■	
	24 – 240			■		■	■	■	
SAV 07.6	6 – 60	20	40	15	60	● 5)	■	■	■
	12 – 120		30	13		●	■	■	■
	24 – 240					●	■	■	■
SAV 10.2	6 – 60	40	90	30	60	▲ 6)	■	■	■
	12 – 120		70	25		—	■	■	■
	24 – 240					—	■	■	■
SAV 14.2	6 – 60	100	180	63	60	—	■	■	■
	12 – 120		140	49		—	●	●	■
	24 – 240					—	—	▲	■

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Type of duty S2 - 30 min									
Type	Output speed rpm	Torque range <sup>1)</sup>		Run torque <sup>2)</sup>	Number of starts	Available mains voltage/mains frequency			
						1-phase AC		3-phase AC	
	50 Hz	Min. [Nm]	Max. <sup>3)</sup> [Nm]	Max. [Nm]	Starts Max. [1/h]	110 V – 120 V/ 50 – 60 Hz	220 V – 240 V/ 50 – 60 Hz	220 V – 240 V/ 50 – 60 Hz	380 V – 480 V/ 50 – 60 Hz
SAV 14.6	6 – 60	200	360	123	60	–	–	▲	■
	12 – 120					–	–	–	●
	24 – 240		290			–	–	–	●
SAV 16.2	6 – 60	400	710	249	60	–	–	–	●

- 1) The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range.
- 2) Permissible average torque for 15 min or 30 min running time and at maximum output speed.
- 3) Maximum torque to approx. 50 % of maximum output speed
- 4) Square = Without restriction to +70 °C ambient temperature
- 5) Circle = For ambient temperatures exceeding +40 °C, restrictions may occur for Maximum permissible run torque, mode of operation and running time. Detailed information on request.
- 6) Triangle = Special sizing on request

Valve attachments and weights							
Type	Output speed rpm	Valve attachment <sup>1)</sup>			Handwheel		Weight <sup>2)</sup>
		Standard EN ISO 5210	Option DIN 3210	Max. Ø rising stem [mm]	Ø [mm]	Reduction ratio	approx. [kg]
SAV 07.2	6 – 60	F07 F10	– G0	26 34 <sup>3)</sup>	160	8 : 1	20
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SAV 07.6	6 – 60	F07 F10	– G0	26 34 <sup>3)</sup>	160	8 : 1	21
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SAV 10.2	6 – 60	F10	G0	40	200	8 : 1	25
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SAV 14.2	6 – 60	F14	G1/2	58	315	8 : 1	48
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SAV 14.6	6 – 60	F14	G1/2	58	400	8 : 1	53
	12 – 120					8 : 1	
	24 – 240					4 : 1	
SAV 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 SAV multi-turn actuator with 3-phase AC motor, electrical connection in standard version, output drive type B1 and handwheel.
- 3) 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:	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 100 % nominal voltage and +40 °C ambient temperature and at run torque load at maximum output speed.	
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 table on page 1. Permissible variation of mains voltage: ±10 % Permissible variation of mains frequency: ±5 %	
Overvoltage category	Category III according to IEC 60364-4-443	
Insulation class	Standard:	F, tropicalized
	Option:	H, tropicalized
Motor protection	Standard:	Thermoswitches (NC)
	Option:	PTC thermistors (according to DIN 44082)

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Features and functions	
Self-locking	<p>Self-locking: Speed ranges 6 – 60 rpm and 12 – 120 rpm</p> <p>NOT self-locking: Speed range variant 24 – 240 rpm</p> <p>Applications of NON self-locking speed variants with pulling loads (like protective weirs, fishbelly flap gates and sluice gates, etc.) on request.</p> <p>Multi-turn actuators are self-locking if the valve position cannot be changed from standstill while torque acts upon the output drive.</p>
Motor heater (option)	<p>Voltages: 110 – 120 V AC, 220 – 240 V AC or 380 – 480 V AC</p> <p>Power depending on the size 12.5 – 25 W</p>
Manual operation	<p>Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation.</p> <p>Option:</p> <ul style="list-style-type: none"> <li>Handwheel lockable</li> <li>Handwheel stem extension</li> <li>Power tool for emergency operation with square 30 mm or 50 mm</li> </ul>
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)
Electrical connection	<p>Standard: AUMA plug/socket connector with screw-type connection</p> <p>Option:</p> <ul style="list-style-type: none"> <li>Terminals or crimp connection</li> <li>Gold-plated control plug (sockets and plugs)</li> </ul>
Threads for cable entries	<p>Standard: Metric threads</p> <p>Option: Pg-threads, NPT-threads, G-threads</p>
Terminal plan	TPA00R1AA-101-000 (basic version)
Valve attachment	<p>Standard: B1 according to EN ISO 5210</p> <p>Option:</p> <ul style="list-style-type: none"> <li>A, B2, B3, B4, C, D according to EN ISO 5210</li> <li>A, B, D, E according to DIN 3210</li> <li>C according to DIN 3338</li> </ul> <p>Special valve attachments: AF, AK, AG, B3D, ED, DD, IB1, IB3</p> <p>A prepared for permanent lubrication of stem</p>

Electromechanical control unit	
Limit switching	<p>Counter gear mechanism for end positions OPEN and CLOSED</p> <p>Turns per stroke: 2 to 500 (standard) or 2 to 5,000 (option)</p> <p>Standard: Single switch (1 NC and 1 NO) for each end position, not galvanically isolated</p> <p>Options:</p> <ul style="list-style-type: none"> <li>Tandem switch (2 NC and 2 NO) for each end position, switches galvanically isolated</li> <li>Triple switch (3 NC and 3 NO) for each end position, switches galvanically isolated</li> <li>Intermediate position switches (DUO limit switching), adjustable for each direction of operation</li> </ul>
Torque switching	<p>Torque switching adjustable for directions OPEN and CLOSE</p> <p>Standard: Single switch (1 NC and 1 NO) silver contact (Ag) for each direction, not galvanically isolated</p> <p>Options:</p> <ul style="list-style-type: none"> <li>Tandem switch (2 NC and 2 NO) for each direction, switches galvanically isolated</li> </ul>
Switch contact material	<p>Standard: Silver (Ag)</p> <p>Options:</p> <ul style="list-style-type: none"> <li>Gold (Au), recommended for low voltage actuator controls</li> </ul>
Position feedback signal, analogue (option)	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	Resistance type heater with 5 W, 24 V AC

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Electronic control unit (option)	
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

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 available (refer to motor name plate)
	Option: DS 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"> <li>• Depth of water: maximum 8 m head of water</li> <li>• Continuous immersion in water: maximal 96 hours</li> <li>• Up to 10 operations during immersion</li> </ul>
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 ACV 01.2 actuator controls) Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. They are not valid in combination with gearboxes.
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. 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.
Noise 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 SAV 07.2 – SAV 16.2 Technical data ACV 01.2