

SAR 07.2-UW – SAR 16.2-UW

for continuous underwater use

Technical data Multi-turn actuators for modulating duty with 3-phase AC motor

General information

Multi-turn actuators for continuous underwater use require AC actuator controls. Actuator controls are mounted on a wall bracket and are not immersed. A special cable set for connection between actuator and actuator controls is required.

Type	Output speed rpm		Torque range ¹⁾			Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Pulse duration on reversal ⁴⁾	Valve attachment ⁵⁾		Handwheel		Weight ⁶⁾	
	50 Hz	60 Hz	Min. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]				Starts Max. [1/h]	Min. [ms]	Max. [ms]	Standard EN ISO 5210		Option DIN 3210
SAR 07.2-UW	4	4.8	15	30	20	15	10	1,500	50	260	F07 F10	— G0 ⁷⁾	160	11 : 1	25	
	5.6	6.7								200				8 : 1		
	8	9.6								155				11 : 1		
	11	13								130				8 : 1		
	16	19								100				11 : 1		
	22	26								90				8 : 1		
	32	38								75				11 : 1	26	
	45	54						70		8 : 1						
	63	75						1,200		65				11 : 1		
90	108	60	8 : 1													
SAR 07.6-UW	4	4.8	30	60	40	30	20	1,500	50	260	F07 F10	— G0 ⁷⁾	160	11 : 1	25	
	5.6	6.7								200				8 : 1		
	8	9.6								155				11 : 1		
	11	13								130				8 : 1		
	16	19								100				11 : 1		
	22	26								90				8 : 1		
	32	38								75				11 : 1	27	
	45	54				70	8 : 1									
	63	75				20	15	1,200		65				11 : 1		
90	108	60	8 : 1													
SAR 10.2-UW	4	4.8	60	120	90	60	45	1,500	50	260	F10	G0 ⁷⁾	200	11 : 1	31	
	5.6	6.7								200				8 : 1		
	8	9.6								155				11 : 1		
	11	13								130				8 : 1		
	16	19								100				11 : 1		
	22	26								90				8 : 1		
	32	38								75				11 : 1	33	
	45	54				70	8 : 1									
	63	75				50	35	1,200		65				11 : 1		
90	108	60	8 : 1													
SAR 14.2-UW	4	4.8	120	250	180	120	90	1,200	70	280	F14	G1/2	315	11 : 1	54	
	5.6	6.7								220				8 : 1		
	8	9.6								175				11 : 1		
	11	13								150				8 : 1		
	16	19						900		120				11 : 1	58	
	22	26						110		8 : 1						
	32	38						600		100				11 : 1		
	45	54				90	8 : 1									
	63	75				100	70	400		85				11 : 1		
90	108	80	8 : 1													
SAR 14.6-UW	4	4.8	250	500	360	200	180	1,200	70	280	F14	G1/2	400	11 : 1	56	
	5.6	6.7								220				8 : 1		
	8	9.6								175				11 : 1		
	11	13								150				8 : 1		
	16	19						900		120				11 : 1	62	
	22	26						110		8 : 1						
	32	38						175		125				600		100
	45	54				90	8 : 1									
	63	75				150	105	400		85				11 : 1		
90	108	80	8 : 1													

Type	Output speed rpm		Torque range ¹⁾			Modulating torque ²⁾		Number of starts	Pulse duration ³⁾	Pulse duration on reversal ⁴⁾	Valve attachment ⁵⁾		Handwheel		Weight ⁶⁾				
	50 Hz	60 Hz	Min. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]	S4-25% Max. [Nm]	S4-50% Max. [Nm]				Starts Max. [1/h]	Min. [ms]	Max. [ms]	Standard EN ISO 5210		Option DIN 3210	Ø [mm]	Reduction ratio	
SAR 16.2-UW	4	4.8	500	1,000	710	400	280	900	100	300	F16	G3	500	11 : 1	77				
	5.6	6.7												8 : 1					
	8	9.6												11 : 1					
	11	13												8 : 1					
	16	19				350	250	600						150	140	11 : 1	8 : 1		
	22	26														8 : 1			
	32	38						300								130		11 : 1	88
	45	54																8 : 1	
	63	75				250	175	200						115	11 : 1	93			
	90	108													8 : 1				

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

2) Maximum permissible torque for modulating duty.

3) For identical direction of rotation: Time duration for which the motor must be electrically powered until there is a movement at the output drive.

4) For reversal of rotation direction: Time duration for which the motor must be electrically powered until there is a movement at the output drive.

5) Indicated flange size applies for output drive type B1. Refer to separate dimension sheets for further output drive types.

6) Indicated weight includes multi-turn actuator with 3-phase AC motor, electrical connection with cable glands and output drive type B1.

7) G0 valve attachment is designed without spigot hub.

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
		Intermittent duty S5 - 25 % (insulation class H required), class C according to EN ISO 22153
		For 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	Standard voltages: Refer to table: 3-phase AC standard voltages [► 3] Special voltages: Refer to table: 3-phase AC special voltages [► 3] 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	Yes (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 (option)	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation.	
Indication for manual operation (option)	Indication whether manual operation is active/not active via single switch (1 change-over contact)	
Electrical connection	The AUMA plug/socket connector is part of the cable set with wall bracket which must be ordered separately and which is customised for connection. Terminal compartment additionally sealed against interior (double sealed).	
Valve attachment	Standard:	B1 in accordance with ISO 5210
	Options:	B3, B4, D according to ISO 5210; B2 on request
		B, D, E according to DIN 3210
	Special valve attachments: B3D, DD	

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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

Electronic control unit	
Non-intrusive settings	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
Running indication	Blinking signal via actuator controls
Heater in switch compartment	Resistance type heater with 5 W, 24 V AC

Service conditions	
Use	For continuous underwater use as well as indoor and outdoor use.
Mounting position	Any position
Installation altitude	≤ 2,000 m above sea level > 2,000 m above sea level on request
Ambient temperature	–30 °C to +70 °C
Humidity	Up to 100 % relative humidity across the entire permissible temperature range
Enclosure protection in accordance with IEC 60529	Standard: Increased enclosure protection IP68-C15. The maximum head of water is 15 m. Options: Increased enclosure protection IP68-C60. The maximum head of water is 60 m. In combination with handwheel: permissible head of water > 15 m on request.
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) 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	KX-G Suitable for use in freshwater (Im1), seawater (Im2) and on seafloor (Im3), aluminium-free version (outer parts)
Coating	Two-layer powder coating with additional wet painting
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 SA 07.2-UW – SA 16.2-UW/SAR 07.2-UW – SAR 16.2-UW / SAV 07.2-UW – SAV 16.2-UW/ SARV 07.2-UW – SARV 16.2-UW Electrical data SAR 07.2 – SAR 16.2 Technical data AC 01.2