

Technical data Part-turn actuators with integral controls for open-close and modulating duty	SGM 04.1 – SGM 10.1 SGMR 04.1 – SGMR 10.1
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Type	Operating time for 90° in seconds ¹⁾ (adjustable in 9 steps) 50 Hz/60 Hz	Torque range max. Nm	Running torque/ modulating torque ²⁾ max. Nm	Valve attachment Standard EN ISO 5211	Valve shaft			Handwheel/ crank handle acc. to VG 85081 ³⁾		Wgt ca. kg ⁴⁾
					Cylindrical max. mm	Square max. mm	Two-flat max. mm	Ø mm	Turns for 90°	
SGM/SGMR 04.1	4 – 63	25 – 63	32	F07	20	17	17	125	13.5	11
SGM/SGMR 05.1	4 – 63	50 – 125	63	F07	20	17	17	125	13.5	11
SGM/SGMR 07.1	4 – 63	100 – 250	125	F07	25.4	22	22	125	13.5	17
SGM/SGMR 10.1	5.6 – 90	200 – 500	250	F10	38	30	27	150	13.5	26

Features and functions of actuator

Type of duty ⁵⁾	Open-close duty SGM: Modulating duty SGMR:	Short-time duty S2 - 15 min Intermittent duty S4 - 40 % with maximum number of starts of 1,800 cycles per hour (option)
Motor	Variable speed, brushless motor	
Insulation class	F, tropicalized	
Motor protection	PTC thermistors (according to DIN 44081)	
Self-locking	Yes	
Swing angle	Standard: 82° – 98° adjustable between min. and max. values Option: Other swing angles on request	
Limit switching	Via position transmitter potentiometer status signals for directions OPEN and CLOSE	
Torque switching	Via electronic current measurement status signals for directions OPEN and CLOSE, adjustable in 8 steps	
Mechanical position indicator	Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED	
Manual operation	Manual drive for setting and emergency operation, handwheel does not rotate during electric operation	
Coupling	Standard: Coupling without bore Options: Machined coupling with bore and keyway, square bore or bore with two-flats according to EN ISO 5211	
Valve attachment	Dimensions according to EN ISO 5211	

Features and functions of actuator controls

Mains voltage, mains frequency	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="3">1-phase AC voltages/frequencies</th> </tr> <tr> <td>Volt</td> <td>115</td> <td>230</td> </tr> <tr> <td>Hz</td> <td>50/60</td> <td>50/60</td> </tr> </table> <p>Permissible variation of the mains voltage: ±10 % Permissible variation of the mains frequency: ±5 % For current consumption, refer to Electrical data Part-turn actuators SGM/SGMR</p>		1-phase AC voltages/frequencies			Volt	115	230	Hz	50/60	50/60
1-phase AC voltages/frequencies											
Volt	115	230									
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External supply of the electronics (option)	24 V DC +20 %/-15 %, Current consumption: With options up to 200 mA										
Overvoltage category	Category III according to IEC 60364-4-443										
Switchgear	Power electronics with integral motor controller										
Control	Control inputs 24 V DC, OPEN, CLOSE (via opto-isolator, one common), current consumption: approx. 15 mA per input Observe minimum pulse duration for modulating actuators										
Status signals	4 programmable semiconductor output contacts: 2 NO contacts with one common, max. 24 V DC, 1 A (resistive load) Default configuration: End position CLOSED, end position OPEN 2 NO contacts without one common, max. max. 24 V DC, 1 A (resistive load) Default configuration: Collective fault (torque fault, motor protection tripped), push button REMOTE										
Position feedback signal	Galvanically isolated analogue output E2 = 0/4 – 20 mA (load max. 500 Ω)										

- 1) For longer operating times (SGM/SGMR 04.1 – 07.1 from 32 s and SGM/SGMR 10.1 from 45 s), the rotary movement will be in stepping mode.
2) Permissible average torque for the whole travel or in modulating duty
3) Hub does not correspond to VG 85081; other versions on request
4) Part-turn actuator weight with controls, standard electrical connection, unbored coupling and handwheel/crank handle
5) For nominal voltage and 40 °C ambient temperature and at average running or modulating torque load. The type of duty must not be exceeded.

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

Local controls	Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE 2 multicolour indication lights: End position CLOSED (yellow), fault/malfunction (red), end position OPEN (green), operation mode LOCAL (blue)
Functions	Standard: Switch-off mode adjustable: Limit or torque seating for end position OPEN and end position CLOSED Torque monitoring over the whole travel Torque by-pass Options: Positioner: Position setpoint via analogue input E1 = 0/4 – 20 mA Programmable behaviour on loss of signal Automatic adaptation of the dead band (adaptive behaviour can be selected) Selection between open-close duty and modulating duty via digital MODE input EMERGENCY behaviour programmable: Digital input low active Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN
Electrical connection	Standard: Connector with crimp connection (make ITT Cannon)
Wiring diagram (basic version)	SGM/SGMR: TPC B-0F6-2A7-0510 TPA 50R200-0A0-000

Service conditions

Mounting position	Any position
Enclosure protection according to EN 60529	IP 68 According to AUMA definition, enclosure protection IP 68 meets the following requirements: Head of water max. 8 m Duration of continuous immersion in water: max. 96 hours Up to 10 operations during flooding Modulating duty is not possible during continuous immersion
Corrosion protection	Sea water resistant bronze housing All external bolts and shafts are of stainless steel
Ambient temperature	-25 °C to +70 °C
Electromagnetic compatibility (EMC)	Limit class 2 according to VG 95373 (marine) and MIL-STD-461E
Shock test	BV 0430(2), BV 0230(1) and MIL-S-901D
Vibration test	BV 0440(1), BV 0240(1) and MIL-STD-167-1
Lifetime	Open-close duty: 20,000 operating cycles OPEN - CLOSE - OPEN An operation cycle is based on an operation from CLOSED to OPEN and back to CLOSED, with a respective swing movement of 90°. Modulating duty ⁶⁾ : 5 million modulating steps

Further information

EU Directives	Electromagnetic Compatibility (EMC): (2004/108/EC) Low Voltage Directive: (2006/95/EC) Machinery Directive: (2006/42/EC)
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6) The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as possible for the process.

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