

Technical data Part-turn actuators with integral actuator controls for open-close and modulating duty

Type	Operating time for 90° in seconds (adjustable in 9 steps)	Torque range ¹⁾	Running torque ^{2)/} Modulating torque ³⁾	Valve attachment	Valve shaft			Handwheel		Weight ⁴⁾
					50 Hz/60 Hz	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical max. [mm]	
SGC/SGCR 04.1	4 – 63	25 – 63	32	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 05.1	4 – 63	50 – 125	63	F05/F07	20	17	17	100	13.5	7.0
SGC/SGCR 07.1	4 – 63	100 – 250	125	F07	25.4	22	22	125	13.5	10
SGC/SGCR 10.1	5.6 – 90	200 – 500	250	F10	38	30	27	160	13.5	15
SGC/SGCR 12.1	20 – 275	400 – 1,000	500	F12	50	36	41	125	35	25

Notes on table

1) Unseating torque	The "Torque by-pass" function (can be activated) allows increasing the pre-set torque to 130 %. This increase only applies during actuator start for an adjustable time period, allowing safer unseating of blocked valves.
2) Running torque	Maximum permissible torque for 15 min. running time.
3) Modulating torque	Maximum permissible torque for modulating duty
4) Weight	Indicated weight includes part-turn actuator with controls, electrical connection in standard version, unbored coupling and handwheel

Features and functions of actuator

Type of duty	Open-close duty SGC:	Short-time duty S2 - 15 min, classes A and B according to EN 15714-2
	Modulating duty SGCR:	Intermittent duty S4 - 40 % class C in compliance with EN 15714-2 with maximum number of starts of 1,800 cycles per hour (option)
For nominal voltage and +40 °C ambient temperature and at running or modulating torque load. The type of duty must not be exceeded.		
Motor	Variable speed, brushless motor	
Insulation class	F, tropicalized	
Motor protection	PTC thermistors (according to DIN 44081)	
Self-locking	Yes	
Swing angle	Standard:	SGC/SGCR 04.1 – 10.1: 82° – 98° adjustable between min. and max. values SGC/SGCR 12.1: 75 ° – 105 °
	Options:	Available 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 electrical operation	
Coupling	Standard:	Coupling unbored
	Options:	<ul style="list-style-type: none"> • Coupling unbored extended • Finish machining of coupling (standard or extended) <ul style="list-style-type: none"> - Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 - Square bore according to EN ISO 5211 - Two-flat according to EN ISO 5211
Valve attachment	Dimensions according to EN ISO 5211	

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Features and functions of actuator controls													
Power supply	<p>Standard voltages:</p> <table border="1"> <thead> <tr> <th colspan="3">1-phase AC current</th> </tr> <tr> <th colspan="3">Voltages/frequencies</th> </tr> </thead> <tbody> <tr> <td>Volt</td> <td>115</td> <td>230</td> </tr> <tr> <td>Hz</td> <td>50/60</td> <td>50/60</td> </tr> </tbody> </table> <p>Permissible variation of mains voltage: $\pm 10\%$ Permissible variation of mains frequency: $\pm 5\%$ For current consumption, refer to Electrical data Part-turn actuators SGC/SGCR</p>	1-phase AC current			Voltages/frequencies			Volt	115	230	Hz	50/60	50/60
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External supply of the electronics (option)	<p>24 V DC $\pm 20\%$ / -15%, Current consumption: With options up to 200 mA</p> <p>The external power supply must have reinforced insulation against mains voltage in accordance with IEC 61800-5-1 and may only be supplied by a circuit limited to 150 VA in accordance with IEC 61800-5-1.</p>												
Overvoltage category	Category III according to IEC 60364-4-443												
Power electronics	Power electronics with integral motor controller												
Rated power	Controls are designed for rated motor power, refer to Electrical Data Part-turn actuators SGC/SGCR												
Control (input signals)	<ul style="list-style-type: none"> 4 digital inputs (via opto-isolator, with one common) <ul style="list-style-type: none"> Control voltage 24 V DC, current consumption: approx. 15 mA per input Minimum pulse duration for shortest operation pulse: 100 ms All digital inputs must be supplied with the same potential. <p>Assignment for open-close actuators:</p> <ul style="list-style-type: none"> OPEN, STOP, CLOSE (standard) OPEN, STOP, CLOSE, EMERGENCY (option) OPEN, STOP, CLOSE, MODE in combination with positioner (option) OPEN, EMERGENCY, CLOSE, MODE in combination with positioner (option) <p>Assignment for modulating actuators:</p> <ul style="list-style-type: none"> OPEN, STOP, CLOSE, MODE (standard) OPEN, EMERGENCY, CLOSE, MODE (option) Analogue input 0/4 – 20 mA (galvanically isolated) (option) Used as input signal for position setpoint E1 (in combination with positioner) or as input signal for motor speed E3. 												
Status signals (output signals)	<ul style="list-style-type: none"> Output contacts: 4 programmable semi-conductor output contacts, per contact max. 24 V DC, 1 A (resistive load) <ul style="list-style-type: none"> 2 NO contacts with one common Default configuration: End position OPEN, end position CLOSED 1 potential-free NO contact for collective fault signal Default configuration: Torque fault, motor protection tripped 1 potential-free change-over contact Default configuration: Push button REMOTE Analogue output: Galvanically isolated position feedback 0/4 – 20 mA (load 500 Ω). 												
Voltage output	<p>Auxiliary voltage 24 V DC, max. 40 mA for supply of control inputs, galvanically isolated from internal voltage supply. Not available for option "external electronics supply".</p>												
Local controls	<table border="1"> <tbody> <tr> <td>Standard:</td> <td> <ul style="list-style-type: none"> Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE 2 multi-colour indication lights: <ul style="list-style-type: none"> End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue) </td> </tr> <tr> <td>Option:</td> <td>Local controls mounted separately on wall bracket</td> </tr> </tbody> </table>	Standard:	<ul style="list-style-type: none"> Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE 2 multi-colour indication lights: <ul style="list-style-type: none"> End position CLOSED (yellow), fault/failure (red), end position OPEN (green), operation mode LOCAL (blue) 	Option:	Local controls mounted separately on wall bracket								
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Functions	<ul style="list-style-type: none"> • Switch-off mode adjustable: <ul style="list-style-type: none"> - Limit or torque seating for end positions OPEN and CLOSED • Torque monitoring across the whole travel • Torque by-pass • Programmable EMERGENCY behaviour <ul style="list-style-type: none"> - Digital input low active, - Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN • Positioner (for modulating actuators): <ul style="list-style-type: none"> - Position setpoint via analogue input E1 = 0/4 – 20 mA - Programmable behaviour on loss of signal - Automatic adaptation of dead band (adaptive behaviour selectable) - Selection between open-close duty and modulating duty via digital MODE input 	
Electrical connection	Standard:	Plug/socket connector with crimp connection
	Option:	AUMA plug/socket connector with screw-type connection
Wiring diagram (basic version)	Open-close duty:	TPC B-0E6-2C7-0530 TPA 50R200-0A0-000
	Modulating duty:	TPC B-1H6-2C7-0530 TPA 50R200-0A0-000

Service conditions		
Mounting position	Any position	
Installation altitude	≤ 2 000 m above seal level > 2,000 m above sea level on request	
Ambient temperature	-25 °C to +70 °C	
Humidity	Up to 100 % relative humidity across the entire permissible temperature range	
Enclosure protection according to EN 60529	IP68 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 • Duration of continuous immersion in water: Max. 96 hours • Up to 10 operations during continuous immersion • Modulating duty is not possible during continuous immersion 	
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, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.	
GL approval (option)	Environmental categories D, G, EMC2	
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.
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	Open-close duty:	20,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED, at a respective rotary movement of 90°.
	Modulating duty:	5 million modulating steps
<p>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 permissible for the process.</p>		

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

Further information	
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)
Reference documents	Dimensions SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1 Electrical data SGC 04.1– SGC 12.1/SGCR 04.1 – SGCR 12.1