# Technical data Part-turn actuators for open-close duty with 1-phase AC motors

## SGExC 05.1 – SGExC 12.1 AUMA NORM

| Type | Operating time for 90° in seconds | Torque range[1] | | Running torque[2] | Valve attachment | | Valve shaft | | | Handwheel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50/60 Hz | min. Nm | max. Nm | max. Nm | Standard EN ISO 5211 | Option EN ISO 5211 | Cylindrical max. mm | Square max. mm | Two-flat max. mm | Ø mm | Turns for 90° | approx. kg[3] |
| **SGExC 05.1** | **4 – 32** | 100 | 150 | 75 | F05 | F07 | 25.4 | 22 | 22 | 160 | 58 | 19 |
| **SGExC 07.1** | **8 – 63** | 120 | 300 | 150 | F07 | F10 | 25.4 | 22 | 22 | 160 | 58 | 19 |
| **SGExC 10.1** | **16 – 125** | 250 | 600 | 300 | F10 | F12 | 38 | 30 | 27 | 160 | 107 | 25 |
| **SGExC 12.1** | **22 – 180** | 500 | 840 | 420 | F12 | F14 | 50 | 36 | 41 | 160 | 110 | 29 |

### General information

Part-turn actuators AUMA NORM require external controls. AUMA offers actuator controls AUMA MATIC or AUMATIC. These can also easily be mounted to the actuator at a later date.

### Features and functions

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| Explosion protection | Standard: II2G Ex de IIC T4<br>II2G c IIC T4<br>Option: II2G Ex d IIC T4<br>II2G c IIC T4 |
| EC type examination certificate | PTB 01 ATEX 1119 |
| Types of explosion protection | Motor compartment: d flameproof enclosure Ex d<br>Switch compartment: d flameproof enclosure Ex d<br>Terminal compartment: e increased safety Ex e (optional d) |
| Type of duty[4] | Short-time duty S2 - 10 min |
| Motors | 1-ph AC motor, type IM B14 according to IEC 60034 |
| Mains voltage, mains frequency | Standard voltages:<br>**1-phase AC** voltages/frequencies<br>Volt: 110 – 120 / 220 – 240<br>Hz: 50/60 / 50/60<br>Permissible variation of the mains voltage: ±10 %<br>Permissible variation of the mains frequency: ±5 % |
| Overvoltage category | Category III according to IEC 60364-4-443 |
| Insulation class | F, tropicalized |
| Motor protection | Standard: PTC thermistors according to DIN 44082[5]<br>Option: Thermoswitches (NC)[6] |
| Self-locking | Yes |
| Swing angle | Standard: 80° to 110° adjustable between min. and max. values<br>Options: 30° – 40°, 40° – 55°, 55° – 80°, 110° – 160°, 160° – 230° or 230° – 320° |
| Limit switching | Counter gear mechanism for end positions CLOSED and OPEN<br>Standard: Single switches (1 NC and 1 NO) for each end position, switches not galvanically isolated<br>Options: Tandem switches (2 NC and 2 NO) for each end position, switches galvanically isolated<br>Triple switches (3 NC and 3 NO) for each end position, switches galvanically isolated<br>Intermediate position switch (DUO limit switching), adjustable for any position |
| Torque switching | Torque switching adjustable for directions OPEN and CLOSE<br>Standard: Single switch (1 NC and 1 NO) for each direction, switches not galvanically isolated<br>Options: Tandem switches (2 NC and 2 NO) for each direction, switches galvanically isolated |
| Non-intrusive setting (option) | Magnetic limit and torque transmitter MWG (only possible in combination with AUMATIC actuator controls) |

1) Tripping torque adjustable for both directions

2) Permissible average torque for a travel of 90°

3) Weight for part-turn actuator AUMA NORM with 1-phase AC motor, standard electrical connection, unbored coupling and handwheel

4) Based on 20 °C ambient temperature and at an average load with running torque. When reversing, a pause of at least 100 ms is required. Suitable for operation with semi-conductor relays (SSR) or EMC filter up to max. 10 mA leakage.

5) PTC thermistors additionally require a suitable tripping device in the controls.

6) According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermoswitches.

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| Position feedback signal, analogue (options) | Potentiometer or 0/4 – 20 mA (RWG) |
| Torque feedback signal, analogue (option) | Only in combination with magnetic limit and torque transmitter MWG and AUMATIC controls |
| Mechanical position indicator | Continuous indication, adjustable indicator disc with symbols OPEN and CLOSED |
| Running indication | Blinker transmitter |
| Heater in switch compartment | Standard: Self-regulating PTC heater, 5 – 20 W, 110 – 250 V AC/DC<br>Options: 24 – 48 V AC/DC or 380 – 400 V AC<br>A resistance type heater (5 W, 24 V DC) is installed in the actuator in combination with the actuator controls AUMA MATIC or AUMATIC. |
| Manual operation | Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation.<br>Option: Handwheel lockable |
| Electrical connection | Standard: Plug/socket connector with screw-type terminals (KP)<br>Options: Plug/socket connector with terminal blocks (KES) |
| Threads for cable entries | Standard: Metric threads<br>Options: Pg-threads, NPT-threads, G-threads |
| Terminal plan | TPA16R2AA-101-000 (basic version) |
| Splined coupling for connection to the valve shaft | Standard: Coupling without bore<br>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 |
| **Service conditions** | |
| Use | Indoor and outdoor use permissible |
| Mounting position | Any position |
| Installation altitude | Standard: ≤ 2 000 m above sea level<br>Option: > 2 000 m above sea level, please contact AUMA |
| Ambient temperature | –40 °C to +40 °C/60 °C |
| Enclosure protection according to EN 60529 | Standard: IP 67<br>Options: IP 68<br>For both enclosure protection types (IP 67 and IP 68), the terminal compartment is additionally sealed against the interior – double sealed |
| Pollution degree | Pollution degree 4 |
| Corrosion protection | Standard: KS Suitable for installation in occasionally or permanently aggressive atmosphere with a moderate pollutant concentration (e.g. in waste water treatment plants, chemical industry)<br>Options: KX Suitable for installation in extremely aggressive atmospheres with high humidity and high pollutant concentration<br>KG Same as KX, however aluminium-free version (outer parts) |
| Finish coating | Powder coating |
| Standard colour | Standard: AUMA silver-grey (similar to RAL 7037)<br>Option: Other colours are possible on request. |
| Lifetime | Operating cycles (OPEN-CLOSE-OPEN) for 90°<br>SGExC 05.1 – SGExC 07.1: 20,000<br>SGExC 10.1: 15,000<br>SGExC 12.1: 10,000 |
| **Further information** | |
| EU Directives | ATEX Directive: (94/9/EC)<br>Electromagnetic Compatibility (EMC): (2004/108/EC)<br>Low Voltage Directive: (2006/95/EC)<br>Machinery Directive: (2006/42/EC) |
| Reference documents | Product description “Electric part-turn actuators SG”<br>Information “Electric actuators and valve gearboxes according to ATEX directive 94/9/EC for the use in potentially explosive atmospheres”<br>Dimension sheets SGExC<br>Electrical data SGExC<br>Technical data for switches<br>Technical data Electronic position transmitter/potentiometer |