# SVC 05.1 – SVC 07.5/SVCR 05.1 – SVCR 07.5

## Technical data Globe valve actuators with integral actuator controls for open-close and modulating duty

| Type | Output speed rpm | Torque range[1] | Running torque[2]/ Modulating torque[3] | Valve attachment | Valve shaft | | | Stem stroke | Stem diameter | Handwheel | | Weight[5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (adjustable in 9 steps) 50 Hz/60 Hz | Max. [Nm] | Max. [Nm] | Standard EN ISO 5211 | Cylindrical max. [mm] | Square max. [mm] | Two-flat max. [mm] | for rising valve stem[4] max. [mm] | for rising valve stem[4] max. [mm] | ø [mm] | Reduction ratio | approx. [kg] |
| SVC/SVCR 05.1 | 1.6 – 22 | 10 – 25 | 13 | F05/F07 | 20 | 17 | 17 | 60 | 23 | 100 | 13 : 1 | 7.0 |
| SVC/SVCR 07.1 | 1.6 – 22 | 20 – 50 | 25 | F07 | 25.4 | 22 | 22 | 70 | 26 | 125 | 13 : 1 | 10 |
| SVC/SVCR 07.5 | 0.6 – 8.0 | 40 – 100 | 50 | F07 | 25.4 | 22 | 22 | 70 | 26 | 125 | 13 : 1 | 10 |

| **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) Rising valve stem | For output drive type A |
| 5) Weight | Indicated weight includes globe valve actuator with controls, electrical connection in standard version, unbored coupling and handwheel |

| **Features and functions of actuator** | | |
|---|---|---|
| Type of duty | Open-close duty<br>SVC: | Short-time duty S2 - 15 min, classes A and B according to EN 15714-2 |
| | Modulating duty<br>SVCR: | Intermittent duty S4 - 40 %, class C according to EN 15714-2<br>with maximum number of 1,800 starts per hour |
| | 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 | |
| Limit switching | • Via position transmitter potentiometer, status signals for directions OPEN and CLOSE<br>• Turns per stroke: Available in subranges out of a total range between 1 – 40 (heed max. stem stroke). However, the turns per stroke can only be set within the subrange ordered. More than 40 turns per stroke on request. | |
| 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: | • Coupling unbored extended<br>• Finish machining of coupling (standard or extended)<br>- Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1<br>- Square bore according to EN ISO 5211<br>- Two-flat according to EN ISO 5211 |
| Valve attachment | Standard: | With coupling, dimensions according to EN ISO 5211 |
| | Options: | With output drive type A<br>With LE linear thrust unit<br>With GS worm gearbox |

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| Features and functions of actuator controls | | |
|---|---|---|
| Power supply | Standard voltages:<br>**1-phase AC**<br>Voltages/frequencies<br>Volt: 115 / 230<br>Hz: 50/60 / 50/60<br>Permissible variation of mains voltage: ±10 %<br>Permissible variation of mains frequency: ±5 %<br>For current consumption, refer to Electrical data Globe valve actuators SVC/SVCR | |
| External supply of the electronics (option) | 24 V DC +20 %/–15 %,<br>Current consumption: With options up to 200 mA<br>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. | |
| 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 Globe valve actuators SVC/SVCR | |
| Control (input signals) | • 4 digital inputs (via opto-isolator, with one common)<br>- Control voltage 24 V DC, current consumption: approx. 15 mA per input<br>- Minimum pulse duration for shortest operation pulse: 100 ms<br>- All digital inputs must be supplied with the same potential.<br>Assignment for open-close actuators:<br>- OPEN, STOP, CLOSE (standard)<br>- OPEN, STOP, CLOSE, EMERGENCY (option)<br>- OPEN, STOP, CLOSE, MODE in combination with positioner (option)<br>- OPEN, EMERGENCY, CLOSE, MODE in combination with positioner (option)<br>Assignment for modulating actuators:<br>- OPEN, STOP, CLOSE, MODE (standard)<br>- OPEN, EMERGENCY, CLOSE, MODE (option)<br>• Analogue input 0/4 – 20 mA (option)<br>Used as input signal for position setpoint E1 (in combination with positioner) or as input signal for motor speed E3. | |
| Status signals (output signals) | • Output contacts:<br>4 programmable semi-conductor output contacts, per contact max. 24 V DC, 1 A (resistive load)<br>- 2 NO contacts with one common<br>Default configuration: End position OPEN, end position CLOSED<br>- 1 potential-free NO contact for collective fault signal<br>Default configuration: Torque fault, motor protection tripped<br>- 1 potential-free change-over contact<br>Default configuration: Push button REMOTE<br>• Analogue output:<br>Galvanically isolated position feedback 0/4 – 20 mA (load 500 Ω). | |
| Voltage output | Auxiliary voltage 24 V DC, max. 40 mA for supply of control inputs, galvanically isolated from internal voltage supply.<br>Not available for option "external electronics supply". | |
| Local controls | Standard: | • Push buttons OPEN, STOP (LOCAL - REMOTE), CLOSE<br>• 2 multi-colour indication lights:<br>- 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 | • Switch-off mode adjustable:<br>- Limit or torque seating for end positions OPEN and CLOSED<br>• Torque monitoring across the whole travel<br>• Torque by-pass<br>• Programmable EMERGENCY behaviour<br>- Digital input low active,<br>- Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN<br>• Positioner (for modulating actuators):<br>- Position setpoint via analogue input E1 = 0/4 – 20 mA<br>- Programmable behaviour on loss of signal<br>- Automatic adaptation of dead band (adaptive behaviour selectable)<br>- 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 über NN<br>> 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<br>According to AUMA definition, enclosure protection IP68 meets the following requirements:<br>• Depth of water: maximum 8 m head of water<br>• Duration of continuous immersion in water: Max. 96 hours<br>• Up to 10 operations during continuous immersion<br>• 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<br>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 | 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<br>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<br>An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED | |
| | Modulating duty: | 5 million modulating steps | |
| | 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. | | |

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| Further information | |
|---|---|
| EU Directives | Electromagnetic Compatibility (EMC): (2014/30/EU)<br>Low Voltage Directive: (2014/35/EU)<br>Machinery Directive: (2006/42/EC) |
| Reference documents | Dimensions SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5<br>Electrical data SVC 05.1– SVC 07.5/SVCR 05.1 – SVCR 07.5 |

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