

Modulating globe valve actuator for 2-way and 3-way globe valves

- Actuating force 2000 N
- Nominal voltage AC/DC 24 V
- Control modulating DC (0)0.5...10 V
- Nominal stroke 32 mm
- Design life SuperCaps: 15 years


Technical data

| | | |
|------------------------|--|--|
| Electrical data | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Nominal voltage range | AC 19.2...28.8 V / DC 21.6...28.8 V |
| | Power consumption in operation | 5 W |
| | Power consumption in rest position | 2 W |
| | Power consumption for wire sizing | 9.5 VA |
| | Connection supply / control | Terminals with cable 1 m, 4 x 0.75 mm ² (Terminal 4 mm ²) |
| | Parallel operation | Yes (note the performance data) |
| Functional data | Actuating force motor | 2000 N |
| | Positioning signal Y | DC 0...10 V |
| | Positioning signal Y note | Input impedance 100 kΩ |
| | Operating range Y | DC 0.5...10 V |
| | Position feedback U | DC 0.5...10 V |
| | Position feedback U note | Max. 0.5 mA |
| | Setting emergency setting position (POP) | Actuator spindle 0...100%, adjustable (POP rotary button) |
| | Position accuracy | 5% absolute |
| | Manual override | with push-button |
| | Nominal stroke | 32 mm |
| | Actuating time motor | 150 s / 32 mm |
| | Actuating time emergency control function | 35 s / 32 mm |
| | Adaption setting range | manual (automatic on first power-up) |
| | Sound power level motor | 60 dB(A) |
| | Sound power level emergency control position | 60 dB(A) |
| Position indication | Mechanically, 5...32 mm stroke | |
| Safety | Protection class IEC/EN | III Safety extra-low voltage |
| | Protection class UL | UL Class 2 Supply |
| | Degree of protection IEC/EN | IP54 |
| | Degree of protection NEMA/UL | NEMA 2, UL Enclosure Type 2 |
| | EMC | CE according to 2014/30/EU |
| | Certification IEC/EN | IEC/EN 60730-1 and IEC/EN 60730-2-14 |
| | Certification UL | cULus according to UL 60730-1A, UL 60730-2-14 and CAN/CSA E60730-1:02 |
| | Mode of operation | Type 1.AA |
| | Rated impulse voltage supply / control | 0.8 kV |
| | Control pollution degree | 3 |
| | Ambient temperature range | 0...50 °C |
| | Non-operating temperature | -40...80 °C |
| | Ambient humidity | 95% r.h., non-condensing |
| Maintenance | Maintenance-free | |

Technical data

| | | |
|---------------|---------------|---|
| Weight | Weight | 4.5 kg |
| Terms | Abbreviations | POP = Power off position / emergency setting position CPO = Controlled power off / controlled emergency control function PF = Power fail delay time / bridging time |

Safety notes

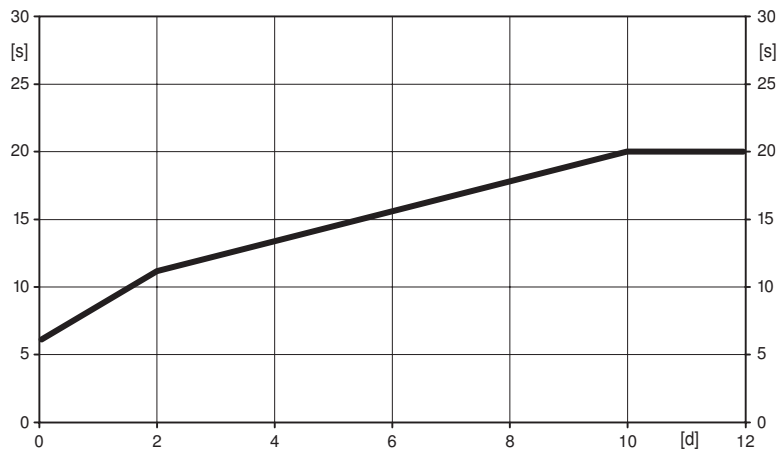


- This device has been designed for use in stationary heating, ventilation and air conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The switch for changing the direction of motion and so the closing point may be adjusted only by authorised specialists. The direction of motion is critical, particularly in connection with frost protection circuits.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

- Mode of operation** The actuator is connected with a standard modulating signal of DC 0...10 V and moves to the position defined by the positioning signal at the same time as the integrated capacitors are loaded. Interrupting the supply voltage causes the valve to be moved to the selected emergency setting position (POP) by means of stored electrical energy.
- Pre-charging time (start up)** The capacitor actuators require a pre-charging time. This time is used for charging the capacitors up to a usable voltage level. This ensures that, in the event of an electricity interruption, the actuator can move at any time from its current position into the preset emergency setting position (POP). The duration of the pre-charging time depends mainly on how long the power was interrupted.

Typical pre-charging time



| | | | | | |
|-----|-----|---|----|----|-----|
| | [d] | | | | |
| | 0 | 1 | 2 | 7 | ≥10 |
| [s] | 6 | 9 | 11 | 16 | 20 |

[d] = Electricity interruption in days
[s] = Pre-charging time in seconds

Delivery condition (capacitors)

The actuator is completely discharged after delivery from the factory, which is why the actuator requires approximately 20 s pre-charging time before initial commissioning in order to bring the capacitors up to the required voltage level.

Simple direct mounting

Simple direct mounting on the globe valve by means of form-fit hollow clamping jaws. The actuator can be rotated by 360° on the valve neck.

Product features

| | |
|---|---|
| Manual override | Manual control with push-button possible - temporary. The gear is disengaged and the actuator decoupled for as long as the button is pressed. The stroke can be adjusted by using a hexagon socket screw key (5 mm), which is inserted into the top of the actuator. The stroke spindle extends when the key is rotated clockwise. |
| High functional reliability | The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached. |
| Combination valve/actuator | Refer to the valve documentation for suitable valves, their permitted medium temperatures and closing pressures. |
| Position indication | The stroke is indicated mechanically on the bracket with tabs. The stroke range adjusts itself automatically during operation. |
| Home position | Factory setting: Actuator spindle is retracted. When valve-actuator combinations are shipped, the direction of motion is set in accordance with the closing point of the valve. The first time the supply voltage is switched on, i.e. at the time of commissioning, the actuator carries out an adaption, which is when the operating range and position feedback adjust themselves to the mechanical setting range. The actuator then moves into the position defined by the positioning signal. |
| Direction of stroke switch | When actuated, the direction of stroke switch changes the running direction in normal operation. The direction of stroke switch has no influence on the emergency setting position (POP) which has been set. |
| Adaption and synchronisation | An adaption can be triggered manually by pressing the "Adaption" button. Both mechanical end stops are detected during the adaption (entire setting range). The actuator then moves into the position defined by the positioning signal. |
| Emergency setting position (POP) rotary knob | The rotary knob «Emergency setting position» can be used to adjust the desired emergency setting position (POP) between 0 and 100% in 10% increments. The rotary knob refers to the adapted or programmed height of stroke. In the event of an electricity interruption, the actuator will move into the selected emergency setting position (POP), taking into account the bridging time (PF) of 2 s which was set ex-works. |

Accessories

| | Description | Type |
|------------------------|--|-------|
| Electrical accessories | Auxiliary switch, 2 x SPDT, add-on, grey | S2A-H |

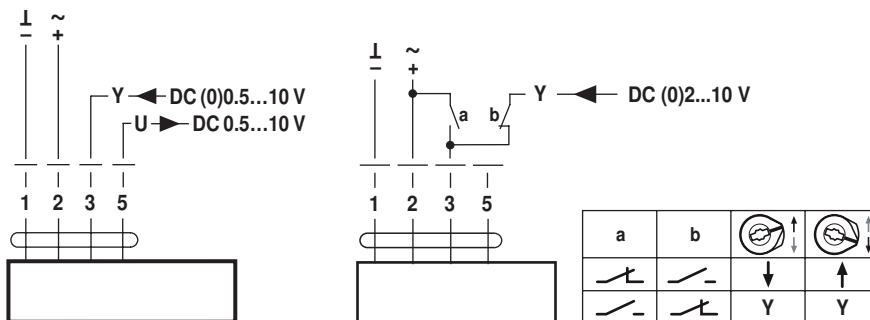
Electrical installation

Notes

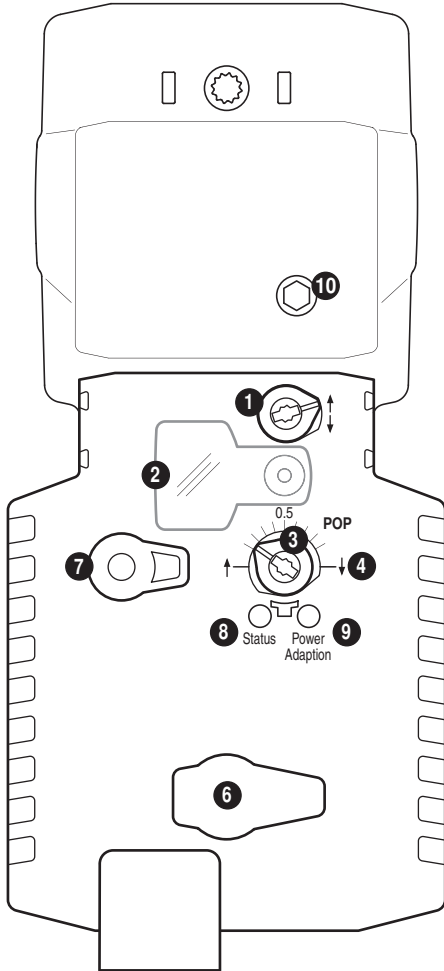
- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.
- Direction of stroke switch factory setting: Actuator spindle retracted.

Wiring diagrams

Override control (frost protection circuit)



Operating controls and indicators

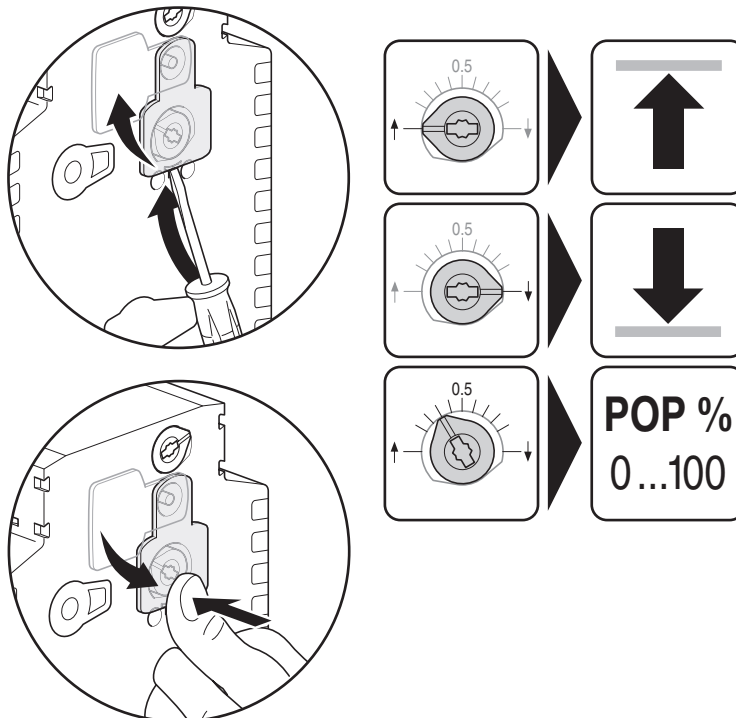


- 1 Direction of stroke switch**
Switch over: Direction of stroke changes
- 2 Cover, POP button**
- 3 POP button**
- 4 Scale for manual adjustment**
- 6 (No function)**
- 7 Gear disengagement button**
Press button: Gear disengaged, motor stops, manual operation possible
Release button: Gear engaged, standard mode

| LED displays | | Meaning / function |
|--------------|----------|--|
| 8 yellow | 9 green | |
| Off | On | Operation OK |
| Off | Flashing | POP function active |
| On | Off | Pre-charging time SuperCap, fault SuperCap or wiring error in supply |
| Off | Off | Not in operation |
| On | On | Adaptation procedure running |

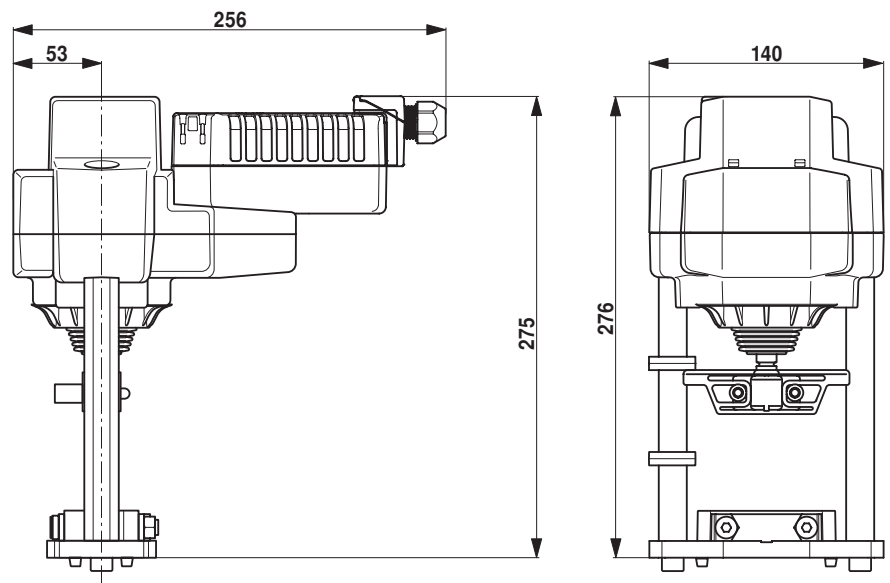
- 9 Push-button (LED green)**
Press button: Triggers stroke adaptation, followed by standard mode
- 10 Manual override**
Clockwise: Actuator spindle extends
Counterclockwise: Actuator spindle retracts

Setting emergency setting position (POP)



Dimensions [mm]

Dimensional drawings



Further documentation

- Overview Valve-actuator combinations
- Data sheets for globe valves
- Installation instructions for actuators and/or globe valves
- Notes for project planning 2-way and 3-way globe valves
- General notes for project planning