

Spring-return actuator with emergency control function for adjusting dampers in technical building installations

- Air damper size up to approx. 4 m<sup>2</sup>
- Nominal torque 20 Nm
- Nominal voltage AC/DC 24 V
- Control Open-close
- with 2 integrated auxiliary switches


**Technical data**

|  |  |   |                              |
|--|--|---|------------------------------|
| <b>Electrical data</b>                         | 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     | 2.5 W   |                              |
|  | Power consumption for wire sizing      | 7.5 VA  |                              |
|  | Auxiliary switch                       | 2 x SPDT, 1 x 10% / 1 x 11...90%                                      |                              |
|  | Switching capacity auxiliary switch    | 1 mA...3 (0.5 inductive) A, AC 250 V                                  |                              |
|  | Connection supply / control            | Cable 1 m, 2 x 0.75 mm <sup>2</sup>                                   |                              |
|  | Connection auxiliary switch            | Cable 1 m, 6 x 0.75 mm <sup>2</sup>                                   |                              |
|  | Parallel operation                     | Yes (note the performance data)                                       |                              |
|  | <b>Functional data</b>                 | Torque motor  | Min. 20 Nm                   |
| Torque spring return                           |  | Min. 20 Nm  |                              |
| Direction of motion motor                      |  | Selectable by mounting L / R  |                              |
| Direction of motion emergency control function |  | Selectable by mounting L / R  |                              |
| Manual override                                |  | By means of hand crank and locking switch                             |                              |
| Angle of rotation                              |  | Max. 95°  |                              |
| Angle of rotation note                         |  | can be limited by adjustable mechanical end stop                      |                              |
| Running time motor                             |  | 75 s / 90°  |                              |
| Running time emergency control position        |  | <20 s / 90°   |                              |
| Running time emergency setting position note   |  | <20 s @ -20...50°C / <60 s @ -30°C                                    |                              |
| Sound power level motor                        |  | 45 dB(A)  |                              |
| Spindle driver                                 |  | Universal spindle clamp 10...25.4 mm                                  |                              |
| Position indication                            |  | Mechanical  |                              |
| Service life                                   |  | Min. 60,000 emergency positions                                       |                              |
| <b>Safety</b>                                  |  | Protection class IEC/EN   | III Safety extra-low voltage |
|  |  | Protection class UL   | UL Class 2 Supply            |
|  |  | Protection class auxiliary switch IEC/EN                              | II Protective insulated      |
|  |  | Degree of protection IEC/EN   | IP54                         |
|  | Degree of protection NEMA/UL           | NEMA 2, UL Enclosure Type 2   |                              |
|  | EMC                                    | CE according to 2014/30/EU  |                              |
|  | Low voltage directive                  | CE according to 2014/35/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.B   |                              |
|  | Rated impulse voltage supply / control | 0.8 kV  |                              |
|  | Rated impulse voltage auxiliary switch | 2.5 kV  |                              |
| Control pollution degree                       | 3                                      |   |                              |
| Ambient temperature                            | -30...50°C                             |   |                              |
| Non-operating temperature                      | -40...80°C                             |   |                              |
| Ambient humidity                               | 95% r.h., non-condensing               |   |                              |
| Maintenance                                    | Maintenance-free                       |   |                              |
| <b>Weight</b>                                  | Weight                                 | 2.4 kg  |                              |

## Safety notes



- The device must not be used outside the specified field of application, especially not in aircraft or in any other airborne means of transport.
- Outdoor application: only possible in case that no (sea)water, snow, ice, insolation or aggressive gases interfere directly with the actuator and that is ensured that the ambient conditions remain at any time within the thresholds according to the data sheet.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- 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.
- Cables must not be removed from the device.
- To calculate the torque required, the specifications supplied by the damper manufacturers concerning the cross-section, the design, the installation site and the ventilation conditions must be observed.
- 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

|                                     |   |
|-------------------------------------|---|
| <b>Mode of operation</b>            | The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the emergency position by spring force when the supply voltage is interrupted. |
| <b>Simple direct mounting</b>       | Simple direct mounting on the damper spindle with an universal spindle clamp, supplied with an anti-rotation device to prevent the actuator from rotating.  |
| <b>Manual override</b>              | By using the hand crank the damper can be actuated manually and engaged with the locking switch at any position. Unlocking is carried out manually or automatically by applying the operating voltage.                |
| <b>High functional reliability</b>  | The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.  |
| <b>Adjustable angle of rotation</b> | Adjustable angle of rotation with mechanical end stops.   |
| <b>Flexible signalization</b>       | The actuator has one auxiliary switch with a fixed setting and one adjustable auxiliary switch. They permit a 10% or 11...90% angle of rotation to be signaled.   |

## Accessories

|                               | Description   | Type       |
|-------------------------------|---|------------|
| <b>Electrical accessories</b> | Auxiliary switch, 2 x SPDT                                      | S2A-F      |
|                               | Feedback potentiometer, 200 Ohm, incl. installation accessories | P200A-F    |
|                               | Feedback potentiometer 1 kOhm, incl. installation accessories   | P1000A-F   |
|                               | Description   | Type       |
| <b>Mechanical accessories</b> | Shaft extension 250 mm, for damper spindles Ø 8...25 mm         | AV8-25     |
|                               | End stop indicator for NF..A / SF..A                            | IND-AFB    |
|                               | Spindle clamp set for NF..A/SF..A (1", 3/4", 1/2")              | K7-2       |
|                               | Straight ball joint with M8, suitable for damper crank arms KH8 | KG10A      |
|                               | Angled ball joint with M8, suitable for damper crank arms KH8   | KG8        |
|                               | Damper crank arm, for damper spindles                           | KH8        |
|                               | Damper crank arm for NF..A / SF..A, for 3/4" spindles           | KH-AFB     |
|                               | Form fit insert 10x10 mm, for spring return actuators NG        | ZF10-NSA-F |
|                               | Form fit insert 12x12 mm, for spring return actuators NG        | ZF12-NSA-F |
|                               | Form fit insert 16x16 mm, for spring return actuators NG        | ZF16-NSA-F |
|                               | Damper crank arm, for spring return actuators NG                | ZG-AFB     |
|                               | Base plate extensions for NF..A/SF..A                           | Z-SF       |

## Electrical installation

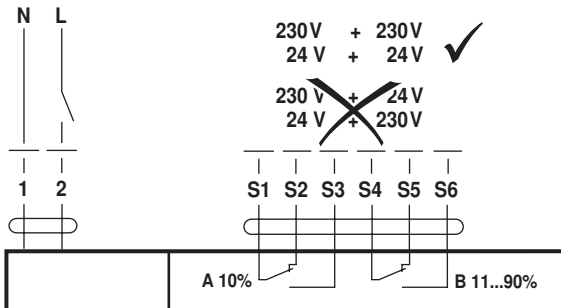


### Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

## Wiring diagrams

AC/DC 24 V, open-close

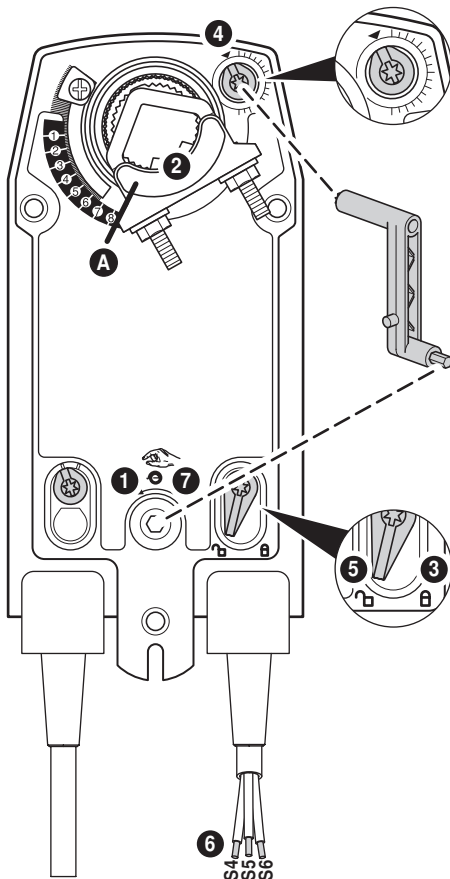


### Cable colours:

- 1 = black
- 2 = red
- S1 = violet
- S2 = red
- S3 = white
- S4 = orange
- S5 = pink
- S6 = grey

## Operating controls and indicators

### Auxiliary switch settings



### Note

Perform settings on the actuator only in deenergised state.

- Manual override**  
Turn the hand crank until the desired switching position is set.
- Spindle clamp**  
Edge line **A** displays the desired switching position of the actuator on the scale.
- Fasten the locking device**  
Turn the locking switch to the "Locked padlock" symbol.
- Auxiliary switch**  
Turn rotary knob until the notch points to the arrow symbol.
- Unlock the locking device**  
Turn the locking switch to the "Unlocked padlock" symbol or unlock with the hand crank.
- Cable**  
Connect continuity tester to S4 + S5 or to S4 + S6.
- Manual override**  
Turn the hand crank until the desired switching position is set and check whether the continuity tester shows the switching point.

Dimensions [mm]

Spindle length

|  |  |         |
|--|--|---------|
|  |  | Min. 85 |
|  |  | Min. 15 |

Clamping range

|  |           |         |           |
|--|-----------|---------|-----------|
|  |           |         |           |
|  | 10...22   | 10      | 14...25.4 |
|  |           |         |           |
|  | 19...25.4 | 12...18 |           |

Dimensional drawings

