

Modulating damper actuator for adjusting dampers in technical building installations

- Air damper size up to approx. 0.4 m<sup>2</sup>
- Torque motor 2 Nm
- Nominal voltage AC/DC 24 V
- Control modulating
- Mechanical interface Form fit 8x8 mm
- with connecting terminals



Picture may differ from product

## 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 19.2...28.8 V                                              |
|                        | Power consumption in operation     | 1 W                                                                              |
|                        | Power consumption in rest position | 0.5 W                                                                            |
|                        | Power consumption for wire sizing  | 1.5 VA                                                                           |
|                        | Connection supply / control        | Terminals 1.5 mm <sup>2</sup> Cu wire or 1.0 mm <sup>2</sup> Cu strands (4-wire) |
|                        | Parallel operation                 | Yes (note the performance data)                                                  |
| <b>Functional data</b> | Torque motor                       | 2 Nm                                                                             |
|                        | Operating range Y                  | 2...10 V                                                                         |
|                        | Input impedance                    | 100 kΩ                                                                           |
|                        | Position feedback U                | 2...10 V                                                                         |
|                        | Position feedback U note           | Max. 1 mA                                                                        |
|                        | Position accuracy                  | ±5%                                                                              |
|                        | Direction of motion motor          | counter-clockwise rotation (ccw)                                                 |
|                        | Direction of motion note           | Y = 0 V: left end stop, position 0                                               |
|                        | Manual override                    | with magnet                                                                      |
|                        | Angle of rotation                  | 95°, fixed setting                                                               |
|                        | Running time motor                 | 75 s / 90°                                                                       |
|                        | Sound power level, motor           | 35 dB(A)                                                                         |
|                        | Mechanical interface               | Form fit 8x8 mm                                                                  |
|                        | Position indication                | Mechanical, pluggable (with integrated magnet for gear train disengagement)      |
| <b>Safety data</b>     | Protection class IEC/EN            | III, Safety Extra-Low Voltage (SELV)                                             |
|                        | Power source UL                    | Class 2 Supply                                                                   |
|                        | Degree of protection IEC/EN        | IP20                                                                             |
|                        | Degree of protection NEMA/UL       | NEMA 1                                                                           |
|                        | Housing                            | UL Enclosure Type 1                                                              |
|                        | EMC                                | CE according to 2014/30/EU                                                       |
|                        | Certification IEC/EN               | IEC/EN 60730-1 and IEC/EN 60730-2-14                                             |

|                    |                                        |                                                                                                                                                                           |
|--------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Safety data</b> | UL Approval                            | cULus according to UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1<br>The UL marking on the actuator depends on the production site, the device is UL-compliant in any case |
|                    | Hygiene test                           | According to VDI 6022 Part 1 / SWKI VA 104-01, cleanable and disinfectable, low emission                                                                                  |
|                    | Type of action                         | Type 1                                                                                                                                                                    |
|                    | Rated impulse voltage supply / control | 0.8 kV                                                                                                                                                                    |
|                    | Pollution degree                       | 2                                                                                                                                                                         |
|                    | Ambient humidity                       | Max. 95% RH, non-condensing                                                                                                                                               |
|                    | Ambient temperature                    | -30...50°C [-22...122°F]                                                                                                                                                  |
|                    | Storage temperature                    | -40...80°C [-40...176°F]                                                                                                                                                  |
|                    | Servicing                              | maintenance-free                                                                                                                                                          |
| <b>Weight</b>      | Weight                                 | 0.18 kg                                                                                                                                                                   |

## 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.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insolation or aggressive gases interfere directly with the device and that it is ensured that the ambient conditions remain within the thresholds according to the data sheet at any time.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The mechanical end stops for limiting the angle of rotation may only be removed for adjustment. They must always be mounted during operation.
- 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.
- To calculate the torque required, the specifications supplied by the damper manufacturers concerning the cross-section and the design, as well as the installation situation 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>Operating mode</b>               | The actuator is controlled with a control signal Y (note the operating range) and drives to the position defined by the control signal. Measuring voltage U serves for the electrical display of the damper position 0...100% and as control signal for other actuators. |
| <b>Simple direct mounting</b>       | The actuator with its hollow shaft is mounted in a form-fit manner directly on the damper shaft and then secured with the anti-rotation clip, to prevent it from rotating.<br>The anti-rotation clip Z-ARCM is included in the scope of delivery.                        |
| <b>Manual override</b>              | Manual override with magnet possible (the gear train is disengaged as long as the magnet adheres to the magnet symbol). The magnet for gear train disengagement is integrated in the position indicator.                                                                 |
| <b>Adjustable angle of rotation</b> | Adjustable angle of rotation with mechanical end stops.                                                                                                                                                                                                                  |
| <b>High functional reliability</b>  | The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.                                                                                                                                                     |

## Product features

**Hidden synchronisation** If the actuator drives to the lower end stop during ongoing operation, it performs a synchronisation of the control signal at DC 2 V. This ensures that the signal range also corresponds to the effective functional range in ongoing operation. The bottom end stop is actively approached as soon as the control signal is <DC 2.1 V. The actuator drives to the new specified position as soon as the control signal is once again >DC 2.3 V.

## Accessories

| Mechanical accessories | Description                                        | Type   |
|------------------------|----------------------------------------------------|--------|
|                        | Anti-rotation clip, Multipack 20 pcs.              | Z-ARCM |
|                        | Gear train disengagement magnet, Multipack 20 pcs. | Z-MA   |
|                        | Position indicator, Multipack 20 pcs.              | Z-PICM |
|                        | End stop clip, Multipack 20 pcs.                   | Z-ESCM |

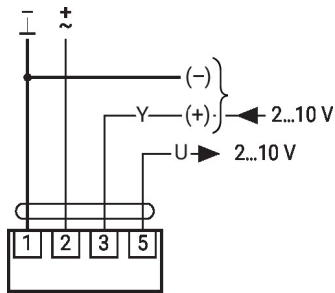
## Electrical installation



Supply from isolating transformer.

Parallel connection of other actuators possible. Observe the performance data.

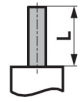
AC/DC 24 V, modulating

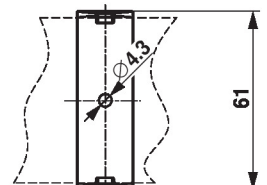
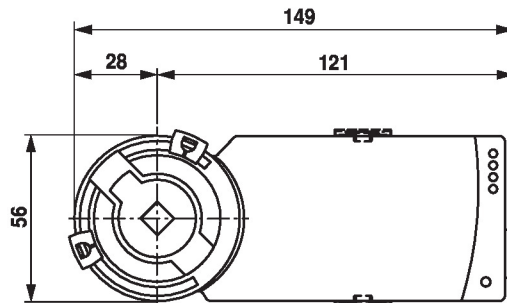
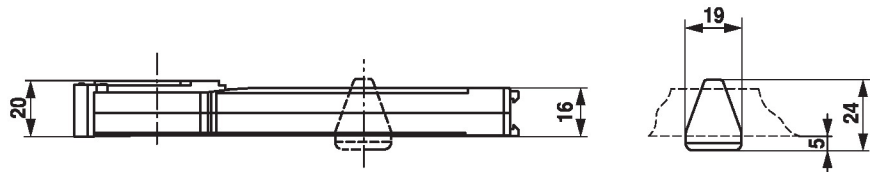


| 1 | 2 | 3    |   |
|---|---|------|---|
| ⎓ | ⎓ | 2 V  | ↺ |
| ⎓ | ⎓ | 10 V | ↺ |

## Dimensions

## Spindle length

|                                                                                     |         |
|-------------------------------------------------------------------------------------|---------|
|  | Min. 25 |
|                                                                                     |         |



1) Anti-rotation clip, accessory part Z-ARCM

2) Position indicator with integrated magnet for gear train disengagement, accessory part Z-PICM