

Modulating RobustLine damper actuator for adjusting dampers in industrial plants and 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 modulating DC (0)2...10 V
- Position feedback DC 2...10 V
- Optimum protection against corrosion and chemical influences, UV radiation, damp and condensation


**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         | 2 W   |
|                           | Power consumption in rest position     | 0.4 W   |
|                           | Power consumption for wire sizing      | 4 VA  |
|                           | Connection supply / control            | Cable 1 m, 4 x 0.75 mm <sup>2</sup> (halogen-free)                    |
|                           | Parallel operation                     | Yes (note the performance data)                                       |
| <b>Functional data</b>    | Torque motor                           | Min. 20 Nm  |
|                           | Positioning signal Y                   | DC 0...10 V   |
|                           | Positioning signal Y note              | Input impedance 100 kΩ  |
|                           | Operating range Y                      | DC 2...10 V   |
|                           | Position feedback U                    | DC 2...10 V   |
|                           | Position feedback U note               | Max. 1 mA   |
|                           | Position accuracy                      | ±5%   |
|                           | Direction of motion motor              | selectable with switch 0 / 1  |
|                           | Direction of motion note               | Y = 0 V: At switch position 0 (ccw rotation) / 1 (cw rotation)        |
|                           | Manual override                        | with push-button, can be locked                                       |
|                           | Angle of rotation                      | Max. 95°  |
|                           | Angle of rotation note                 | can be limited on both sides with adjustable mechanical end stops     |
|                           | Running time motor                     | 150 s / 90°   |
|                           | Sound power level motor                | 45 dB(A)  |
| Spindle driver            | Universal spindle clamp 14...20 mm     |   |
| Position indication       | Mechanically, pluggable                |   |
| <b>Safety</b>             | Protection class IEC/EN                | III Safety Extra-Low Voltage (SELV)                                   |
|                           | Degree of protection IEC/EN            | IP66 + IP67   |
|                           | Degree of protection NEMA/UL           | NEMA 4, UL Enclosure Type 4   |
|                           | 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  |
|                           | Rated impulse voltage supply / control | 0.8 kV  |
|                           | Control pollution degree               | 4   |
|                           | Ambient temperature                    | -30...50 °C   |
| Non-operating temperature | -40...80 °C                            |   |
| Ambient humidity          | 100% r.h.                              |   |
| Maintenance               | Maintenance-free                       |   |
| <b>Weight</b>             | Weight                                 | 2.1 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.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

## Safety notes

- Junction boxes must at least correspond with enclosure IP degree of protection!
- The cover of the protective housing may be opened for adjustment and servicing. When it is closed afterwards, the housing must seal tight (see installation instructions).
- The device may only be opened in the manufacturer's factory. It does not contain any parts that can be replaced or repaired by the user.
- The cables must not be removed from the device installed in the interior.
- 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.
- The information on chemical resistance refers to laboratory tests with raw materials and finished products and to trials in the field in the areas of application indicated.
- The materials used may be subjected to external influences (temperature, pressure, constructional fixture, effect of chemical substances, etc.), which cannot be simulated in laboratory tests or field trials.
- The information regarding areas of application and resistance can therefore only serve as a guideline. In case of doubt, we definitely recommend that you carry out a test. This information does not imply any legal entitlement. Belimo will not be held liable and will provide no warranty. The chemical or mechanical resistance of the materials used is not alone sufficient for judging the suitability of a product. Regulations pertaining to combustible liquids such as solvents etc. must be taken into account with special reference to explosion protection.

## Product features

|                               |  |
|-------------------------------|--|
| <b>Fields of application</b>  | The actuator is particularly suitable for utilisation in outdoor applications and is protected against the following weather conditions: <ul style="list-style-type: none"> <li>- Wood drying</li> <li>- Animal breeding</li> <li>- Food processing</li> <li>- Agricultural</li> <li>- Swimming baths / bathrooms</li> <li>- Rooftop ventilation plant rooms</li> <li>- General outdoor applications</li> <li>- Changing atmosphere</li> <li>- Laboratories</li> </ul> |
| <b>Resistances</b>            | Noxious gas test EN 60068-2-60 (Fraunhofer Institut ICT / DE)<br>Salt fog spray test EN 60068-2-52 (Fraunhofer Institut ICT / DE)<br>Ammoniac test DIN 50916-2 (Fraunhofer Institut ICT / DE)<br>Climate test IEC60068-2-30 (Trikon Solutions AG / CH)<br>Disinfectant (animals) (Trikon Solutions AG / CH)<br>UV Test (Solar radiation at ground level) EN 60068-2-5, EN 60068-2-63 (Quinel / Zug CH)   |
| <b>Used materials</b>         | Actuator housing polypropylene (PP)<br>Cable glands / hollow shaft polyamide (PA)<br>Connecting cable FRNC<br>Clamp / screws in general Steel 1.4404<br>Seals EPDM<br>Form fit insert aluminium anodised   |
| <b>Mode of operation</b>      | The actuator is connected with a standard modulating signal of DC 0...10V and drives to the position defined by the positioning signal. Measuring voltage U serves for the electrical display of the damper position 0...100% and as slave control signal for other actuators.   |
| <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>        | Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked).   |

## Product features

|                                     |   |
|-------------------------------------|---|
| <b>Adjustable angle of rotation</b> | Adjustable angle of rotation with mechanical end stops. Standard setting 0 ... 90°. The housing cover must be removed to set the angle of rotation. |
| <b>High functional reliability</b>  | The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.                                |

## Accessories

|   | Description   | Type       |
|---|---|------------|
| <b>Electrical accessories</b>                       | Auxiliary switch, add-on, 1 x SPDT  | S1A        |
|   | Auxiliary switch, add-on, 2 x SPDT  | S2A        |
|   | Feedback potentiometer 140 Ohm, add-on  | P140A      |
|   | Feedback potentiometer 140 Ohm, add-on, grey  | P140A GR   |
|   | Feedback potentiometer 200 Ohm, add-on  | P200A      |
|   | Feedback potentiometer 500 Ohm, add-on  | P500A      |
|   | Feedback potentiometer 500 Ohm, add-on, grey  | P500A GR   |
|   | Feedback potentiometer 1 kOhm, add-on   | P1000A     |
|   | Feedback potentiometer 1 kOhm, add-on, grey   | P1000A GR  |
|   | Feedback potentiometer 2.8 kOhm, add-on   | P2800A     |
|   | Feedback potentiometer 2.8 kOhm, add-on, grey   | P2800A GR  |
|   | Feedback potentiometer 5 kOhm, add-on   | P5000A     |
|   | Feedback potentiometer 5 kOhm, add-on, grey   | P5000A GR  |
|   | Feedback potentiometer 10 kOhm, add-on  | P10000A    |
|   | Feedback potentiometer 10 kOhm, add-on, grey  | P10000A GR |
|   | Signal converter voltage/current, supply AC/DC 24V  | Z-UIC      |
|   | Digital position indicator for front-panel mounting, 0...99%, front mass 72 x 72 mm             | ZAD24      |
|   | Range controller for wall mounting, adjustable electron. Min./max. angle of rotation limitation | SBG24      |
|   | Positioner for wall mounting, range 0...100%  | SGA24      |
|   | Positioner in a conduit box, range 0...100%   | SGE24      |
| Positioner for front-panel mounting, range 0...100% | SGF24   |            |
| Positioner for wall mounting, range 0...100%        | CRP24-B1  |            |

## Electrical installation

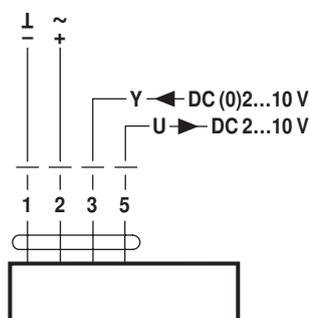


### Notes

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

## Wiring diagrams

AC/DC 24 V, modulating



**Dimensions [mm]**

**Spindle length**

|  |         |
|--|---------|
|  | -       |
|  | 20...58 |

**Clamping range**

|         |         |         |
|---------|---------|---------|
|         |         |         |
| 14...20 | 10...14 | 14...20 |

**Dimensional drawings**

