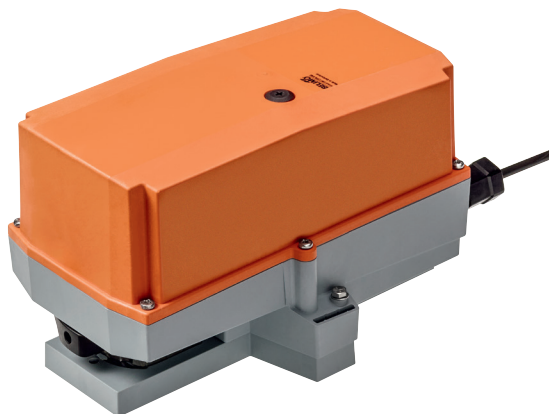


**RobustLine rotary actuator for rotary valves**

- Torque motor 20 Nm
- Nominal voltage AC/DC 24 V
- Control modulating 2...10 V
- Position feedback 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     | 2.5 W   |
|  | Power consumption in rest position | 0.4 W   |
|  | Power consumption for wire sizing  | 5 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                       | 20 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%   |
|  | Manual override                    | with push-button, can be locked   |
|  | Running time motor                 | 90 s / 90°  |
|  | Sound power level, motor           | 45 dB(A)  |
|  | Position indication                | Mechanically, pluggable   |
|  | <b>Safety</b>                      | Protection class IEC/EN   |
| Protection class UL                    |                                    | UL Class 2 Supply   |
| Degree of protection IEC/EN            |                                    | IP66/67   |
| Degree of protection NEMA/UL           |                                    | NEMA 4X   |
| Enclosure                              |                                    | UL Enclosure Type 4X  |
| 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 UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1:02                                   |
| Certification UL note                  |                                    | The UL marking on the actuator depends on the production site, the device is UL-compliant in any case |
| Mode of operation                      |                                    | Type 1  |
| Rated impulse voltage supply / control |                                    | 0.8 kV  |
| Control pollution degree               |                                    | 4   |
| Ambient temperature                    |                                    | -30...50 °C   |
| Storage temperature                    |                                    | -40...80 °C   |
| Ambient humidity                       | Max. 100% r.H.                     |   |
| Servicing                              | maintenance-free                   |   |
| <b>Weight</b>                          | Weight                             | 2.1 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.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- Junction boxes must at least correspond with enclosure IP degree of protection!
- The switch for changing the direction of rotation may only be operated by authorised specialists. The direction of rotation must not in particular be reversed in a frost protection circuit.
- 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 at the manufacturer's site. 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.
- 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.
- When used under high UV loads, e.g. extreme sunlight, the use of flexible metallic or equivalent cable conduits is recommended.

## Product features

|                              |  |
|------------------------------|--|
| <b>Fields of application</b> | The actuator is particularly suited for use in difficult conditions, e.g. in the field of: <ul style="list-style-type: none"> <li>- Wood drying</li> <li>- Animal breeding</li> <li>- Food processing</li> <li>- Agriculture</li> <li>- Indoor swimming pools / bathhouses</li> <li>- Rooftop ventilation plant rooms</li> <li>- General outdoor applications</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   |

**Product features**

- Mode of operation** The actuator is connected with a standard modulating signal of 0...10 V and drives to the position defined by the positioning signal. Measuring voltage U serves for the electrical display of the valve position 0.5...100% and as slave control signal for other actuators.
- Simple direct mounting** Straightforward direct mounting on the ball valve with only one central screw. The assembly tool is integrated in the plug-in position indication. The mounting orientation in relation to the ball valve can be selected in 90° steps.
- Manual override** Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked). The housing cover must be removed for manual override.
- Adjustable angle of rotation** Adjustable angle of rotation with mechanical end stops. Standard setting 0 ... 90°. The housing cover must be removed to set the angle of rotation.
- High functional reliability** 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 2 x SPDT add-on, grau | S2A GR  |
|                               | Feedback potentiometer 140 Ω add-on    | P140A   |
|                               | Feedback potentiometer 200 Ω add-on    | P200A   |
|                               | Feedback potentiometer 500 Ω add-on    | P500A   |
|                               | Feedback potentiometer 1 kΩ add-on     | P1000A  |
|                               | Feedback potentiometer 2.8 kΩ add-on   | P2800A  |
|                               | Feedback potentiometer 5 kΩ add-on     | P5000A  |
|                               | Feedback potentiometer 10 kΩ add-on    | P10000A |

**Electrical installation**

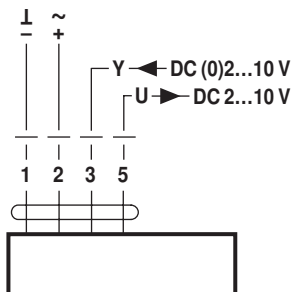
**Notes**

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.
- Direction of rotation switch is covered. Factory setting: Direction of rotation Y2.

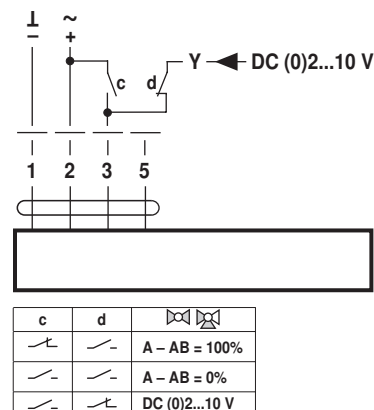
**Wiring diagrams**

AC/DC 24 V, modulating

Override control (frost protection circuit)

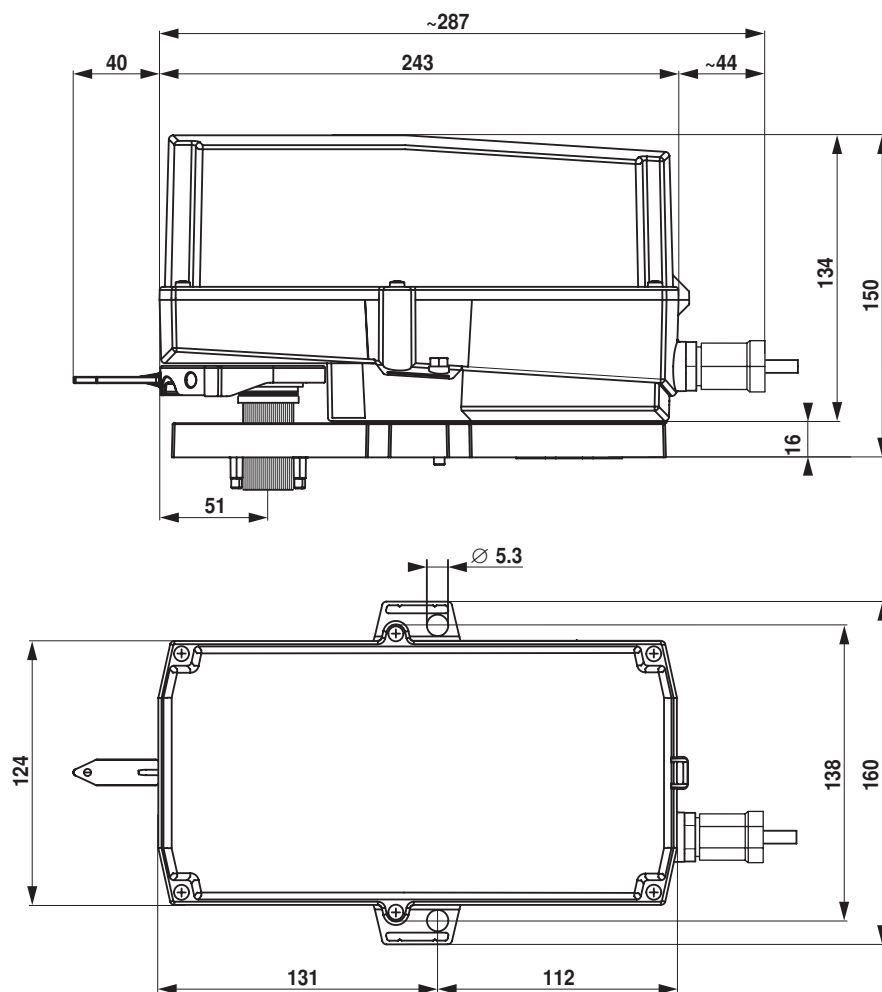


**Cable colours:**  
 1 = black  
 2 = red  
 3 = white  
 5 = orange



## Dimensions [mm]

## Dimensional drawings



## Further documentation

- The complete product range for water applications
- Data sheets for ball valves
- Installation instructions for actuators and/or ball valves
- General notes for project planning