

Rotary actuator for butterfly valves

- Nominal torque 160 Nm
- Nominal voltage AC 24...240 V / DC 24...125 V
- Control Open-close, 3-point
- with 2 integrated auxiliary switches




Technical data

| | | |
|---------------------------|--|---|
| Electrical data | Nominal voltage | AC 24...240 V / DC 24...125 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Nominal voltage range | AC 19.2...264 V / DC 19.2...137.5 V |
| | Power consumption in operation | 20 W |
| | Power consumption in rest position | 6 W |
| | Power consumption for wire sizing | with 24 V 20 VA / with 230 V 52 VA |
| | Auxiliary switch | 2 x SPDT, 1 x 10° / 1 x 0...90° (ex works 85°) |
| | Switching capacity auxiliary switch | 1 mA...3 (0.5 inductive) A, AC 250 V |
| | Connection supply / control | Terminals 2.5 mm ² |
| | Connection auxiliary switch | Terminals 2.5 mm ² |
| Parallel operation | Yes (note the performance data) | |
| Functional data | Torque motor | 160 Nm (parameterized for D6250W/WL) |
| | Manual override | with hand crank, can be fixed in any position |
| | Running time motor | 35 s / 90° |
| | Motor running time variable | 30...120 s |
| | Sound power level motor | 68 dB(A) |
| | Position indication | Mechanically (integrated) |
| Safety | Protection class IEC/EN | II reinforced insulation |
| | Protection class UL | II reinforced insulation |
| | Protection class auxiliary switch IEC/EN | II reinforced insulation |
| | Degree of protection IEC/EN | IP66 + IP67 |
| | Degree of protection NEMA/UL | NEMA 4X, UL Enclosure Type 4X |
| | 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 |
| | Rated impulse voltage supply | 4 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 | |
| Mechanical data | Connection flange | F07 (F05 only with accessory) |
| Weight | Weight | 5.8 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.
- Caution: Power supply voltage!
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

Safety notes

- Apart from the connection box, 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

| | |
|------------------------------------|---|
| Fields of application | The actuator is particularly suitable for utilisation in outdoor applications and is protected against the following weather conditions: <ul style="list-style-type: none"> - UV radiation - dirt / dust - rain / snow - Humidity |
| Parameterisable actuators | The factory settings cover the most common applications. The Belimo Assistant App is required for parameterisation via Near Field Communication (NFC) and simplifies commissioning. Moreover, it provides a variety of diagnostic options. The ZTH EU service tool provides a selection of both diagnostic and setting options. |
| Simple direct mounting | Simple direct mounting on the butterfly valve. The mounting orientation in relation to the butterfly valve can be selected in 90° (angle) increments. |
| Manual override | The valve can be manually operated using a hand crank. Unlocking is carried out manually by removing the hand crank. |
| Internal heating | An internal heater prevents condensation buildup. Thanks to the integrated temperature and humidity sensor the built-in heater automatically switches on and off. |
| High functional reliability | The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached. |
| Flexible signalization | The actuator has one auxiliary switch with a fixed setting (10°) and one adjustable auxiliary switch (0...90°). |

Accessories

| | Description | Type |
|-------------------------------|---|--|
| Electrical accessories | Connection cable 5 m, A+B: RJ12 6/6, To ZTH/ZIP-USB-MP | ZK1-GEN |
| Mechanical accessories | Description Position indicator and tappet shaft, F07, square, SW 17 Tappet shaft, F07, square, SW 17 Position indicator and tappet shaft, F05, square, SW 14 Retrofit adapter kit, F05/F07, flat head/ square, SW 17 Retrofit adapter kit, F05/F07, square 45° turned, SW 14 Retrofit adapter kit with ring, F07, square 45° turned, SW 17 Retrofit adapter kit with ring, F07, flat head/ square, SW 14 Retrofit adapter kit, F05/F07, flat head/ square, SW 14 Retrofit adapter kit, F05/F07, square 45° turned, SW 18 Retrofit adapter kit, F05/F07, flat head/ square, SW 16 Hand crank for PR-actuator | Type ZPR01 ZPR02 ZPR03 ZPR05 ZPR06 ZPR08 ZPR09 ZPR10 ZPR11 ZPR12 ZPR20 |
| Service Tools | Description Smartphone app for easy commissioning, parameterising and maintenance Service tool for parametrisable and communicative Belimo actuators / VAV controller and HVAC performance devices | Type Belimo Assistant App ZTH EU |

Electrical installation

Electrical installation

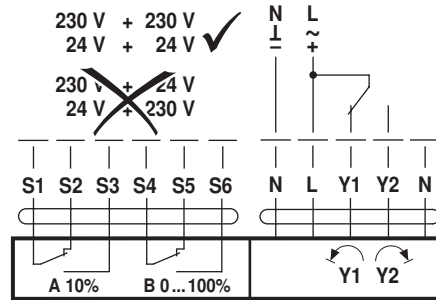
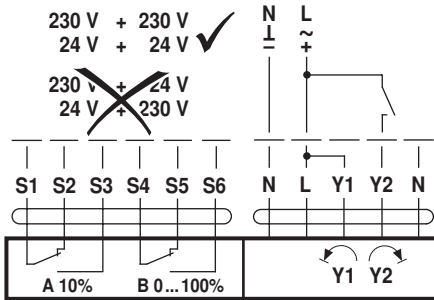


Notes

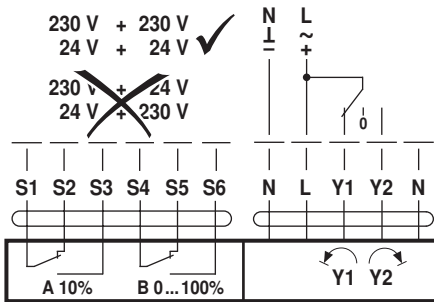
- Caution: Power supply voltage!
- Parallel connection of other actuators possible. Observe the performance data.
- The main power supply for the actuator and for the auxiliary switches shall be from the same phase.

Wiring diagrams

AC 24...240 V / DC 24...125 V, Open-close, Auxiliary switches

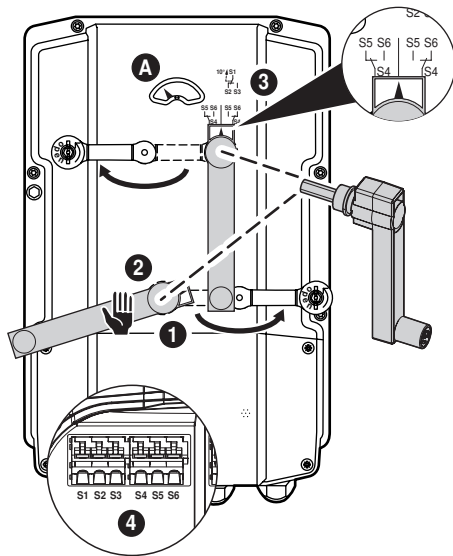


AC 24...240 V / DC 24...125 V, 3-point, Auxiliary switches



Operating controls and indicators

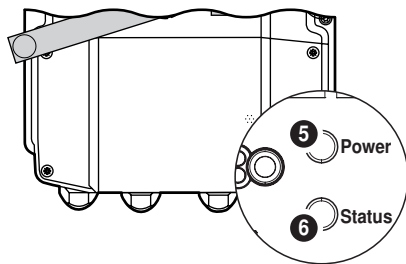
Auxiliary switch settings



Note Perform settings on the actuator only in deenergised state.

- 1 Gear disengagement**
Opening the manual override cover and adjusting the hand crank. Manual override is possible.
- 2 Manual override control**
Turn the hand crank until the desired switching position **A** is indicated and then remove the crank.
- 3 Auxiliary Switch**
Opening the auxiliary switch adjustment cover and adjusting the hand crank. Turn the crank until the arrow points to the vertical line
- 4 Terminals**
Connect continuity tester to S4 + S5 or to S4 + S6.
If the auxiliary switch should switch in the opposite direction, rotate the hand crank by 180°.

Push-buttons and display



- 5 Push-button and LED display green**
Off: No power supply or malfunction
On: In operation
Press button: Triggers test run, followed by standard mode
- 6 LED display yellow**
Off: Standard mode
On: Test run active

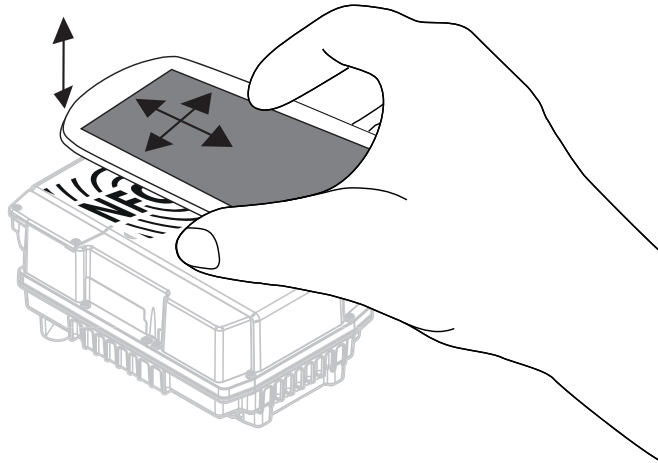
Service

NFC connection Belimo equipment marked with the NFC logo can be operated with the “Belimo Assistant App”.

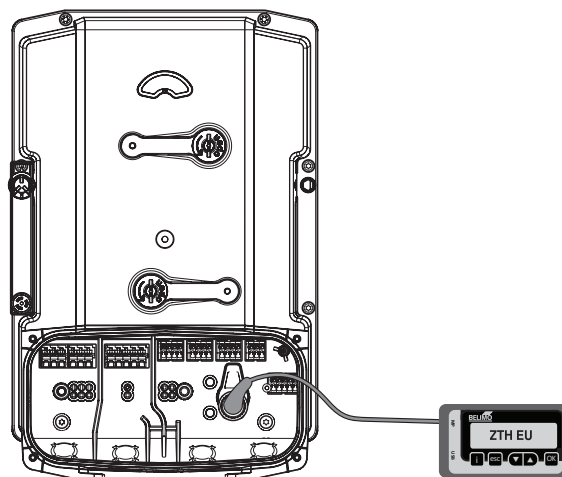
Requirement:

- NFC-capable Android smartphone
- Belimo Assistant App (Google Play Store)

Align smartphone on the actuator so that both NFC antennas are superposed.

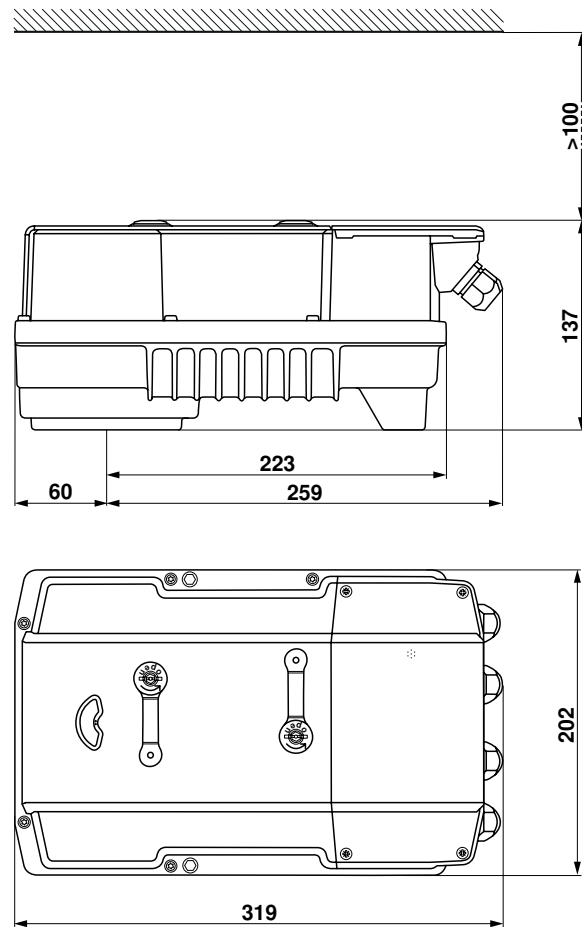


Service Tools connection The actuator can be parameterised by the ZTH EU via the service socket.



Dimensions [mm]

Dimensional drawings



Further documentation

- Overview Valve-actuator combinations
- Data sheets for butterfly valves
- Installation instructions for actuators and/or butterfly valves
- General notes for project planning