

Rotary actuator for butterfly valves

- Torque motor 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 240 V 52 VA
	Auxiliary switch	2x SPDT, 1x 10° / 1x 0...90° (default setting 85°)
	Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V
	Connection protective earth	earth terminal
	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
Manual override		hand crank
Running time motor		35 s / 90°
Running time motor variable		30...120 s
Sound power level, motor		68 dB(A)
Position indication		Mechanical, integrated
Safety data	Protection class IEC/EN	I, protective earth (PE)
	Protection class UL	I, protective earth (PE)
	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
	Low voltage directive	CE according to 2014/35/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	UL Approval	cULus according to UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1 The UL marking on the actuator depends on the production site, the device is UL-compliant in any case
	Type of action	Type 1
	Rated impulse voltage auxiliary switch	2.5 kV
	Pollution degree	3
	Ambient humidity	Max. 100% RH

Technical data

Safety data	Ambient temperature	-30...50°C [-22...122°F]
	Storage temperature	-40...80°C [-40...176°F]
	Servicing	maintenance-free
Weight	Weight	5.0 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!
- The device has a protective earthing. Incorrect connection of the protective earth can lead to hazards due to electrical shock.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- Apart from the wiring compartment, 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 is not designed for applications where chemical influences (gases, fluids) are present or for utilisation in corrosive environments in general.
- 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 two switches integrated in the actuator are to be operated either on power supply voltage or at safety extra-low voltage. The combination power supply voltage/safety extra-low voltage is not permitted.

Product features

Fields of application	The actuator is particularly suitable for utilisation in outdoor applications and is protected against the following weather conditions: - UV radiation - Dirt / Dust - Rain / Snow - Air humidity
Internal heating	An internal heater prevents condensation buildup. Thanks to the integrated temperature and humidity sensor, the built-in heater automatically switches on/off.
Parametrisable actuators	The factory settings cover the most common applications. The Belimo Assistant App is required for parametrisation 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.
High functional reliability	The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.
Flexible signalling	The actuator has one auxiliary switch with a fixed setting (10°) and one adjustable auxiliary switch (0...90°).

Accessories

Tools	Description	Type
	Belimo Assistant App, Smartphone app for easy commissioning, parametrising and maintenance	Belimo Assistant App
	Converter Bluetooth / NFC	ZIP-BT-NFC
	Service tool, with ZIP-USB function, for parametrisable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH EU
	Connecting cable 5 m, A: RJ11 6/4 ZTH EU, B: 6-pin for connection to service socket	ZK1-GEN

Mechanical accessories	Description	Type
	Position indicator and tappet shaft, F07, square 45° offset, SW 17, DN 125...300	ZPR01
	Tappet shaft, F07, square 45° offset, SW 17	ZPR02
	Position indicator and tappet shaft, F05, square 45° offset, SW 14, DN 80...100	ZPR03
	Hand crank for PR/PM actuator	ZPR20

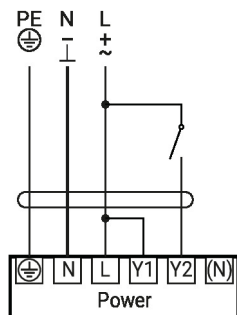
Electrical installation



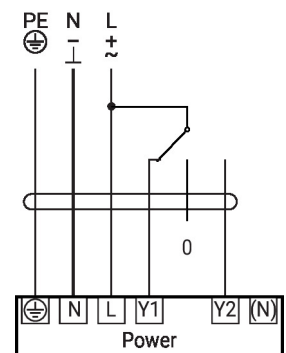
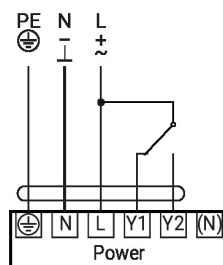
Caution: Power supply voltage!
Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

AC 24...240 V / DC 24...125 V, open/close



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



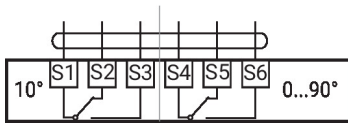
Electrical installation

Wiring diagrams

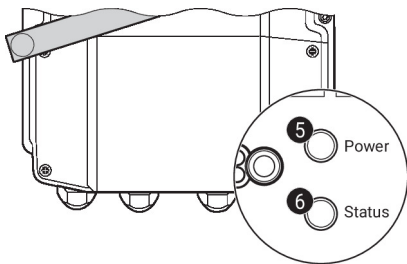
Auxiliary switch

230 V + 230 V
24 V ✓+ 24 V

~~230 V + 24 V~~
~~24 V + 230 V~~



Operating controls and indicators



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 Push-button and LED display yellow

- Off: Standard mode
- On: Test run active

Auxiliary switch settings

Note: Perform settings on the actuator only in deenergised state.

For the auxiliary switch position settings, carry out points 1 to 4 successively.

1 Gear train disengagement

Opening the manual override cover and adjusting the hand crank. Manual override is possible.

2 Manual override

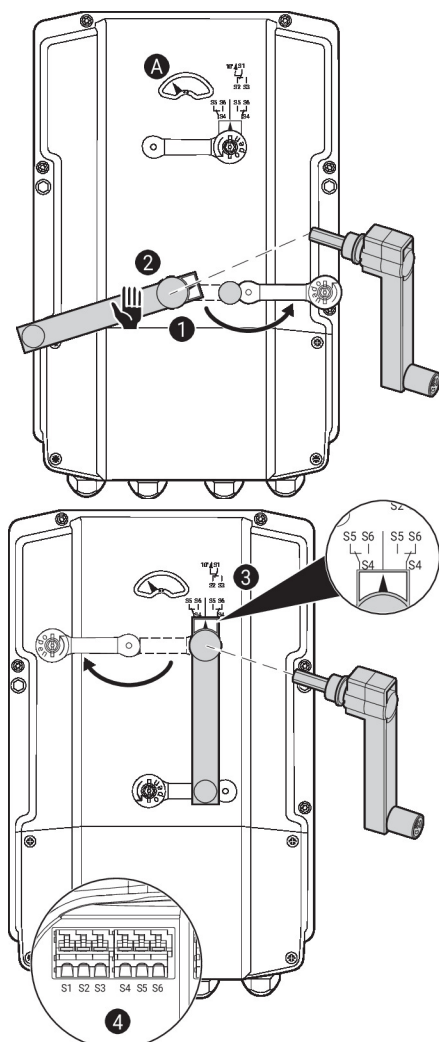
Turn the hand crank until the desired switching position A is indicated and then remove the hand crank.

3 Auxiliary switch

For the auxiliary switch position settings, carry out points 1 to 4 successively. Opening the auxiliary switch adjustment cover and adjusting the hand crank. Turn the hand 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°.



Service

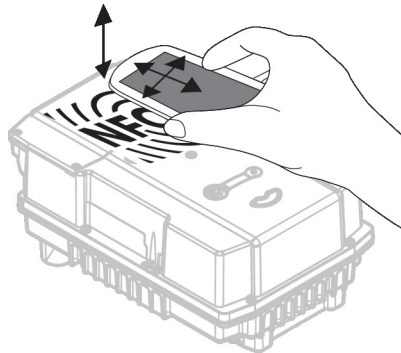
NFC connection Belimo devices marked with the NFC logo can be operated with the Belimo Assistant App.

Requirement:

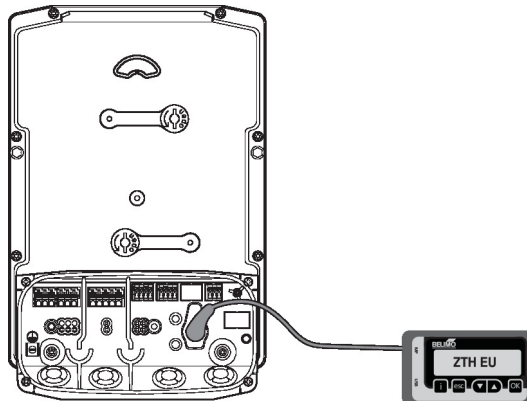
- NFC- or Bluetooth-capable smartphone
- Belimo Assistant App (Google Play & Apple AppStore)

Align NFC-capable smartphone on the device so that both NFC antennas are superposed.

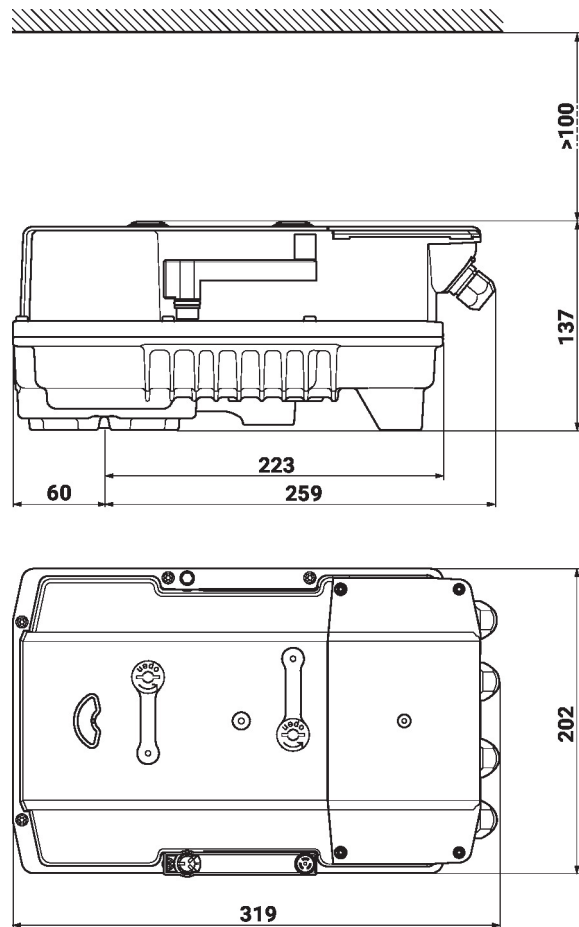
Connect Bluetooth-enabled smartphone via the Bluetooth-to-NFC Converter ZIP-BT-NFC to the device. Technical data and operation instructions are shown in the ZIP-BT-NFC data sheet.



Tool connection The actuator can be configured by the ZTH EU via the service socket.



Dimensions



Further documentation

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