

## 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



Picture may differ from product

## Technical data

<b>Electrical data</b>	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 <sup>2</sup>
	Connection auxiliary switch	Terminals 2.5 mm <sup>2</sup>
	Parallel operation	Yes (note the performance data)
<b>Functional data</b>	Torque motor	160 Nm (configured for D6250W/WL)
	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
<b>Safety data</b>	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
	Housing	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	

**Technical data**

<b>Safety data</b>	Ambient humidity	Max. 100% RH
	Ambient temperature	-30...50°C [-22...122°F]
	Storage temperature	-40...80°C [-40...176°F]
	Servicing	maintenance-free
<b>Weight</b>	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: Mains 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 mains voltage or on safety extra-low voltage. The combination mains voltage/safety extra-low voltage is not permitted.
- In case of maintenance work on the hydronic system, the correct valve position must be set via the control signal. Additionally, the actuator has to be disconnected from the power supply. The hand crank and manual override must not be used as a safety measure to maintain the set valve position.

**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: - UV radiation - Dirt / Dust - Rain / Snow - Air humidity
<b>Internal heating</b>	An internal heater prevents condensation buildup. Thanks to the integrated temperature and humidity sensor, the built-in heater automatically switches on/off.
<b>Configurable device</b>	The factory settings cover the most common applications. Belimo Assistant 2 is required for configuration via Near Field Communication (NFC) and simplifies commissioning. Moreover, Belimo Assistant 2 provides a variety of diagnostic options. The ZTH EU service tool provides a selection of both diagnostic and setting options.
<b>Simple direct mounting</b>	Simple direct mounting on the butterfly valve. The mounting orientation in relation to the butterfly valve can be selected in 90° (angle) increments.
<b>Manual override</b>	The valve can be manually operated using a hand crank. Unlocking is carried out manually by removing the hand crank.

Product features

- 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

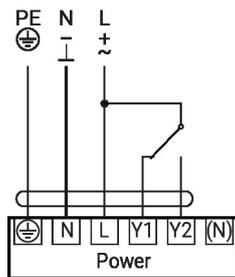
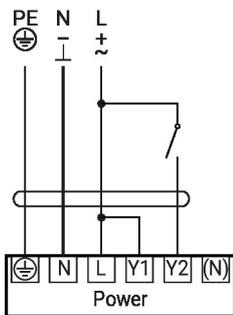
Tools	Description	Type
	Service tool for wired and wireless setup, on-site operation and troubleshooting.	Belimo Assistant 2
	Service tool, with ZIP-USB function, for configurable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH EU
	Connecting cable 5 m, A: RJ11 6/4 LINK.10, B: 6-pin for connection to service socket	ZK1-GEN
	Belimo Assistant Link Bluetooth and USB to NFC and MP-Bus converter for configurable and communicative devices	LINK.10
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

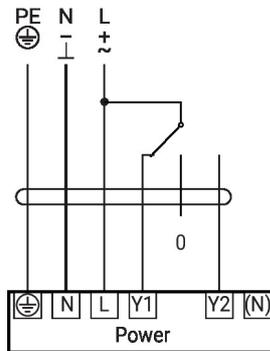


**Caution: Mains voltage!**  
Parallel connection of other actuators possible. Observe the performance data.

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



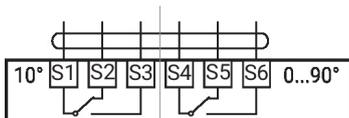
AC 24...240 V / DC 24...125 V, 3-point



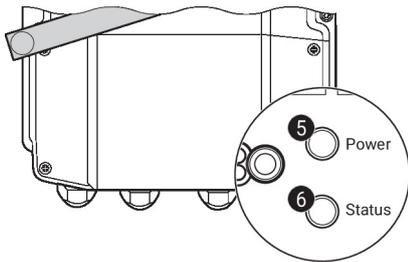
Auxiliary switch

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**

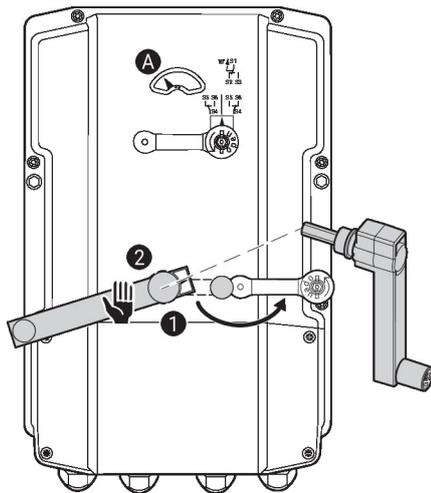
- Off: Standard mode
- On: Test run active

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.

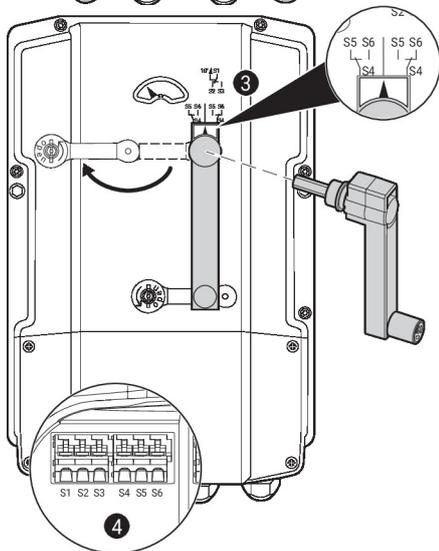


**1 Gear train disengagement**

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**

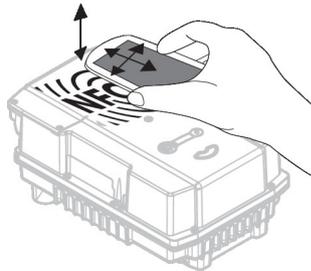
**Wireless connection** Belimo devices marked with the NFC logo can be operated with Belimo Assistant 2.

Requirement:

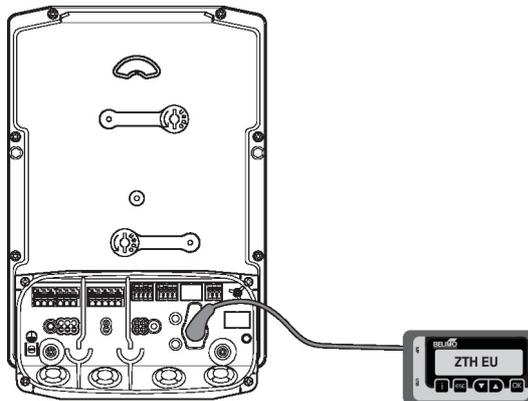
- NFC- or Bluetooth-capable smartphone
- Belimo Assistant 2 (Google Play and Apple AppStore)

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

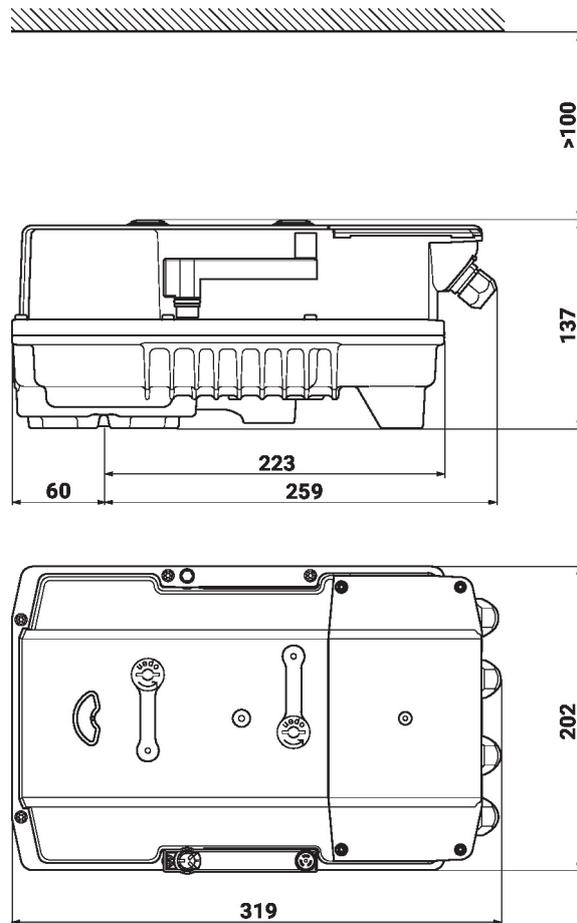
Connect Bluetooth-enabled smartphone via the Bluetooth-to-NFC converter ZIP-BT-NFC to the device. Technical data and operating instructions are shown in the ZIP-BT-NFC data sheet.



**Wired 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
- Quick Guide – Belimo Assistant 2