

## 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

<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
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
	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**

<b>Safety data</b>	Ambient temperature	-30...50°C [-22...122°F]
	Storage temperature	-40...80°C [-40...176°F]
	Servicing	maintenance-free
<b>Mechanical data</b>	Connection flange	F07 (F05/F10 only with accessory)
<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: 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**

<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>Parametrisable actuators</b>	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.
<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.
<b>High functional reliability</b>	The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.
<b>Flexible signalling</b>	The actuator has one auxiliary switch with a fixed setting (10°) and one adjustable auxiliary switch (0...90°).

**Accessories**

	<b>Tools</b>	<b>Description</b>	<b>Type</b>
		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
	<b>Mechanical accessories</b>	<b>Description</b>	<b>Type</b>
		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
		RetroFIT+ adapter kit, F07/F10 (incl. screws F07), flat head/square, SW 17	ZPR05
		RetroFIT+ adapter kit, F07/F10 (incl. screws F07), square 45° offset, SW 14	ZPR06
		Adapter kit with spacer ring, F07, square 45° offset, SW 17	ZPR08
		RetroFIT+ adapter kit, F07/F05/F10 (incl. screws F07), flat head/square, SW 14	ZPR09
		RetroFIT+ adapter kit, F05/F07/F10 (incl. screws F05), flat head/square, SW 14	ZPR10
		RetroFIT+ adapter kit, F07/F10 (incl. screws F07), square 45° offset, SW 18	ZPR11
		RetroFIT+ adapter kit, F07/F10 (incl. screws F07), flat head/square, SW 16	ZPR12
		RetroFIT+ adapter kit, F07/F05/F10 (incl. screws F07), flat head/square, SW 11	ZPR13
		RetroFIT+ adapter kit, F07/F05/F10 (incl. screws F07), flat head/square, SW 12.7	ZPR14
		RetroFIT+ adapter kit, F07/F10 (incl. screws F07), square 45° offset, SW 11	ZPR15
		Hand crank for PR/PM actuator	ZPR20
		Spacer ring, F04/F05, Height 22 mm	ZRI-001
		Spacer ring, F05/F07, Height 23.5 mm	ZRI-002

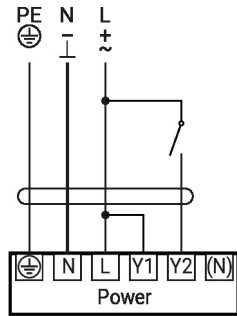
**Electrical installation**

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

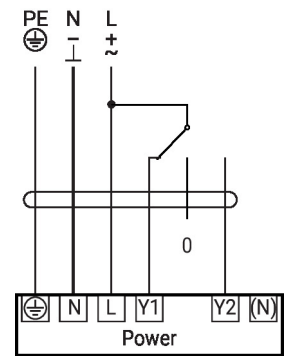
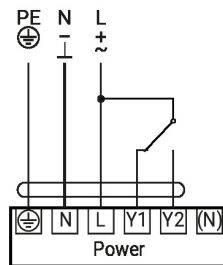
Electrical installation

Wiring diagrams

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



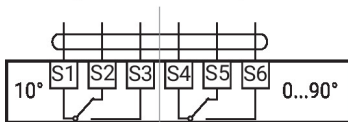
AC 24...240 V / DC 24...125 V, 3-point



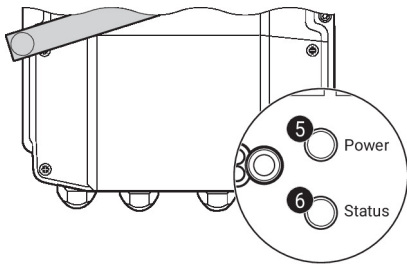
Auxiliary switch

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**

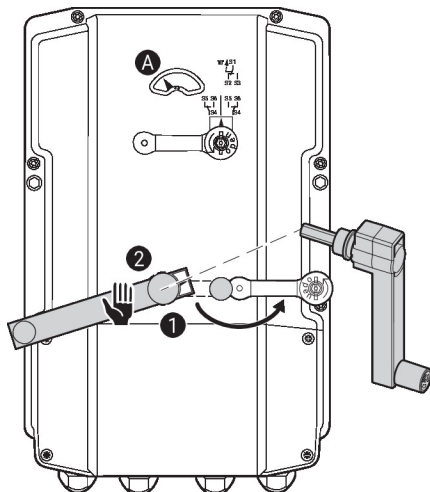
- Off: Standard mode  
 On: Test run active

## 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**

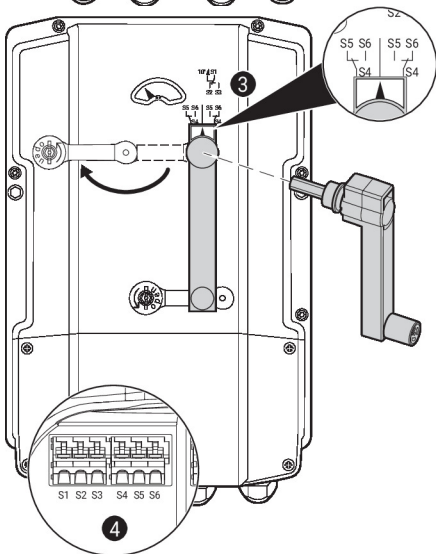
- Turn the hand crank until the desired switching position **A** is indicated and then remove the hand crank.

**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

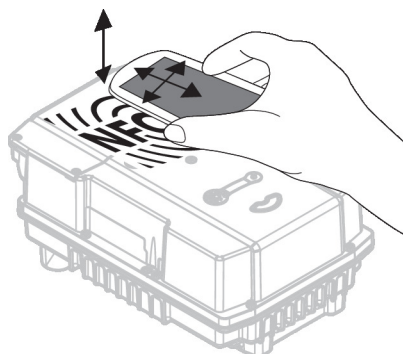
**NFC connection** Belimo devices marked with the NFC logo can be operated with the Belimo Assistant App.

Requirement:

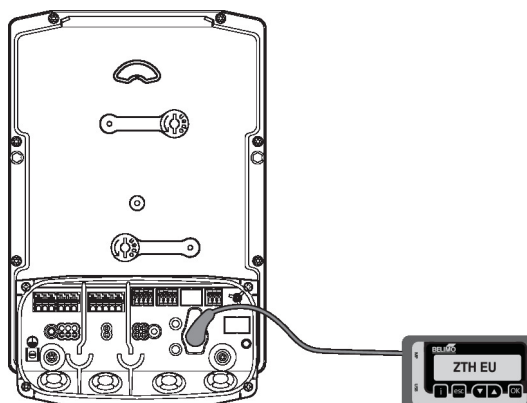
- NFC- or Bluetooth-capable smartphone
- Belimo Assistant App (Google Play & Apple AppStore)

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

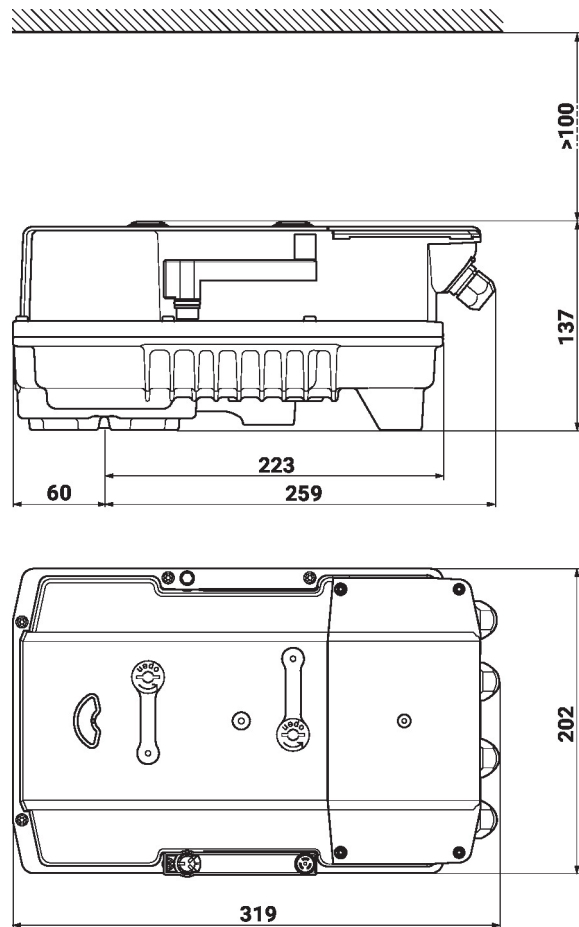
Connect Bluetooth-enabled smartphone via the Bluetooth-to-NFC Converter ZIP-BT-NFC to the device. Technical data and operation instructions are shown in the ZIP-BT-NFC data sheet.



**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