

**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


**RETROFIT**

**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 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 <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
	Manual override	with hand crank, can be fixed in any position
	Running time motor	35 s / 90°
	Running time motor variable	30...120 s
	Sound power level, motor	68 dB(A)
	Position indication	Mechanically (integrated)
<b>Safety</b>	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	IP66/67
	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 UL60730-1A, UL60730-2-14 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	Max. 95% r.H., non-condensing	
Maintenance	Maintenance-free	
<b>Mechanical data</b>	Connection flange	F07 (F05 only with accessory)
<b>Weight</b>	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.
- 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

<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 - Humidity
<b>Parameterisable actuators</b>	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.
<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>Internal heating</b>	An internal heater prevents condensation buildup. Thanks to the integrated temperature and humidity sensor the built-in heater automatically switches on and off.
<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 signalization</b>	The actuator has one auxiliary switch with a fixed setting (10°) and one adjustable auxiliary switch (0...90°).

## Accessories

	Description	Type
<b>Electrical accessories</b>	Connection cable 5 m A: RJ11 6/4, B: 6-pin New Generation to ZTH EU	ZK1-GEN
<b>Mechanical accessories</b>	Position indicator and tappet shaft, F07 square, SW 17	ZPR01
	Tappet shaft, F07 square, SW 17	ZPR02
	Position indicator and tappet shaft, F05, square, SW 14	ZPR03
	Retrofit adapter kit, F05/F07, flat head/square, SW 17	ZPR05
	Retrofit adapter kit, F07, square 45° turned, SW 14	ZPR06
	Retrofit adapter kit with ring, F07, square 45° turned, SW 17	ZPR08
	Retrofit adapter kit with ring, F07, flat head/square, SW 14	ZPR09
	Retrofit adapter kit, F05/F07, flat head/square, SW 14	ZPR10
	Retrofit adapter kit, F05/F07, square 45° turned, SW 18	ZPR11
	Retrofit adapter kit, F05/F07, flat head/square, SW 16	ZPR12
	Hand crank for PR/PM actuator	ZPR20

Accessories

Service Tools	Description	Type
	Belimo Assistant App, Smartphone app for easy commissioning, parameterising and maintenance	Belimo Assistant App
	Service tool for parametrisable and communicative Belimo actuators / VAV controller and HVAC performance devices	ZTH EU

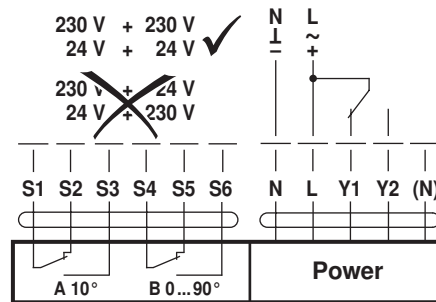
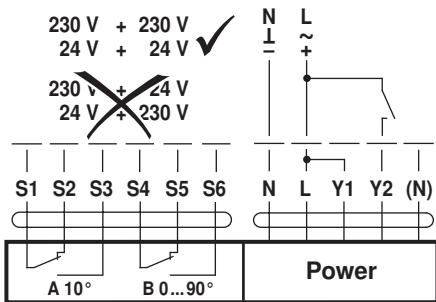
Electrical installation

**Notes**

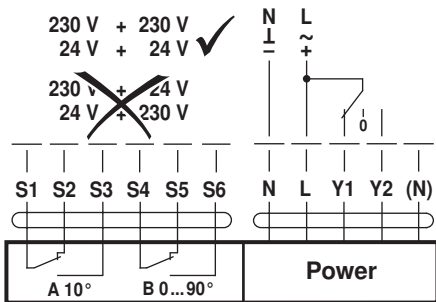
- Caution: Power supply voltage!
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

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



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



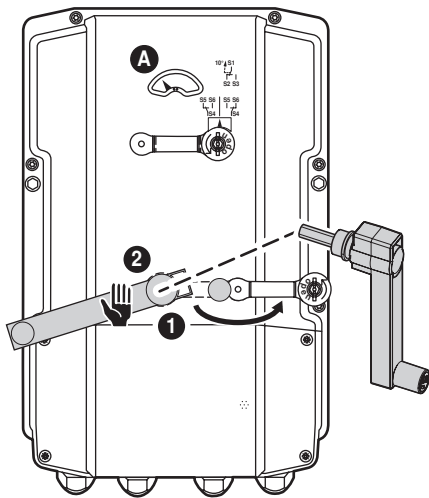
Operating controls and indicators

Hilfsschaltereinstellungen



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

For the auxiliary switch position settings, carry out points ❶ to ❹ successively.

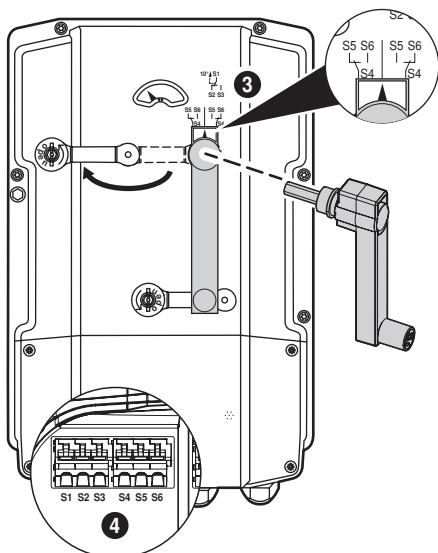


❶ Gear disengagement

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

❷ Manual override control

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



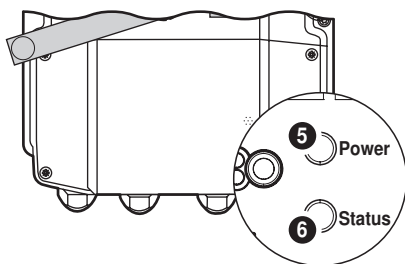
❸ Auxiliary switch

For the auxiliary switch position settings, carry out points ❶ to ❹ successively.  
Opening the auxiliary switch adjustment cover and adjusting the hand crank.  
Turn the crank until the arrow points to the vertical line

❹ 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°.

Drucktasten und Anzeige



❺ Push-button and LED display green

Off: No power supply or malfunction  
On: In operation  
Press button: Triggers test run, followed by standard mode

❻ Push-button and LED display yellow

Off: Standard mode  
On: Test run active

**Service**

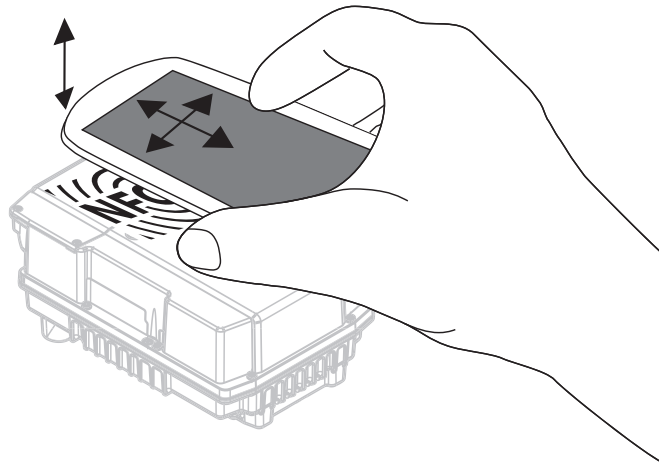
**NFC connection** Belimo equipment marked with the NFC logo can be operated with the “Belimo Assistant App”.

Requirement:

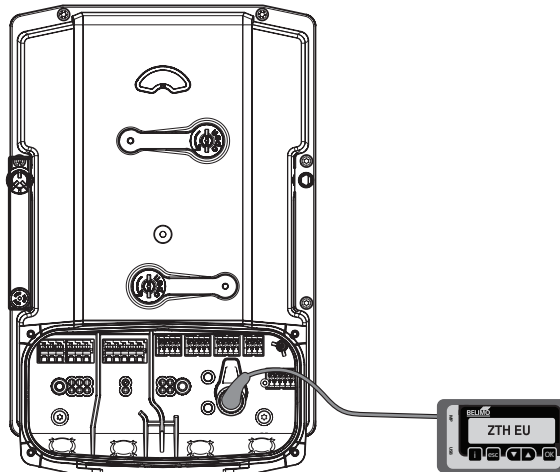
- NFC- or Bluetooth-capable smartphone
- Belimo Assistant App (Google Play & Apple AppStore)

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

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

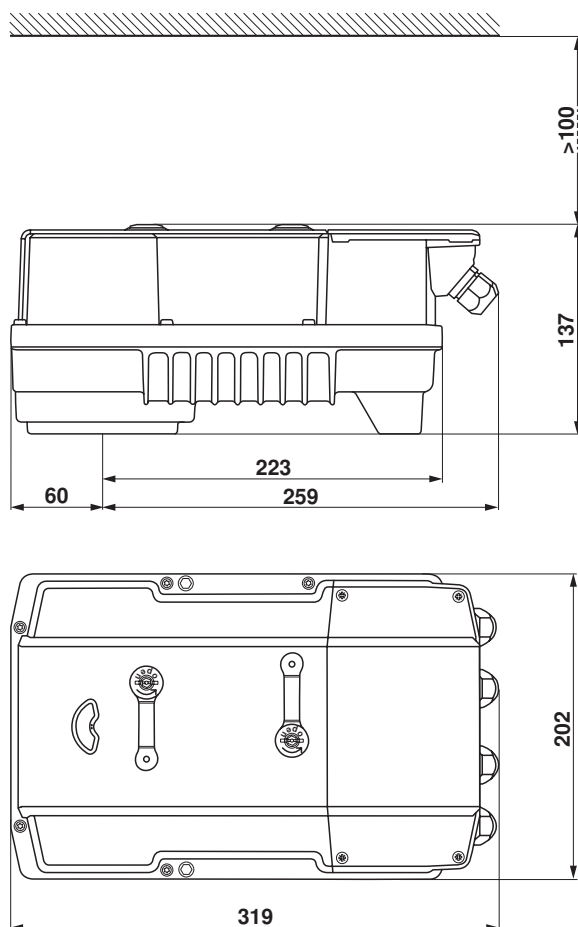


**Service Tools connection** The actuator can be parameterised by the ZTH EU via the service socket.



## 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