

**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**

<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°
	Motor running time 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 + 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	
<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.

## 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

<b>Fields of application</b>	The actuator is particularly suitable for utilisation in outdoor applications and is protected against the following weather conditions: <ul style="list-style-type: none"> <li>- UV radiation</li> <li>- dirt / dust</li> <li>- rain / snow</li> <li>- Humidity</li> </ul>
<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+B: RJ12 6/6, To ZTH/ZIP-USB-MP	ZK1-GEN
<b>Mechanical accessories</b>	<b>Description</b> 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	<b>Type</b> ZPR01 ZPR02 ZPR03 ZPR05 ZPR06 ZPR08 ZPR09 ZPR10 ZPR11 ZPR12 ZPR20
<b>Service Tools</b>	<b>Description</b> Smartphone app for easy commissioning, parameterising and maintenance Service tool for parametrisable and communicative Belimo actuators / VAV controller and HVAC performance devices	<b>Type</b> Belimo Assistant App ZTH EU

## Electrical installation

Electrical installation

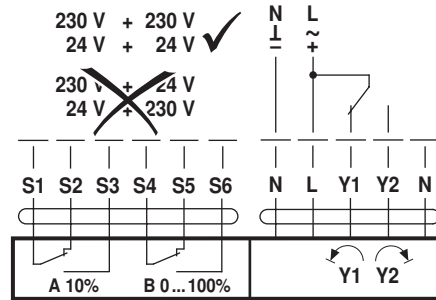
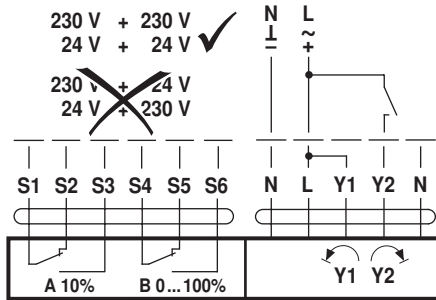


Notes

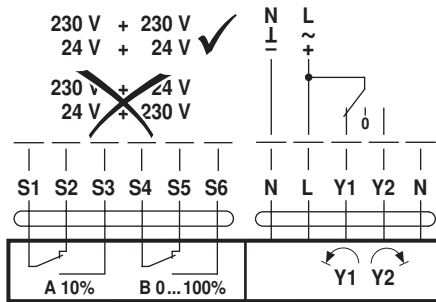
- Caution: Power supply voltage!
- Parallel connection of other actuators possible. Observe the performance data.
- The main power supply for the actuator and for the auxiliary switches shall be from the same phase.

Wiring diagrams

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

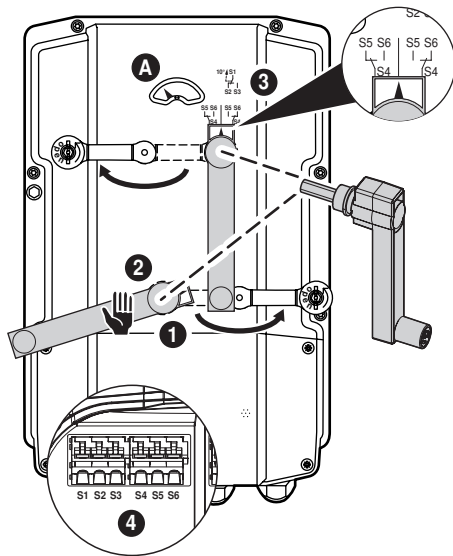


AC 24...240 V / DC 24...125 V, 3-point, Auxiliary switches



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.

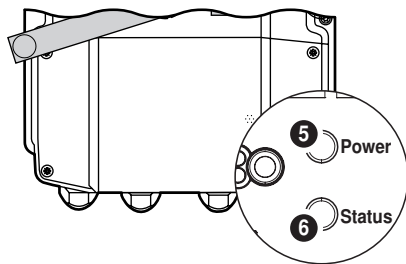
**3 Auxiliary Switch**

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

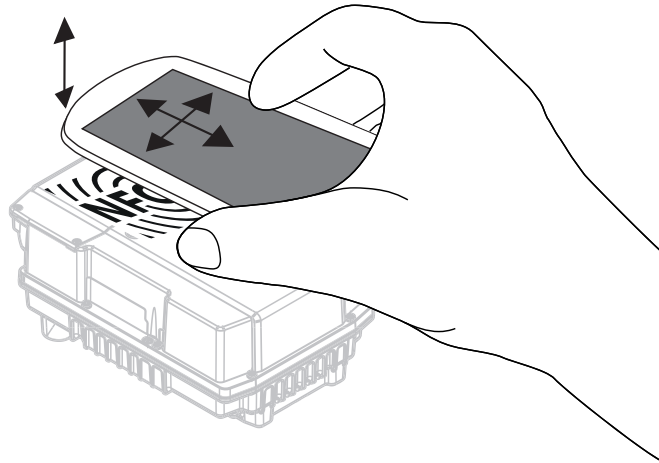
**Service**

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

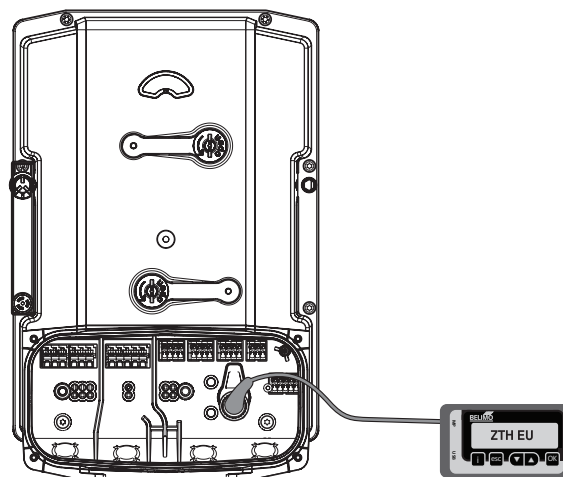
Requirement:

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

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

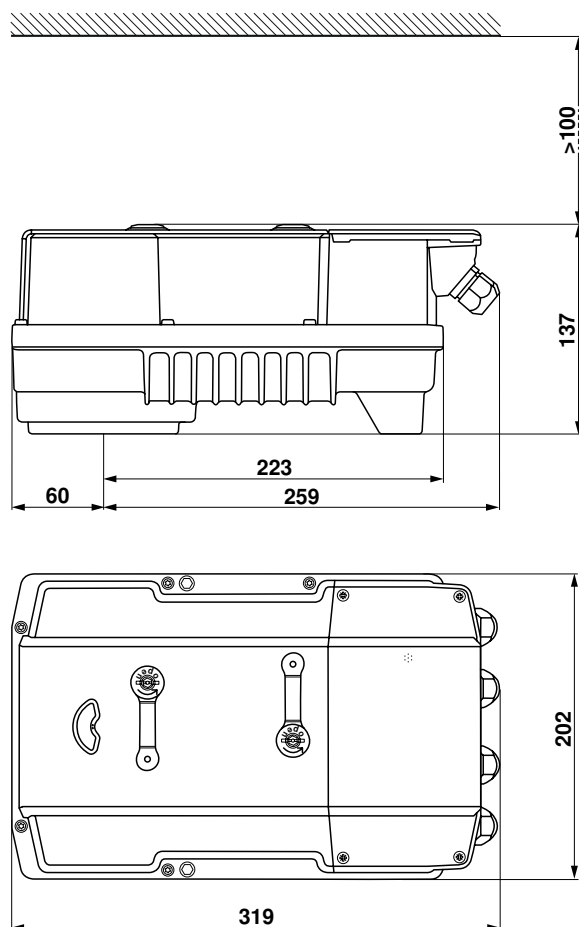


**Service Tools connection** The actuator can be parameterised by the ZTH EU via the service socket.



## 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