BELIMO

Rotary actuator for zone valves
- Nominal voltage AC 230 V
- Control Open/close
- Snap-assembly of the actuator
- Flow setting variable
- Deenergised closed (NC)

Technical data

Electrical data	Nominal voltage	AC 230 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 207...253 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	0.5 W
	Power consumption for wire sizing	7 VA
	Connection supply / control	Cable 1 m, 2 x 0.34 mm²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	1 Nm
	Direction of motion fail-safe	fix deenergised closed (end stop NC = 0%)
	Manual override	with actuator (clicked out)
	Running time motor	75 s / 90°
	Running time fail-safe	60 s / 90°
	Sound power level, motor	35 dB(A)
	Sound power level, fail-safe	35 dB(A)
	Position indication	Mechanical
	Flow setting	see product features
Safety	Protection class IEC/EN	II reinforced insulation
	Degree of protection IEC/EN	IP40
	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
	Mode of operation	Type 1
	Rated impulse voltage supply / control	2.5 kV
	Control pollution degree	2
	Ambient temperature	5...40°C
	Storage temperature	-40...80°C
	Ambient humidity	Max. 95% r.H., non-condensing
	Servicing	maintenance-free
Weight	Weight	0.20 kg
Terms	Abbreviations	POP = Power off position / fail-safe position
		PF = Power fail delay time / bridging time

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.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insolation or aggressive gases interfere directly with the actuator and that is ensured that the ambient conditions remain at any time within the thresholds according to the data sheet.
- Caution: Power supply voltage!
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- 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.
- Cables must not be removed from the device.
- 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

Mode of operation

The actuator moves the valve to the desired operating position at the same time as the integrated capacitors are loaded.
Interrupting the supply voltage causes the valve to be moved to the fail-safe position by means of stored electrical energy, taking into account the bridging time (PF) of 1 s which was set ex-works.

Pre-charging time (start up)

The capacitor actuators require a pre-charging time. This time is used for charging the capacitors up to a usable voltage level. This ensures that, in the event of a power failure, the actuator can move at any time from its current position into the fail-safe position. The duration of the pre-charging time depends mainly on how long the power was interrupted.

Typical pre-charging time

	[d]				
	0	**3**	**6**	**9**	**12**
[s]	6	8	10	12	14
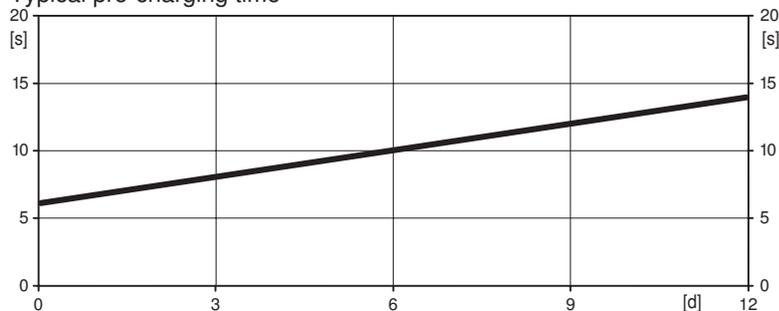
[d] = Electricity interruption in days
[s] = Pre-charging time in seconds

Delivery condition (capacitors)

The actuator is completely discharged after delivery from the factory, which is why the actuator requires approximately 25 s pre-charging time before initial commissioning in order to bring the capacitors up to the required voltage level.

Simple direct mounting

Tool-free snap assembly.
The actuator can be plugged on the valve by hand (Caution! Just vertical movements). Pins must match the holes on the flange.
The mounting orientation in relation to the valve can be selected in 180° increments. (Possible two times)

Manual override

Click out the actuator and rotate the valve stem with the help of the actuator.

Adjustable angle of rotation

The angle of rotation of the actuator can be changed by clip in 2.5° increments. This is used to set the maximum flow rate of the valve.

High functional reliability

The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

Product features

Flow setting
Adjustable kv-values (C2..Q-.., C4..Q-..) / V'max-values (C2..QP(T)-..) are given in the respective zone valve data sheets.

2-way valve: Remove end stop clip and place at desired position.
3-way valve: Remove end stop clip (change-over application).

Pos	1	2	3	4	5	6	N
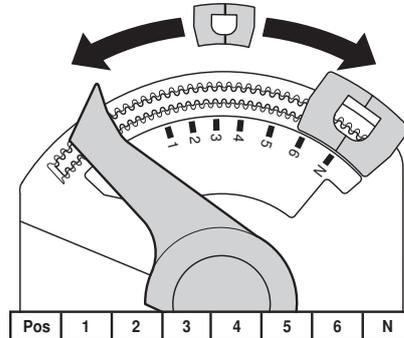
Accessories

	Description	Type
Mechanical accessories	Spindle extension CQ for cooling applications only	ZCQ-E

Electrical installation

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

Wiring diagrams

AC 230 V, open/close
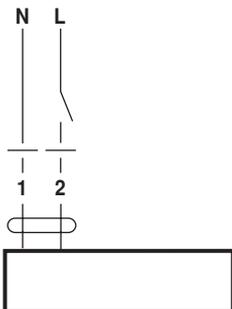
Cable colours:
1 = blue
2 = brown

Installation notes

Servicing
Ball valves and rotary actuators are maintenance-free.
Before any service work on the final controlling device is carried out, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable if necessary). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow all components to cool down first if necessary and always reduce the system pressure to ambient pressure level).
The system must not be returned to service until the ball valve and the rotary actuator have been correctly reassembled in accordance with the instructions and the pipeline has been refilled by professionally trained personnel.

Dimensions [mm]

Dimensional drawings
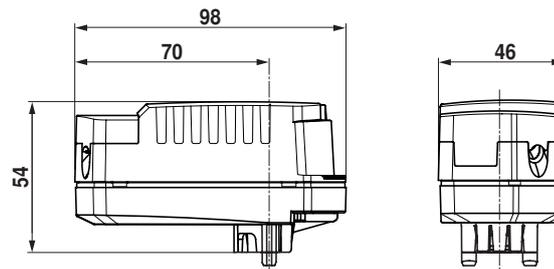
Further documentation

- The complete product range for water applications
- Data sheet for zone valves
- Installation instruction for zone valves and actuators
- General notes for project planning