BELIMO

Technical data sheet CQK24A-SR

SuperCap rotary actuator for zone valves

- **Nominal voltage AC/DC 24 V**
- **Control Modulating**
- **Snap-assembly of the actuator**
- **Flow setting variable**
- **Design life SuperCaps: 10 years**
- **Deenergised closed (NC)**

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	0.5 W
	Power consumption for wire sizing	5 VA
	Connection supply / control	Cable 1 m, 3 x 0.34 mm²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	Min. 1 Nm
	Positioning signal Y	DC 0...10 V
	Positioning signal Y note	Input impedance 100 kΩ
	Operating range Y	DC 2...10 V
	Direction of rotation fail safe	fix deenergised closed (end stop NC = 0%)
	Manual override	with actuator (clicked out) adjustable
	Running time motor	75 s / 90°
	Running time emergency control position	60 s / 90°
	Sound power level motor	35 dB(A)
	Sound power level emergency control position	35 dB(A)
	Position indication	Mechanical
	Flow setting	see product features
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP40
	EMC	CE according to 2004/108/EC
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1.AA
	Rated impulse voltage supply / control	0.8 kV
	Control pollution degree	2
	Ambient temperature	5...40°C
	Non-operating temperature	-7...50°C
	Medium temperature	2...90°C (with valve)
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight approx.	0.2 kg
Terms	Abbreviations	POP = Power off position / emergency setting 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 is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- 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.

Safety notes

- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

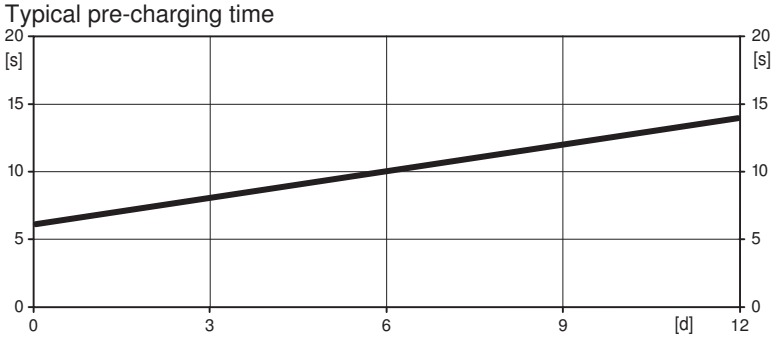
Principle of operation

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 emergency setting position (POP) 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 an electricity interruption, the actuator can move at any time from its current position into the emergency setting position (POP). 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 to the valve with hand pressure (Caution! vertical movement only). Pins must match the holes on the flange.
The mounting orientation in relation to the valve can be selected in 180° increments. (possible 2 x)

Manual override

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

High functional reliability

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

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.

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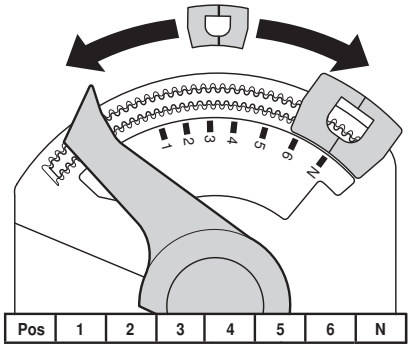
Product features

kv setting

Adjustable kv-values (C2..Q- ..) / V̇max-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).



Accessories

	Description	Type
Mechanical accessories	Spindle extension CQ	ZCQ-E

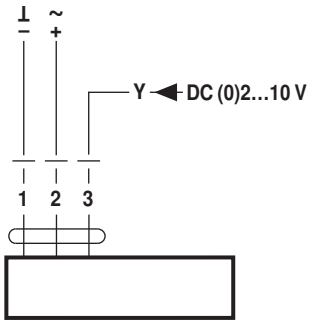
Electrical installation

Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

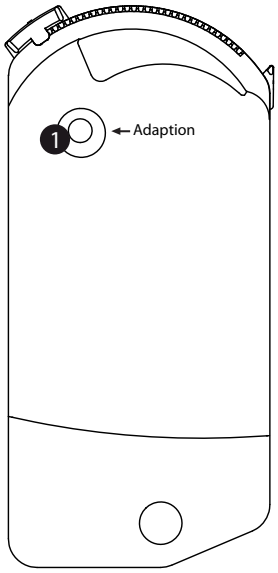
Wiring diagrams

AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white

Operating controls and indicators



1 Push-button
Press button: Triggers angle of rotation adaptation, followed by standard mode

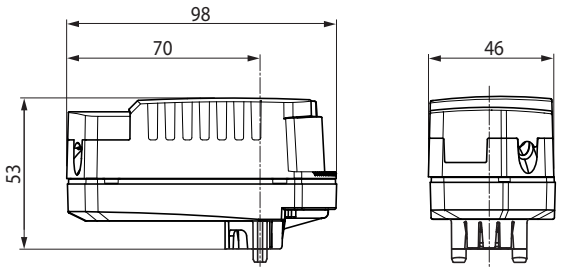
Installation notes

Maintenance

Ball valves and rotary actuators are maintenance-free.
Before any kind of service work is carried out on the actuator, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow everything to cool down first if necessary and 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 properly reassembled in accordance with the instructions and the pipeline has been refilled in the proper manner.

Dimensions [mm]

Dimensional drawings



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