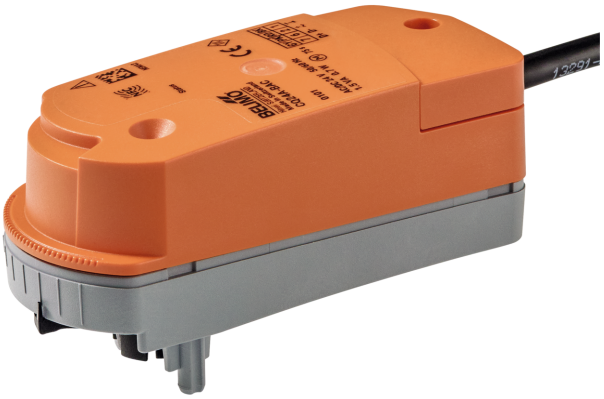
Communicative rotary actuator for zone valves

- Torque motor 1 Nm
- Nominal voltage AC/DC 24 V
- Control communicative
- Snap-assembly of the actuator
- Flow setting variable
- Communication via BACnet MS/TP or Modbus RTU



Picture may differ from product

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	0.7 W
	Power consumption in rest position	0.6 W
	Power consumption for wire sizing	1.5 VA
	Connection supply / control	Cable 1 m, 4x 0.34 mm^2
Data bus communication	Communicative control	BACnet MS/TP (factory setting) Modbus RTU
	Number of nodes	BACnet / Modbus see interface description
Functional data	Torque motor	1 Nm
	Manual override	with actuator (clicked out)
	Running time motor	75 s / 90°
	Sound power level, motor	35 dB(A)
	Position indication	Yes
	Flow setting	see product features
Safety data	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Degree of protection IEC/EN	IP40
	EMC	CE according to 2014/30/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Type of action	Type 1
	Rated impulse voltage supply / control	0.8 kV
	Pollution degree	2
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	5...40°C [41...104°F]
	Storage temperature	-40...80°C [-40...176°F]
	Servicing	maintenance-free
Weight	Weight	0.19 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.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insolation or aggressive gases interfere directly with the device and that it is ensured that the ambient conditions remain within the thresholds according to the data sheet at any time.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with 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

Operating mode

The actuator is fitted with an integrated interface for BACnet MS/TP and Modbus RTU, it receives the digital control signal from the control system and returns the current status.

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 spindle with the help of the actuator.

High functional reliability

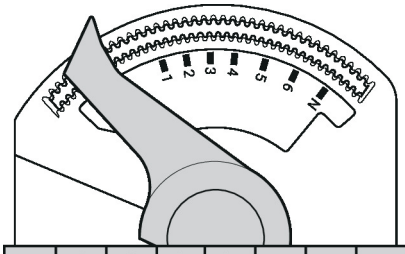
The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

Flow setting

The CQ24A-BAC actuator is delivered without an end stop clip. In order to set the Kv value (QCV) or the V'max value (PIQCV), the angle-of-rotation limitation can be set on this actuator easily and quickly using the Assistant App or bus communication.

The table below shows the corresponding values in percent and degrees for the clip positions listed in the zone valve data sheets.

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



Pos	1	2	3	3+	4-	4	4+	5-	5	5+	6-	6	6+	N-	N	max.
Bus	41%	49%	56%	60%	63%	66%	68%	71%	74%	77%	79%	82%	85%	88%	91%	100%
∢	37°	44°	51°	54°	57°	59°	61°	64°	67°	69°	71°	74°	77°	79°	82°	90°

Accessories

Tools

Description	Type
Service tool for wired and wireless setup, on-site operation and troubleshooting.	Belimo Assistant 2
Belimo Assistant Link Bluetooth and USB to NFC and MP-Bus converter for configurable and communicative devices	LINK.10

Accessories

Mechanical accessories	Description	Type
	Spindle extension CQ	ZCQ-E
	Housing cover CQ, Colour: white (RAL 9010)	ZCQ-W

Electrical installation

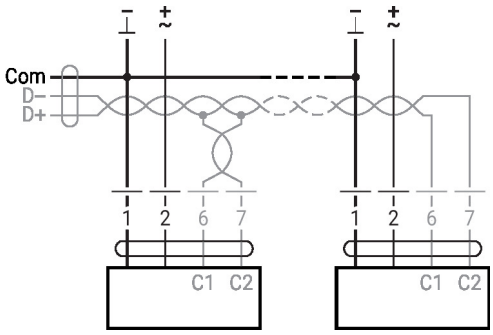
The wiring of the line for BACnet MS/TP / Modbus RTU is to be carried out in accordance with applicable RS-485 regulations.

Modbus / BACnet: Supply and communication are not galvanically isolated. COM and ground of the devices must be connected to each other.

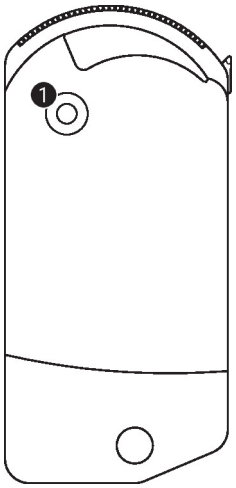
Wire colours:
1 = black
2 = red
6 = pink
7 = grey

Functions:
C1 = D- (wire 6)
C2 = D+ (wire 7)

BACnet MS/TP / Modbus RTU



Operating controls and indicators



1 LED display yellow

Off:	No power supply or malfunction
On:	In operation
Flickering:	BACnet / Modbus communication active

Service

Wired connection

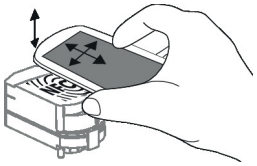
Belimo devices marked with the NFC logo can be operated with Belimo Assistant 2.

Requirement:

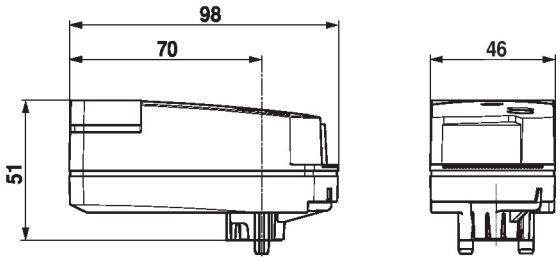
- NFC- or Bluetooth-capable smartphone
- Belimo Assistant 2 (Google Play and Apple AppStore)

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 operating instructions are shown in the ZIP-BT-NFC data sheet.



Dimensions



Further documentation

- BACnet Interface description
- Modbus Interface description
- The complete product range for water applications
- Data sheets for zone valves
- Installation instructions for zone valves and actuators
- General notes for project planning
- Notes for project planning for QCV valves
- Notes for project planning for 6-way PI zone valve
- Notes for project planning for pressure-independent zone valve PIQCV
- Notes for project planning for 6-way characterised control valves
- Quick Guide – Belimo Assistant 2