

Communicative rotary actuator for zone valves

- Nominal voltage AC/DC 24 V
- Communication via BELIMO MP-Bus
- Snap-assembly
- kv setting


Technical data

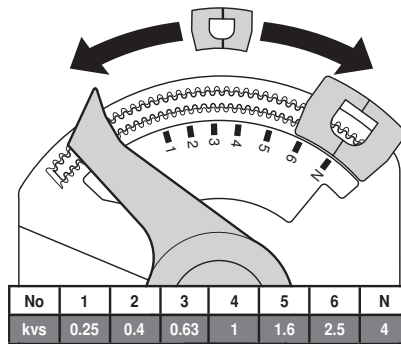
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|------------------------|-----------------------------------|---|
| Electrical data | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Nominal voltage range | AC 19.2...28.8 V / DC 21.6...28.8 V |
| | Power consumption in operation | 0.6 W |
| | Power consumption at rest | 0.4 W |
| | Power consumption for wire sizing | 1.2 VA |
| | Connection supply / control | Cable 1 m, 3 x 0.75 mm ² |
| | Parallel operation | Yes (note the performance data) |
| Functional data | Torque Motor | 1 Nm |
| | Control positioning signal Y | via BELIMO MP-Bus |
| | Manual override | No |
| | Running time motor | 90 s / 90° (kvs = 4.5) |
| | Sound power level motor max. | 35 dB(A) |
| | Position indication | Yes |
| | kv (factory setting) | 4 m ³ /h |
| | kv setting | 0.25 / 0.4 / 0.63 / 1 / 1.6 / 2.5 / 4 (4.5 without end stop clip) |
| Safety | Protection class IEC/EN | III safety extra-low voltage |
| | Degree of protection IEC/EN | IP40 |
| | Electromagnetic compatibility | CE according to 2004/108/EC |
| | Certification IEC/EN | Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 |
| | Mode of operation | Type 1 |
| | Rated current voltage motor | 0.8 kV |
| | Control pollution degree | 3 |
| | Ambient temperature | 10...40 °C |
| | Non-operating temperature | -7...50 °C |
| | Ambient humidity | 95% r.h., non-condensing |
| Maintenance | Maintenance-free | |
| Weight | Weight approx. | 0.2 kg |

Safety notes


- This actuator 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.
- It may be installed only by suitably trained personnel. Any legal technical regulations or technical regulations issued by authorities must be observed during assembly.
- 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 cable must not be removed from the device.
- 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

- Mode of operation** The actuator receives its digital positioning signal from the higher level controller via the MP-Bus and moves to the position defined. Connection 5 serves as communication interface and does not supply an analogue measuring voltage.
Note: It is neither a conventional operation with standard signal nor a parameterization of signals (e.g. running time). With the parameterizing device a functional check can be carried out and the MP address assigned.
- 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 in intermediate positions and automatically stops when the end stop is reached (at rest).
- 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 kvs value (maximum flow rate of the valve).
- kv setting** Remove end stop clip and place at desired position (without end stop clip kvs = 4.5 m³/h).



Accessories

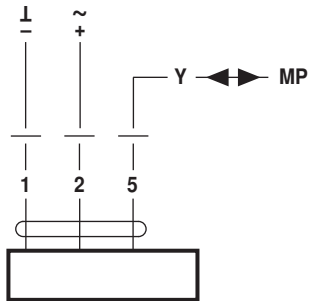
| | Description | Type |
|-------------------------------|--|--------|
| Mechanical accessories | Housing-cover white | ZCQ-W |
| Service Tools | Servicetool, for MF/MP/Modbus/LonWorks actuators and VAV-Control | ZTH EU |
| | Belimo PC-TOOL Software for adjustments and diagnostics | MFT-P |

Electrical installation

| | |
|--|--|
| | <p>Notes</p> <ul style="list-style-type: none"> • Connection via safety isolating transformer. • Parallel connection of other actuators possible. Observe the performance data. |
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Wiring diagrams

AC/DC 24 V, MPL

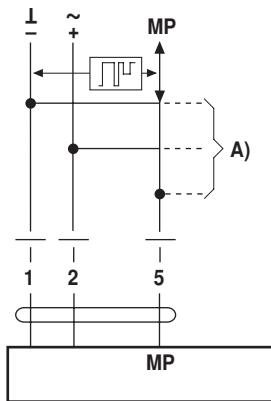


Cable colours:
1 = black
2 = red
5 = orange

Electrical installation

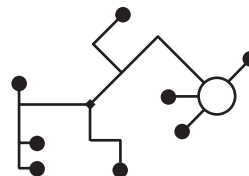
Functions when operated on MP-Bus

Connection on the MP-Bus



A) more actuators and sensors (max.8)

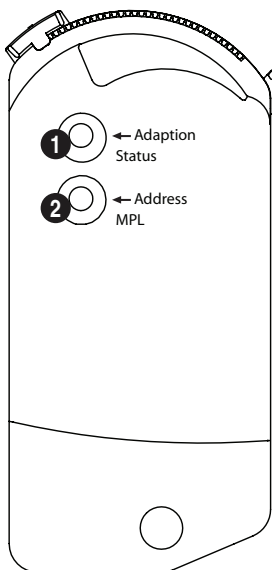
Network topology



There are no restrictions for the network topology (star, ring, tree or mixed forms are permitted). Supply and communication in one and the same 3-wire cable

- no shielding or twisting required
- no terminating resistor required

Operating controls and indicators



1 Push-button and LED display yellow

Illuminated: Angle of rotation adaption active
Press button: Triggers angle of rotation adaption, followed by standard mode

2 Push-button and LED display green

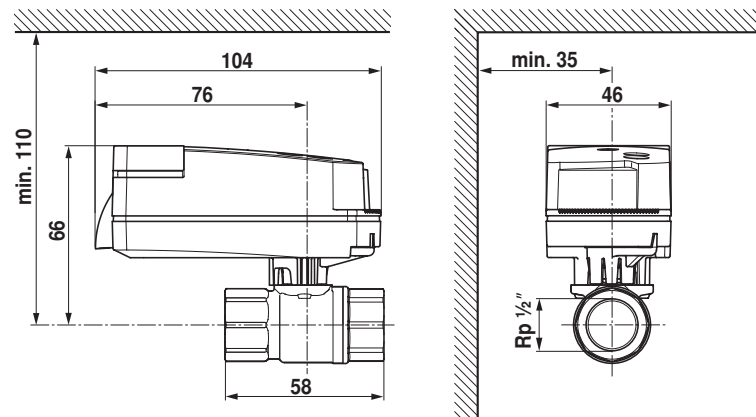
Off: No voltage supply or no MP-Bus level
Illuminated: Supply and MP-Bus level in order
Flickering: MP communication active
Blinking: Visualization MP address (command from the MP master)

- continuous: No MP address set
- with breaks: Pulses corresponding to MP address (eg 5 = MP5)

Press button: Confirmation of addressing

Installation instructions

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 characterised control 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****Further documentation**

- Overview Valve-actuator combinations
- Data sheet for zone valves C215Q
- Installation instruction for zone valves and actuators C215Q / CQ..
- General notes for project planning