Communicative rotary actuator for zone valves
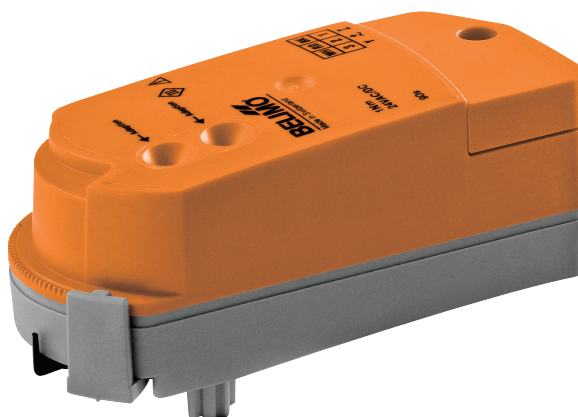• **Nominal voltage AC/DC 24 V**
• **Snap-assembly of the actuator**
• **Flow setting variable**
• **Communication via Belimo MP-Bus**

Technical data

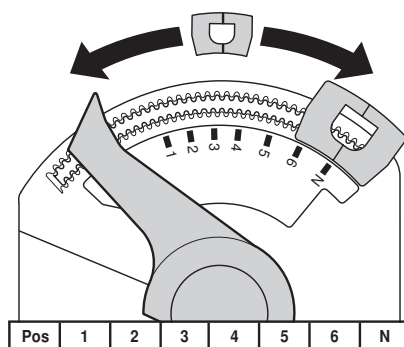|		
Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	0.6 W
	Power consumption in rest position	0.4 W
	Power consumption for wire sizing	1.1 VA
	Connection supply / control	Terminals 2.5 mm² (cable Ø 6.3...6.8 mm, 3-wire)
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	1 Nm
	Positioning signal Y	via BELIMO MP-Bus
	Manual override	With actuator (clicked out) adjustable
	Running time motor	75 s / 90°
	Sound power level motor	35 dB(A)
	Position indication	Yes
	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
	Rated impulse voltage supply / control	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	0.15 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.
• 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.
• 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.

Zone rotary actuator, communicative, AC/DC 24 V, 1 Nm, Communication via Belimo MP-Bus

BELIMO®

Product features

Mode of operation	The actuator receives its digital positioning signal from the higher level controller via the MP-Bus and drives to the position defined. Connection U serves as communication interface and does not supply an analogue measuring voltage. Note: Neither a conventional operation with a standard signal nor a parametrisation of signals (e.g. running time) is possible. With the parameterising devices a functional check can be executed and the MP adress can be assigned.
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.
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 maximum flow rate of the valve.
kv setting	Adjustable kv-values (C2..Q- ..) / $\dot{V}$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
Gateways	Gateway MP for BACnet MS/TP, AC/DC 24 V	UK24BAC
	Gateway MP to Modbus RTU, AC/DC 24 V	UK24MOD
	Gateway MP to LonWorks, AC/DC 24 V, LonMark certified	UK24LON

	Description	Type
Electrical accessories	Connection cable 5 m, A: RJ11 6/4, B: Free wire end, To ZTH/ZIP-USB-MP	ZK2-GEN
	MP-Bus power supply for MP actuators, AC 230/24V for local power supply	ZN230-24MP
	Connecting board MP bus suitable for wiring boxes EXT-WR-FP..-MP	ZFP2-MP

	Description	Type
Mechanical accessories	Spindle extension CQ, for cooling applications only	ZCQ-E
	Housing cover white	ZCQ-W

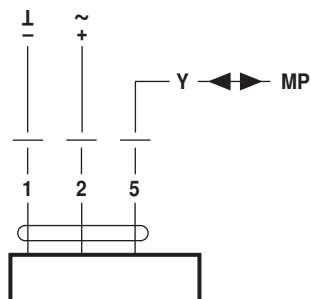|	Description	Type
Service Tools	Service Tool, for MF/MP/Modbus/LonWorks actuators and VAV-Controller	ZTH EU
	Belimo PC-Tool, software for adjustments and diagnostics	MFT-P
	Adapter to Service Tool ZTH	MFT-C

Electrical installation

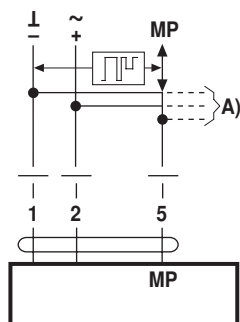| ⚠	Notes	• Connection via safety isolating transformer. • Parallel connection of other actuators possible. Observe the performance data.

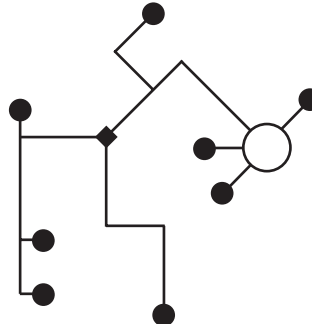**Wiring diagrams**

AC/DC 24 V, MPL

Functions

Functions when operated on MP-Bus

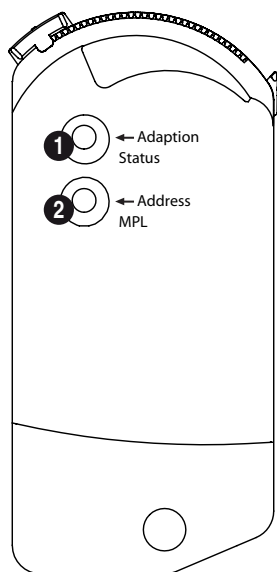Connection on the MP-Bus

A) more actuators (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 necessary
• no terminating resistors required

Operating controls and indicators
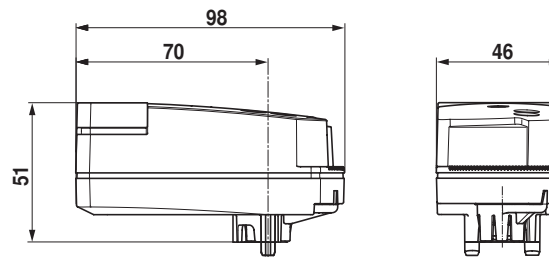

❶ Push-button and LED display yellow

| On: | Angle of rotation adaptation active |
| Press button: | Triggers angle of rotation adaptation, followed by standard mode |

❷ Push-button and LED display green

Off:	No power supply or no MP-Bus level
On:	Power supply and MP-Bus level OK
Flickering:	MP communication active
Flashing:	Depiction of MP address (Command from MP master)
– continuous:	No MP address set
– with breaks:	Pulse in accordance with MP address (e.g. 5 = MP5)
Press button:	Confirmation of addressing

Installation notes

Maintenance Ball valves and rotary actuators are maintenance-free.

In the event of any service work on the final controlling device, 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

Further documentation

- Overview MP Cooperation Partners
- Tool connections
- Overview Valve-actuator combinations
- Data sheet for zone valves
- Installation instruction for zone valves and actuators
- General notes for project planning