

Communicative damper actuator for adjusting dampers in technical building installations

- Air damper size up to approx. 0.4 m²
- Nominal torque 2 Nm
- Nominal voltage AC/DC 24 V
- Control communicative
- 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 19.2...28.8 V
	Power consumption in operation	1 W
	Power consumption in rest position	0.5 W
	Power consumption for wire sizing	1.5 VA
	Connection supply / control	Cable 1 m, 3 x 0.75 mm ²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	Min. 2 Nm
	Positioning signal Y	via BELIMO MP-Bus
	Direction of motion motor	ccw rotation
	Direction of motion note	0 %: left end stop, position 0
	Manual override	with magnet
	Angle of rotation	0...287.5°
	Running time motor	75 s / 90°
	Adaption setting range	manual with magnet (automatic on first power-up)
	Sound power level motor	35 dB(A)
	Spindle driver	Universal spindle clamp 6...12.7 mm
Position indication	Mechanically, pluggable (with integrated magnet for gear disengagement)	
Safety	Protection class IEC/EN	III Safety Extra-Low Voltage (SELV)
	Protection class UL	UL Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2, UL Enclosure Type 2
	EMC	CE according to 2014/30/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Certification UL	cULus according to UL 60730-1A, UL 60730-2-14 and CAN/CSA E60730-1:02
	Mode of operation	Type 1
	Rated impulse voltage supply / control	0.8 kV
	Control pollution degree	3
Ambient temperature	-30...50 °C	
Non-operating temperature	-40...80 °C	
Ambient humidity	95% r.h., non-condensing	
Maintenance	Maintenance-free	
Weight	Weight	0.29 kg

Safety notes


- The device must not be used outside the specified field of application, especially not 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.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

Safety notes

- 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 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 address can be assigned.
Simple direct mounting	The actuator is mounted directly on the damper spindle (∅ 6...12.7 mm) with an universal spindle clamp and then secured with the anti-rotation device supplied, to prevent it from rotating.
Manual override	Manual override with magnet possible (the gear is disengaged as long as the magnet adheres to the magnet symbol). The magnet for gear disengagement is integrated in the position indication. After a manual override, it is mandatory that an adaption via magnet be triggered at the position intended for this purpose.
Adjustable angle of rotation	Adjustable angle of rotation with mechanical end stops.
High functional reliability	The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.
Home position	The first time the supply voltage is switched on, i.e. at the time of commissioning, the actuator carries out an adaption, which is when the operating range and position feedback adjust themselves to the mechanical setting range. The actuator then moves into the position defined by the positioning signal.
Adaption and synchronisation	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;"> </div> An adaption can be triggered manually through activation of the magnet switch or with the PC-Tool. Both mechanical end stops are detected during the adaption (entire setting range). The actuator then moves into the position defined by the positioning signal.
Hidden synchronisation	If the actuator drives to the lower end stop during ongoing operation, then it performs a synchronization.

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
Electrical accessories	Description	Type
	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
Service Tools	Description	Type
	Service tool for parametrisable and communicative Belimo actuators / VAV controller and HVAC performance devices	ZTH EU
	Belimo PC-Tool, software for adjustments and diagnostics	MFT-P
	Adapter to Service Tool ZTH	MFT-C

Electrical installation

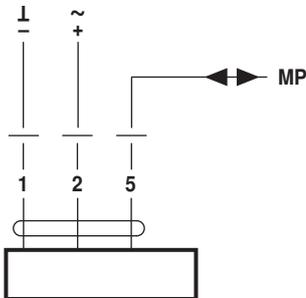


Notes

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

Wiring diagrams

AC/DC 24 V, MPL



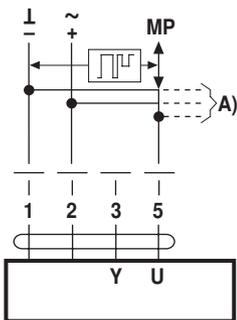
Cable colours:

- 1 = black
- 2 = red
- 5 = orange

Functions

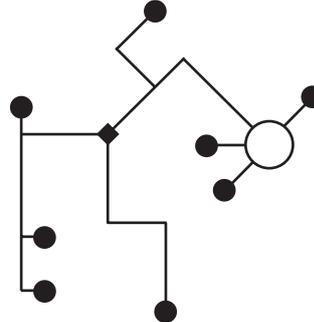
Functions when operated on MP-Bus

Connection on the MP-Bus



A) more actuators and sensors (max.8)

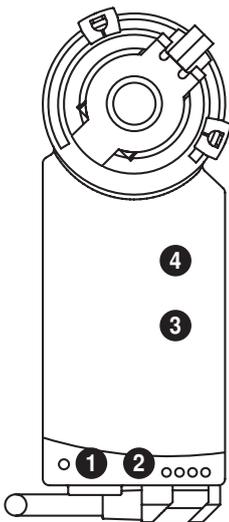
Network topology



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 necessary
- no terminating resistors required

Operating controls and indicators



1 LED display yellow

On: Angle of rotation adaptation active

2 LED display green

Off: No supply or no MP-Bus level
 On: Power supply and MP-Bus level OK, no MP communication
 Flickering: MP communication active
 Flashing: Depiction of MP address (Command from MP master)

3 Magnet switch

Magnetized: Triggering the angle of rotation adaptation

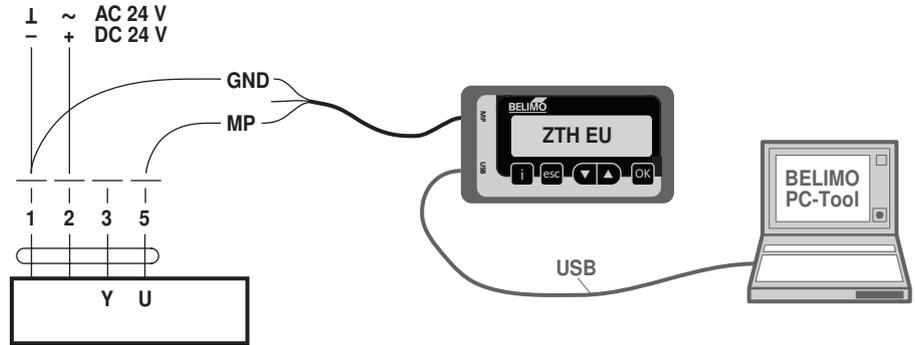
4 Magnet disengagement

Magnetized: Gear disengages, manual override possible

Service

Service Tools connection The actuator can be parameterised by ZTH EU via terminal connection. For extended parameterisation the PC tool can be connected.

Connection ZTH EU / PC-Tool



Dimensions [mm]

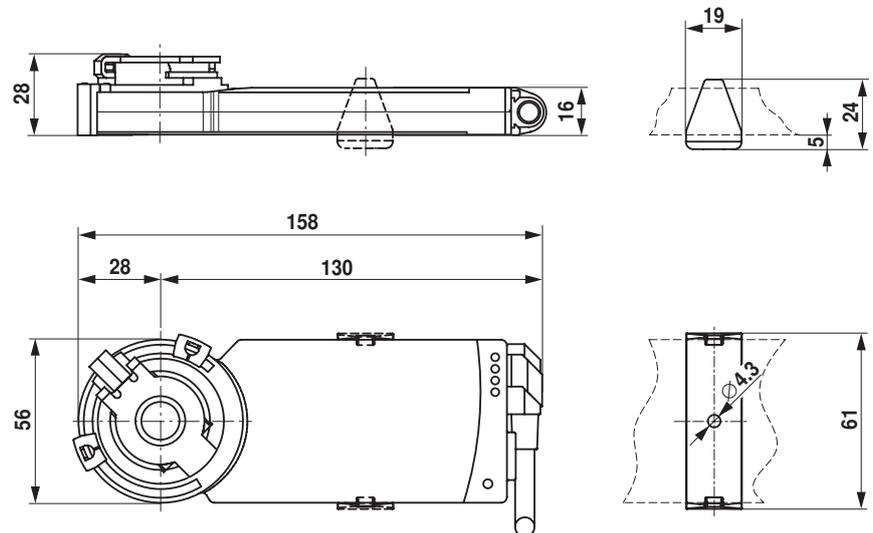
Spindle length

	Min. 32
	-

Clamping range

6...12.7	6 / 8 / 10	6...12.7

Dimensional drawings



Further documentation

- Overview MP Cooperation Partners
- Tool connections
- Introduction to MP-Bus Technology