

• VAV control unit CMV 2 Nm5" [DN 125]

- AC/DC 24 V, modulating
- Communication MP-Bus
- Running Time (Motor) 70 s
- Operating range 2...10 V Variable
- Feedback volume/position 2...10 V Variable
- IP00, Manual override disengage with magnet



5-year warranty



MP-BUS

Technical data

<b>Electrical data</b>	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	1.5 W
	Power consumption in rest position	1 W
	Power consumption for wire sizing	2.5 VA
	Connection supply / control	cable 3 ft. [1 m], 4 x 0.34 mm <sup>2</sup>
<b>Functional data</b>	Torque motor	18 in-lb [2 Nm]
	Pipe diameter	5" [DN 125]
	Communicative control	MP-Bus
	Operating range Y	2...10 V
	Input Impedance	100 kΩ
	Options positioning signal	modulating
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	Manual override	disengage with magnet
	Running Time (Motor)	70 s
	Noise level, motor	35 dB(A)
	Position indication	Mechanically, pluggable (with integrated magnet for gear disengagement)
Airtightness	Class 2 (DIN EN 1751)	
<b>Safety data</b>	Fire behaviour group	Damper blade RF3 (CH)
	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Degree of protection IEC/EN	IP00
	Degree of protection NEMA/UL	NEMA 1
	Enclosure	UL Enclosure Type 1
	EMC	CE according to 2014/30/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU Listed to UL 2043 - suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Quality Standard	ISO 9001
	Mode of operation	Type 1
	Rated impulse voltage supply / control	0.8 kV
	Pollution degree	2
	Ambient temperature	32...122°F [0...50°C]
	Storage temperature	-40...176°F [-40...80°C]

<b>Safety data</b>	Ambient humidity	Max. 95% RH, non-condensing
	Servicing	maintenance-free
<b>Materials</b>	Housing material	UL94-5VA

**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.
- Only authorized 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.
- The device does not contain any parts that can be replaced or repaired by the user.

**Product features**

<b>Mode of operation</b>	<p>Conventional operation:</p> <p>The actuator is connected with a standard modulating signal of 0...10 V and drives to the position defined by the positioning signal. The measuring voltage U serves for the electrical display of the actuator position 0.5...100% and as slave control signal for other actuators.</p> <p>Operation on Bus:</p> <p>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 analog measuring voltage.</p>
<b>Converter for sensors</b>	<p>Connection option for a sensor (active sensor or switching contact). The MP actuator serves as an analog/digital converter for the transmission of the sensor signal via MP-Bus to the higher level system.</p>
<b>Parametrisable actuators</b>	<p>The factory settings cover the most common applications. Single parameters can be modified with the Belimo Service Tools MFT-P or ZTH EU.</p>
<b>Application</b>	<p>Variable volumetric flow with a modulating reference variable, e.g. room temperature controller direct digital control or bus system, enables demand-related, energy-saving ventilation of individual rooms or zones. The input for the operating range <math>V_{min}</math> ... <math>V_{max}</math> can be adapted at the reference controller (mode switching).</p>
<b>Simple direct mounting</b>	<p>The actuator is mounted directly on the damper shaft (<math>\varnothing</math> 6...12.7 mm) with a universal shaft clamp and then secured with the anti-rotation clip, to prevent it from revolving.</p>
<b>Manual override</b>	<p>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.</p>
<b>Adjustable angle of rotation</b>	<p>Adjustable angle of rotation with mechanical end stops.</p>
<b>High functional reliability</b>	<p>The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.</p>

**Accessories**

Gateways	Description	Type
	Gateway MP to BACnet MS/TP	UK24BAC
	Gateway MP to Modbus RTU	UK24MOD

Service tools	Description	Type
	Belimo PC-Tool, Software for adjustments and diagnostics	MFT-P
	Connection cable 16 ft [5 m], A: RJ11 6/4 ZTH EU, B: free wire end for connection to MP/PP terminal	ZK2-GEN
	Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

**Electrical installation**

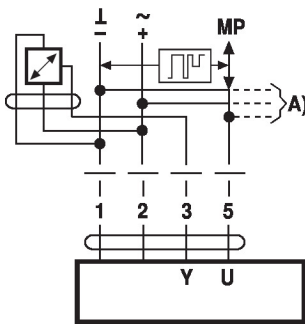


Supply from isolating transformer.

Parallel connection of other actuators possible. Observe the performance data.

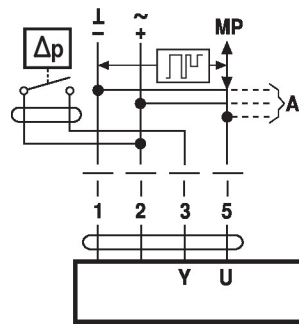
**Wiring diagrams**

Connection of active sensors



- A) additional MP-Bus nodes (max. 8)
- Supply AC/DC 24 V
  - Output signal DC 0...10 V (max. DC 0...32 V)
  - Resolution 30 mV

Connection of external switching contact

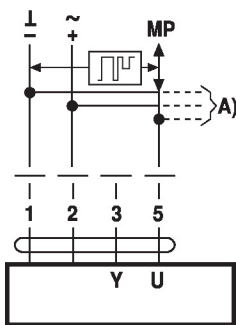


- A) additional MP-Bus nodes (max. 8)
- Switching current 16 mA @ 24 V
  - Start point of the operating range must be parametrised on the MP actuator as  $\geq 0.5$  V

**Functions**

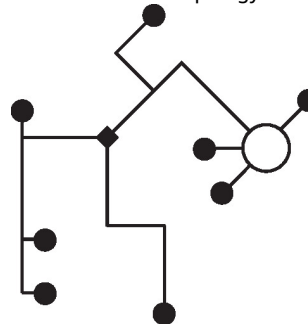
**Functions when operated on MP-Bus**

Connection on the MP-Bus



- A) additional MP-Bus nodes (max. 8)

MP-Bus 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

**Service**

**Service tools connection** The actuator can be configured by ZTH EU via terminal connection. For extended configuration the PC tool can be connected.

## Dimensions

