BELIMO

Technical data sheet **CMBV-150-MFT Technical Data**

MP BUS

VAV control unit complete with damper blade and air velocity sensor for pressure-independent VAV applications. Integrated thermo anemometer for duct temperature and air velocity measurements. For installation in round ducts.

- **VAV control unit CMV 6" [DN 150]**
- **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**
- **18 GA plenum cable, 3 ft [1 m]**

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	1.5 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 mm²
Functional Data	Pipe diameter	6" [DN 150]
	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
	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)
Safety	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
	Mode of operation	Type 1
	Rated impulse voltage supply	0.8 kV
	Rated impulse voltage supply / control	0.8 kV
	Control pollution degree	2
	Ambient temperature	32...122°F [0...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Ambient humidity	max. 95% r.H., non-condensing
	Servicing	maintenance-free
Weight	Weight	0.97 lb [0.44 kg]
Materials	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 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.
- Cables must not be removed from the device.
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Product features

Mode of operation
Conventional operation:
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.
Operation on Bus:
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.

Converter for sensors
Connection option for a sensor (active sensor or switching contact). The MP actuator serves as an analogue/digital converter for the transmission of the sensor signal via MP-Bus to the higher level system.

Application
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 V min … V max can be adapted at the
reference controller (mode switching).

Simple direct mounting
The actuator is mounted directly on the damper shaft (∅ 6...12.7 mm) with a universal shaft clamp and then secured with the anti-rotation clip, to prevent it from rotating.
The anti-rotation clip Z-ARCM is included in the scope of delivery.

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.

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

Accessories

Gateways

Description	Type
Gateway MP to BACnet MS/TP	UK24BAC
Gateway MP to Modbus RTU	UK24MOD
Gateway MP to LonWorks	UK24LON
Gateway MP to KNX	UK24EIB

Electrical accessories

Description	Type
Connection cable 5 m, A: RJ11 6/4 ZTH EU, B: free wire end for connection to MP/PP terminal	ZK2-GEN

Service Tools

Description	Type
Belimo PC-Tool, Software for adjustments and diagnostics	MFT-P

Electrical installation

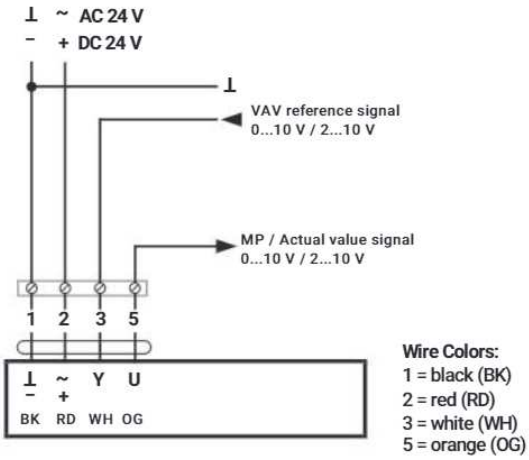
Electrical installation

Notes

- Connection via safety isolating transformer.
- Parallel power connection of additional actuators is possible. Observe the transformer size and performance data.

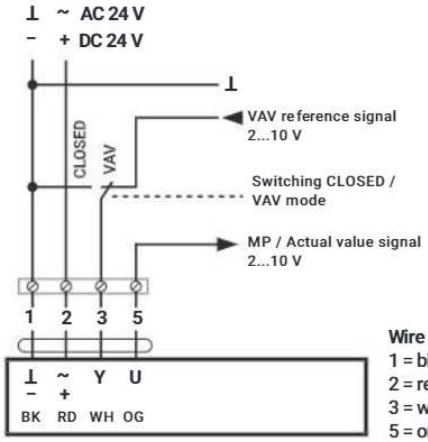
Wiring diagrams

CMBV-..-MFT



Wire Colors:
1 = black (BK)
2 = red (RD)
3 = white (WH)
5 = orange (OG)

CMBV-..-MFT



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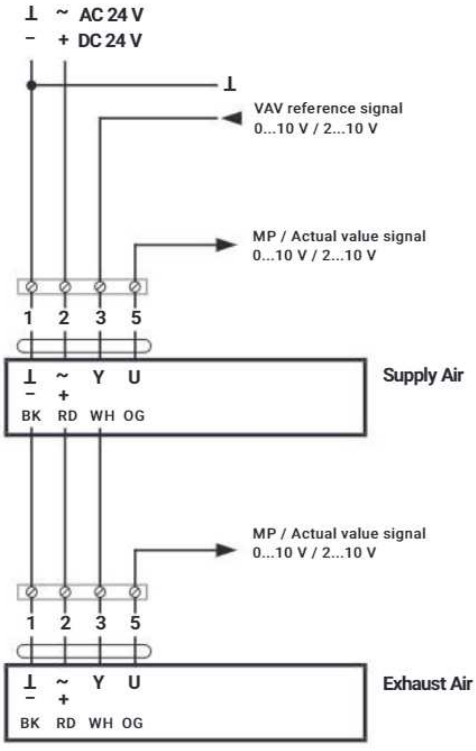
CMBV-..-MP



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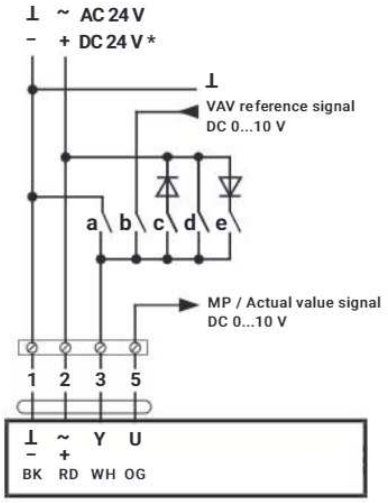
Electrical installation

CMBV-..-MFT



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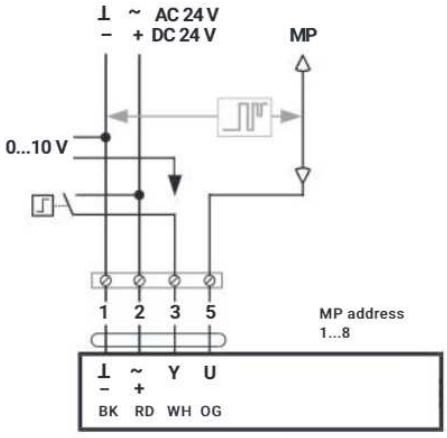

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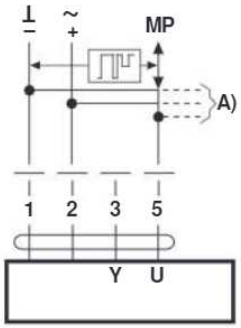
Functions

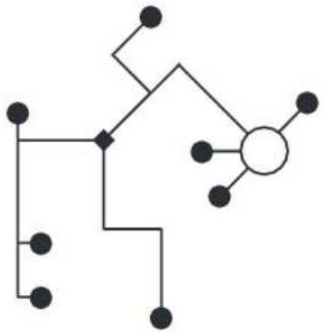
Functions when operated on MP-Bus

Connection on the MP-Bus



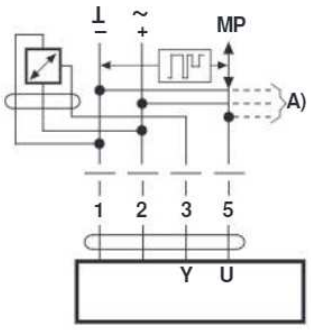
A) additional MP-Bus nodes (max. 8)

MP-Bus Network topology



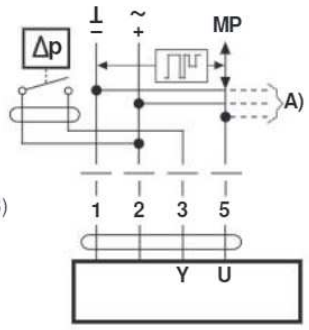
There are no restrictions for the network topology (star, ring, tree or mixed forms are permitted).
Supply and communication in one and the same 3-wire cable
- no shielding or twisting necessary
- no terminating resistors required

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 ≥ 0.5 V

Service

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

Operating Controls and Indicators

Dimensional drawings