

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 5" [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
- 18 GA plenum cable, 3 ft [1 m]


**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>	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
	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</b>	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
<b>Weight</b>	Weight	0.93 lb [0.42 kg]
<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 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.
- 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: 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: 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.</p>
<b>Converter for sensors</b>	<p>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.</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 V min ... V max 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 (∅ 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.</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>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**

	<b>Description</b>	<b>Type</b>
<b>Gateways</b>	Gateway MP to BACnet MS/TP	UK24BAC
	Gateway MP to Modbus RTU	UK24MOD
	Gateway MP to LonWorks	UK24LON
	Gateway MP to KNX	UK24EIB
<b>Electrical accessories</b>	<b>Description</b>	<b>Type</b>
	Connection cable 5 m, A: RJ11 6/4 ZTH EU, B: free wire end for connection to MP/PP terminal	ZK2-GEN
<b>Service Tools</b>	<b>Description</b>	<b>Type</b>
	Belimo PC-Tool, Software for adjustments and diagnostics	MFT-P

**Electrical installation**



**Notes**

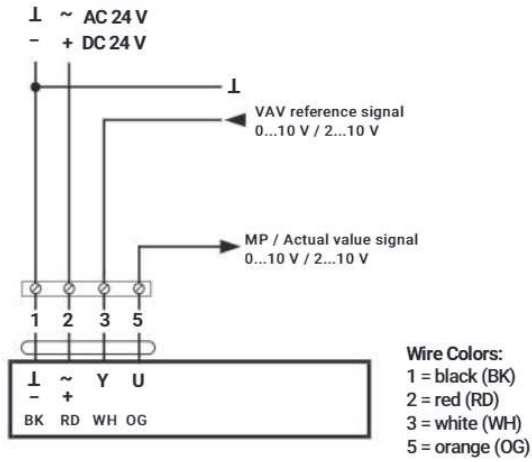
- Connection via safety isolating transformer.
- Parallel power connection of additional actuators is possible. Observe the transformer size and performance data.



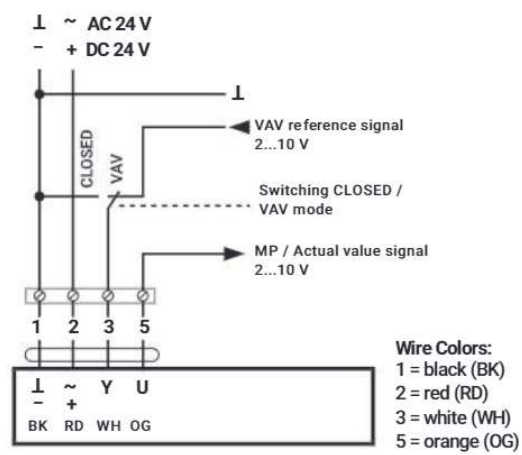
**Electrical installation**

**Wiring diagrams**

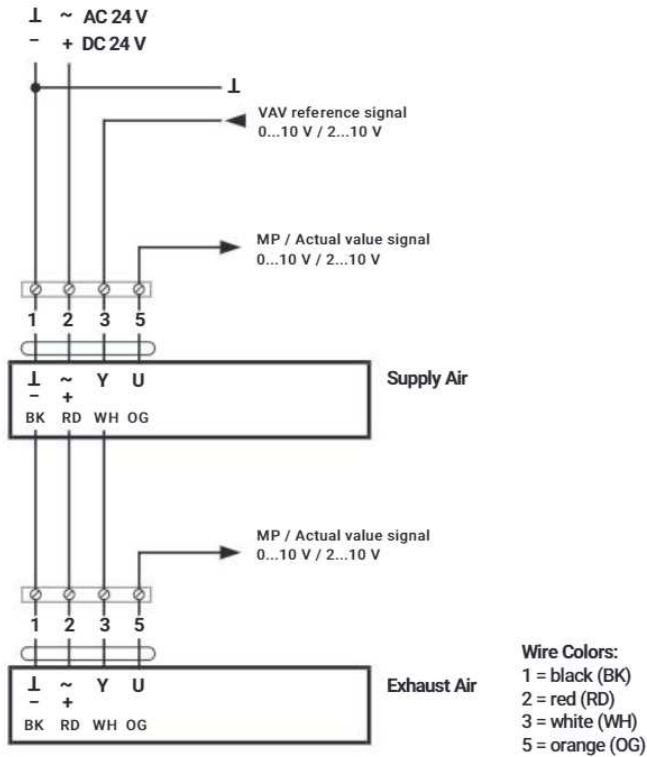
CMBV-...-MFT



CMBV-...-MFT



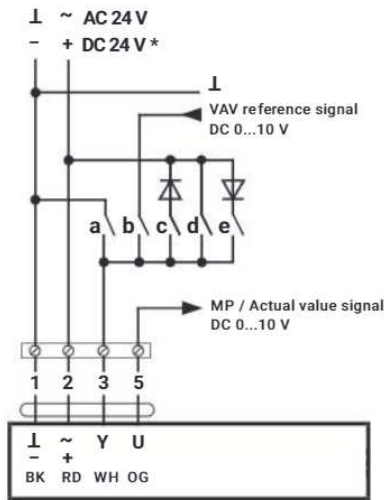
CMBV-...-MP





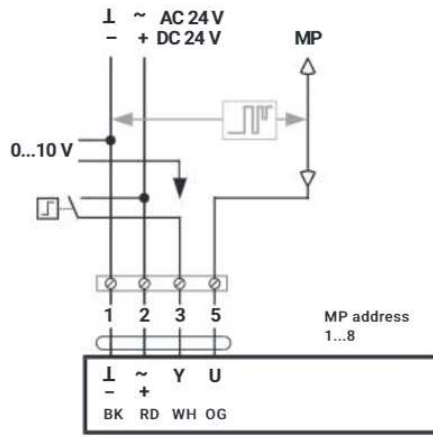
**Electrical installation**

CMBV...-MFT



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

CMBV...-MFT

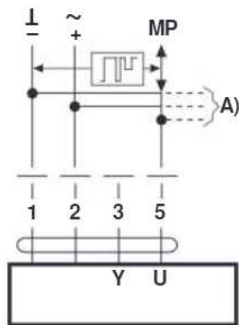


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**Functions**

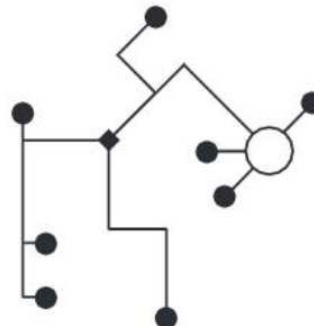
**Functions when operated on MP-Bus**

Connection on the MP-Bus



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

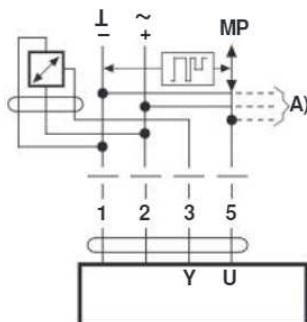
MP-Bus Network topology



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

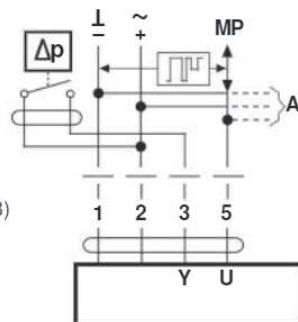
Connection of active sensors



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  $\geq 0.5$  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**