

**Adjustment tool with PP interface
for VAV controller**

- Nominal voltage AC/DC 24 V
- Peer-to-peer connection to VAV controller via
 - U/PP connection
 - Service socket
 - Connection terminals


Brief description

Applications	The ZEV adjustment tool enables the operating volumetric flow settings in VAV and CAV systems with conventional control to be adjusted on site. It is not suitable for systems with an MP bus connection.
Can be used with	<ul style="list-style-type: none"> – NMV-D2, VRD2, VRD2-L ¹⁾ – LMV-D2M, NMV-D2M ²⁾ – LMV-D2-MP, NMV-D2-MP, SMV-D2-MP ^{2) 3)} – LHV-D2M ^{2) 3)}
Connection	<p>The ZEV is connected to the VAV-Compact using the PP (peer-to-peer) interface of the VAV controller.</p> <p>As well as using the service socket on the VAV-Compact, it is also possible to connect the ZEV to easily accessible connection points such as the service plug on the CR24-B room temperature controller or on the terminals in the control cabinet. This means there is no need for direct access to the VAV controller.</p>
Supply	The 24 V supply to the ZEV comes via the service socket of the VAV, CR24 controller or from a local 24 V supply, e.g. connection terminals of the VAV controller.
VAV-Compact	The VAV-Compact devices do not have any operating elements such as switches or setpoint potentiometers. If necessary, the operating parameters are set using the ZEV or another adjustment tool, e.g. the PC-Tool with additional functions such as trend, etc.
VAV-Universal	In the VRD2(-L), it is possible to set the mode appropriately for the selected 0...10 V or 2...10 V room temperature controller.

¹⁾ Mode setting 0 ... 10 V / 2 ... 10 V

²⁾ See mode setting

³⁾ Devices manufactured before 8/2006 need a modified scale sticker

Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz, DC 24 V
	Power supply range	AC 19.2 ... 28.8 V, DC 21.6 ... 26.4 V
	Power consumption	1 W
	PP communication	DC 1.0/12.5 V max. DC 15 V bidirectional 1200 baud
	Connection	Screw terminals for 2 x 1.5 mm ²
	Connection cable	separate obtainable, see «Accessories» on page 4
Safety	Protection class	III Safety extra-low voltage
	Degree of protection	IP42
	EMC	CE according to 89/336/EEC
	Ambient temperature range	0 ... +50 °C
	Non-operating temperature range	-20 ... +80 °C
Dimensions / weight	Moisture test	According to EN 60730-1
	Dimensions	See «Dimensions» on page 3
	Weight	Approx. 500 g

Safety notes



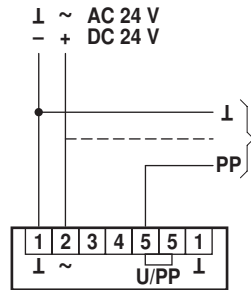
- The device is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only for Belimo VAV devices with 24 V safety extra-low voltage.

Electrical installation

Wiring diagrams

Note

Connection via safety transformer!



The ZEV is connected to connections 1 and 5 of the corresponding controller. The ZEV supply (AC/DC 24 V) comes directly from connection 2.

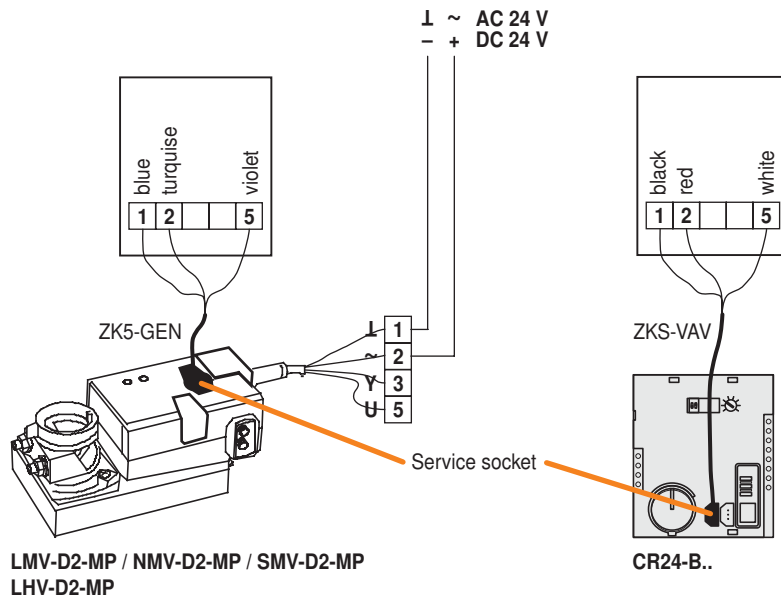
When the system is being wired up, it is advantageous for the actual value signal U5 (terminal 5) of the VAV controller to be fed back to the room temperature controller or into the control cabinet. Communication is via a peer-to-peer connection (PP).

Connection options

Connection via service socket (Cable see «Accessories» on page 4)

Note

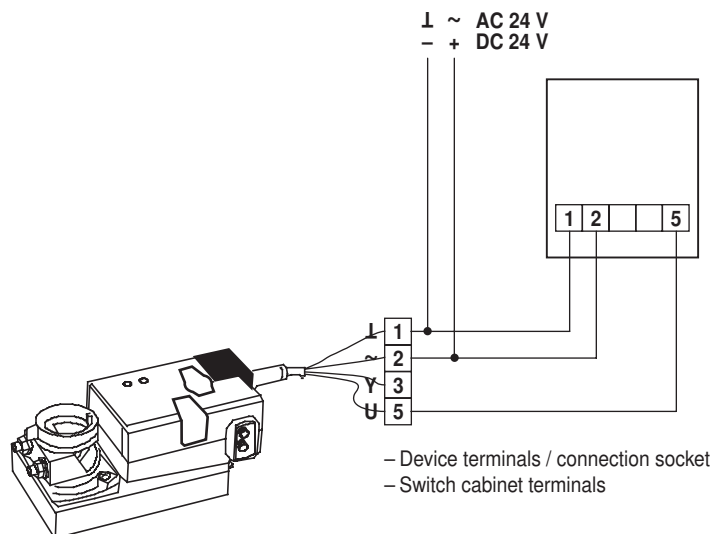
- When an operating device (e.g. ZEV) is connected via the U/PP connection (terminal 5) of the VAV controller, the voltage signal of output U5 does not correspond to the current actual value signal. When using the service socket of an LMV-D2-MP, NMV-D2-MP or SMV-D2-MP, the U5 signal is not impaired.
- The maximum communication level is DC 15 V. To prevent damage to third-party equipment, it may have to be disconnected from terminal 5 under certain circumstances – for the duration of communication.



LMV-D2-MP / NMV-D2-MP / SMV-D2-MP
LHV-D2-MP

CR24-B..

Connection via connection terminals

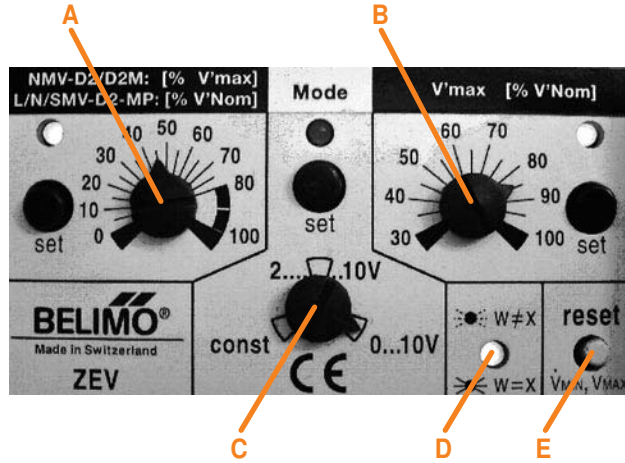


- Device terminals / connection socket
- Switch cabinet terminals

LMV-D2M / NMV-D2
LMV-D2-MP / NMV-D2-MP / SMV-D2-MP
LHV-D2-MP
VRD2 / VRD2-L

Operation

Structure

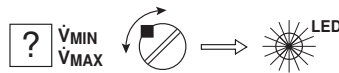


Note

ZEV devices manufactured before 8/2006 need a modified scale sticker. Please contact your Belimo branch.

- A Operating volumetric flow \dot{V}_{min}
- B Operating volumetric flow \dot{V}_{max}
- C Mode setting for reference and volumetric flow actual value signal
- D Functional check of control loop nominal/actual value comparison
- E Reset \dot{V}_{min} -/ \dot{V}_{max} setting to original OEM values

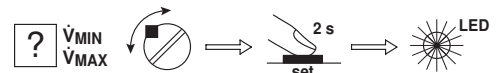
Operation Query



Turn the rotary button slowly until the check LED lights up.

- Flashing LED: Value in VAV controller is lower
- LED dark: Value in VAV controller is higher

Programming



Set the value at the corresponding rotary button: Press and hold the «Set» button for 2 seconds. The write procedure is acknowledge by the LED lighting up (see application table on page 4).

Functional check VAV control loop

- | | | | |
|--|-----|---------------------|--|
| | W≠X | Green LED lights up | → Actual value same as nominal value |
| | | Green LED flashes | → Actual value not same as nominal value |
| | W=X | - Dark | → Volumetric flow not reached |
| | | - Bright | → Volumetric flow too high |

Dimensions [mm]

Dimensional diagrams

