

## MZ3-FU-V01 3-Level Switch

### Function

- Electronic 3-level switch with touch panel
- Manual operation with up to 3 Levels: MIN, MID, MAX
- Automatic reset of the level MAX to specified level (per default no reset)
- One 0...10 VDC output to output defined voltage levels
- Password protected settings
- Copy of settings with accessory (AEC-PM2)

### Applications

Comfort ventilation, for example for very well insulated living rooms which must be ventilated according to regulations or for controlling dampers, valve drives, blinds or windows, etc.

### General description

The MZ3-FU-V01 is a microprocessor-controlled precision level switch with touch panel. Through parameters the level switch may be configured. Settings such as switching levels for each step may be adjusted. The level switch is configuration with a programming device called OPA-S. Configuration can as well be updated using a remote memory device called AEC-PM2.



### Safety



#### **DANGER! Safety note**

This device is intended to be used as 3-level switch. Where a device failure endangers human life and/or property, it is the responsibility of the client to add additional safety devices to prevent or detect a system failure caused by such a device failure.

The device contains electronic components and must not be disposed of with household waste.

### Types and ordering

Product name	Product No.	Description	Features
MZ3-FU-V01-B3-T3	on request	- Blue LED - White frame - Lettering: MIN, MID, MAX	Compact positioner/controller in a frame, with one 0-10 VDC output. Operation as 3-level switch with touch panel.
MZ3-FU-V01-G3-T3	on request	- Green LED - White frame - Lettering: MIN, MID, MAX	

#### **Accessories**

OPA-S	40-500006	Programming and display device	LCD display for surface mounting or handheld operation.
AEC-PM2	40-500130	Memory-Device. Used for copying settings	Stores settings of MZ3

### Interface to the ventilation system

The 3-level switch works with all systems that are designed for a 0...10 VDC or 2...10 VDC input signal.

## Technical Data

<b>Power supply</b>	Operating voltage	24 V AC/DC $\pm$ 10%, 50/60 Hz, Class 2 48 VA max.
	Power consumption	Max. 1 VA
	Electrical connection	Terminal connectors, wire 0,34-2,5 mm <sup>2</sup> (AWG 22...13)
<b>Signal output</b>	Analog output	DC 0...10 V
	Output signal	2 mA or 5 k $\Omega$
	Maximum load	
<b>Environment</b>	Operation	To IEC 721-3-3
	Climatic conditions	class 3K5
	Temperature	0...50 °C (32...122 °F)
	Humidity	< 95% RH non-condensing
	Transport & storage	To IEC 721-3-2 and IEC 721-3-1
	Climatic conditions	class 3K3 and class 1K3
<b>Standards</b>	Temperature	-25...70 °C (-13...158 °F)
	Humidity	< 95% RH non-condensing
	Mechanical conditions	class 2MT2
	Degree of protection	Wall mounted: IP40 acc. EN 60529 Not installed: IP00 acc. EN 60529
<b>General</b>	Safety class	III (IEC 60536)
	Housing material:	Flame retardant PC+ABS plastic (UL94 class V-0)
	Dimensions (H x W x D) including packaging	145 x 105 x 70 mm (5,7" x 4,1" x 2,8")
	Weight (incl. packaging)	155 g (5.5 oz)

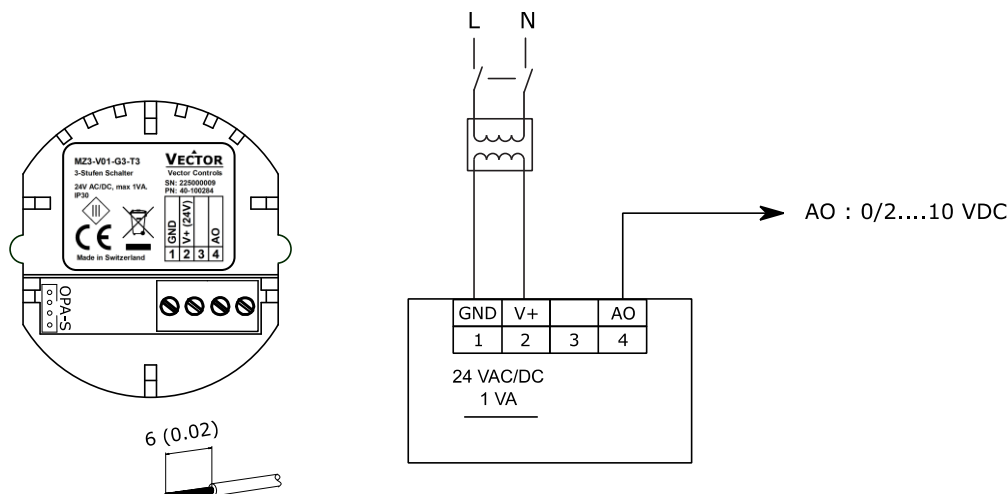
## Product testing and certification



Declaration of  
Conformity

Information on the conformity of our products can be found on our website  
[www.vectorcontrols.com](http://www.vectorcontrols.com) on the corresponding product page under "Downloads".

## Connection diagram



### Description:

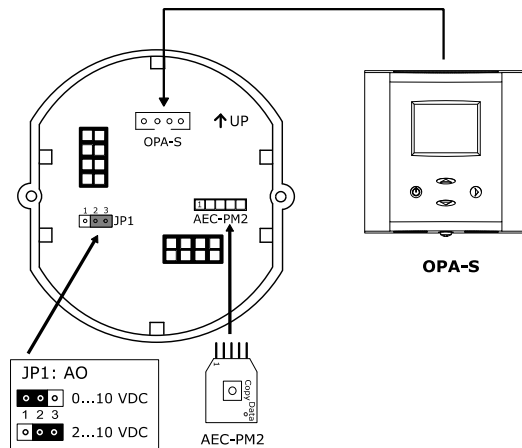
- |              |                            |   |
|--------------|----------------------------|---|
| <b>1 GND</b> | Power supply:              | 0 V, -24 VDC, internally connected to signal common |
| <b>2 V+</b>  | Power supply:              | 24 VAC, +24 VDC                                     |
| <b>3</b>     | Not used, do not connect   |   |
| <b>4 AO</b>  | Analog output ventilation: | 0/2...10 VDC  |

## Mounting instruction



For more information on mounting, refer to MZ3-FU-V01 Installation Manual No. 70-000841  
([www.vectorcontrols.com](http://www.vectorcontrols.com)).

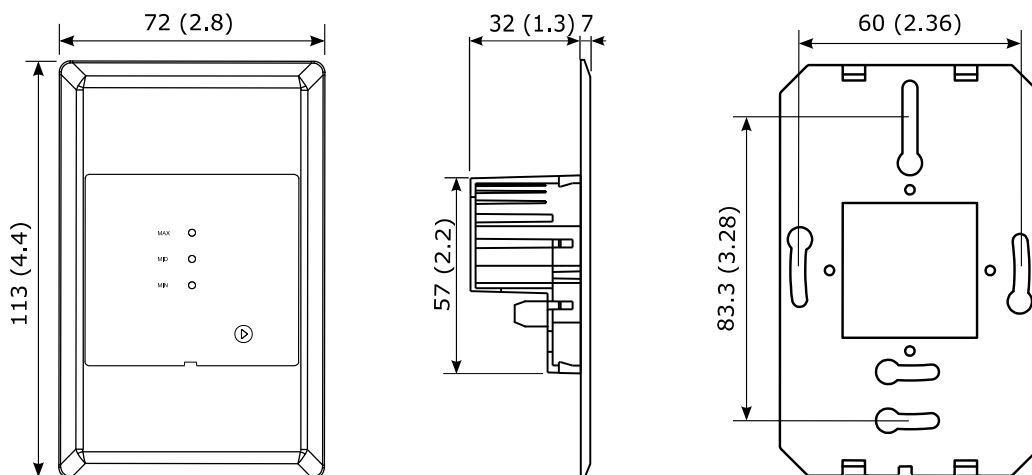
### View of rear part, without front panel



**i** NOTE: For parameter programming, the OPA-S programming and display unit must be plugged in at the connector under the front panel or on the back of the MZ3.

### Dimensions mm (in)

The MZ3-FU-V01 is so designed that it can be incorporated into a commercially available flush box.



## Display and Operation

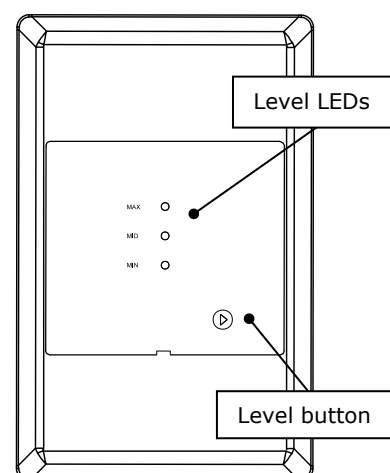
### Manual operation

The following operation modes will be activated through repeated pressing of the level button:

- Level 0 = MIN = Minimum
- Level 1 = MID = Medium
- Level 2 = MAX = Maximum

The active level is activated after 3 seconds. This prevents unnecessary switching when setting the device. The level-indication and buttons light up in blue.

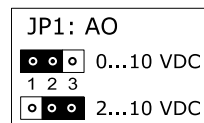
The device is equipped with proximity detection. When approaching a distance of approx. 10 cm, the luminosity of the LED increases. After 30 seconds without interaction, the LEDs dim down again and thus save energy.



## Configuration

### Configuration of the output signal and jumper

- If JP1 is in position 1-2, the output signal is 0...10 VDC
- If JP1 is in position 2-3, the output signal is 2...10 VDC



The jumper position can be seen in section "View of rear part, without front panel" page 3.

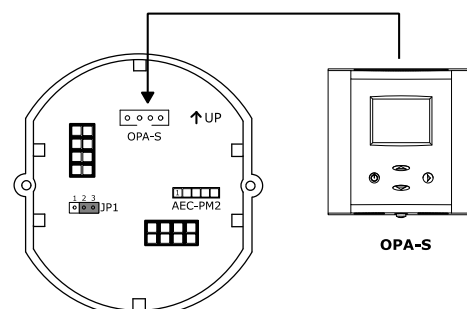
### Output configuration (AO)

Parameter	Description	Range	Default
OP00	Output level 0 (MIN): 0...100 % = 0...10.0 VDC	0...100%	0% = 0 V (JP1 = 1-2) 2 V (JP1 = 2-3)
OP01	Output level 1 (MID): 0...100 % = 0...10.0 VDC Note: setting a level to 0 disables it	0...100%	50% = 5 V (JP1 = 1-2) 6 V (JP1 = 2-3)
OP02	Output level 2 (MAX): 0...100 % = 0...10.0 VDC Note: setting a level to 0 disables it	0...100%	100% = 10 V (JP1 = 1-2) 10 V (JP1 = 2-3)
OP03	Automatic reset time of the lowest level to the level defined in OP05. The reset is deactivated with setting = 0	0...255 min	0 min (deactivated)
OP04	Automatic reset time of the highest level to the level defined in OP05. The reset is deactivated with setting = 0	0...255 min	0 min (deactivated)
OP05	Level after automatic reset. This level will be activated once the reset time defined in OP04 has expired.	0...2	1
OP06	- 0: Parameter copy successful; No action - 1: Start parameter copy to AEC-PM2 - 7: Copy fail (no AEC-PM2 or communication error)	0...1 7: display only	0

### Setting the parameters

The MZ3 is designed to work for most comfort ventilation applications. It is however possible to fine tune it to fit perfect into the application at hand. The parameters can be changed during operation through an operation unit called OPA-S. The operating unit OPA-S must be connected for the adjustment of the parameters with the MZ3.

Carefully lift the front panel of the MZ3 and pull it away to the front. Plug the connecting cable of the OPA-S operating unit into the rear part of the MZ3.



#### Important

The MZ3 does not accept the new settings until the OPA-S parameter menu is exited. The connection must not be disconnected earlier than five seconds after the last keystroke!

### Copy parameters

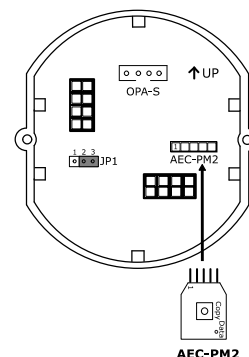
It is now possible to copy settings to an accessory (AEC-PM2) and to copy them back to other MZ3. For this, remove the front panel of the MZ3, insert AEC-PM2 in the designated plug.

#### Copy parameters from MZ3 to AEC-PM2

Connect OPA-S and copy parameters from MZ3 to AEC-PM2 by setting OP06 to 1. The "Data" LED of the AEC-PM2 lights up for 5 seconds after successful parameter copying and OP06 is set to 0. If parameter copying has failed, the LED flashes for 5 seconds and OP06 is set to 7.

#### Copy parameters from AEC-PM2 to MZ3

Copy the parameters from AEC-PM2 to MZ3 simply by pressing the "Copy" button on the AEC-PM2. The "Data" LED on the AEC-PM2 will light for 5 seconds after the parameters have been successfully copied. If the parameter copy failed, the LED will blink for 5 seconds.



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