



# VELOMAT

MESSELEKTRONIK GmbH



## Analog load monitoring VMV-0035



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The VMV-0035 limit value switch was designed for the continuous monitoring of loads on sensors with a measuring bridge output.

VMV-0035 is equipped with:

- One measuring amplifier
- Three comparator stages with relay output
- Setting controller for switching thresholds
- Various connection terminals

The connected sensor and the measuring amplifier transform the load on the sensor into a measuring signal. The downstream comparators enable the setting of various switching thresholds that respond to a specific load on the sensor. Each comparator controls a relay and a control LED.

If the load on the sensor is less than the switching threshold of a comparator, the associated relay is in the operating state. If the switching threshold is exceeded due to an increasing load, the relay switches off and goes into the idle state. Either the normally open or normally closed contact of the respective relay can be connected to the output terminal. This selection is set at the factory using a solder jumper.

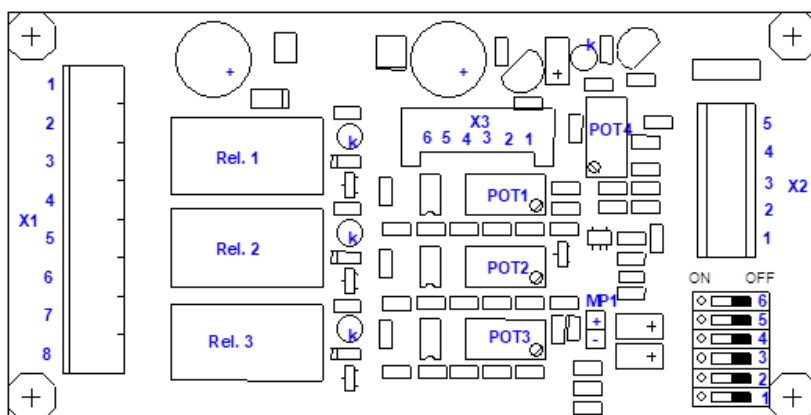
The service connector X3 is located on the circuit board for control purposes. The measuring voltage, the internal operating voltage and the three voltages of the switching thresholds can be checked on this connector using a service device (VHB-260 - optionally available). A two-pole socket strip 'MP' is located parallel to the connections X3/2 and X3/3. The voltage value measured there depends on the load status of the sensor. It should be between 0.35 V and 3.85 V. The switching thresholds for the individual channels can be set in this range.

The VMV-0035 is designed for installation in a switch cabinet and can be mounted on a mounting rail in a closed or open top-hat rail housing made of extruded profiles.

# Technical Data

Power supply:	24 V AC -10 % / +15
Current consumption:	max. 100 mA
Sensor input:	Measuring bridge signal in 4-wire technology
Output:	3 relay outputs
Hysteresis:	10 mV or 50 mV
Time constants of the measurement signal change:	low attenuation (10 kΩ, 0,1 μF) medium attenuation (10 kΩ, 10,1 μF) strong attenuation (10 kΩ, 20,1 μF)
Gain:	approx. 1,9 mV / V or 3,1 mV / V (depending on version) approx. 0,9 mV / V or 2,1 mV / V (depending on version)
Relay:	30 V DC at 1 A
PCB dimensions:	107 mm x 54 mm x 25 mm
Housing:	UM 108 top-hat rail housing, open or closed
Operating temperature:	0... +70 °C

## PIN-assignment



### DIL-switch

- 1 Hysteresis comparator 3
- 2 Hysteresis comparator 2
- 3 Hysteresis comparator 1
- 4 Attenuation 1
- 5 Attenuation 2
- 6 Gain

## Connection terminal for outputs X1:

Connection	Description	Controller
1	+24 V DC Power supply	
2	-24 V DC Power supply	
3	Relay 1, Contact 1 – Comparator 1	POT 1
4	Relay 1, Contact 2 – Comparator 1	
5	Relay 2, Contact 1 – Comparator 2	POT 2
6	Relay 2, Contact 2 – Comparator 2	
7	Relay 3, Contact 1 – Comparator 3	POT 3
8	Relay 3, Contact 2 – Comparator 3	

## Connection terminal for sensor X2

Connection	Description	Remark
1	B+	Bridge voltage PLUS
2	S-	Signal MINUS
3	S+	Signal PLUS
4	B-	Bridge voltage MINUS
5	Screen	Shielding of the connection cable to the measuring bridge

## Assignment of the service plug X3

Connection	Description	Controller
1	+5 V internal operating voltage	
2	Ground	
3	Measuring voltage of the sensor	
4	Threshold voltage - comparator 1	POT 1
5	Threshold voltage - comparator 2	POT 2
6	Threshold voltage - comparator 3	POT 3