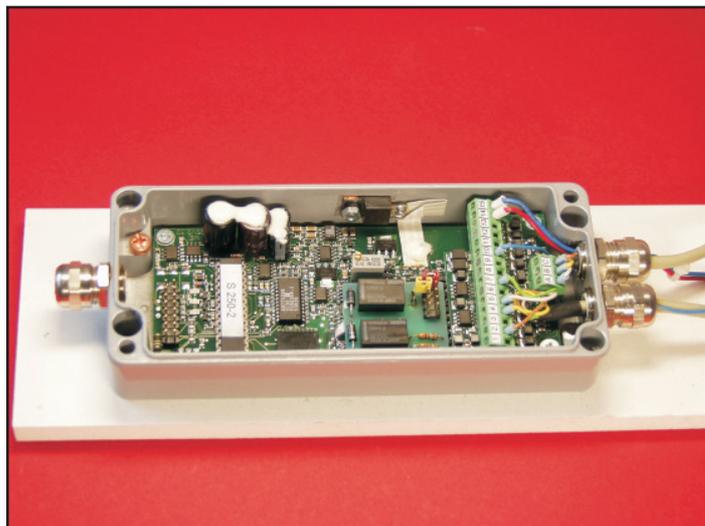


# DMS-Measurement Amplifier VMV-0029

## functional description

The measurement amplifier VMV-0029 was developed for heaviest demands in the industry's measuring technique. The highest EMV protection according to sharpening degree 4 (EN61000-4-2, EN61000-4-4, EN50082-2) and furthermore outgoing norms, IP66 cases and compactness make use possible in rough industry surroundings.

There optionally is the amplifier VMV-0029 with display, plug connectors or zero putting keyboard as well as amplification switchover about relay contacts.



The measurement amplifier VMV-0029 is applied its applications in the process monitoring and in pondering technology with high precision demands. The base of the assembly is an A/D change in 24 bits of technology.

About the serial interface RS232 can be transferred up to 390 measurements per second. The internal digital filter doesn't require a filtration or averaging of the transferred measurements.

An analog output (0...10 V or  $\pm 5$  V or 4...20 mA) is in addition available. The analog output can be backed 0 over a digital control input. The comparison area amounts to 400% of the measurement range.

The adjusting of the measurement amplifier regarding measuring rate, switching thresholds or display display is carried out either via control characters or via the accompanying PC programme. The communication description of the RS232 interfaces is available for software developer.

## technical data

### precision grade

analog	0,1
digital	0,1

### measurement range

analog output	$\pm 1$
at sedated plug-in strap	$\pm 2$ mV / V (optional $\pm 3,5$ mV / V)
display / serial output	$\pm 0,125$ mV / V; $\pm 0,25$ mV / V; $\pm 0,5$ mV / V; $\pm 1$ mV / V
at sedated plug-in strap	the 2-fold (optional 3,5-fold)

### connected full strap

4 x 350  $\Omega$

### strap voltage

2,5 V

### input impedance

> 20 M $\Omega$  / 300 pF

### common mode rejection

DC	> 120 dB
100 Hz	> 100 dB

### linearity difference

< 0,02 % from final value

### temperature influence on zero point per 10 K

measurement range 1 mV / V: < 0,4 % typical 0,2 % from final value  
measurement range 2 mV / V: < 0,2 % typical 0,1 % from final value

## technical data

**temperature influence on measuring sensitivity per 10 K related to the measurement**

analog output < 0,1; typical 0,05 %  
display / digital < 0,01; typical 0,005 %

**output filter**

**analog output**  
3 dB critical frequency analog, Bessel, 2. order 250, (10) (2k5) Hz (10 k)

**output filter digital**  
3 dB critical frequency digital and display, 2,6 - 100 Hz  
measuring rate digital 10 - 400 Hz

**resolution** > 30000 parts from final value

**analog output**

utilizable output range at:  
nominal range 0...10 V -5,2 - 11 V  
nominal range ±5 V -5,2 - 6 V  
output resistance 47 Ω

**analog input**

input voltage range 0 - 10 V  
input resistance 45 kΩ

**control power**

automatical low level: < 1,4 V high level: > 3,4 V  
zero comparison (active high)

## terminal assignment

	<b>GND</b>	supply ground
	<b>UB</b>	supply voltage (12 - 28 V DC)
	<b>UB</b>	supply voltage (12 - 28 V DC) 1)
	<b>T</b>	tara (offset & zero) 2)
	<b>SW</b>	threshold output 3)
	<b>GND</b>	ground analog input / analog output
	<b>UA</b>	analog output (0 - 10 V / -5 to + 5 V / 4 - 20 mA)
	<b>UE</b>	analog input (0 - 10 V)
	<b>-US</b>	negative sensor voltage 4)
	<b>-UF</b>	negative sense lead for 6-ladder technique 5)
	<b>-UD</b>	negative differential input
	<b>+UD</b>	positive differential input
	<b>+UF</b>	positive sense lead for 6-ladder technique 5)
	<b>+US</b>	positive sensor voltage 4)
	<b>GND</b>	supply ground
	<b>TX</b>	transmit data
	<b>RX</b>	receive data
	<b>GND</b>	interfaces ground

# DMS-Measurement Amplifier VMV-0029

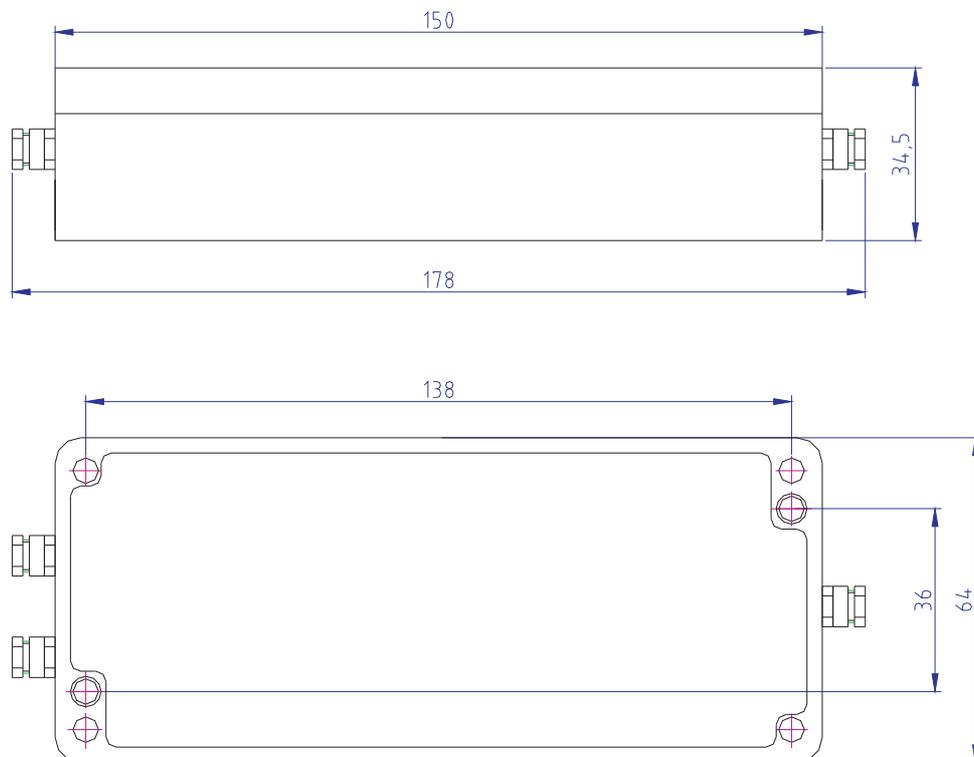
## terminal assignment

All ground connections (clamps 1, 10, 15 and A) are protected one by one over interference suppressor chokes in the VMV-0029. The clamps 1 and 15 are connected to the case over interference suppressor chokes. Currents above 1A between the clamps and the case lead to the damage to the interference suppressor chokes.

**Please, you check before contact whether case, supply mass, the mass of your data acquisition and your interface lie on the same potential!**

- 1) can be used for the sensitization by supply interruptions
- 2) At voltage 3,4 V at this connection a Tara is triggered. There an offset comparison is carried out in the analogous part of the VMV-0029. At executions with a serial interface, in addition, the digital output is set on zero.
- 3) threshold values are programmed via the RS 232 interface
- 4) lines not sustained short-circuit proof , connecting not with each other or with GND or UB
- 5) The sense inputs can respectively be connected with the adjacent strap voltage at connection of sensors in 4-ladder technique (clamp 3 at clamp 2 and clamp 6 at clamp 7). There isn't , however, a necessity of these connections since the contacts are internally high-impedance bridge over.

## case dimension



## DMS-Measuring Amplifier VMV-0029.10 execution control cubicle installation

## case dimension



further technical details as VMV-0029