Measuring amplifier GSV-1H 010/250/10

Item number: 3143



Highlights

- Taring function via control cable
- 250Hz filter in the standard design
- 2.5 kHz or 10 kHz filter optional
- Amplification configurable
- ±10V output signal
- optional 4...20mA output signal
- Supply from up to 8 full bridges at 350 ohm
- Connection of half and full bridges as an option

The measuring amplifier GSV-1H is available with voltage outputs ±10V and current output 4...20mA.

The current output can be factory configured for automatic zero adjustment to 4 mA (4 mA + 16mA, for "unipolar" measurements), or for an automatic zero adjustment to 12 mA (12 mA + -8 mA, for "bipolar" measurements).

Due to the high filter frequency of 250 Hz (2.5 kHz and 10 kHz optional), it is also perfectly suitable for dynamic measurements.

The force sensor is connected to terminals 1 to 4.

The voltage supply (11-28 volt) is connected to terminal 5 and 8 (ground).

To set to zero, terminal 6 is a brief (ca. 2 s) connected to the voltage supply or a control signal between 5 volt and 24 volt is applied. The status is permanently stored in an EEPROM.

Amplification can be switched 1-2-4-10 times via internal jumpers.

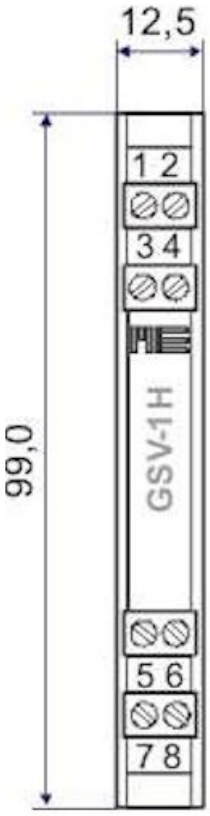
If the input signal becomes negative, output follows up to 0 mA.

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Stand: 16.04.2026

Technical Drawing



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Technical Data

Basic Data		Unit
Dimensions	12.5 x 115 x 99	mm³
Housing	Din rail	
Connection	Screw terminal	
Number of channels	1-channel	
Functions	Tara, Range	

Input analog		Unit
Input sensitivity-steps	2.0 | 5.0 | 10 | 1.0	mV/V

Output analog		Unit
Number of analog outputs	1	
Voltage output from	-10	V
Voltage output to	10	V
Output resistance - voltage output	47	Ohm

Accuracy data		Unit
Accuracy class	0,1%	
Relative linearity error	0.02	%FS
Temperature effect on the zero point	0.1	%FS/10°C
Temperature effect on the measuring sensitivity	0.05	%RD/10°C

Measuring frequency		Unit
Limit frequency (analog)	250	Hz

Supply		Unit
Supply voltage from	11	V
Supply voltage to	29	V
Current consumption from	70	mA
Current consumption to	90	mA
Strain gauge bridge supply	5	V

Interface		Unit
Type of the interface	Analog	

Zero Adjustment		Unit
Tolerance	0.1	%FS
Time period	250	ms
Debouncing time	4	ms
Trigger level from	3.5	v
Trigger level to	30	V
Trigger edge	falling	

Filter		Unit

Environmental Data		Unit
Rated temperature range from	-10	°C
Rated temperature range to	65	°C
Operating temperature range from	-40	°C
Operating temperature range to	85	°C
Environmental protection	IP40	

Mounting

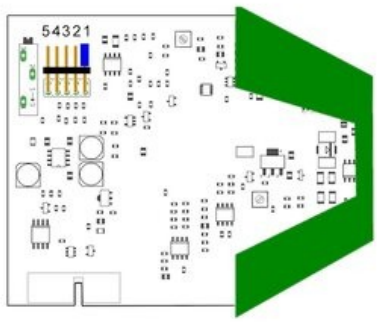
Adjustment of the input sensitivity

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The input sensitivity can be adjusted by moving the jumper. The input sensitivity for position 1 is indicated in the type designation. In position 5, the amplification can be set in a continuously variable manner using trimmer “TR”.

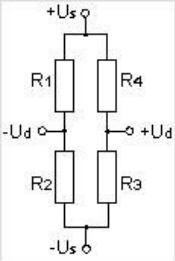
Position	Amplification factor	Input sensitivity in mV/V for GSV-1H with 2 mV/V	Input sensitivity in mV/V for GSV-1H with 3.5 mV/V	Input sensitivity in mV/V for GSV-1H with 10 mV/V
1	1	2	3.5	10
2	2	1	1.75	5
3	4	0,5	0.85	3.3
4	10	0,2	0.35	2.5
5	1...10	2...0.2	3.5 ... 0.35	10 ... 2.5

For an amplification factor 1, the complete output signal is reached for a modulation of 100%.

For an amplification factor 2, the complete output signal is already reached for a modulation of 50%.

Connection of half bridge strain gauges

In a special version GSV-1H with the “/HB” option, an internal bridge supplement is available with resistors R1 and R2:



The external active resistors R3 and R4 are connected to

+Us (PIN 1)

+Ud (PIN 3)

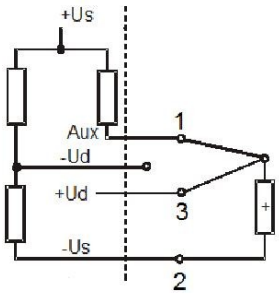
+US (PIN 2

Connection of quarter bridge strain gauges

In a special version GSV-1H with the “/QB” option, an internal bridge supplement is available with resistors R1, R2 and R4:

The active resistor is R3

The Aux connection is at PIN 1 in this version.



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