

GSV-1H



Highlights

- Taring function via control cable
- 250Hz filter in the standard design
- 2.5 kHz or 10 kHz filter optional
- Amplification configurable
- $\pm 10V$ 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



Description

The measuring amplifier GSV-1H is available with voltage outputs $\pm 10V$ 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.

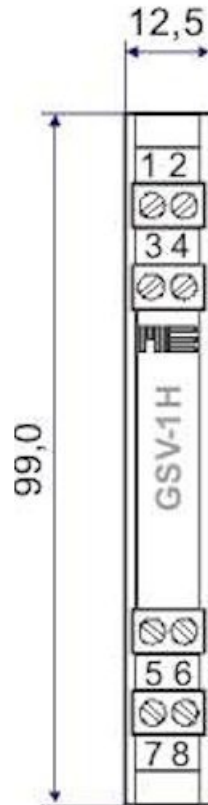
The voltage supply (11-28 volt) is connected to terminal 5 and 8 (ground).

To set to zero, terminal 6 is 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.

Dimensions



Technical Data

Input analog

Input sensitivity-steps	2.0 3.5 10	mV/V
Input resistance strain-gauge-full-/half-bridge	43 ... 5000	Ohm

Output analog

Number of analog outputs	1	
Output resistance - voltage	47	Ohm

Measuring frequency

Limit frequency (analog)	250	Hz
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Supply

Supply voltage f	11 ... 29	V
Strain gauge bridge supply	5	V

Interface

Type of the interface	Analog	
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Zero adjustment

Tolerance	0.1	%FS
Time period	250	ms
Debouncing time	4	ms
Trigger level f	3.5 ... 30	v
Trigger edge	falling	

Temperature

Rated temperature range f	-10 ... 65	°C
Operating temperature range f	-40 ... 85	°C
Environmental protection	IP40	

Basis Data

Housing	top-hat rail	
Connection	screw terminal	
Number of channels	1-Kanal	

Precision

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

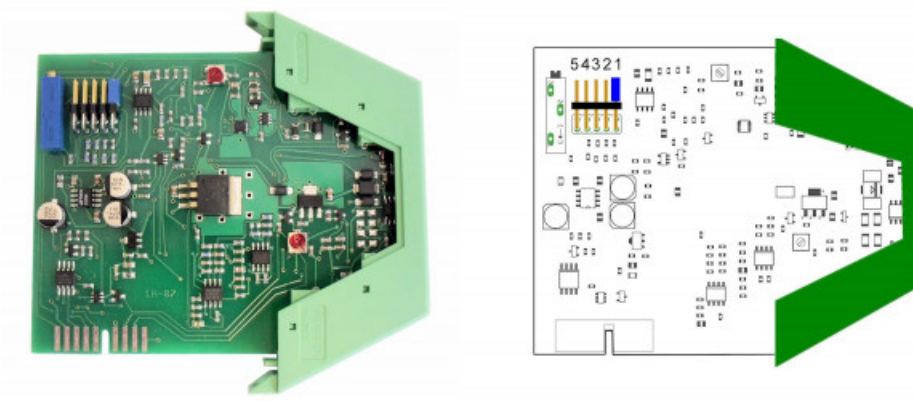
Pin Configuration

Symbol	Description	PIN
+Us	positive bridge power supply	1
-Us	negative bridge power supply	2
+Ud	positive differential input	3
-Ud	negative differential input	4
+Ub	DC voltage supply	5
Tara	Control input zero adjustment	6
UA	Analogue output	7
GND	Earth	8

Comment: The earth of the supply voltage AND the earth of the analogue output are connected to terminal 8. Terminal 8 is doubly allocated.

Mounting

Adjustment of the input sensitivity



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".

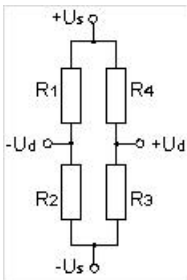
Position	Amplification factor	Input sensitivity in mV/V for GSV-1H with 2 mV/V	Input sensitivity in mV/V for GSV-1H with 3.5 mV/V	Input sensitivity in mV/V for GSV-1H with 10 mV/V
1	1	2	3.5	10
2	2	1	1.75	5
3	4	0,5	0.85	3.3
4	10	0,2	0.35	2.5
5	1...10	2...0.2	3.5 ... 0.35	10 ... 2.5

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)

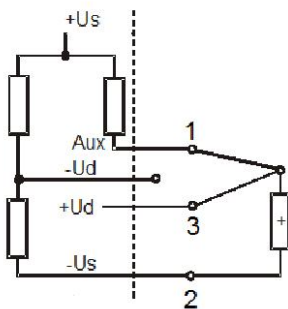
+US (PIN 2)

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.



Orderoptions

Type	Description
GSV-1H 010/250/2	Output -10...+10 V, 250 Hz, input ± 2 mV/V (standard type)
GSV-1H 4-20/250/2	Output 4...20 mA, 250 Hz, input ± 2 mV/V (standard type)
GSV-1H 010/2k5/2	Output -10...+10 V, 2.5 kHz, input ± 2 mV/V
GSV-1H 4-20/2k5/2	Output 4...20 mA, 2.5 kHz, input ± 2 mV/V (standard type)
GSV-1H 010/250/3.5	Output -10...+10 V, 250 Hz, input ± 3.5 mV/V
GSV-1H 4-20/250/3.5	Output 4...20 mA, 250 Hz, input ± 3.5 mV/V
GSV-1H ± 10 /250/2	Output -10...+10 V, 250 Hz, input ± 4 mV/V
GSV-1H ± 10 /250/3.5	Output -10...+10 V, 250 Hz, input ± 7 mV/V
GSV-1H 010/250/2/QB350	Output -10...+10 V, 250 Hz, input ± 2 mV/V bridge completion for 350 ohm quarter bridge
GSV-1H 010/250/10	Output -10...+10 V, 250 Hz, input ± 10 mV/V
GSV-1H 4-20/20/2	Output -10...+10 V, 20 Hz, input ± 2 mV/V
GSV-1H 010/10khz/2	Output -10...+10 V, 10 kHz, input ± 2 mV/V