

GSV-13L 010/300/1



Highlights

- Analogue output 4-20 mA or 1-9 volt
- Supply voltage 24V DC,
- Optional supply voltage 12V DC
- Solder pads for strain gauge port
- Solder pads for zero adjustment
- Solder pads for series resistor

Description

The measuring amplifier GSV-13L is suitable for installation in sensors with strain gauges, e.g. in force sensors, torque sensors, load cells.

The measuring amplifier stands out due to its very small size of just 18 mm diameter and 3.5 mm thickness. It can be attached using 2 fastening clips and M2 screws.

The analogue output 4-20 mA can be scaled to the sensitivity of the sensor by means of resistors (design 0805).

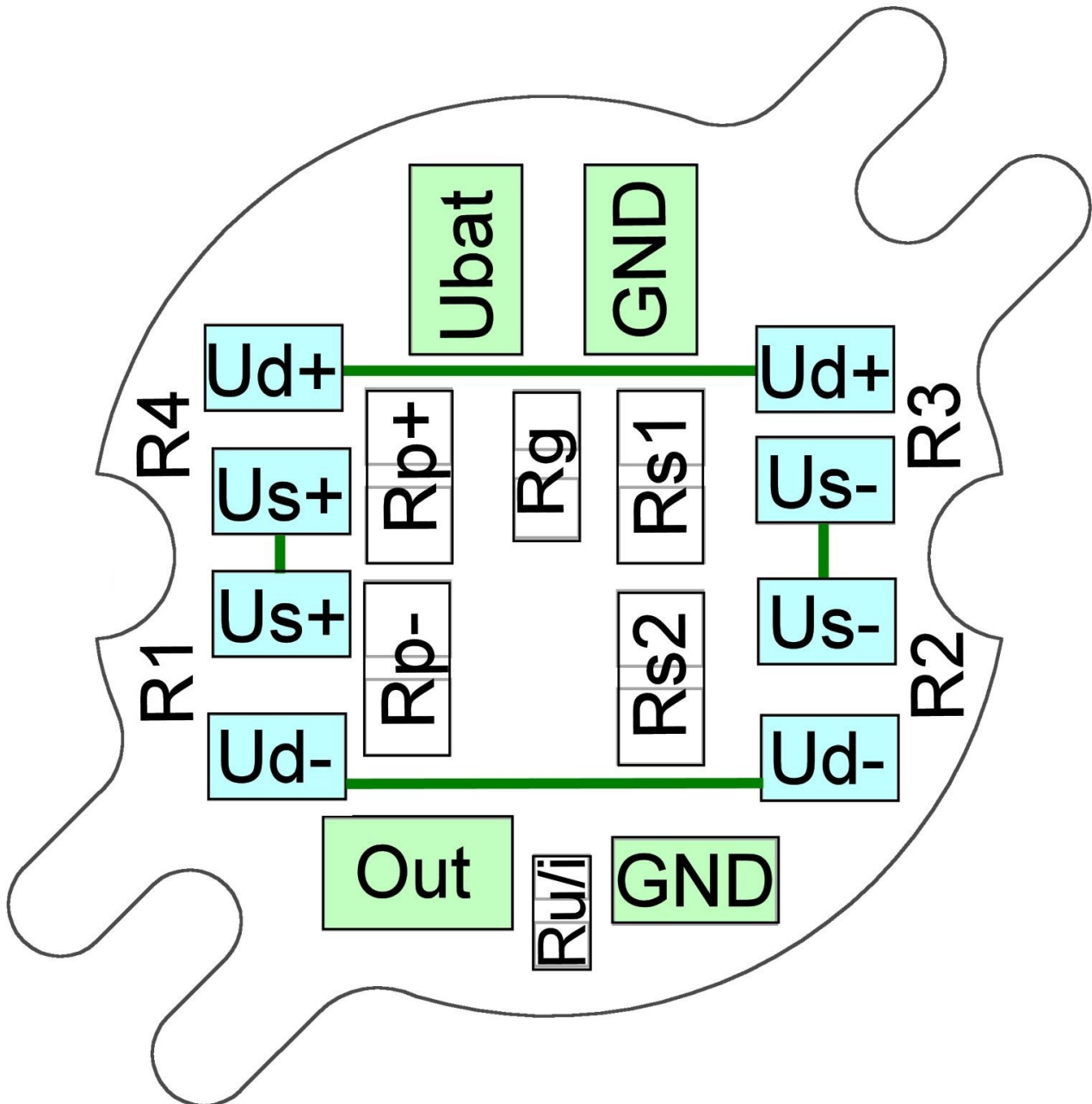
The zero point (4 mA) can also be set using resistors.

By soldering an extra resistor, the output can be converted to 1-9 volt.

With this measuring amplifier, the 4 strain gauges on a full bridge in 2 wire technology can be connected directly to the soldering pads of the circuit board. The bridge circuit is then wired on the measuring amplifier.

The resolution at the analogue output is approx. 10000 parts.

Dimensions



Technical Data

Input analog

Input sensitivity-steps	1.0	mV/V
Input sensitivity-stepsless f	0.2 ... 20	mV/V
Input resistance strain-gauge-full-/half-bridge	175 ... 5000	Ohm

Output analog

Number of analog outputs	1	
Voltage output f	1 ... 9	V
Output resistance - voltage	15	Ohm
Current output f	4 ... 20	mA
Output resistance - current	300	Ohm

Measuring frequency

Limit frequency (analog)	300	Hz
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Supply

Supply voltage f	15 ... 29	V
Current consumption to	30	mA
Strain gauge bridge supply	5	V

Zero adjustment

Type	festwiderstand	
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Temperature

Rated temperature range f	-10 ... 85	°C
Operating temperature range f	-40 ... 95	°C
Environmental protection	IP40	

Basis Data

Housing	PCB	
Connection	Solder connection	
Number of channels	1-Kanal	

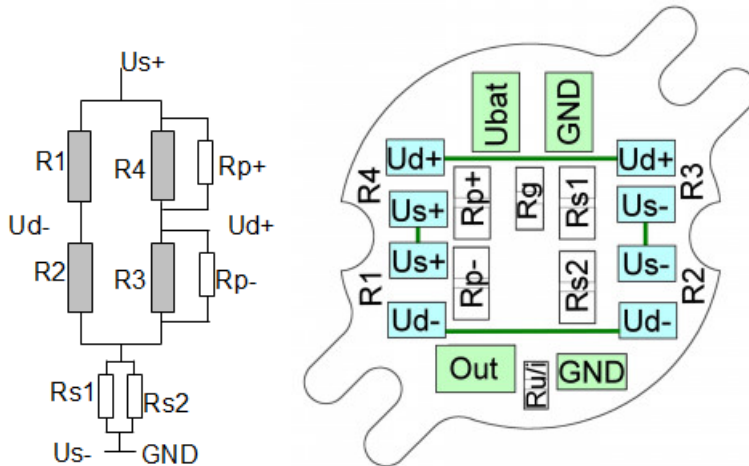
Precision

Accuracy class	0,1%	
Temperature effect on the zero point	0.1	%FS/10°C
Temperature effect on the measuring sensitivity	0.05	%RD/10°C

Mounting

Configuration of GSV-13L

The measuring amplifier GSV-13L supplies an output signal of 4-20 mA. The default input sensitivity is 2 mV/V in its delivery condition.



Zero point

The zero point can be adjusted using fixed resistors (design 0805).

Rp+ increases the zero point,

Rp- lowers the zero point.

Amplification

The amplification of the circuit can be increased by soldering a resistor (design 0603). This resistor is soldered parallel to the amplification resistor R5 already integrated. Rg (gain) increases amplification

Absorption

The signal can be absorbed by connecting a fixed resistor Rs1, Rs2 (design 0805) in series to the sensor.

In standard cases, Rs1 is wired with 0 Ω.

This has to be replaced by a larger resistor to absorb the sensor signal.

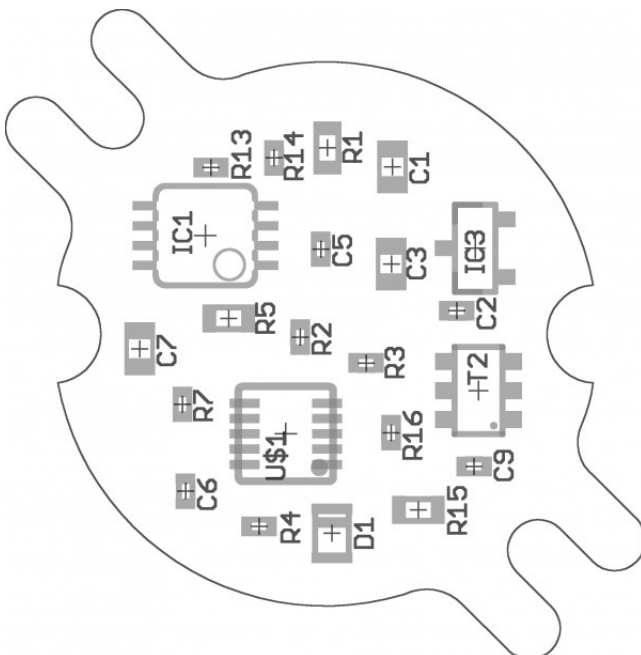
Rs2 is wired parallel to Rs1 and is used for fine-tuning.

Terminal assignment

Name	Description
Us-	negative sensor power supply
Us+	positive sensor power supply
Ud+	positive differential input
Ud-	negative differential input
Ub	Supply voltage 24 volt
GND	Ground supply voltage
Out	Analogue output 4-20 mA optional 0-10 volt
GND	Ground analogue output (optional)

Mounting for input sensitivity 1 mV/V

Ausgang	Ub	Bürde	R2	R3	R4	R5	R6	C6
4-20 mA	24 VDC	< 700 Ohm	4k99	15k	4k99	51R	n.B.	100 nF
4-20 mA	12 VDC	< 400 Ohm	4k99//18k	15k//30k	4k99//4k99	62R	n.B.	100 nF
1,0 -10 V	24 VDC	> 1 kOhm	4k99	15k	4k99	51R	0R	100 nF
0,5 – 5,0 V	24 VDC	> 1 kOhm	4k99	15k	4k99	51R	0R	100 nF//4k99
1,0 – 5,0 V	12 VDC	> 1 kOhm	4k99	15k//30k	4k99	62R	0R	100 nF//8k2



For an input sensitivity of about 2 mV/V, R5 is doubled.



For an input sensitivity of about 0.5 mV/V, R5 is divided by 2.



Orderoptions

Type	Description
GSV-13L 4-20/300/1	Output 4...20 mA, 300 Hz, input 1 mV/V (standard type)
GSV-13L 010/300/1	Output 1...9 V, 300 Hz, input 1 mV/V

More versions on request;