

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).

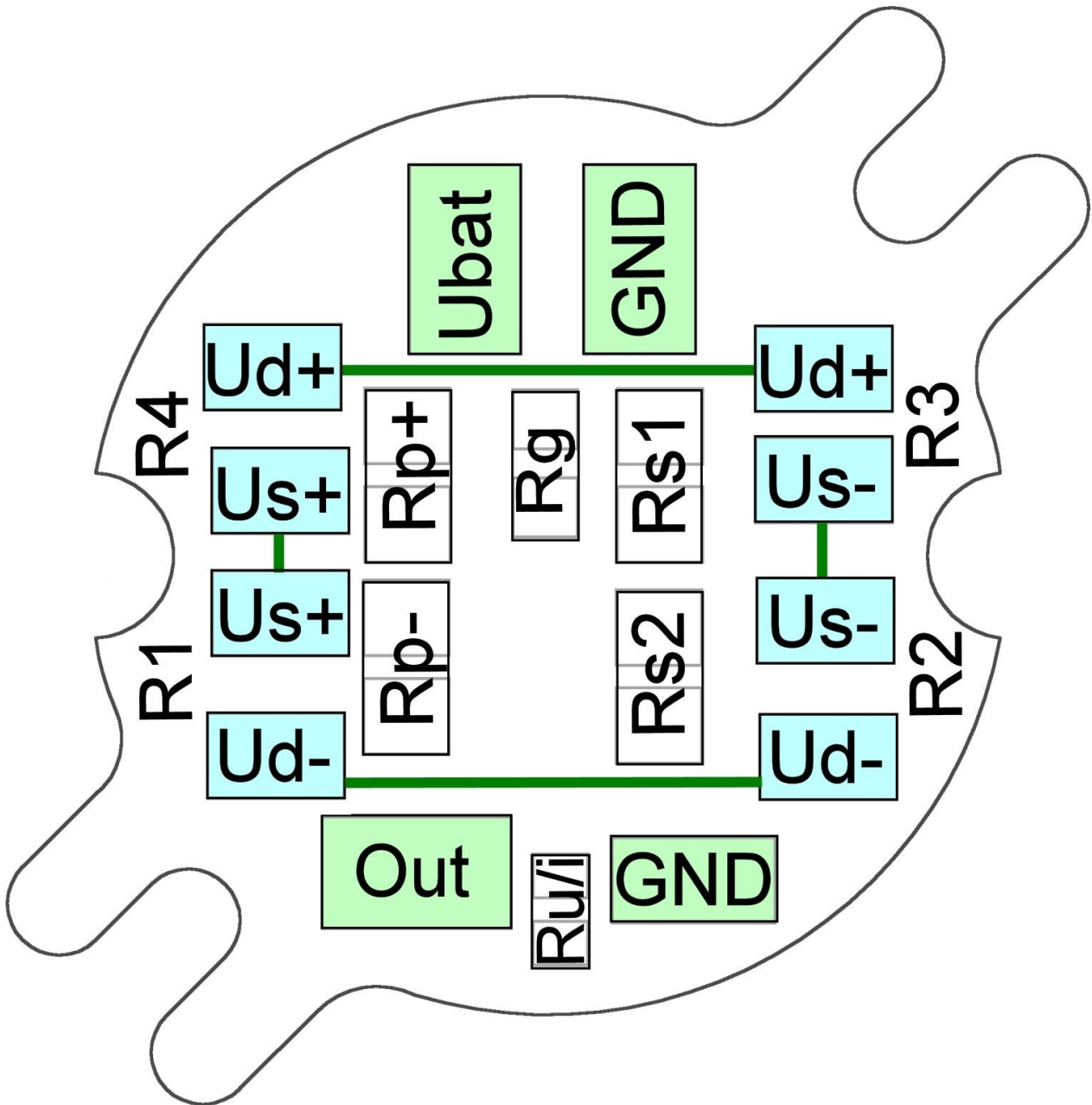
The zero point (4 mA) can also be set using resistors.

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

Basis Data

| | |
|--------------------|--------------|
| Housing | PCB |
| Connection | Lötanschluss |
| Number of channels | 1-Kanal |

Eingang analog

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

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 |

Supply

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

Zero adjustment

| | |
|------|----------------|
| Type | festwiderstand |
|------|----------------|

Temperature

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

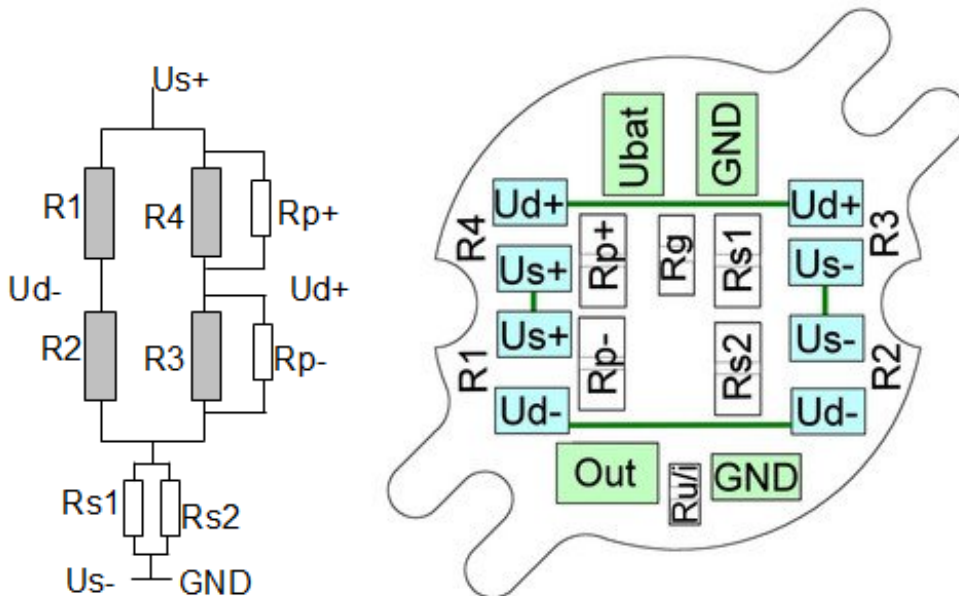
Measuring frequency

| | | |
|--------------------------|-----|----|
| Limit frequency (analog) | 300 | Hz |
|--------------------------|-----|----|

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 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.

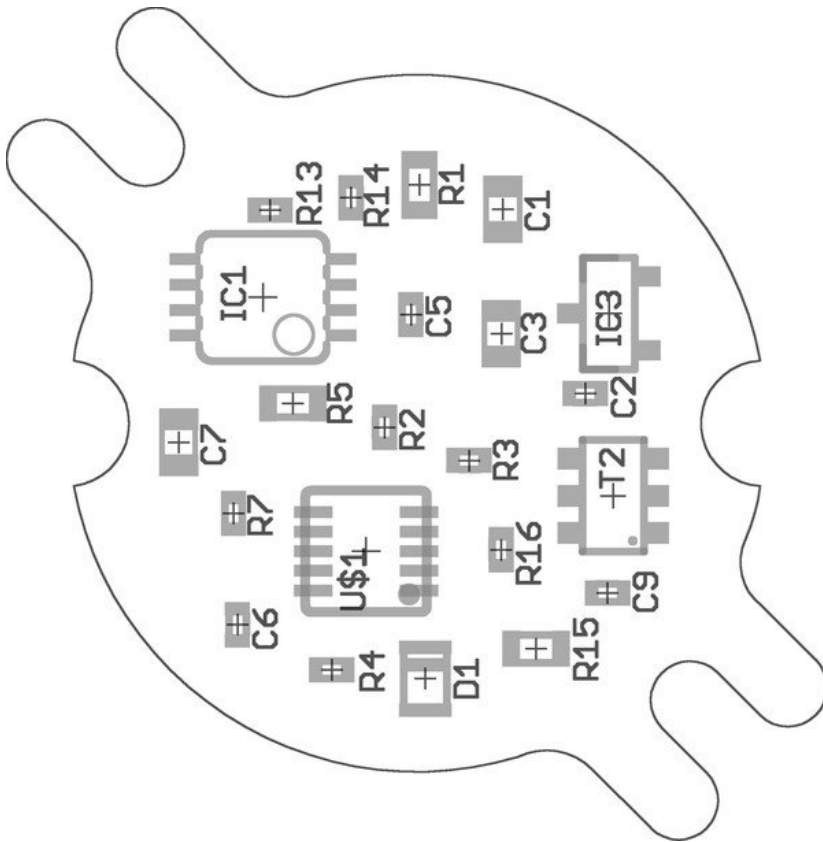
Terminal assignment



| 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 2 mV/V, R5 is doubled.



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;