

SG-IP-4P

Single Channel Strain Gauge Amplifier for Parallel Operating of up to 4 Transducers with Normalized Signal

- Supply voltage 10 ... 18 VDC / 18 ... 30 VDC
- Analogue output 0 ... 10 V, ± 10 V, 4 ... 20 mA
- EMC aluminium die-cast enclosure (IP65)
- Dimensions (W x H x D) 220 x 120 x 80 mm



This single channel strain gauge measuring amplifier SG-IP-4P allows supply and signal evaluation of up to four transducers with normalized sensitivity and a strain gauge full bridge greater than 300 ohms. Input and output are galvanically isolated. The connection is done in 4-wire technology. For further evaluation standard analogue outputs are available. The measuring amplifier is built-in into a robust EMC die-cast aluminium enclosure (IP65) which is suited for applications in rough and industrial environments.

The amplification can be adapted by an internal precision resistance.

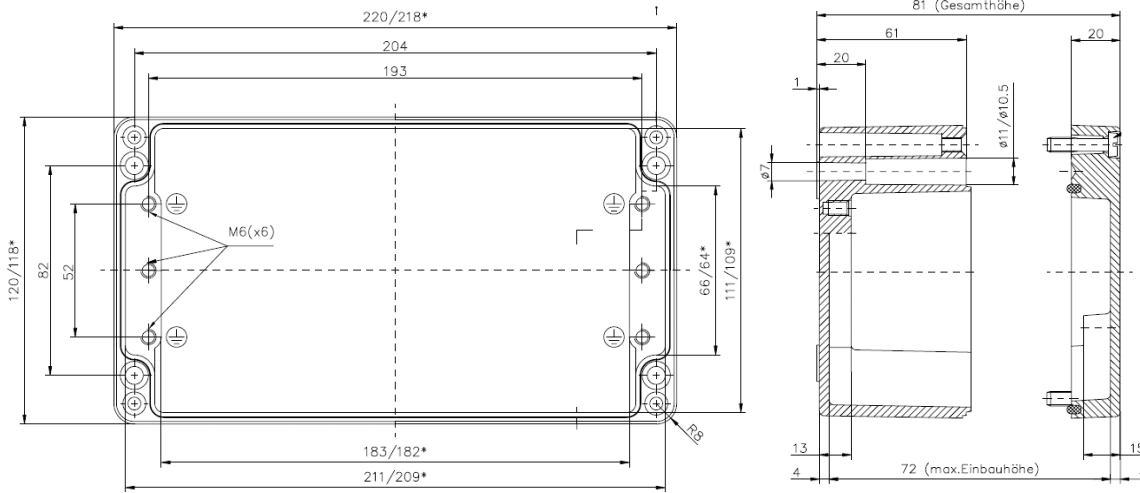
The potentiometers Z (Zero) and G (Gain) which are accessible after removing the enclosure cover, allow a calibration correction.

By means of an internal dip switch, a change of range of the potentiometer Z (zero) can be reached. To allow a zero range shift, a basic load / tare can be suppressed by a resistance electrically.

Technical Data

| | |
|--|--|
| Number of measuring channels: | 1 (full bridge resistance >300 Ω) |
| Supply voltage: | 10 ... 18 VDC, 18 ... 30 VDC, electronics protected against voltage reversal |
| Isolating proof voltage input to output: | 200 V, higher isolated proof voltage on request |
| Power consumption: | 8 W, max. |
| Strain gauge excitation supply: | ± 2.5 VDC, ± 5 VDC |
| Analogue output: | 0 ... 10 V / ± 10 V max. 1 mA (short-period short-circuit proof) 4 ... 20mA (max. 500 Ω) and 0 ... 10V (max. 1mA, max. 30mV Offset) |
| Limit frequency (-3 dB): | 1 kHz, optional up to 30 kHz |
| Input resistance: | >3 M Ω |
| Max. input sensitivity: | 100 mV/V at ± 5 VDC excitation supply |
| Non-linearity: | ± 0.05 % FSO |
| Electrical connection: | EMC cable gland on internal terminal block |
| Enclosure: | EMC aluminium die-cast enclosure (IP65) |
| Dimensions (W x H x D): | 220 x 120 x 80 mm |
| Weight: | 1650 g |
| Temperature, storage: | -20 ... +60 $^{\circ}\text{C}$ |
| Temperature, operating: | -20 ... +50 $^{\circ}\text{C}$ |

Enclosure Dimensions



Terminal Wiring

Electrical connections are made via cable glands on a terminal block located inside of the enclosure. The terminal numbering is stated on the board. The maximum cable cross section amounts 2.5 mm². EMC installation information must be followed.

Note: The amplifier has to be operated with closed cover only.

| Terminals | Description |
|---------------------------|---|
| 1 | Supply Voltage |
| 2 | Supply Ground |
| 3 | Supply Ground |
| Galvanic isolation | |
| 4 | Analogue Ground |
| 5 | Analogue output 1 (0 ... +10 V, ± 10 V) |
| 6 | Analogue output 2 (Version 4 ... 20 mA) |
| 7 | Analogue Ground |
| 8 | + SG Signal Transducer 1 |
| 9 | - SG Signal Transducer 1 |
| 10 | + SG Excitation Transducer 1 |
| 11 | - SG Excitation Transducer 1 |
| 12 | Screen / Enclosure |
| 13 | + SG Signal Transducer 2 |

| Terminals | Description |
|-----------|------------------------------|
| 14 | - SG Signal Transducer 2 |
| 15 | + SG Excitation Transducer 2 |
| 16 | - SG Excitation Transducer 2 |
| 17 | Screen / Enclosure |
| 18 | + SG Signal Transducer 3 |
| 19 | - SG Signal Transducer 3 |
| 20 | + SG Excitation Transducer 3 |
| 21 | - SG Excitation Transducer 3 |
| 22 | Screen / Enclosure |
| 23 | + SG Signal Transducer 4 |
| 24 | - SG Signal Transducer 4 |
| 25 | + SG Excitation Transducer 4 |
| 26 | - SG Excitation Transducer 4 |
| 27 | Screen / Enclosure |

Option -2G

| | |
|----|-------------------------------------|
| 28 | SP 1 (Relay 1) (30 VDC / 0.5 A) MIN |
| 29 | SP 1 (Relay 1) (30 VDC / 0.5 A) MIN |
| 30 | SP 1 (Relay 1) (30 VDC / 0.5 A) MIN |
| 31 | SP 2 (Relay 3) (30 VDC / 0.5 A) MAX |
| 32 | SP 2 (Relay 3) (30 VDC / 0.5 A) MAX |
| 33 | SP 2 (Relay 3) (30 VDC / 0.5 A) MAX |

The terminals "Supply Ground" and "Analogue Ground" are galvanically isolated. To eliminate galvanic isolation, the terminals 2 and 4 have to be bridged externally.

Ordering Description

| | |
|--------------------|---|
| SG-IP-... | Single channel strain gauge amplifier in a EMC aluminium die-cast enclosure (IP65) |
| ...-12E-... | Supply voltage:10 ... 18 VDC |
| ...-24E-... | Supply voltage:18... 30 VDC |
| ...-010-... | Analogue output: 0 ... 10 V |
| ...-B10-... | Analogue output: ±10 V |
| ...-420-... | Analogue output: 0 ...10 V and 4 ... 20 mA |
| ...-4P-... | For up to four strain gauge transducers with normalized sensitivity |
| ...-GFxx | Limit frequency optionally up to 30 kHz |
| (blank) | Standard version 1 kHz |
| ...-2G | 2 adjustable threshold value switching points as well as potential-free switching contacts (max. 30 VDC/ 0.5 A) |

Alignment / Calibration

On request, a pre-setting of the measuring system or a factory calibration certificate with traceable references can be carried out for an extra charge.

Customized Requirements

Technical modifications according to customized requirements are available on request. Moreover, we deliver customized special solutions for a lot of measuring tasks in the section pressure, force, position and tilt measuring using our measuring transducers. Do not hesitate to contact us.

Due to continuous product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.

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The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.

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