

Strain Gauge Board

When an external force is applied to an object, stress and strain result. Stress is the object's internal resisting force, strain is the amount of deformation per unit length of the object when the load is applied. Strain is calculated by dividing the length after deformation by the original length.

A strain gauge is a sensor, whose structure causes a change of the electrical resistance when being deformed. For testing purposes, the strain gauge is bonded to the surface of an object using a special adhesive. Once the surface of the test object gets deformed, the strain gauge is either being bent or stretched. The resulting change in electrical resistance is detected using the strain gauge board and can be evaluated using the ROTEC software. Strain gauges can be used for measuring a variety of physical quantities, e.g. force or pressure.



Technical Specifications

- 2 independent channels, completely configurable via software
- sampling rate: 3 Hz to 50 kHz per channel
- resolution: 16 bit per channel
- full, half and quarter bridge
- bridge supply: +1V, +2.5V, +5 V or +10 V
- 6-wire-technology (sense lines for control of bridge supply voltage)
- full and half bridge resistor: $\geq 120 \Omega$
- quarter bridge resistor: 350 Ω (channel 1), 120 Ω (channel 2)

- automatic internal calibration
- amplification: 100, 200, 500, 1000, 2000, 5000
- hardware filter: 1 kHz, 20 kHz
- offset drift: $\pm 8 \,\mu\text{V}$ / °C max.
- common mode rejection: 110 dB min.
- isolation voltage: 2 kV
- zero adjust via digital potentiometer using software