

Bolt-on strain gauges

- Simple application
- Cost effective
- Quick to install
- Two hole and temperature compensated three hole design
- Ideal for level measurement in existing structures



Application

Bolt on strain gauges are a cost effective way to measure strain and level measurement. They can be used with a wide range of equipment:

- Hoppers and Silos
- Bridges
- Cranes
- Vehicles and ships
- Oil rigs
- Engineered structures

The rugged design ensures a high degree of reliability and availability.

Features

The sensors measure both tensile and compressive bending stresses ranging from 50 to 1100 micro-strain. We offer two types of multi-element bolt-on strain sensor to provide a rugged robust sensor.

The two hole unit is designed for general applications, while the three hole unit offers inbuilt temperature compensation (using the second axis to evaluate thermal expansion from measured strain)

Resistant to dust, water, salt spray, paint, dilute acid and most fuels and coolants.

Installation

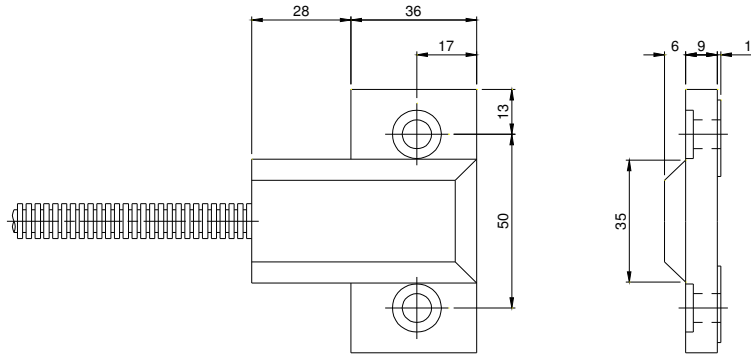
The sensors must be installed onto flat clean surfaces. We suggest that the surface be clean to the naked eye and then wiped, in a two stage cleaning process, with Loctite 7063 degreasing agent. It is recommended that the sensor is fixed with an adhesive, for example Loctite retaining compound 638 or equivalent.

The sensors should be first loosely bolted to the unloaded structure, the adhesive applied, the sensors then again loosely bolted at all fixation points. Then tighten alternatively in three stages to achieve and even torque for each of the mounting bolts.

Dimensions and Technical Data

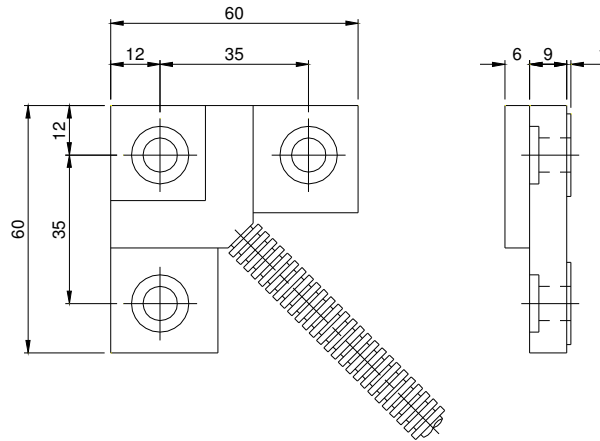
2-Hole Sensor

The standard 2-Hole sensor can be bolted direct to the structure for use in a range of applications and environments. We recommend that the structure on to which sensor is to be bolted should be at least 10 times larger than the sensor, for accurate and reliable measurement data.



3-Hole Sensor

The 3-Hole sensor has a unique design eliminating the temperature effect on bending and strain of the application, providing a far more effective strain indication than a standard 2-hole option. As the external temperature of the application fluctuates, the bolt-on sensor compensates for this and distinguishes this change from the measured strain of the application. Highly sensitive with effective temperature compensation built in, this product makes an incredibly useful and cost-effective method of measuring strain.



Technical Data

Construction

IP67 photo anodised aluminium (black)

Max Strain (continuous)

1050 micro-strain

Max Strain (single operation)

1500 micro-strain

Min. Strain at full-scale

50 micro-strain

Accuracy

0.2% of strain range

Output

1.50mV/V for 1,000 micro-strain

Repeatability

Better than 2 micro-strain

(Subject to structure characteristics)

Connection

3 metre, 4 core integral cable

Red Excitation +

Blue Excitation -

Green Signal +

Yellow Signal -

Fixation

M8 Grade 12.9 Socket Head Cap Screw

(in addition to the bolts it is recommended to clean applied surface and mount with structural adhesive)

Recommended Excitation Voltage

10V

Max Excitation Voltage

15V

Bridge Resistance

350 ohms (nominal)

Max operating temperature

-20 to 60°C (special option to 80°C)

Due to our policy of continuous improvement, dimensions and specifications may change. Have dimensions certified for installation purposes.

