

Applications

To measure strain in steel structures including:

- Steel struts to brace deep excavations.
- In tunnel lining and supports.
- The monitoring of pipeline integrity.
- Bridge supports and platforms.
- The stress distribution in piles.
- Sheet piling.

Operating Principle

The arc weldable strain gauge comprises of two anchors that are arc welded to the steel member that is to be monitored. A tensioned wire between the two anchor points is plucked electronically, which induces a vibration that has a frequency proportional to the extension of the wire.

Arc Weldable Strain Gauge

When load is applied to the steel member the deformation of the structure changes the position of the anchors and the frequency output produces a proportional change.

An electromagnet is used to pluck the tensioned wire and measure the frequency of vibration via a signal cable to a readout unit. The readout unit measures the frequency and applies a constant gauge factor to display a reading in microstrain.

O-ring seals are utilized between the protective tube and the gauge end blocks to provide waterproofing and allow the tube to remain unstressed.

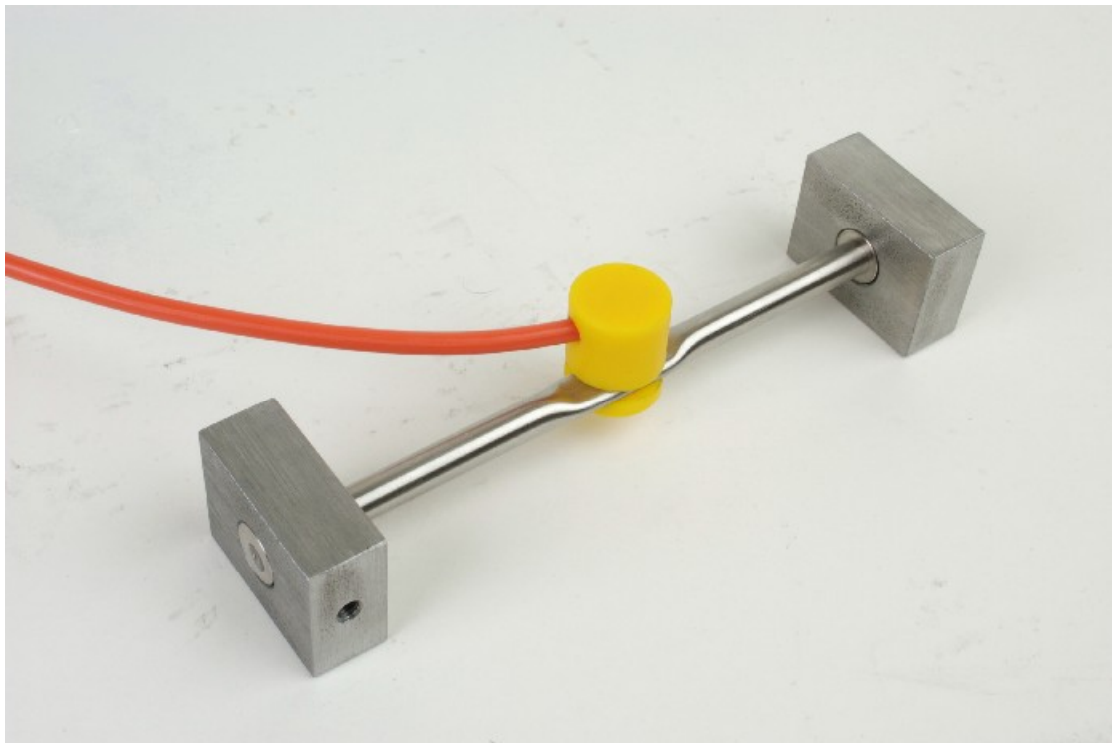
The gauges and coils are re-useable.

Advantages and Limitations

- Robust, reliable and easy to use.
- Can be used with long cable lengths with no degradation of signal.
- Strain gauge can be adjusted to allow for the most effective use of the range.
- Built in thermistor which allows for thermal effects to be automatically compensated.
- Gauge and coils are re-useable.

Performance

- Measuring Range: 3000 μ
- Sensitivity: 1.0 μ
- Accuracy: \pm 0.1%
- Active Gauge Length: 150mm
- Operating Temp: -20 to +80°C



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DATA SHEET
ST9

Ordering Information

ST9-1 Arc Weldable Strain Gauge

ST9-1.1 Arc Weldable Strain Gauge
Includes two mounting blocks.

ST9-2 Installation Kit

ST9-2.1 Installation kit for the strain gauge

CA-1 Connecting Cable and Fittings

CA-1-4-S Cable, 4 core

CA-1.5 Cable End Plug

CA -1.6 Joint Sealing Kit

ST9-3 Installation Accessories

ST9-3.1 Spare Mounting Blocks



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*Issue 1
2003*