

Stress & Strain Monitoring

Typical applications include:

- Structural Monitoring
- Bridge Monitoring
- Dam Monitoring
- Pipeline Stress Analysis
- Excavation Propping Monitoring
- Component Stress Analysis
- Material Stress Analysis

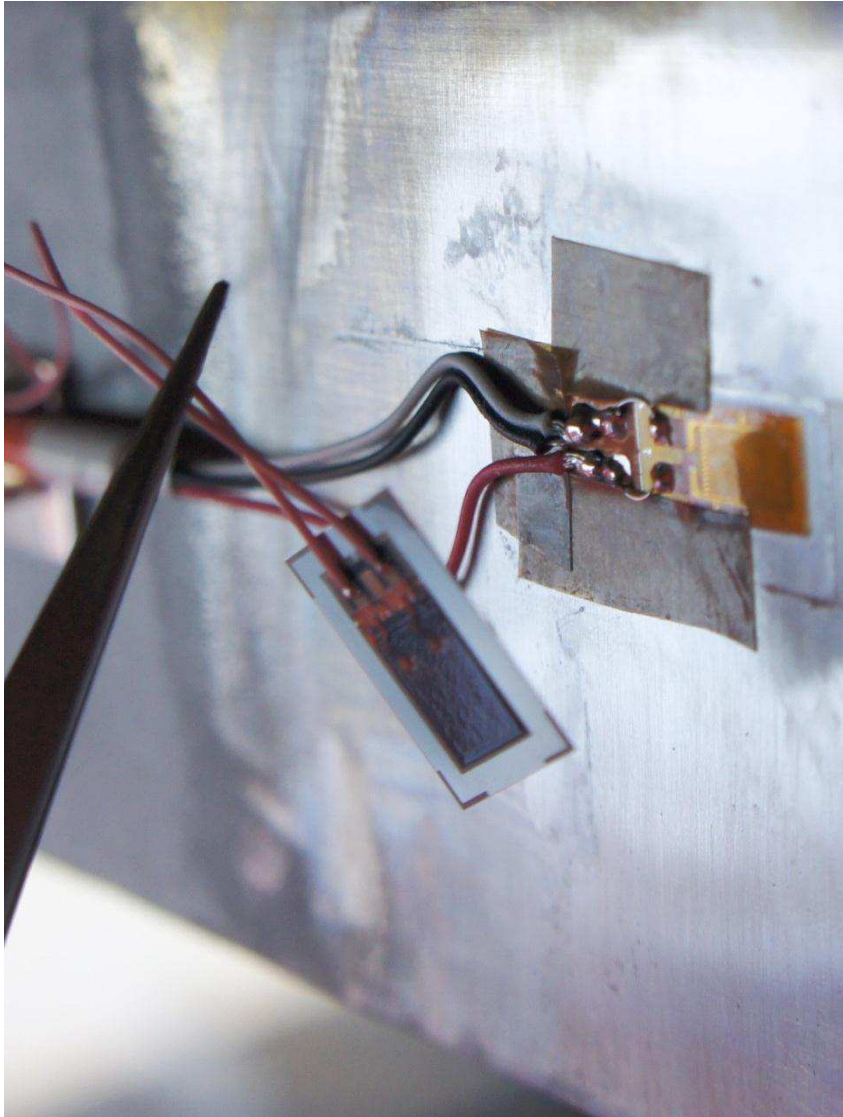
Commonly used instrumentation detailed below:

- Foil Strain Gauge
- Concrete Mounted Vibrating Wire Strain Gauge
- Spot Weldable Vibrating Wire Strain Gauge
- Arc Weldable Vibrating Wire Strain Gauge
- Optical Strain Gauge

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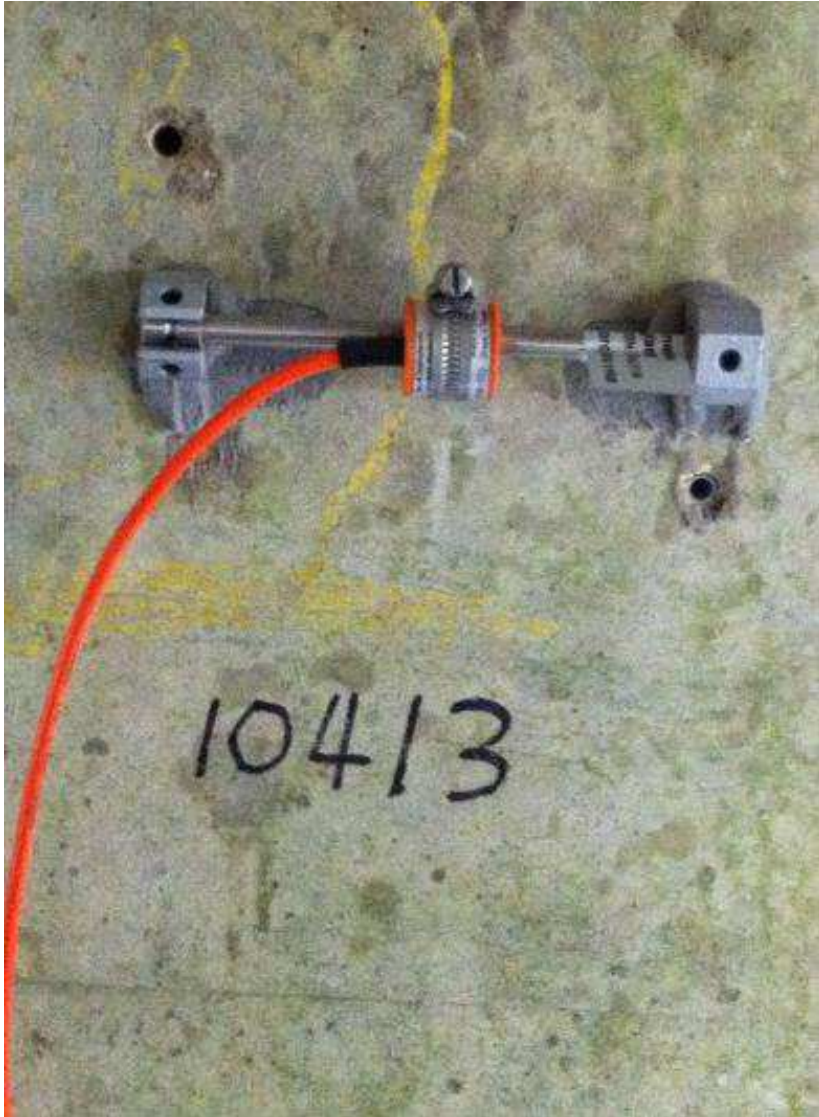


Foil Strain Gauge

Variables measured	Strain ($\mu\epsilon$)
Range	up to $\pm 50,000\mu\epsilon$
Accuracy	$\pm 3\mu\epsilon$ (1% full scale)
Resolution	$1\mu\epsilon$
System operation	Automated
Data access	Remotely or on site
Reading frequency	Sub second

Additional Information:

- Suited for use on short to long term projects.
- Highly accurate.
- Can be bonded to almost any material.
- Numerous types of foil gauges available for different requirements (i.e. uniaxial, biaxial, triaxial, torsion, shear etc.)
- Foil strain gauges consist of a thin wire filament in a grid formation, which acts as a resistor. As the material monitored elongates or contracts the shape of the measurement grid changes which alters the resistance across the strain gauge.



Vibrating Wire Strain Gauge

Variables measured	Strain ($\mu\epsilon$)
Range	3000 $\mu\epsilon$
Accuracy	$\pm 3\mu\epsilon$ ($\pm 0.1\%$ full scale)
Resolution	1$\mu\epsilon$ (0.033% full scale)
Repeatability	$\pm 2\mu\epsilon$ ($\pm 0.067\%$ full scale)
System operation	Automated
Data access	Remotely or on site
Reading frequency	> 10 seconds

Additional Information:

- Suited for use on short to long term projects.
- Cheap, simple & reliable.
- Good long term electrical stability (long lead length).
- Mount to concrete with anchors & spot or arc weld to metal.
- Within the sensor, a high carbon steel wire is held between a fixed point and a moveable point. The wire is plucked / excited via a magnetic coil adjacent to the wire and the resulting frequency is measured by the coil. Changes to the strain in the wire relate to a change in the frequency readings taken.

More detail available if required:

- Optical strain gauges

Please get in touch if you would like more information.
