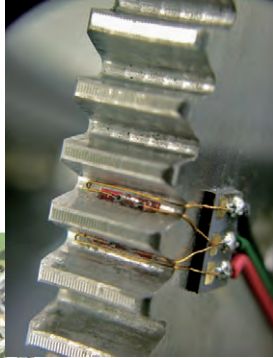




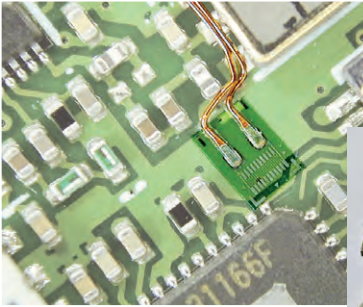
Miniature strain gauges

Printed circuit boards and surface mounting parts of automobile, computers and industrial machinery are getting smaller. Miniature strain gauges can be installed in a very limited gauge installation space.

Strain gauges in the valley of gear



Strain gauges on printed circuit board

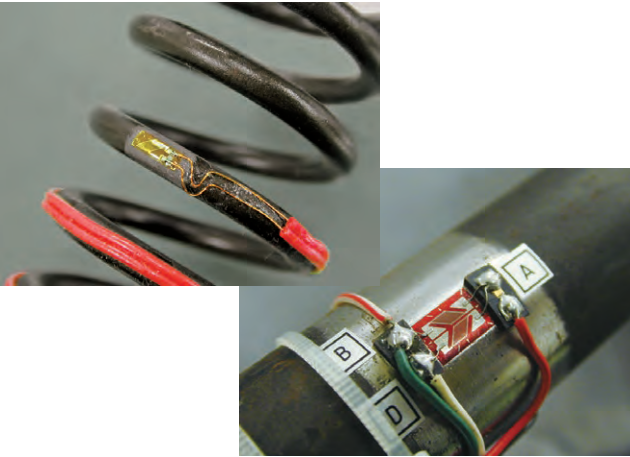


10-element chain type strain gauges on bolt head



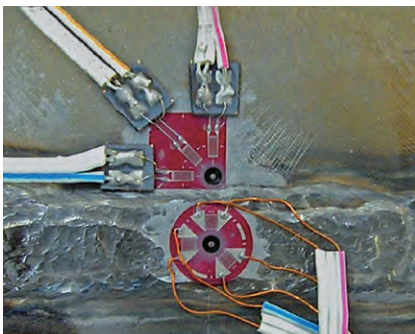
Shearing strain and torque measurements

Shearing strains in 45-degree direction generated by shearing stress.



Residual stress measurement

3-element residual stress measurement by center-hole drilling method



Magnetic field use

Strain Gauge single element and twisted leadwire

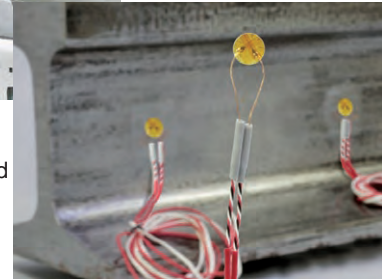


Strain Gauge 0°/45°/90° 3-element and FEP twisted leadwire



Strain measurement less influenced by EM noise between pantograph and trolley wire of electrified railway system

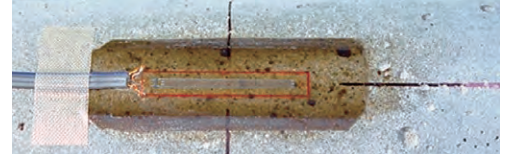
Railway axle load measurement



Concrete/Mortar measurements

Surface strain measurement of concrete and mortar

Strain Gauge with longer gauge length for concrete surface



Strain Gauges with longer gauge length and metal backing for concrete surface



Internal strain measurement of concrete and mortar

Mold strain gauges

PMF series available with temperature sensor integrated



Internal strain measurement of concrete for long term



Full bridge Strain Transducer KM series

Before placement of concrete, 3 KM transducers are installed to reinforcing bars.

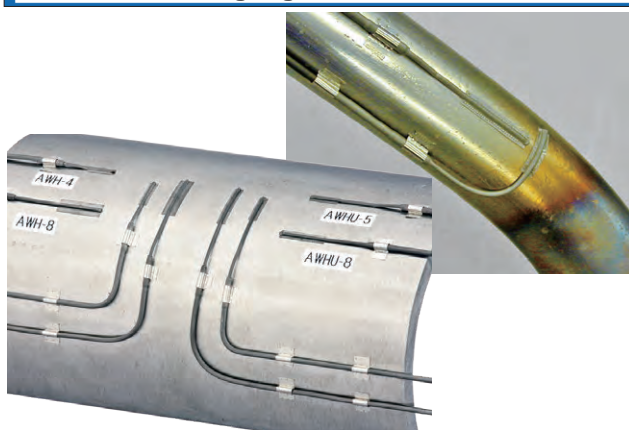


Bolt tensile force by embedment type gauges

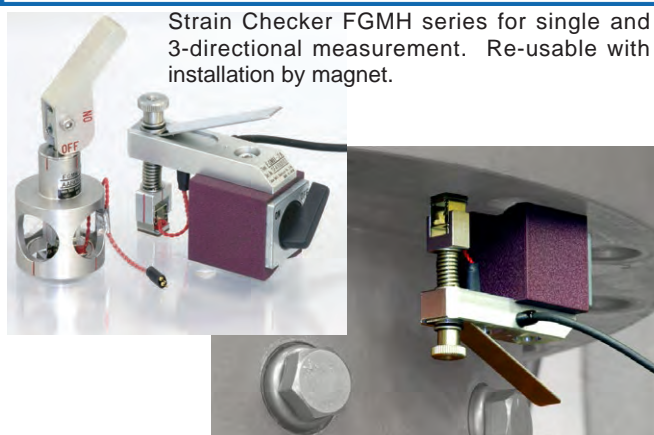
For measurement of tensile strain in a bolt. Simply inserted into a pre-drilled hole in the bolt head together with bonding adhesive. BTM and BTMC gauge series are recommendable if an ordinary strain gauge cannot be mounted on the bolt surface. Accurate tensile force measurement is possible by calibrating the bolt after installing the bolt gauges.



Weldable strain gauges



Frictional Strain Checker, Axial Strain Transducer, Torque Sensor System

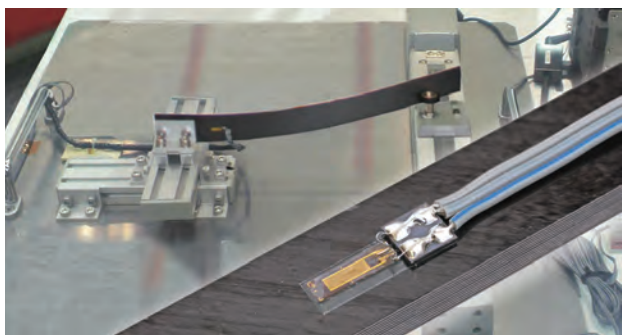


Strain Checker FGMH series for single and 3-directional measurement. Re-usable with installation by magnet.

Torque Sensor System FGDH series applicable to driving shaft with split and cover-up system. With built-in telemetry transmitter, no wiring is required.



High Endurance Strain Gauge bonded on composite materials



Composite materials on which High Endurance Strain Gauge DSF is bonded are demonstrated for fatigue test over 10^7 cycles at strain level of $\pm 3,000$ microstrain.

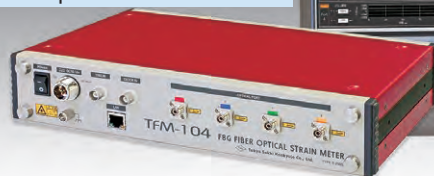
Axial Strain Transducer FGAH series applicable to steering shaft with cover-up system. Different from the above FGDH, wire connection is required.



FBG Fiber-optic Strainmeter

Designed for Fiber Bragg Grating based strain gauges with optic fiber

- Temperature-compensation available with our FBG sensor
- No effect by EM noise
- Long distance measurement
- Fiber branching due to WDM techniques



Long term measurement

For construction measurement and maintenance.

