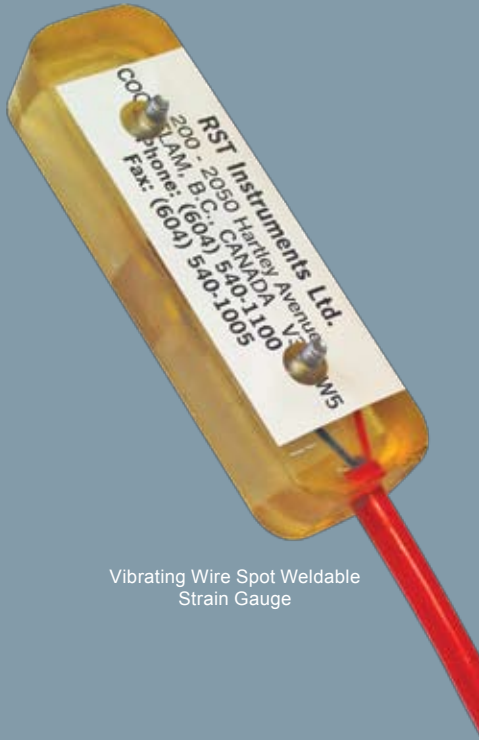




Vibrating Wire Strain Gauge



Vibrating Wire Spot Weldable Strain Gauge

RST Vibrating Wire Strain Gauges are designed to be welded to or embedded in various structures for monitoring strain. RST vibrating wire strain gauges are available in 3 models: VWSG-A, for arc welding to steel structures; VWSG-S, for spot welding to steel structures; VWSG-E and VWSG-EL, for embedment in concrete.

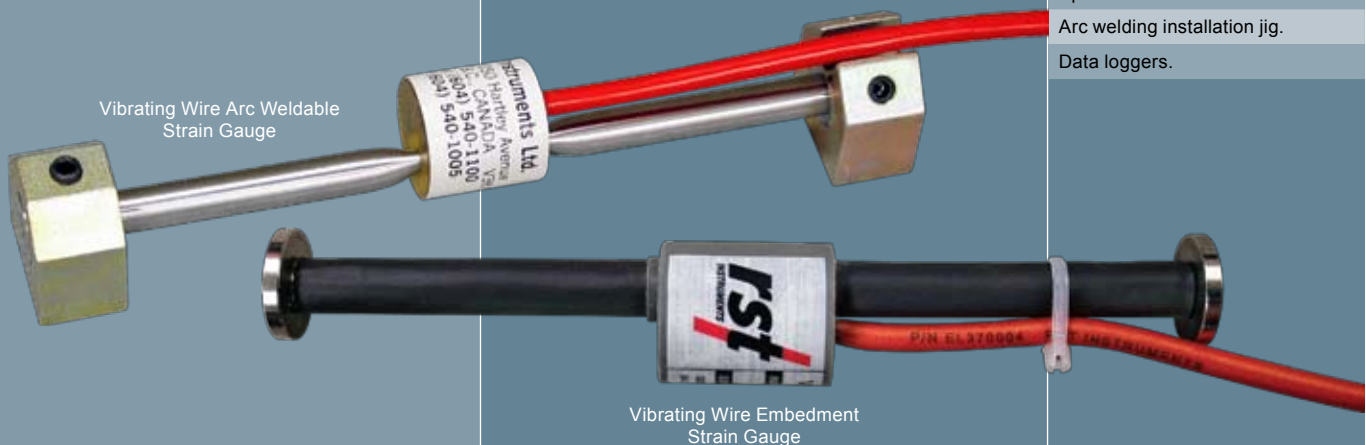
Each strain gauge consists of two end blocks (designed specifically for each application) with a tensioned steel wire between them. As the steel or concrete surface that encompasses the strain gauge undergoes strain, the end blocks will move relative to each other. The tension in the wire between the blocks will change accordingly, thus altering the resonant frequency of the wire. A vibrating wire readout is utilized to generate voltage pulses in the magnet/coil assembly located at the center of the strain gauge. The magnet/coil assembly plucks the wire and measures the resulting resonant frequency of vibration.

The advantages of vibrating wire strain gauges are that the frequency output is immune to electrical noise, able to tolerate wet wiring common to geotechnical applications, and capable of signal transmission of several kilometers without loss of signal.

The RST VW2106 Vibrating Wire Readout can be used to read the vibrating wire strain gauges.

specifications

ITEM	VWSG-A	VWSG-S	VWSG-E	VWSG-EL
Installation by	Arc welding	Spot Welding	Embedment	Embedment
Standard Gauge Length	150 mm (5.88 in.)	50.8 mm (2 in.)	153 mm (6 in.)	250 mm (10 in.)
Strain Range	3000 $\mu\epsilon$	3000 $\mu\epsilon$	3000 $\mu\epsilon$	3000 $\mu\epsilon$
Sensitivity	1.0 microstrain	0.5 to 1 microstrain	1.0 microstrain	0.5 microstrain
Operating Temperature	-4 to 176°F (-20°C to 80°C)	-4 to 176°F (-20°C to 80°C)	-4 to 176°F (-20°C to 80°C)	-4 to 176°F (-20°C to 80°C)
Thermal Coefficient of Expansion	12.0 ppm/°C	12.0 ppm/°C	12.0 ppm/°C	12.0 ppm/°C
Thermistor Accuracy	0.9°F (0.5°C)	0.9°F (0.5°C)	0.9°F (0.5°C)	0.9°F (0.5°C)



Vibrating Wire Arc Weldable Strain Gauge

Vibrating Wire Embedment Strain Gauge



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applications

Measuring strain in steel members and concrete structures including bridges, piles, dams, tunnels, and buildings.

features

Rugged and reliable construction.

Pre tensioned for ease of installation.

Accurate to 1 microstrain.

Integral thermistor for temperature compensation.

Remote monitoring capability.

ordering info

Model number.

Length of cable required.

Accessories required.

optional equipment

VW2106 vibrating wire readout.

Terminal boxes.

Spot welder.

Arc welding installation jig.

Data loggers.

RST Instruments Ltd. reserves the right to change specifications without notice.