Monitor with Confidence

TEL 604 540 1100
info@rstinstruments.com
www.rstinstruments.com

RST Instruments Ltd.
11545 Kingston St.,
Maple Ridge, BC V2X 0Z5 Canada

ISO 9001

PRODUCT CATEGORY:
LOAD CELLS + PRESSURE SENSORS + STRESS METERS

Vibrating Wire Strain Gauge

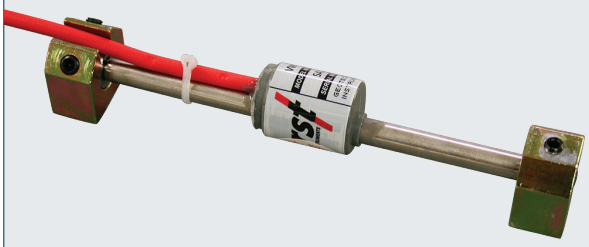
RST Vibrating Wire Strain Gauges are designed to be welded to or embedded in various structures for monitoring strain. RST vibrating wire strain gauges are available in 3 models: VWSG-A, for arc welding to steel structures; VWSG-S, for spot welding to steel structures and VWSG-E for embedment in concrete.

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 or "DT Series" Data Loggers (see separate brochures) can be used to read the vibrating wire strain gauges.

Vibrating Wire Spot Weldable Strain Gauge - Low Profile (VWSG-S-3000 or VWSG-S-5000)



Vibrating Wire Arc Weldable Strain Gauge

Vibrating Wire Embedment Strain Gauge

> 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.
Precise to 1 microstrain.	Remote monitoring capability.
Integral thermistor for temperature compensation.	
Low stiffness.	

SPECIFICATIONS

ITEM	VWSG-A	VWSG-E	VWSG-S-3000 OR VWSG-S-5000
Installation by	Arc welding	Embedment	Spot Welding
Standard Gauge Length	165 mm (6.5 in.)	156 mm (6.125 in.)	50.8 mm (2 in.)
Strain Range	3000 $\mu\varepsilon$	3000 $\mu\varepsilon$	3000 $\mu\varepsilon$ / 5000 $\mu\varepsilon$
Sensitivity	1.0 microstrain	1.0 microstrain	0.5 to 1 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)
Thermal Coefficient of Expansion	12.2 ppm/°C	12.2 ppm/°C	12.2 ppm/°C
Accuracy	+/- 0.5% F.S. (batch calibration) +/- 0.1% F.S. (individual calibration - upon request) contact RST for complete details.		
Thermistor Accuracy	0.9°F (0.5°C)	0.9°F (0.5°C)	0.9°F (0.5°C)
Signal Cable	EL370004 or EL380004	EL370004 or EL380004	EL370004 or EL380004
Accessories	Please contact RST for complete information about accessories: VWSG-A-INST (installation tools) VWSG-A-ENDS VWSG-A-SPACER		

ORDERING INFO

Model number
Length of cable required
Accessories required