

	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.

RSTAR Affinity Data Loggers, DT Series Data Loggers, or the RST VW2106 Vibrating Wire Readout, (see separate brochures) can be used to read vibrating wire strain gauges.

### > 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.	

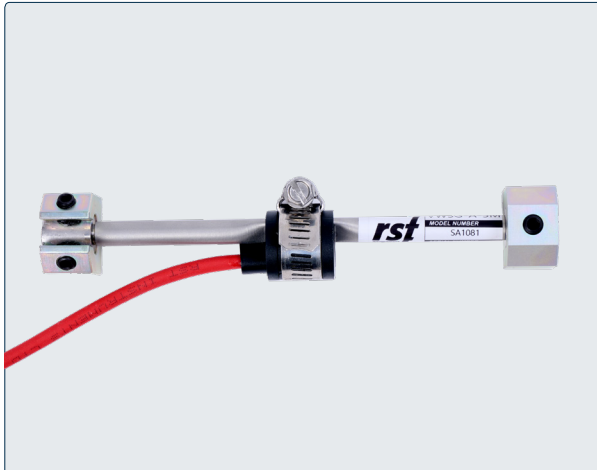
### STANDARD STRAIN GAUGES

#### VIBRATING WIRE ARC WELDABLE STRAIN GAUGES

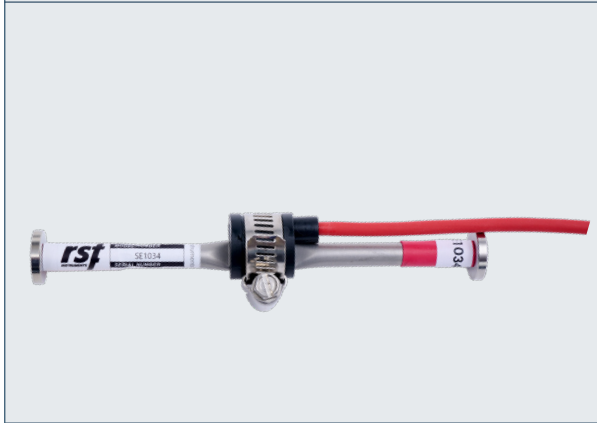
VWSG-A-5M	Vibrating Wire Arc Weldable Strain Gauge w/ 5m of EL370004 Cable and End Blocks
VWSG-A-15M	Vibrating Wire Arc Weldable Strain Gauge w/ 15m of EL370004 Cable and End Blocks
VWSG-A-30M	Vibrating Wire Arc Weldable Strain Gauge w/ 30m of EL370004 Cable and End Blocks
VWSG-A-50M	Vibrating Wire Arc Weldable Strain Gauge w/ 50m of EL370004 Cable and End Blocks

#### VIBRATING WIRE EMBEDMENT STRAIN GAUGES

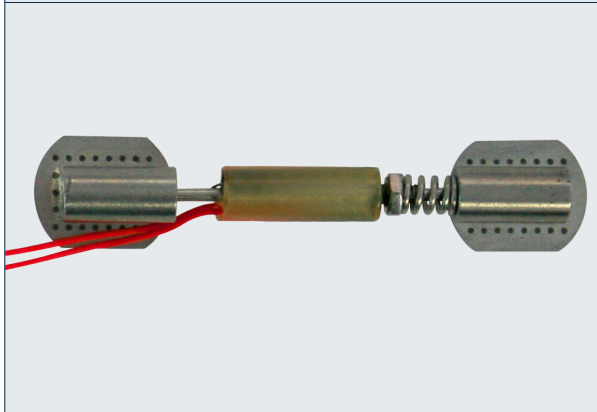
VWSG-E-5M	Vibrating Wire Embedment Strain Gauge w/5m of EL370004 Cable
VWSG-E-15M	Vibrating Wire Embedment Strain Gauge w/15m of EL370004 Cable
VWSG-E-30M	Vibrating Wire Embedment Strain Gauge w/30m of EL370004 Cable
VWSG-E-50M	Vibrating Wire Embedment Strain Gauge w/50m of EL370004 Cable



Vibrating Wire Arc Weldable Strain Gauge



Vibrating Wire Embedment Strain Gauge



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

# Vibrating Wire Strain Gauge

## SPECIFICATIONS + ORDERING



PRODUCT CATEGORY:  
 LOAD CELLS + PRESSURE SENSORS + STRESS METERS

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 $\mu\epsilon$	3000 $\mu\epsilon$	3000 $\mu\epsilon$ / 5000 $\mu\epsilon$
Sensitivity	1.0 microstrain	1.0 microstrain	0.5 to 1 microstrain
Operating Temperature	-4 to 176°F (-20°C to 80°C)		
Thermal Coefficient of Expansion	12.2 ppm/°C		
Accuracy	+/- 0.5% F.S. (batch calibration) +/- 0.1% F.S. (individual calibration - upon request) contact RST for complete details.		
Rated Pressure	2000 kPa	2000 kPa	—
Thermistor Accuracy	0.9°F (0.5°C)		
Signal Cable	EL370004 or EL380004		
Accessories	Please contact RST for complete information about accessories: VWSG-A-INST (installation tools) VWSG-A-ENDS VWSG-A-SPACER		
ACCESSORIES FOR ARC WELDABLE STRAIN GAUGES			
VWSG-A-CONENDS	VWSG-A rebar type mounting blocks for concrete attachment		
VWSG-A-COVER PLATE	VW strain gauge arc weld protective cover		
VWSG-A-ENDS	VWSG-A end block pair replacement		
VWSG-A-INST	VW SG arc weld installation tool kit		
VWSG-S-KIT	VWSG-G-3000/5000 installation kit		
Rental_SPOTWELD	Rental Spot Welder for VWSG-S-3000/5000		
VWSG-A-SPACER	VW SG arc weld spacer bar		
EL370004 Cable	Two twisted pairs cable with polyurethane jacket		
Please contact RST for complete information about accessories			

### ORDERING INFO

Model Number
Custom cable lengths available upon request
Accessories required