

VW Strain Gauge – Spot Weld

Strain gauges offer the ability to measure the effect of loads, settlement or other changes in a structure. They record strain, which is a dimensionless measure of deformation. Stress is related to strain by a material's properties and is predictable within a certain range of applied strain.

Strain gauges are useful for determining the effects of applied loads to a structure.

Geosense® VWS-2020 series vibrating wire strain gauges are designed primarily to measure strains on the surface of steel structures but may also be used on other types of material. VWS 2020 strain gauges are available as a gauge with integral coil housing, or a gauge only with separate coil housing.



Accessories and Customisation

To order VWS-2020 series strain gauges the following information should be specified:

- Fixing method
- Coil type
- Protective cover
- Cable length

The accessories below will speed installation and data collection:

- Readout or datalogger
- Tensioning Jig



Features

- Small size
- Can be used in confined spaces
- Easily tensioned on site
- Reliable long term performance
- Rugged, suitable for demanding environments
- Insensitive to long cable lengths.
- High accuracy
- Integral Thermistor for temperature correction
- Suitable for remote reading and data logging

Applications

- Measurement of stress and strain deformation in:
- Bridges & Dams
- Buildings
- Struts and support systems.
- Pipelines
- Tunnel linings
- Piles & Mass Concrete
- Reinforcement bars

Technical Specifications

Type	VW S-2020	VW S-2025	VW S-2026
Fixing Method	Spot Welding	Spot Welding	Spot Welding
Coil Type	Separate	Integral	Integral
Gauge Length	49 mm	49 mm	49 mm
Overall Length	65 mm	65mm	65 mm
Resolution	0.4 $\mu\epsilon$	0.4 $\mu\epsilon$	0.4 $\mu\epsilon$
Strain Range	3000 $\mu\epsilon$	3000 $\mu\epsilon$	3000 $\mu\epsilon$
Accuracy	$\pm 0.1\%$ to $\pm 0.5\%$ FS	$\pm 0.1\%$ to $\pm 0.5\%$ FS	$\pm 0.1\%$ to $\pm 0.5\%$ FS
Non-Linearity	<0.5% FS	<0.5% FS	<0.5% FS
Temperature Range	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
Frequency Range	1500-3500	1500-3500	1500-3500

VW Strain Gauge – Spot Weld

Applications

- VWS-2020 vibrating wire strain gauges may be read by the VW-2106 or any vibrating wire readout device and may be readily connected with data loggers with vibrating wire interface modules.
- Vibrating wire strain gauges output a frequency signal and are therefore insensitive to resistance changes in connecting cables caused by contact resistance or leakage to ground.
- Cable may be readily and simply extended on site without special precautions. Gauges may be read up to 1000 metres away from their installed location without change in calibration.

Available Models

- Model VWS-2020 consists of the gauge plus a separate plucking coil housing which is placed over the top of the gauge and secured using stainless steel straps.
- The plucking coil housing is made from tough corrosion resistant plastic and also acts as protection to the gauge. It can also be used as a portable readout unit
- Model VWS-2025 consists of an integral coil pluck housing which is encapsulated around the gauge.
- Model VWS-2026 is the same as 2025 except the end blocks have pins which are designed to be grouted or bonded into holes drilled into the material under test.
- For Models VWS-2025 & 2026 a separate cover plate is placed over the gauges to protect them and is secured using stainless steel straps

Readout Systems

Custom datalogger systems for any number of sensors in any configuration are also available and can be designed on request. Please see our other data sheets for details of readout equipment, terminal boxes and data loggers specific to vibrating wire devices.

About PCTE

PCTE have over 30 years' experience in the measurement and testing of construction materials. PCTE can provide more than just the equipment, they can provide expert training. PCTE have a service centre in Sydney in which they can provide calibration, repairs and warranty repairs.

Other Equipment

PCTE supply three main ranges: NDT, Lab and Geotech Instrumentation.

NDT includes: Rebound Hammers, Covermeters, Ultrasonics, GPR, Corrosion Testing, Coating Testing and Foundation Testing

Lab includes equipment for: Concrete, Cement, Aggregate, Soil, Asphalt and Metal

Geotech Instrumentation includes: Strain Gauges, Piezometers, Inclometers, Extensometers, Tiltmeters, Load Cells and Dataloggers