DATASHEET

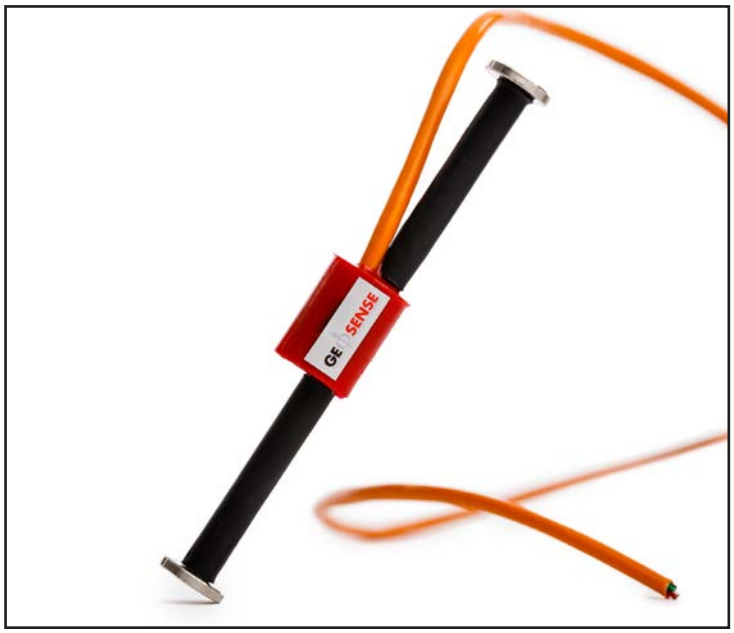
VW Strain Gauge Embedment VWS-2100 Series

Designed for direct embedment in concrete. Can be used within mass concrete with coarse aggregates as its heavy duty construction resists bending and the large end flanges provide a high contact area.

GEOSENSE

VW Strain Gauge Embedment VWS-2100 Series

Overview



Geosense® VWS-2100 series vibrating wire embedment strain gauges are designed for direct embedment in concrete.

The strain gauge operates on the principle that a tensioned wire, when plucked, vibrates at its resonant frequency. The square of this frequency is proportional to the strain in the wire.

The gauge consists of two end blocks with a tensioned steel wire between them.

Around the wire is a magnetic coil which when pulsed by a vibrating readout or data logger interface plucks the wire and measures the resultant resonant frequency of vibration.

Deformation within the concrete will cause the two 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.

VWS-2125 can be used within mass concrete with coarse aggregates as it's heavy duty construction resists bending and the large end flanges provide a high contact area.

APPLICATIONS

- Measurement of stress and strain deformation in:
- Driven and bored piles
- Tunnels and deep excavations
- Mass concrete pours
- Precast piles
- Concrete dams
- Retaining walls
- Dynamic measurements with auto resonant version
- Building foundations

FEATURES

- Reliable long-term performance
- Rugged, suitable for demanding environments
- High accuracy
- Insensitive to long cable lengths
- Totally waterproof
- Direct embedment in concrete
- Auto resonant units available

VW Strain Gauge Embedment VWS-2100 Series

Specifications

GENERAL			
Model number	VWS-2100	VWS-2120	VWS-2125
Gauge length	150mm	50mm	250mm
Overall length	156mm	54mm	260mm
Resolution	1 με	1 με	1 με
Strain range	3000 με	3000 με	3000 με
Accuracy[1]	±0.1% to ±0.5% FS	±0.1% to ±0.5% FS	±0.1% to ±0.5% FS
Non linearity	<0.5% FS	<0.5% FS	<0.5% FS
Coil resistance	180Ω	180Ω	180Ω
Coefficient of thermal expansion	12.0 ppm/°C	12.0 ppm/°C	12.0 ppm/°C
Thermal factor K	<0.1% FS/°C	<0.1% FS/°C	<0.1% FS/°C
Temperature range	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
Frequency range	850-1550	850-1550	850-1550
Cable type	2 pair x Type 900 - VW Sensor with Foil Screen & Drain Wire		
Cable sheath	Orange PUR 5mmØ		
ORDERING INFORMATION			
Gauge length			
Cable length			
Readout			

[1] ±0.1% with individual calibration, ±0.5% FS with standard batch calibration

VW Strain Gauge Embedment VWS-2100 Series

Further Information

READOUTS

VWS-2100 vibrating wire strain gauges may be read by the VWR-1 or any vibrating wire readout device and may be readily data logged using the GeoLogger G8-Plus or any other data loggers with vibrating wire interface modules.

CABLES

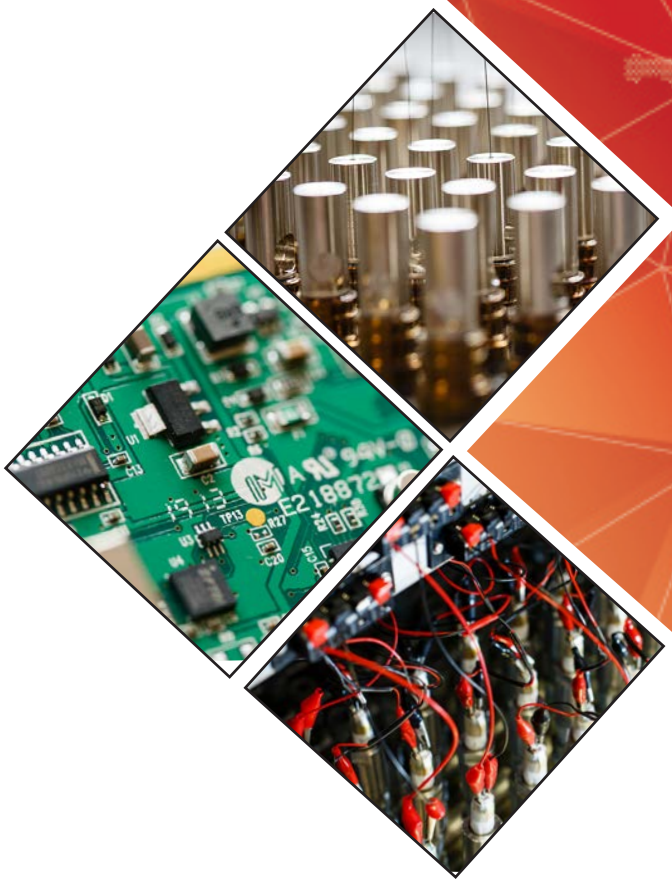
therefore insensitive to resistance changes in connecting cables caused by contact resistance or leakage to ground.
Cable may be readily and simply extended on site without special precautions. Gauges may be read up to 1000 metres away from their installed location without change in calibration.

FULLY WATERPROOF

VWS-2100 strain gauges are fully waterproof all stainless steel construction with coils encapsulated with epoxy resin. The protective tube assembly is totally sealed to the embedment flanges by laser welding, thus eliminating any possibility of seal degradation. During the testing and stressing procedures, the welds are fully checked by tensile testing carried out in excess of the elastic limit of the protective tube assembly.

ROSETTES & ZERO STRAIN CONTAINERS

Strain gauge rosettes and zero strain containers are available for VWS-2100 gauge series.



GEOSENSE

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