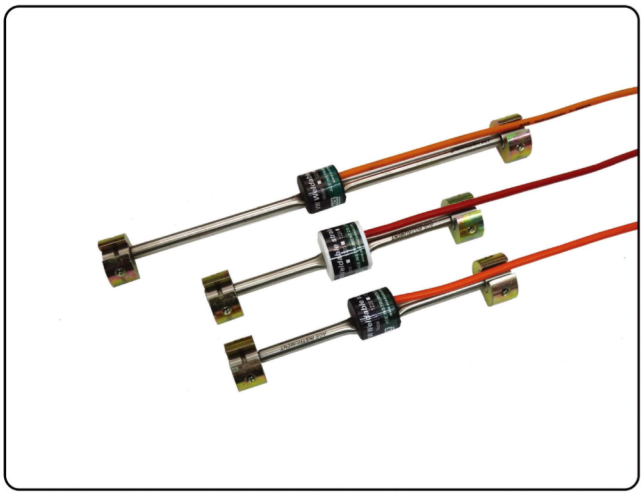
VW weldable strain gages



Description

VW weldable strain gage consists of a sealed stainless steel tube and mounting blocks for arc welding at both ends. It has a vibrating wire that is held tension between both ends in stainless steel tube and the plucking coil is included in nylon case.

The vibrating wire of VW weldable strain gage is tension between two end mounting blocks which are electric arc welded to the surface of the steel member. The wire is plucked so that is vibrates at its resonant frequency. This frequency depends on the wire tension, which will vary as the strain of steel member. The change in frequency is calculated the strain or stress directly by the VW readout unit.

Features

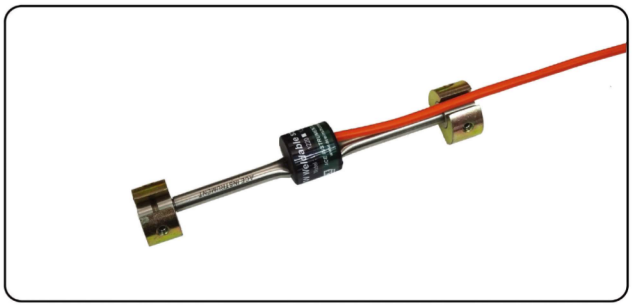
- Not affected by cable length and resistance change, reproducibility are very excellence
- Possible to automatic measurement

Applications

- Measurement of strain in steel member of bridges and buildings during and after construction.
- Measurement of load in struts used to brace deep excavations.
- Measurement of strain in tunnel linings and anchor systems.
- Measurement of concentrated stress in pipe line
- Measurement of displacement in concrete using anchor for surface sticking of concrete

[Model 1220 standard]

The model 1220 is designed to measure strain in steel members of struts, big piles.



[Model 1220A wide range]

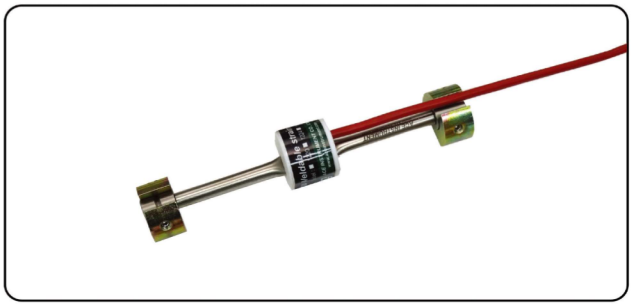
The range of model 1220A is 5000$\mu\varepsilon$. It is useful to measure displacement of soft materials such as plastic. It is also provided calibration sheet.

[Model1222 long gage]

The model 1222 is designed to long gage type product with the length of 250㎜. This is measure more exactly when established in the direction of object material length (measure of longitudinal strain).

[Model 1224 high temperature]

The model 1224 is designed to bear with high temperature up to 200℃. So that it is useful to test the curing of concrete pile



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ACE INSTRUMENT
Geotechnical Sensors & Smart Solutions

VW weldable strain gages

Specification

Model	1220 (Standard)	1222 (Long gage)	1224 (High temperature)	1220A (Wide range)
Sensor element	Vibrating wire sensor			
Range	3,000 microstrain			5,000 microstain
Resolution	0.5 microstrain			
Accuracy	±0.1% FSR			
Nonlinearity	±0.5% FSR			
Coefficient of linear expansion	12.2×10^{-6}/℃			
Operating temperature	-40~80℃		-29~200℃	-40~80℃
Built-in temperature device	Thermistor (3kΩ)			
Temperature device range	-40~105℃			
Temperature device accuracy	±0.5℃			
Gage length	153.1㎜	250㎜	153.1㎜	
Gage factor	4.062			Individual calibration
Waterproof	300m H_2O			
Materials	Stainless steel 300 series. O-ring sealing. high grade epoxy potting			
Weight	0.2kg	0.3kg	0.2kg	
Signal cable	Ø4.5㎜, 0.24㎟×4C shielded PVC sheath cable		Ø5㎜, 0.3㎟×4C shielded Silicone sheath cable	Ø4.5㎜, 0.24㎟×4C shielded PVC sheath cable
Accessories	Mounting block 2ea			

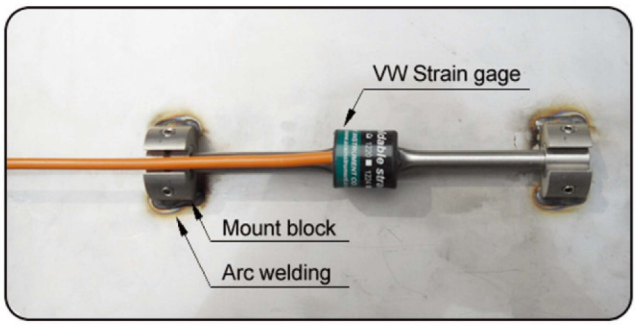
The readout

It is connected to the system such as the VW readout units, data loggers to be data logging and data acquisition system to monitor readings. It is compatible with other company's readout unit.

- ACE-800 (VW readout)
- ACE-1000 (VW data recorder)
- ACE-1100 series (VW mini logger)
- ADL-16V (VW data logger)
- ADL-200A (Smart logger)
- VL Module (Smart LoRa system)

Ancillary equipments

- Terminal box (model 7012/7024)
- Setting bar
- Anchor for mounting on the surface of concrete
- Protective cover



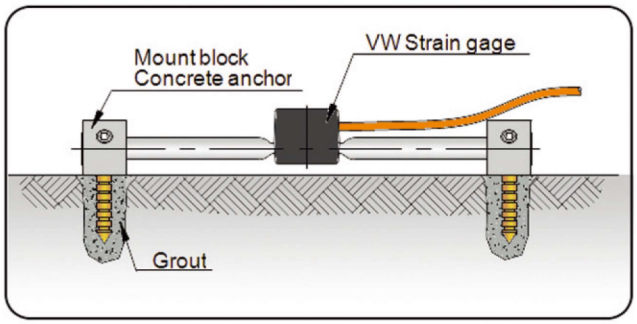
[Installation of arc welding]

Ordering information

- Application field
- Keeping VW readout unit
- Cable length

Recommendation

- It is possible to have lots of measurement error with load cell measuring the pivot force directly as the eccentric load or bending moment for strut, anchor, pile effects greatly. When gotten the average value of transformative rate setting up the 2~4pcs symmetrically in being established at the same point, the minute measurement is possible.
- In case of long-term measuring, apply the epoxy on the top of the tightened screw after gage setting.
- The strut is live with electricity caused by the electric welding and the stagnant water at a temporary site etc. When you measure this sensor, which is installed in this site, you must engage the shield clip of data logger. Only so, you can get the stable data.



[Installation of concrete surface]

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