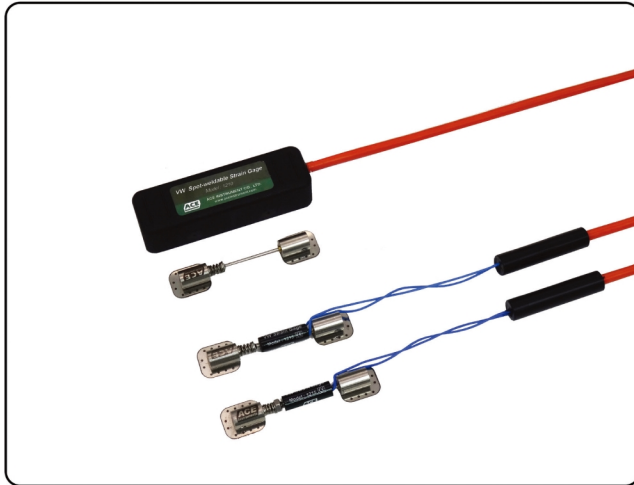


## VW spot weldable strain gages



### Description

The model **1210 VW spot weldable strain gage** consists of a gage that is composed of two end flanges joined by a tube, and a coil housing that two small plucking coils are fixed.

The vibrating wire of VW spot weldable strain gage is tensioned between two end blocks which are spot welded to the surface of the steel member. The wire is plucked so that it 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.

To obtain long-term stable readings, the spot welded surface must grind flat and then are spot welded using the **model ACE-1200 spot welder**.

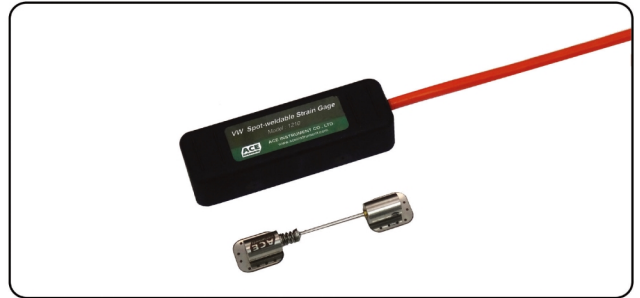
The gage is equipped with a temperature device for compensating of temperature variations.

### Applications

- Measurement of strain in structural member of buildings and bridges
- Measurement of load in the anchors under excavation.
- Measurement of strain in tunnel lining or anchor systems.
- Finding of bearing area in eccentric load applied on the pipelines.
- Measurement of distributed load in strength testing of piles.
- Measurement of strain on reinforcing bars where space may be limited.

### [Model 1210 standard]

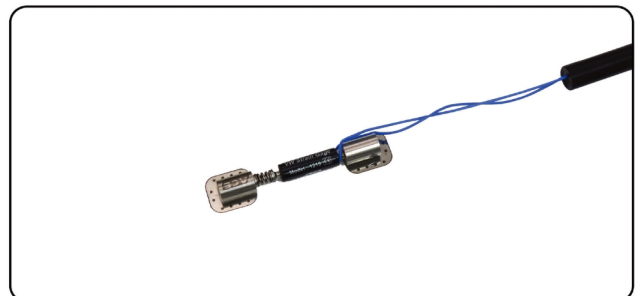
The model 1210 VW spot weldable strain gages are designed to measure strain in steel structure such as bridges, piles, tunnel linings and buildings, etc.



### [Model 1215, 1215A, 1215B all-in-one]

The model 1215 VW soil nail type spot weldable strain gages measurement of metamorphosis rate is more useful in case there is any limitation in the working space as gage and coil are unified when being attached to the construction site of soil nail or reinforcing bar

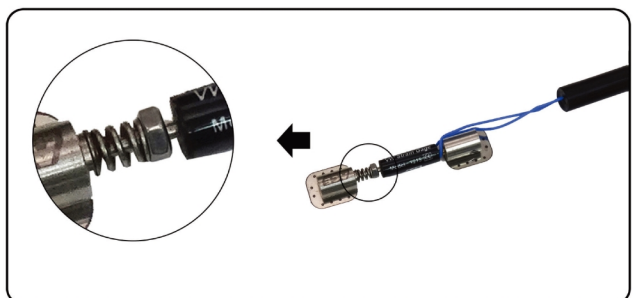
The range of model 1215A is  $5000\mu\epsilon$  and model 1215B is  $10000\mu\epsilon$ . These two models are provided the calibration sheet.



### [Model 1215C range adjustable]

Model **1215C** is possible to adjust its range of  $10000\mu\epsilon$  and also is provided calibration sheet.

There are  $\varnothing 4\text{mm}$  blocks attached at the end of flanges and possible to attach on the plastic pile etc.



## VW spot weldable strain gages

### Features

- Reusable coil housing
- Not affected by cable length and resistance change, reproducibility are very excellence
- Preventative rust materials
- Possible to automatic measurement

### 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 mini logger)
- ADL-200A (Smart logger)

### Recommends

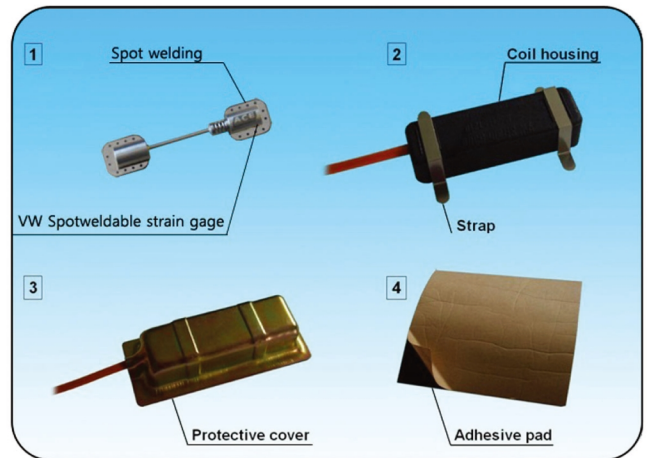
- As the sort of reinforcing bar has rough surface, it is possible to reach the limitation of compression or seal at that time of establishing if the side of sticking is not rough or flat. As the displacement applicable to the reinforcing bar is big and the gage for transformative rate is short during soil nail is imprinted, the range of measuring passes over and finally and it causes to the damage. Therefore, it should be careful not being passed over the frequency range (1,800~2,300Hz) set up during taking out of the factory.

In this works site, wide range type of strain gage are required such as 1215A and B

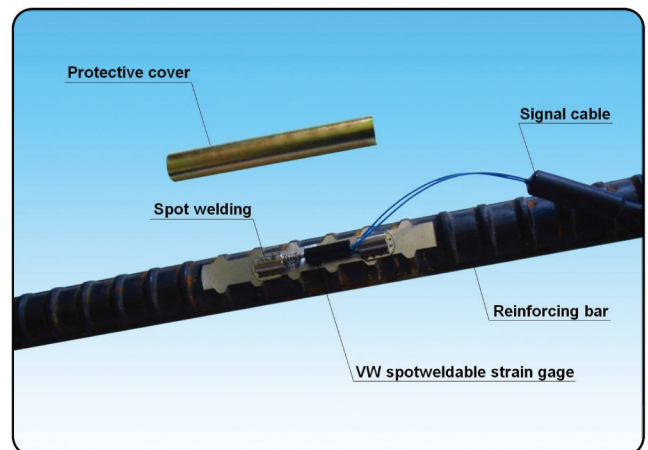
- The strut is live with electricity caused by the electric welding and the stagnant water at a temporary site etc. When you measure this sensor, which is installed in this site, you must engage the shield clip of data logger. Only so, you can get the stable data.



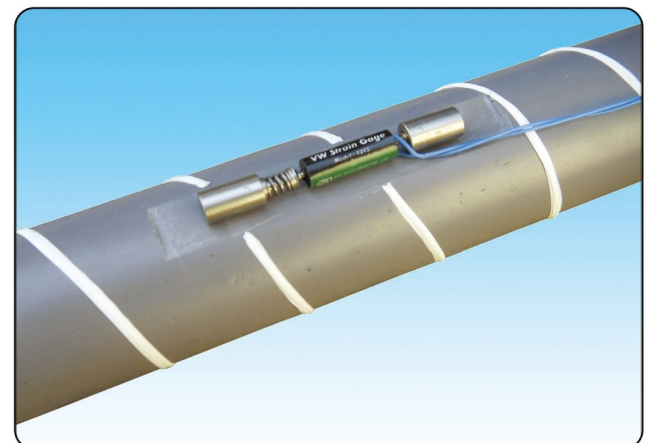
[Model ACE-1200 spot welder]



[Installation of model 1210]



[Installation of model 1215]



[Installation of model 1215 A, B fiber glass member]



## VW spot weldable strain gages

### Specification

Model	1210 (Standard)	1215 (Miniature type)	1215A (Wide range)	1215B (Wide range)	1215C (Adjustable)
Sensor element	Vibrating wire sensor				
Range	3,300 microstrain		5,000 microstrain	10,000 microstrain	
Resolution	0.5 microstrain		1 microstrain	2 microstrain	
Accuracy	±0.1% FSR				
Nonlinearity	±0.5% FSR				
Coefficient of linear expansion	11 × 10 <sup>-6</sup> /°C				
Operating temperature	-40~80°C				
Built-in temperature device	Thermistor (3kΩ)				
Temperature device range	-40~105°C				
Temperature device accuracy	±0.5°C				
Gage length	51.5mm				
Gage factor	0.391		Individual calibration		
Waterproof	105m H <sub>2</sub> O				
Materials	Stainless steel 300 series, O-ring sealing, ABS case, high grade epoxy potting				
Weight	0.1kg				
Signal cable	Ø4.5mm, 0.24mm <sup>2</sup> × 4C shielded PVC sheath cable				
Accessories	①Housing strap ②Mastic pad		Protection cover		

### Ancillary equipments

- Universal terminal box (model 7012/7024)
- Portable spot welder (220VAC model ACE-1200)
- Bonding epoxy kit
- Protective cover (PC-10 / galvanized steel plate)

### Ordering information

- Application field
- Keeping VW readout unit
- Cable length
- Calibration sheet requirement