

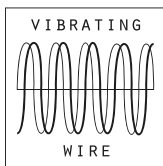
VK41

— **SPOT WELDABLE**
STRAIN GAUGES

STRAIN GAUGES
& THERMOMETERS



VW SPOT WELDABLE STRAIN GAUGES



Vibrating wire spot-weldable strain gauges are mainly designed to measure strain on steel-structure surface.

The gauge consist of a steel wire tensioned between two plates which can be either spot-welded or epoxy bonded to the surface in question.

Gauge is pre-tensioned during manufacturing at mid full scale or in any other position if requested. Measuring coil is mounted inside a plastic red box with a built-in thermistor for data thermal corrections.

APPLICATIONS

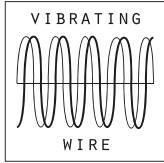
- Strain measurements on pipelines
- Stress and strain monitoring of tunnel final lining
- Evaluation of the stress level on bridges
- Monitoring of struts and reinforcement bars
- Strain measurement of steel structures and arch support

FEATURES

- Simple installation with portable spot-welder
- Long-term stability
- Accurate readings even with long cable lengths
- Long working life and reliability
- Built-in temperature sensor
- Fast response
- Re-usable plucking coil

CE Meet the essential requirements of the EMC Directive 2004/108/EC

OPERATING PRINCIPLE



The model 0VK4100VS00 spot weldable strain gauge is mainly composed by a strain gauge, a separate plucking coil with built-in NTC thermistor and signal cable.

Strain gauge comprises a sealed tube containing a wire held in tension between two welding blocks, one at each end. Deformation of the structure is transferred to the gauge altering the tension of the wire and the resulting readings are used to measure strain. The changes in strain are measured by the coil assembly mounted on the gauge. 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.

Spot weldable strain-gauges are small so that they can be installed in limited space. They are particularly useful for monitoring steel reinforcement bars, rock bolts and for spot-welding on pile-lines and other sensitive structures where arc welding is not allowed or where 220V power supply is unavailable.

TECHNICAL SPECIFICATIONS

	0VK4100VS00
Method of installation	surface mount strain-gauge with spot-weldable end plates
Excitation method	pluck and sweep
Active gauge length	47.5 mm
Range (nominal)	500µε to 3500µε
Sensitivity ⁽¹⁾	1.0 µε
Accuracy ⁽²⁾	±0.5% FS
Stability	0.1% FS/year
Typical frequency range ⁽³⁾	from 1130 to 3000 Hz
Coil resistance	150 Ohm
Thermistor type	NTC 3 kΩ
Thermal coeff. of expansion	12.0 ppm / °C
Temperature range	-20°C a +80°C
Signal cable	0WE104SG0ZH

(1) Using a gauge factor, the measured frequency can be converted directly into units of strain

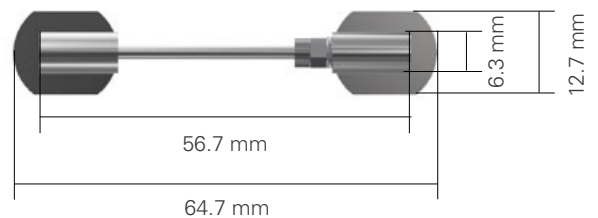
(2) With batch calibration

(3) The expressed frequency range could have a ±10% variation

0VK4100VSP0 - PLUCKING COIL



0VK4100VSG0 - STRAIN GAUGE



APPLICATION

Since 2009, Sisgeo Srl is one of the favourite suppliers of VW spot weldable strain gauges for SNAM Rete Gas (ENI Oil & Gas Group), the Italian natural gas pipe line network management Company.



ACCESSORIES AND SPARE PARTS

0VK410PSW00

Portable capacitive discharge spot-welder specifically designed for installing spot weldable strain gauges. It works from 220V AC main supply and have a heavy duty battery pack that gives the portability for site installation where main supply is not available.

0WE104SG0ZH

LSZH signal cable for VW strain gauges.

0VK4100VSG0

strain-gauge only

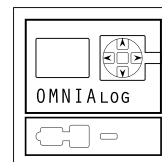
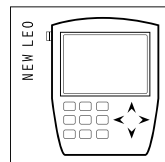
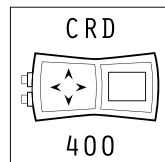
0VK4100VSP0

Plucking coil only



Spot weldable strain gauges on strut

READABLE BY



For further information refer to their own datasheets

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ADDITIONAL SUPPORT

SISGEO offers on-line assistance service to the Customers in order to maximize the performance of the system and training on the correct use of the instrument/readout.

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