

MINIATURE STRAIN GAUGES

SM-2 Series

APPLICATIONS

The SM-2 series of miniature vibrating wire strain gauges is used to measure variations in strain, which allows stress evaluation when the material's modulus of elasticity is known. Typical examples of steel structures where these gauges can be used include:

- Steel girders, pipelines and reservoirs
- Bridges, piers, retaining walls
- Dams and nuclear power plants
- Structural members of buildings and bridges
- Tunnel supports
- Piles and caissons
- Hollow core rock bolts and rebars

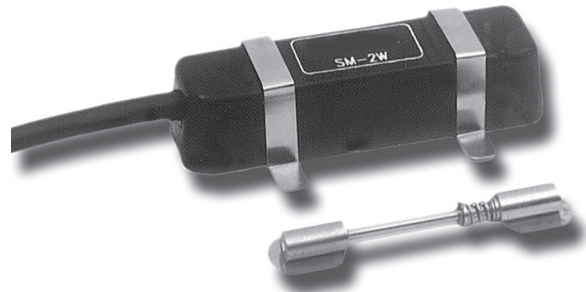
DESCRIPTION

The SM-2 consists of a length of steel wire tensioned between two end blocks and protected by a connecting tube. The exterior forces applied on the end blocks modify the tension in the wire, hence its resonant frequency, which is read by a built-in electromagnet.

The SM-2 is offered in two models, SM-2W and SM-2A, that differ in their installation. The SM-2W is designed to be spot-welded on a surface and then covered by a protective housing which contains the electromagnet. The SM-2A is generally installed inside a small diameter bore. Its electromagnet surrounds the connecting tube.

Unless otherwise specified, the gauge tension is factory-adjusted at mid-range. According to the anticipated strain direction, the tension can later be easily modified using the spring fitting on the gauge. This compressed spring compensates for the wire tension and contributes in making the SM-2 a very compliant gauge.

A thermistor incorporated into the gauge supplies information on the effects of temperature on the materials.



Model SM-2W with removable electromagnet housing

FEATURES

- Long-term reliability
- High resolution and accuracy
- Low profile design to minimize errors caused by bending of structural members
- 3000 microstrain range with adjustable wire tension
- Ease of installation
- Corrosion resistant: stainless steel and ABS plastic components
- Frequency signal easy to process and transmit over long distances

INSTALLATION AND READING

The SM-2W gauge is designed to be spot-welded on flat or curved surfaces (the circular plane has to be perpendicular to the gauge axis). The electromagnet housing is separate from the gauge. It can be permanently spot-welded in place over the gauge, or carried around with a reading unit. The SM-2A is kept tight inside a small diameter bore with a setscrew.

SPECIFICATIONS

MODEL	SM-2W and SM-2A
Range	3000 $\mu\epsilon$
Resolution	0.5 $\mu\epsilon$ (min.)
Operating temperature	-20 to +80°C
Active gauge length	50.8 mm
Thermistor	3k Ω (see model TH-T)
Electrical cable	IRC-41A, IRC-41AP (optional)

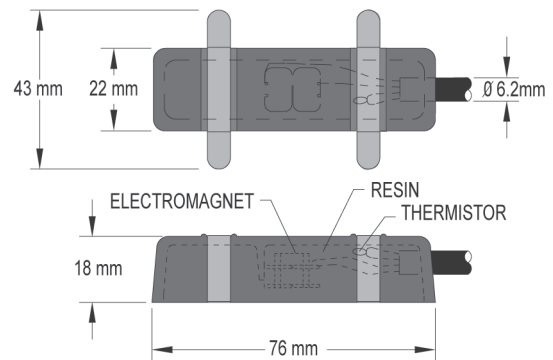
ACCESSORIES

- Installation tools
- Readout instruments: MB-6T(L), SENSLOG

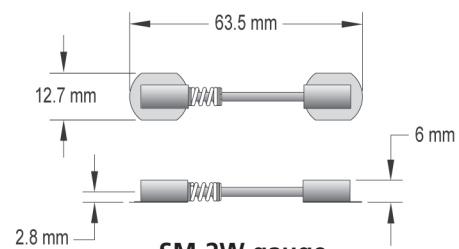
ORDERING INFORMATION

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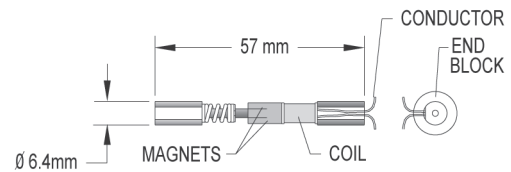
- Model
- Cable length
- Accessories



SM-2W electromagnet housing



SM-2W gauge



SM-2A gauge