



## Miniature VW Strain Gauge Model 5510-RT-SM2 Series

### FEATURES

- **High resolution and accuracy**
- **Long-term reliability**
- **Low profile design to minimise 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.**

### APPLICATIONS

The SM-2 series of miniature vibrating wire strain gauges are 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 and retaining walls
- Dams and nuclear power plants
- Structural members of buildings and bridges
- Tunnel supports
- Piles and caissons
- Hollow core rock bolts and rebars



SM-2W Vibrating Wire Strain Gauge  
with Removable Electromagnet Housing

### Description

The SM-2 comprises 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 and 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, the tension can later be easily modified using the spring fitting on the gauge. This compressed springs compensates

for the wire tension and contributes to making the SM-2 a very compliant gauge.

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

### Installation & 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 with a set-screw inside a small diameter bore. The SM-2W and SM-2A gauges are read using an MB-6T(L) or PALMETO VW readout unit, or a SENSLOG data acquisition system.

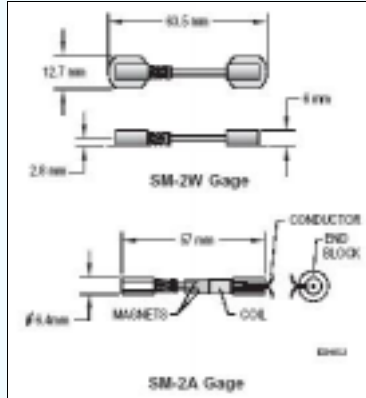
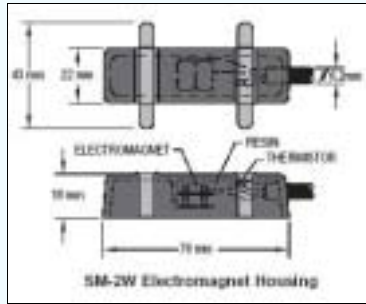
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### Options

- Type of thermistor and cable
- Individual calibration of gauges

### Accessories

- Portable readout units (MB-6T(L), PALMETO VW)
- Data acquisition system (SENSLOG)
- Installation tools
- Protective cover
- Lightning protection box
- Terminal and junction boxes
- Splicing kit



### Ordering Information

Please specify:

- Model
- Cable length
- Options and accessories required

### Specifications

|                                     |  |
|-------------------------------------|--|
| <b>Model:</b>                       | <b>SM-2W and SM-2A</b>   |
| <b>Strain Range:</b>                | 3000 $\mu\epsilon$   |
| <b>Resolution:</b> - Wire:          | 0.5 $\mu\epsilon$ (min.)   |
| - Temperature:                      | 0.1 °C   |
| <b>Operating Temperature Range:</b> | -40°C to +65°C   |
| <b>Active Gauge length:</b>         | 50.8 mm  |
| <b>Gauge Factor:</b>                | 0.3911   |
| <b>Thermistor:</b> - Type:          | 3 k $\Omega$ (2 k $\Omega$ optional)   |
| - Accuracy:                         | $\pm 0.5\%$ F.S.   |
| <b>Electrical Cable:</b>            | <ul style="list-style-type: none"> <li>- IRC 41A (standard): 2 twisted shielded pairs AWG, 6.2 mm O.D., PVC jacket</li> <li>- IRC 41P (optional): identical to IRC 41A except that jacket is polyethylene</li> </ul> |

Due to on-going design improvements and reviews, we reserve the right to amend product and specifications without prior notice



FOR FURTHER INFORMATION

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