



## Surface Mount Strain Gauge Model 5506-RT-SM5 Series

### FEATURES

- Long-term reliability
- High resolution and accuracy
- 3000 microstrain range with adjustable wire tension
- Very high compliance
- Rugged steel construction
- Easy to install
- Choice of mounting blocks: welding, expansion shell or grouted
- Temperature reading
- Frequency signal easy to process and transmit over long distances

### APPLICATIONS

The SM-5 Vibrating Wire Strain Gauge is designed for monitoring variations in strain, which allows stress evaluation when the material's modulus of elasticity is known. The gauge is used for:

- Metal structures: girders, piles, pipelines, pressure vessels
- Concrete structures: bridges, retaining walls, hydraulic structures
- Underground and underwater supports, linings, piers, footings



### Description

The SM-5 is composed of two end pieces joined by a tube that protects a length of steel wire. An electromagnet is placed in a protective housing located at the centre of the tube. The exterior forces applied on the strain gauge modify the tension in the wire, and consequently, the wire's resonant frequency read by the electromagnet.

The SM-5 vibrating wire strain gauges are offered in two models, SM-5A and SM-5B, that differ in their mechanical supports. Both models are threaded between two anchor blocks. The SM-5A is held tight by set screws and the SM-5B by hexagonal nuts.

Unless otherwise specified, the gauge tension is factory-adjusted at mid-range and can later be modified by the user according to anticipated strain direction.

A built-in compressed spring compensates for the wire tension and contributes to making the SM-5 a very compliant gauge.

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

### Installation

The SM-5 strain gauges are designed for quick and easy installation, while offering many possibilities:

- Anchor blocks welded to the structure
- Anchor blocks welded to a bolt or a short reinforcement bar ready to be expansion shell or grouted

A setting tool, holding a dummy gauge, allows both anchor blocks to be positioned accurately.

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### Options

- Type of thermistor and cable
- Individual calibration of gauges

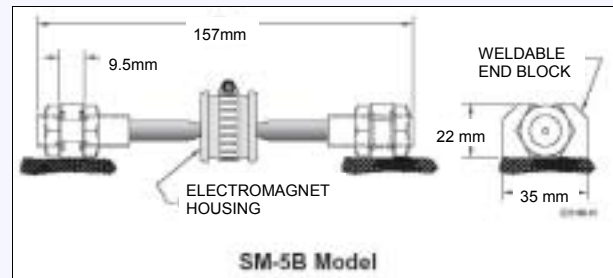
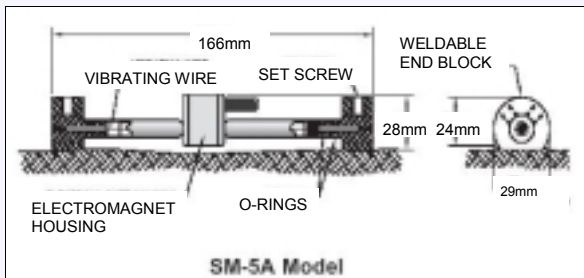
### Accessories

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

### Ordering Information

**Please specify:**

- Model
- Anchor blocks: welded, expansion shell or grouted type
- Cable length
- Options and accessories required



### Specifications

| Model:                       | SM-5A   | SM-5B  |
|------------------------------|---|--------|
| Strain Range:                | 3000 $\mu\epsilon$  |        |
| Resolution:                  | 1 $\mu\epsilon$ (min.)<br>0.1°C   |        |
| Operating Temperature Range: | -50°C to +60°C  |        |
| Active Gauge length:         | 149 mm  | 129 mm |
| Gauge Factor:                | 4.0624  |        |
| Thermistor:                  | 3 kW (2 kW optional)<br>± 0.5% F.S.   |        |
| Electrical Cable:            | <ul style="list-style-type: none"> <li>- IRC 41A (standard): 2 twisted shielded pairs 22 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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