VIBRATING WIRE STRAIN-GAUGES

Vibrating wire strain-gauges are used to monitor variation in strain, which allows stress evaluation in steel or in massive concrete structures. A thermistor incorporated into the gauge supplies information on the effects of temperature.

Arc-weldable vibrating wire strain-gauges are designed for arc welding to steel structure such as tunnel linings, pipes, piles and bridges.

Embedment strain-gauges are directly embedded for strain measurements in concrete structures.

APPLICATIONS
- Piles and mass concrete
- Concrete structures, beams and columns
- Concrete foundations and diaphragm walls
- Tunnel segments
- Steel structures, pipes and arch supports
- Gravity and arch dams
- RCC dams
- Bridges and viaducts

FEATURES
- Reliable long term performance monitoring
- Robust design, suitable for demanding environments
- Thermally aged to minimise long term drift
- Immunity to voltage surges
- Built-in temperature sensor
- Totally waterproof
- Accurate readings even with long cable lengths

Meet the essential requirements of the EMC Directive 2004/108/EC
### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>0VK4000VS00</th>
<th>0VK4200VC00</th>
<th>0VK4000SM00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of installation</td>
<td>surface mount strain-gauge with arc weldable end blocks</td>
<td>embedment strain-gauge with circular end blocks</td>
<td>embedment strain-gauge, specially designed for shotcrete applications</td>
</tr>
<tr>
<td>Active gauge length</td>
<td>150 mm</td>
<td>165 mm</td>
<td>200 mm</td>
</tr>
<tr>
<td>Excitation method</td>
<td>pluck and sweep</td>
<td>pluck and sweep</td>
<td>pluck and sweep</td>
</tr>
<tr>
<td>Range (nominal)</td>
<td>3000 με</td>
<td>3000 με</td>
<td>10000 με</td>
</tr>
<tr>
<td>Sensitivity (1)</td>
<td>1.0 με</td>
<td>1.0 με</td>
<td>1.0 με</td>
</tr>
<tr>
<td>Accuracy (2)</td>
<td>±0.5% FS</td>
<td>±0.5% FS</td>
<td>±0.5% FS</td>
</tr>
<tr>
<td>Stability</td>
<td>0.1% FS/yr</td>
<td>0.1% FS/yr</td>
<td>0.1% FS/yr</td>
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<tr>
<td>Typical frequency</td>
<td>500-1200 Hz</td>
<td>500-1200 Hz</td>
<td>1800-2500 Hz</td>
</tr>
<tr>
<td>Coil resistance</td>
<td>150 ohm</td>
<td>150 ohm</td>
<td>150 ohm</td>
</tr>
<tr>
<td>Thermistor type</td>
<td>NTC 3 kΩ</td>
<td>NTC 3 kΩ</td>
<td>NTC 3 kΩ</td>
</tr>
<tr>
<td>Thermal coeff. of expansion</td>
<td>12 ppm /°C</td>
<td>12 ppm /°C</td>
<td>12 ppm /°C</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20°C + 80°C</td>
<td>-20°C + 80°C</td>
<td>-20°C + 80°C</td>
</tr>
</tbody>
</table>

1. Using a gauge factor, the measured frequency can be converted directly into units of strain. 2. With batch calibration.

### PHYSICAL FEATURES

**0VK4200VC00**

- Length: 165 mm
- Diameter: 20 mm
- End blocks: 42 mm, 6 mm

**0VK4000VS00**

- Length: 150 mm
- Diameter: 20 mm
- End blocks: 42 mm, 15 mm
ACCESSORIES AND SPARE PARTS

0VK4200VN00
“No-stress” embedment strain gauge with plastic container to isolate the section of concrete around the gauge.

0VK42VC3D00
3D rosette mounting block for embedment strain gauges.

0VK400JIG00
Spacing jig for mounting the arc-weldable strain gauges end blocks.

0VK400MB200
Pair of weldable end blocks.

0VK400COVER
Stainless steel protective cover with lugs and pair of weldable blocks. Where thermal influence is expected the cover can be filled with expanding foam.

READABLE BY

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Sisgeo S.r.l. 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.

For more information contact mail: assistance@sisgeo.com

For further information refer to their own datasheets.