ELECTRICAL AND VIBRATING WIRE CRACKMETERS

EXTENSOMETERS & JOINTMETERS
ELECTRICAL AND VIBRATING WIRE CRACKMETERS

Crackmeters are intended to monitor movements across surface joints or cracks, mainly in concrete structures or rocks.

Crackmeter consists of a vibrating wire or potentiometer displacement transducer housed in a stainless steel telescopic body with two anchoring points.

These anchors have self-lubricating ball joints allowing lateral movements up to ±10° in the orthogonal planes (Y - Z axis) not influencing the operation of the jointmeter.

APPLICATIONS
- Cracks on concrete structures or rock
- Structural joints like in concrete dams
- Displacements on pile bearing
- Monitoring of rock faults

FEATURES
- 3-D mounting kit available for triaxial displacement monitoring
- Ball joints allow small lateral movement
- Waterproof up to 100 kPa
- Suitable for long term monitoring

Meet the essential requirements of the EMC Directive 2004/108/EC
# VIBRATING WIRE CRACKMETERS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Technology</th>
<th>Range</th>
<th>Total accuracy (1)</th>
<th>Output signal</th>
<th>Typical frequency range (2)</th>
<th>Power supply</th>
<th>Operating temperature</th>
<th>Anchors type</th>
<th>Length (compressed)</th>
<th>Length (extended)</th>
<th>Material</th>
<th>Weight</th>
<th>Protection</th>
<th>Signal cable</th>
<th>Max. distance to datalogger (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0D313S010VW</td>
<td>vibrating wire with built-in thermistor</td>
<td>0 - 10 mm</td>
<td>&lt; ±0.50% FS</td>
<td>frequency (VW), resistance (T)</td>
<td>-</td>
<td>-20°C +80°C</td>
<td>expanding shell anchor Ø 14 mm, 55 mm long</td>
<td>stainless steel</td>
<td>296 mm</td>
<td>306 mm</td>
<td>15 mm</td>
<td>IP68 up to 1.0 MPa</td>
<td>0WE104K00ZH</td>
<td>1000 m (for more information see FAQ#77)</td>
<td></td>
</tr>
<tr>
<td>0D313S025VW</td>
<td></td>
<td>0 - 25 mm</td>
<td>&lt; ±0.50% FS</td>
<td></td>
<td>2250 - 3000 Hz</td>
<td></td>
<td></td>
<td>Ø 25 mm</td>
<td>303 mm</td>
<td>328 mm</td>
<td>35 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313S050VW</td>
<td></td>
<td>0 - 50 mm</td>
<td>&lt; ±0.30% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>469 mm</td>
<td>519 mm</td>
<td>130 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313S100VW</td>
<td></td>
<td>0 - 100 mm</td>
<td>&lt; ±0.30% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500 mm</td>
<td>600 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313S150VW</td>
<td></td>
<td>0 - 150 mm</td>
<td>&lt; ±0.30% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>631 mm</td>
<td>781 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Including linearity, hysteresis and repeatability  
(2) The expressed frequency range could have a ±10% variation  
(3) Refer to FAQ section of Sisgeo website: www.sisgeo.com/faq

## PHYSICAL FEATURES

- Ø 25 mm
- Ø 16 mm
- Ø 8 mm
- 130 mm
- 35 mm
- 57 mm
- 59 mm

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### PHYSICAL FEATURES

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<thead>
<tr>
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<th>Length (compressed)</th>
<th>Length (extended)</th>
<th>Material</th>
<th>Weight</th>
<th>Signal cable</th>
<th>Max. distance to datalogger (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0D313SA1000</td>
<td>linear potentiometer</td>
<td>10 mm</td>
<td>&lt; ±0.30% FS</td>
<td>4-20 mA current loop (voltage on request)</td>
<td>12 - 24 V DC</td>
<td>-20°C +60°C</td>
<td>expanding shell anchor Ø 14 mm, 55 mm long</td>
<td>334 mm</td>
<td>344 mm</td>
<td>stainless steel</td>
<td>0.5 kg</td>
<td>0WE102KEOZH</td>
<td>1000 m (for more information see FAQ#77)</td>
</tr>
<tr>
<td>0D313SA2500</td>
<td></td>
<td>25 mm</td>
<td>&lt; ±0.30% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>334 mm</td>
<td>359 mm</td>
<td>stainless steel</td>
<td>0.5 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313SA5000</td>
<td></td>
<td>50 mm</td>
<td>&lt; ±0.20% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>384 mm</td>
<td>434 mm</td>
<td>stainless steel</td>
<td>0.6 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313SAE100</td>
<td></td>
<td>100 mm</td>
<td>&lt; ±0.20% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>484 mm</td>
<td>584 mm</td>
<td>stainless steel</td>
<td>0.7 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313SAE250</td>
<td></td>
<td>150 mm</td>
<td>&lt; ±0.15% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>584 mm</td>
<td>734 mm</td>
<td>stainless steel</td>
<td>0.8 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0D313SAE500</td>
<td></td>
<td>200 mm</td>
<td>&lt; ±0.15% FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>684 mm</td>
<td>884 mm</td>
<td>stainless steel</td>
<td>0.9 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Including linearity, hysteresis and repeatability  
(2) Refer to FAQ section of Sisgeo website: www.sisgeo.com/faq
# Accessories and Spare Parts

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Y-axis fixing kit</td>
<td>OD31Y1DTE00</td>
<td>Y-axis fixing kit is composed by a stainless steel “L” shaped plate (50x50x150 mm) supplied with screws, nuts and expanding shell anchors, allowing jointmeter installation in Y direction.</td>
</tr>
<tr>
<td>Z-axis fixing kit</td>
<td>OD31Z1DTE00</td>
<td>Z-axis fixing kit is composed by two stainless steel “L” shaped plates (50x60x200 mm and 50x50x65 mm) supplied with screws, nuts and expanding shell anchors, allowing jointmeter installation in Z direction.</td>
</tr>
<tr>
<td>Extension rod</td>
<td>OD313A15000</td>
<td>Stainless steel extension rod for installation of anchors 150 mm further apart.</td>
</tr>
<tr>
<td>Junction box</td>
<td>0EPD000000</td>
<td>IP67 plastic junction box, available in different models to connect up to 10 crackmeters cables.</td>
</tr>
<tr>
<td>8 pairs multicore cable</td>
<td>OWE1160LSZH</td>
<td>Multicore cable (16 wires, 24 AWG) with LSZH M1 external jacket for grouping up to 4 vibrating wire jointmeters or 8 electrical jointmeters.</td>
</tr>
<tr>
<td>16 pairs multicore cable</td>
<td>OWE1320LSZH</td>
<td>Multicore cable (32 wires, 24 AWG) with LSZH M1 external jacket for grouping up to 4 vibrating wire jointmeters or 8 electrical jointmeters.</td>
</tr>
</tbody>
</table>

![Diagram of Y-axis and Z-axis fixing kits](image)

**Y-axis fixing kit**

**Z-axis fixing kit**

**Extension rod**

**Junction box**

**8 pairs multicore cable**

**16 pairs multicore cable**

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**Electrical and Vibrating Wire Crackmeters** 5
ANALOGUE WIRELESS STRUCTURAL MONITORING

EXAMPLE OF 3-D APPLICATION
PILE BEARING DISPLACEMENT

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TECHNICAL ASSISTANCE
SISGEO offers customers e-mail and phone assistance to ensure proper use of instruments and readout and to maximize performance of the system.

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