



CE 680 M511

Piezoelectric accelerometer with integrated electronics

FEATURES

- » From the Vibro-Meter® product line
- » Designed for medium temperature industrial applications (-50 to +120 °C)
- » Frequency response:
1 Hz to 9 kHz: ±10%
0,5 Hz to 14 kHz: -3 dB
- » Shear mode operation, therefore no output due to thermal transients
- » Hermetically sealed for harsh environments
- » Case insulated, internally shielded
- » ESD protection



DESCRIPTION

The CE 680 M511 is an all-purpose vibration sensor designed for use with machinery in harsh industrial environments. It uses the industry standard 2-wire voltage transmission technique with a constant current supply. The output signal has a sensitivity of 100 mV/g.

Thanks to the accelerometer's isolated ground and internal shield, no ground loops or frame voltages are present to disturb the measurement.

The CE 680 M511 shows extremely low noise levels and exceptional bias voltage stability at elevated temperatures.



SPECIFICATIONS

Note: Unless otherwise stated, all values listed are typical values, referenced at +23°C, 24 V_{DC} supply, 6 mA constant current and 120 Hz.

Operating

| | |
|----------------------------------|-----------------------|
| Sensitivity (at +25°C) | : 100 mV/g ±5% |
| Dynamic range | : 80 g |
| Transverse sensitivity (maximum) | : 5% of axial |
| Linearity | : 1% up to full scale |
| Frequency response (nominal) | |
| • 3 Hz to 5 kHz | : ±5% |
| • 1 Hz to 9 kHz | : ±10% |
| • 0.5 Hz to 14.0 kHz | : -3 dB |
| Resonant frequency | : 30 kHz |
| Temperature response | |
| • <i>Typical deviation</i> | |
| -55 to +120°C | : ±5% |
| -55°C | : -5% |
| 120°C | : +3% |

Electrical

| | |
|--------------------------------------|--------------------------------------|
| Input supply current | : 2 to 10 mA |
| Supply voltage for current source | : 18 to 30 V _{DC} |
| Bias output voltage | : 12 V _{DC} |
| Electrical noise (equivalent g) | |
| • <i>Broadband:</i> 2.5 Hz to 25 kHz | : 700 µg |
| • <i>Spectral:</i> 10 Hz | : 10 µg/√Hz |
| 100 Hz | : 5 µg/√Hz |
| 1000 Hz | : 5 µg/√Hz |
| Output impedance (maximum) | : 100 Ω |
| Grounding | : Case isolated, internally shielded |
| Reversed polarity | : Protected |

Environmental

| | |
|--|-----------------------|
| Temperature range | : -55 to +120°C |
| Sealing | : Hermetically sealed |
| Vibration limit | : 500 g (peak) |
| Shock limit | : 5000 g (peak) |
| Base strain sensitivity (maximum) | : 0.0002 g peak/µε |
| ESD protection | : Yes |
| Electromagnetic sensitivity (equivalent) | : 70 µg/gauss |

Physical

| | |
|------------------------|------------------------|
| Sensing element design | : PZT ceramic / shear |
| Weight (nominal) | : 90 g |
| Case material | : 316L stainless steel |

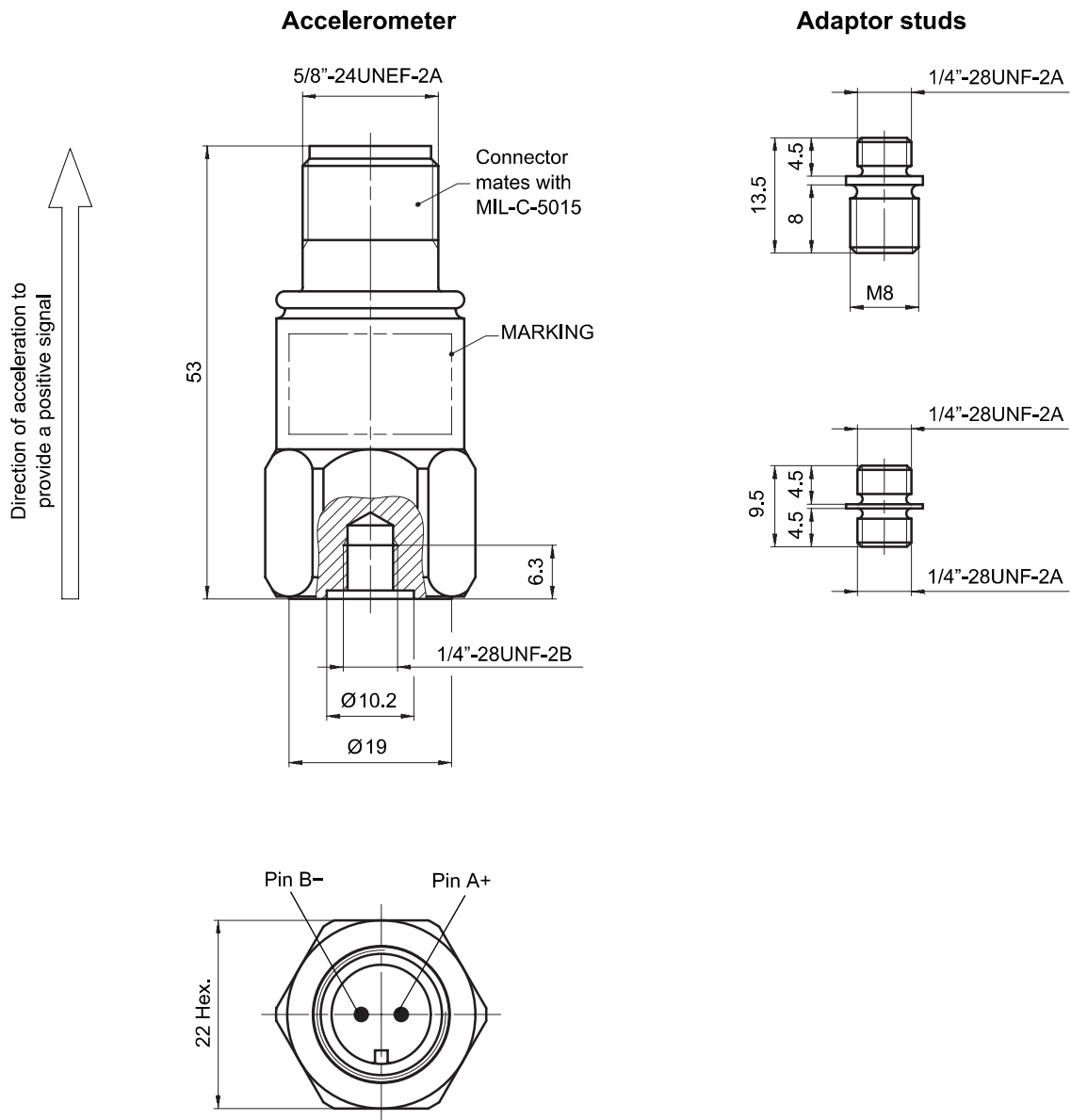
SPECIFICATIONS *(continued)*

| | |
|------------------|---------------------------------|
| Mounting | : 1/4 - 28 UNF tapped hole |
| Mounting torque | : 2.7 N•m |
| Output connector | : 2 pin, MIL-C-5015 style |
| Mating connector | : MS3106F-10SL-4S or equivalent |

Calibration

Dynamic calibration at factory. No subsequent calibration necessary.

MECHANICAL DRAWING



ORDERING INFORMATION

To order please specify

| | | |
|-------------|-----------------------------|------------------------|
| Type | Designation | Ordering number |
| CE 680 M511 | Piezoelectric accelerometer | 444-680-000-511 |

ACCESSORIES

Supplied

| Item | Type |
|------------------------|------------------------------------|
| • <i>Adaptor studs</i> | 1/4 - 28 UNF 1/4 - 28 UNF to M8 |

Optional

| Item | Type | Part number |
|---------------------------|--|------------------------------------|
| • <i>Cable</i> | EC 318 EC 319 | 922-318-000Dxxx 922-319-000Dxxx |
| • <i>Mounting adaptor</i> | MA 122_012 1/4 - 28 UNF to M6 (with conic base) | 809-122-000-012 |
| • <i>Insulating stud</i> | MA 122_021 1/4 - 28 UNF to M6 (with conic base) | 809-122-000-021 |

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The Meggitt Sensing Systems facility in Fribourg, Switzerland was formerly known as Vibro-Meter SA, but is now Meggitt SA. This site produces a wide range of vibration and dynamic pressure sensors capable of operation in extreme environments, leading-edge microwave sensors, electronics monitoring systems and innovative software for aerospace and land-based turbo-machinery.



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