



## CE 680 M511

### Piezoelectric accelerometer with integrated electronics

#### FEATURES

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- » 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

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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.



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## SPECIFICATIONS

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Note: Unless otherwise stated, all values listed are typical values, referenced at +23°C, 24 V<sub>DC</sub> 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	
• Typical deviation	
-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 <sub>DC</sub>
Bias output voltage	: 12 V <sub>DC</sub>
Electrical noise (equivalent g)	
• Broadband: 2.5 Hz to 25 kHz	: 700 µg
• Spectral: 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

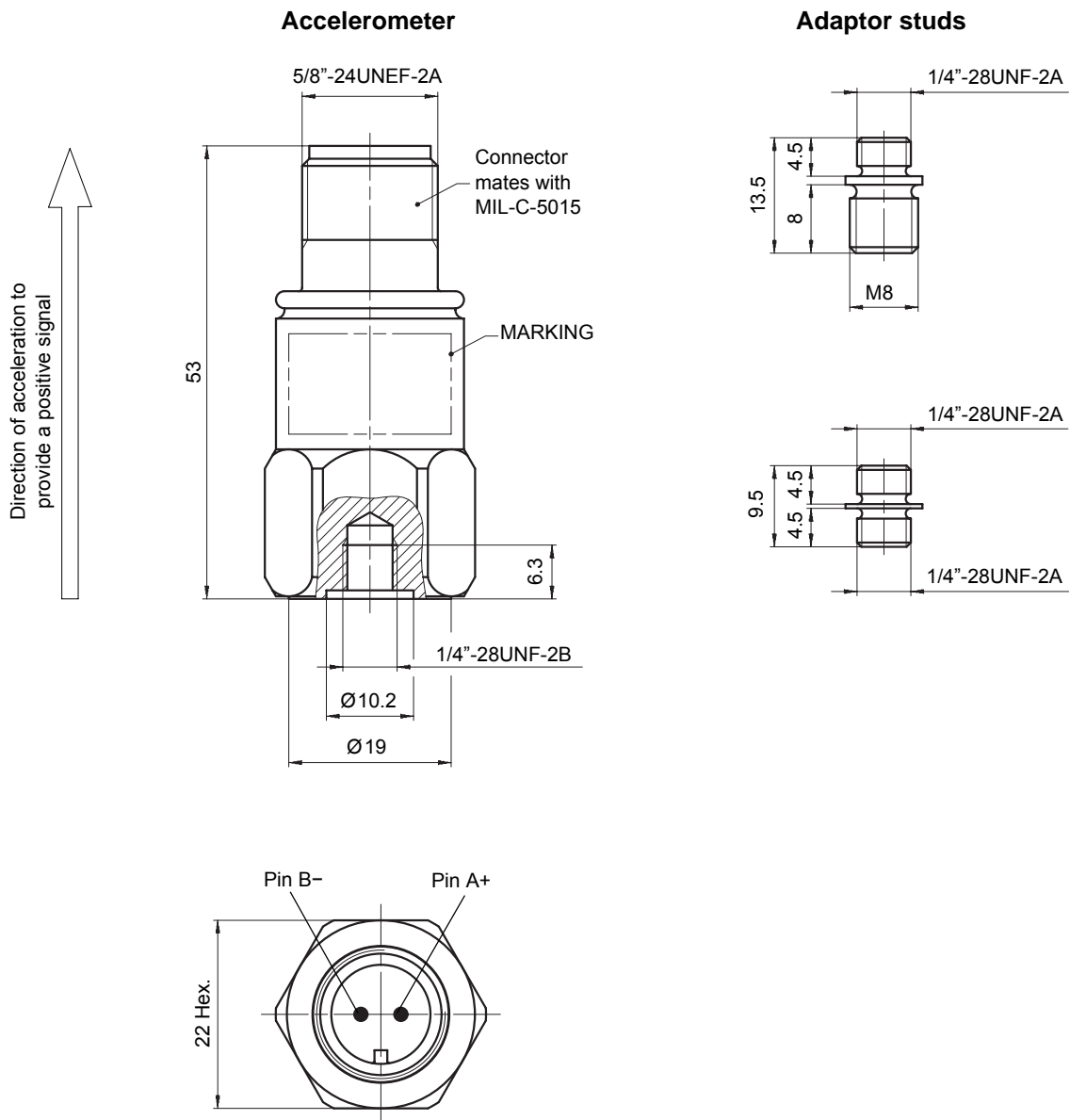
**SPECIFICATIONS** (continued)

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

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To order please specify

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

## ACCESSORIES

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### 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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Meggitt Sensing Systems is the operating division of Meggitt specializing in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevo, Ferroperm Piezoceramics, Lodge Ignition, Sensorex, Vibro-Meter and Wilcoxon Research. Today, these operations are integrated under one strategic business unit called Meggitt Sensing Systems, headquartered in Switzerland and providing complete systems, using these renowned brands, from a single supply base.

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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