



## CE 680 M511

### Piezoelectric Accelerometer with Integrated Electronics Type CE 680 M511

#### FEATURES

---

- Designed for medium temperature industrial applications (-50°C to +120°C)
- Frequency response  
1 Hz to 9 kHz:  $\pm 10\%$   
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 in harsh industrial machinery 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 voltage 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 VDC supply, 6 mA constant current and 120 Hz

### OPERATING

Sensitivity (at +25°C)	: 100 mV/g $\pm 5\%$
Dynamic range	: 80 g
Transverse sensitivity (maximum)	: 5% of axial
Linearity	: 1% up to full scale
Frequency response (nominal)	
• 3 Hz - 5 kHz	: $\pm 5\%$
• 1 Hz - 9 kHz	: $\pm 10\%$
• 0.5 Hz - 14 kHz	: -3 dB
Resonant frequency	: 30 kHz
Temperature response	
• <i>Typical deviations</i>	
-55°C to +120°C	: $\pm 5\%$
-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)	
• <i>Broadband:</i> - 2.5 Hz to 25 kHz	: 700 $\mu\text{g}$
• <i>Spectral:</i> - 10 Hz	: 10 $\mu\text{g}/\sqrt{\text{Hz}}$
- 100 Hz	: 5 $\mu\text{g}/\sqrt{\text{Hz}}$
- 1 000 Hz	: 5 $\mu\text{g}/\sqrt{\text{Hz}}$
Output impedance (maximum)	: 100 $\Omega$
Grounding	: Case isolated, internally shielded
Reversed polarity	: Protected

### ENVIRONMENTAL

Temperature range	: -55°C to +120°C
Vibration limit	: 500 g (peak)
Shock limit	: 5 000 g (peak)
Base strain sensitivity	: Maximum, 0.0002 g peak/ $\mu\text{ε}$
ESD Protection	: Yes
Electromagnetic sensitivity (equivalent)	: 70 $\mu\text{g}/\text{gauss}$
Sealing	: Hermetically sealed

### PHYSICAL

Sensing element design	: PZT ceramic / shear
Weight	: 90 gr
Case material	: 316 L stainless steel

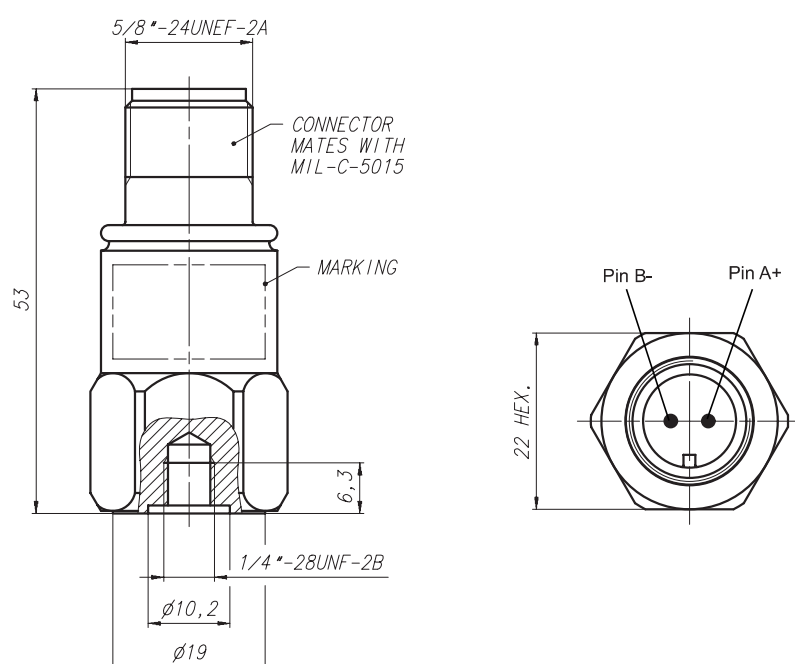
## SPECIFICATIONS (Continued)

Mounting	: 1/4 - 28 UNF tapped hole
Mounting torque	: 3 Nm
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



## ACCESSORIES

### Supplied

Item	Type
• Adaptor stud	1/4 - 28 UNF

### Optional

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

## ORDERING INFORMATION

---

To order please specify:

Type	Designation	Ordering Number
CE 680 M511	Piezoelectric Accelerometer	444-680-000-511



In this publication, a dot (.) is used as the decimal separator and thousands are separated by spaces. Example : 12 345.678 90. Although care has been taken to assure the accuracy of the data presented in this publication, we do not assume liability for errors or omissions. We reserve the right to alter any part of this publication without prior notice.

### Sales offices

Vibro-Meter has offices in more than 30 countries. For a complete list, please visit our website.

### Your local agent

### Head office

**Vibro-Meter SA**  
Rte de Moncor 4  
P.O. Box  
CH-1701 Fribourg  
Switzerland

Tel: +41 26 407 11 11  
Fax: +41 26 407 13 01

[www.vibro-meter.com](http://www.vibro-meter.com)

