

DATA SHEET

# vibro-meter®

## CE620 piezoelectric accelerometer with integrated electronics



### KEY FEATURES AND BENEFITS

- From the vibro-meter® product line
- Voltage output signal: 100 or 500 mV/g
- Frequency response:  
1 to 9000 Hz (100 mV/g versions)  
0.4 to 1600 Hz (500 mV/g versions)
- Temperature range:  
–55 to 120°C (100 mV/g versions)  
–55 to 90°C (500 mV/g versions)
- Ground isolated from case
- Isolated electronics for reduced noise and improved bias-voltage stability
- Available in standard versions and Ex versions certified for use in potentially explosive atmospheres

### APPLICATIONS

- General-purpose vibration monitoring in harsh industrial environments and/or hazardous areas

### DESCRIPTION

The CE620 piezoelectric accelerometer with integrated electronics from Meggitt's vibro-meter® product line is a general-purpose vibration sensor designed for the monitoring and protection of machinery in harsh industrial environments.

The CE620 is available in different versions for different industrial environments: standard versions for use in standard (non-hazardous) areas and Ex versions for installation in hazardous areas.

It is an industry standard IEPE (integrated electronics piezo electric) vibration sensor that requires a constant current power supply and provides a dynamic vibration output signal (AC voltage) on a bias level (DC voltage). The CE620 is available with a sensitivity of either 100 or 500 mV/g.

A range of 2-wire shielded cables are available to connect the sensor to the monitoring system, depending on the environment.

For specific applications, contact your local Meggitt representative.



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## SPECIFICATIONS

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**Note:** Unless otherwise stated, all values listed are typical values, referenced at 24 °C (75 °F), 25 V<sub>DC</sub> supply, 4 mA constant current and 160 Hz.

### Operating

#### Sensitivity

- 100 mV/g versions : 100 mV/g ±5%  
(ordering option code B100)
- 500 mV/g versions : 500 mV/g ±5%  
(ordering option code B500)

#### Dynamic range

- 100 mV/g versions : ±80 g
- 500 mV/g versions : ±16 g

#### Transverse sensitivity

: <5%

#### Linearity

: ±1% maximum

#### Frequency response

- 100 mV/g versions : 1 to 9000 Hz (±10%).  
0.5 to 14000 Hz (±3 dB).
- 500 mV/g versions : 0.4 to 1600 Hz (±10%).  
0.2 to 3700 Hz (±3 dB).

#### Resonant frequency

- 100 mV/g versions : 25 kHz nominal
- 500 mV/g versions : 16 kHz nominal

#### Temperature response (sensitivity deviation)

- -55 °C (-67 °F) : -10% typical
- 120 °C (-248 °F) : +5% typical

### Electrical

#### Power supply voltage (for current source)

: 22 to 28 V<sub>DC</sub>

#### Power supply current

: 2 to 10 mA

#### Bias voltage

: 12 V<sub>DC</sub> nominal

#### Output impedance

: 50 Ω nominal

#### Residual electrical noise

- 100 mV/g versions : 30 µg/√Hz at 1 Hz, 6 µg/√Hz at 10 Hz,  
(ordering option code B100) 5 µg/√Hz at 100 Hz, 5 µg/√Hz at 1000 Hz
- 500 mV/g versions : 20 µg/√Hz at 0.1 Hz, 6 µg/√Hz at 1 Hz, 2 µg/√Hz at 10 Hz,  
(ordering option code B500) 2 µg/√Hz at 100 Hz, 2 µg/√Hz at 1000 Hz

#### Grounding

: Base isolated, internally shielded

#### Reverse polarity

: Protected

#### Overvoltage

: Protected

**SPECIFICATIONS** *(continued)*


**Environmental**


- Temperature range
- 100 mV/g versions : -55 to 120°C (-67 to 248°F)  
(ordering option code B100)
  - 500 mV/g versions : -55 to 90°C (-67 to 194°F)  
(ordering option code B500)
- Protection rating : IP68  
(according to IEC 60529)
- Continuous vibration limit : 500 g peak
- Shock vibration limit : 5000 g peak
- Base strain sensitivity : 0.0002 g peak/ $\mu\epsilon$
- Electromagnetic sensitivity : 0.2 g  
(50 Hz, 0.03 T)

**Potentially explosive atmospheres**

Available in Ex approved versions for use in hazardous areas

Type of protection Ex i: intrinsic safety (ordering option code A2)		
Europe	EC type examination certificate	LCIE 20 ATEX 3039 X I M1 Ex ia I Ma II 1 GD (Zones 0, 1, 2) Ex ia IIC T4 Ga Ex ia IIIC T135°C Da
International	IECEx certificate of conformity	IECEx LCIE 20.0026X Ex ia I Ma Ex ia IIC T4 Ga Ex ia IIIC T135°C Da

 For specific parameters of the mode of protection concerned and special conditions for safe use, refer to the Ex certificates that are available from Meggitt SA.

 For the most recent information on the Ex certifications that are applicable to this product, refer to the *Ex product register (PL-1511)* document that is available from Meggitt SA.

**Approvals**

- Conformity : CE marking, European Union (EU) declaration of conformity
- Electromagnetic compatibility (EMC) : EN 61326-1.  
EMC compliant (2014/30/EU).
- Environmental management : RoHS compliant (2011/65/EU)
- Hazardous areas : Ex approved versions  
(see **Potentially explosive atmospheres** on page 3)

## SPECIFICATIONS *(continued)*

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### Physical

Case material	: Stainless steel (AISI 316L, DIN 1.4404)
Dimensions	: See <b>Mechanical drawings on page 5</b>
Weight	
• 100 mV/g versions (ordering option code B100)	: 85 g (0.19 lb) approx.
• 500 mV/g versions (ordering option code B500)	: 95 g (0.21 lb) approx.

### Connector

Type	: MIL-C/DTL-5015 type – rugged circular, threaded coupling, 2-pin connector with keyway. Mates with MIL-C/DTL-5015 type connectors used by the recommended cable assemblies.
Pinout	
• Pin A+	: Power supply and output signal
• Pin B–	: Common
Recommended cable assemblies	: EC318 or EC319 (see <b>Accessories on page 6</b> )

### Mounting

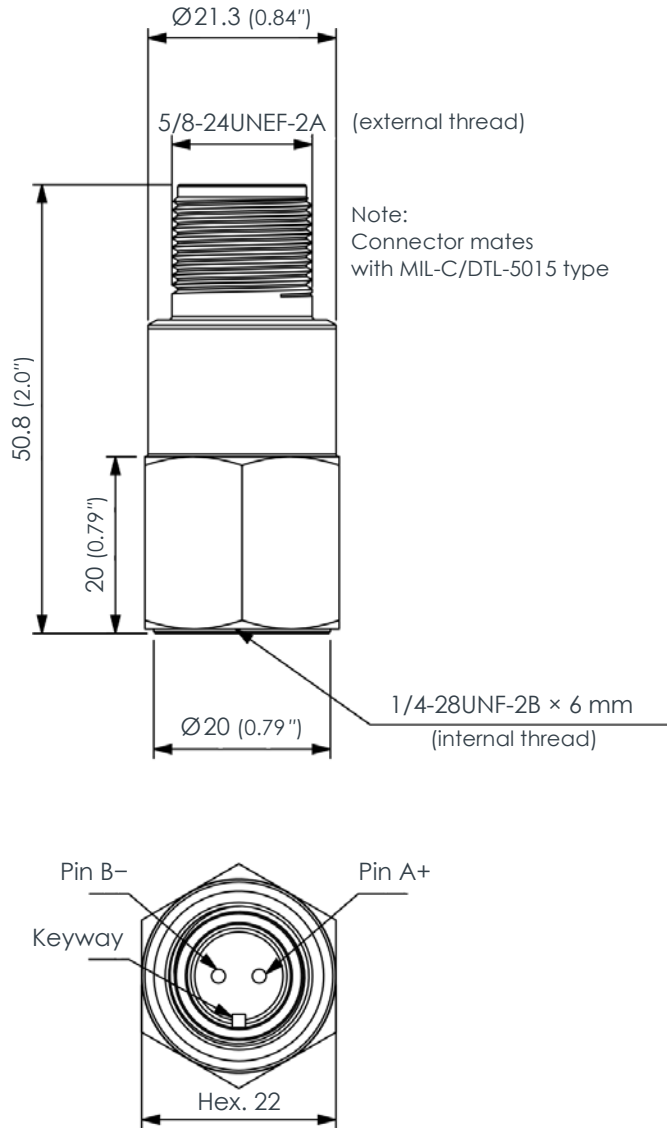
Stud or adaptor	: 1/4-28UNF (see <b>Accessories on page 6</b> )
Torque	: 2.4 N•m (1.8 lb-ft). Refer also to the <i>CExxx and PVxxx vibration sensors (piezoelectric accelerometers and piezoelectric velocity sensors) installation manual</i> .

### Calibration

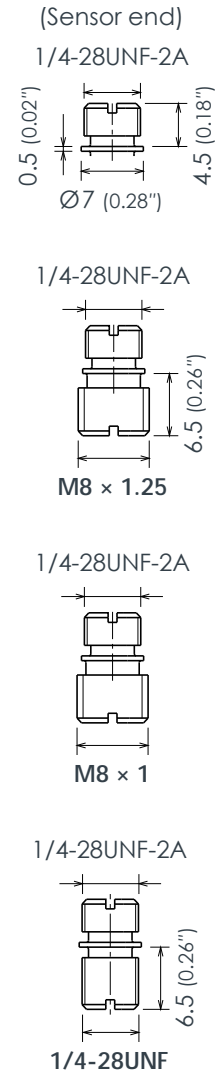
Dynamic calibration at factory. No subsequent calibration necessary.

MECHANICAL DRAWINGS

CE620 accelerometer



Adaptor studs

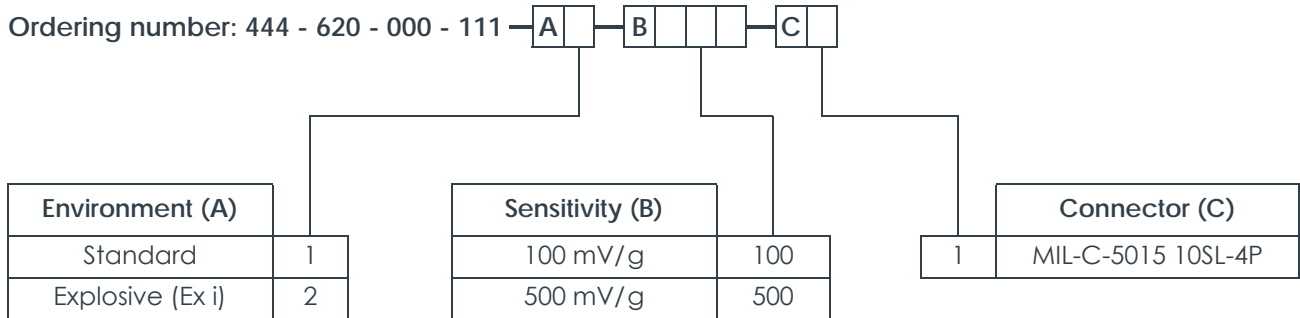


Note: All dimensions in mm (in) unless otherwise stated.

## ORDERING INFORMATION

To order please specify

Type	Designation	Part number (PNR)
CE620	Piezoelectric accelerometer	See below



### Notes

The following versions of the CE620 piezoelectric accelerometer are currently available:

- 100 mV/g sensitivity for standard environments (PNR 444-620-000-111-A1-B100-C1).
- 100 mV/g sensitivity for Ex environments (PNR 444-620-000-111-A2-B100-C1).
- 500 mV/g sensitivity for standard environments (PNR 444-620-000-111-A1-B500-C1).

## ACCESSORIES

### Supplied

Item	Type	Part number (PNR)
• Adaptor studs	M8 × 1.25 (1/4-28UNF-2A to M8 × 1.25)	
	M8 × 1 (1/4-28UNF-2A to M8 × 1)	
	1/4-28UNF (1/4-28UNF-2A to 1/4-28UNF-2A)	

Note: One of each type of adaptor stud is supplied with a CE620, that is, one M8 × 1.25, one M8 × 1 and one 1/4-28UNF.

### Optional

Item	Type	Part number (PNR)
• Cable assemblies	EC318 (Standard version with a 2-pin MIL-C/DTL-5015 type connector and RADOX® 125 2-wire cable)	922-318-000-002
	EC318 (Standard version with a 2-pin MIL-C/DTL-5015 type connector and RADOX® 125 2-wire cable with protection tube)	922-318-000-403
	EC319 (Splashproof version with a 2-pin MIL-C/DTL-5015 type connector and RADOX® 125 2-wire cable)	922-319-000-002
	EC319 (Splashproof version with a 2-pin MIL-C/DTL-5015 type connector and RADOX® 125 2-wire cable with sealed protection tube (leaktight))	922-319-000-103

Note: The cable length must be specified when ordering a cable assembly.

## ACCESSORIES *(continued)*

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### Optional *(continued)*

Item	Type	Part number (PNR)
• Mounting adaptor	MA122_012 (1/4-28UNF-2A to M6, with a conic base)	809-122-000-012
• Insulating stud	MA122_021 (1/4-28UNF-2A to M6, with a conic base)	809-122-000-021

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