DATA SHEET

vibro-meter®

CE630 piezoelectric accelerometer with integrated electronics

CE630

CE Ex IECEx

KEY FEATURES AND BENEFITS

- From the vibro-meter® product line
- Voltage output signal: 100 or 500 mV/g
- Frequency response:
  1 to 8000 Hz (100 mV/g versions)
  0.2 to 3700 Hz (500 mV/g versions)
- Temperature range:
  −55 to 120°C (100 mV/g versions)
  −55 to 90°C (500 mV/g versions)
- Isolated electronics with internal shield for reduced noise and improved bias-voltage stability
- Ground isolated from case
- Available as a sensor only
- Available in standard versions and Ex versions certified for use in hazardous areas

APPLICATIONS

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

DESCRIPTION

The CE630 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 industrial environments.

The CE630 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). It is available with a sensitivity of either 100 or 500 mV/g.

The CE630 is available as a sensor only with a side connector. This allows a range of cable assemblies to be used to connect the sensor to the monitoring system, depending on the application/environment.

The CE630 is also available in standard versions for use in standard (non-hazardous) areas and Ex versions for installation in hazardous areas (potentially explosive atmospheres).

For specific applications, contact your local Meggitt representative.

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SPECIFICATIONS

Note: Unless otherwise stated, all values listed are typical values, referenced at 24°C (75°F).

Operating

Sensitivity

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

Dynamic range

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

Transverse sensitivity : <5%

Linearity : ±1% maximum

Frequency response

- 100 mV/g versions : 1 to 8000 Hz (±30%)
- 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

  Note: Reference at 20°C (68°F).

Electrical

Power supply voltage (for current source) : 22 to 28 V_{DC}

Power supply current : 2 to 10 mA

Bias voltage (4 mA supply)

- 100 mV/g versions (ordering option code B100) : 12 V_{DC} nominal
- 500 mV/g versions (ordering option code B500) : 10 V_{DC} 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,
  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,
  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 (ordering option code B100) : −55 to 120°C (−67 to 248°F)
- 500 mV/g versions (ordering option code B500) : −55 to 90°C (−67 to 194°F)

Humidity : IP68 (according to IEC 60529)

Shock vibration limit : 5000 g peak
Continuous vibration limit : 500 g peak
Base strain sensitivity : 0.0002 g peak/με
Electromagnetic sensitivity (50 Hz, 0.03 T) : 0.2 g

Potentially explosive atmospheres

Available in Ex approved versions for use in hazardous areas

Type of protection Ex ia: intrinsic safety (ordering option code A2)		
Europe	EC type examination certificate	Ⓔx II 1 GD (Zones 0, 1, 2, 20, 21 22) Ex ia IIC T4 Ga Ex ia IIIC T135°C Da LCIE 20 ATEX 3039 X
International	IECEx certificate of conformity	Ex ia IIC T4 Ga Ex ia IIIC T135°C Da IECEx LCIE 20.0026X

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

SPECIFICATIONS *(continued)*

Physical

Case material	: Stainless steel (AISI 316L, DIN 1.4404)
Dimensions	: See **Mechanical drawings on page 5**
Weight	: 155 g (0.34 lb) approx.

Connector

Connector type	: MIL-C-5015-10SL-4P – rugged circular, threaded coupling, 2-pin connector with keyway. Note: Mates with MIL-C/DTL-5015 type connectors, as used by the recommended cable assemblies.
Connector pinouts (pin allocation)	
• Pin A (+)	: Power supply and output signal
• Pin B (−)	: Common
Recommended cable assemblies	: EC318, EC319, EC622 and EC632 (see **Accessories on page 7**)

Mounting

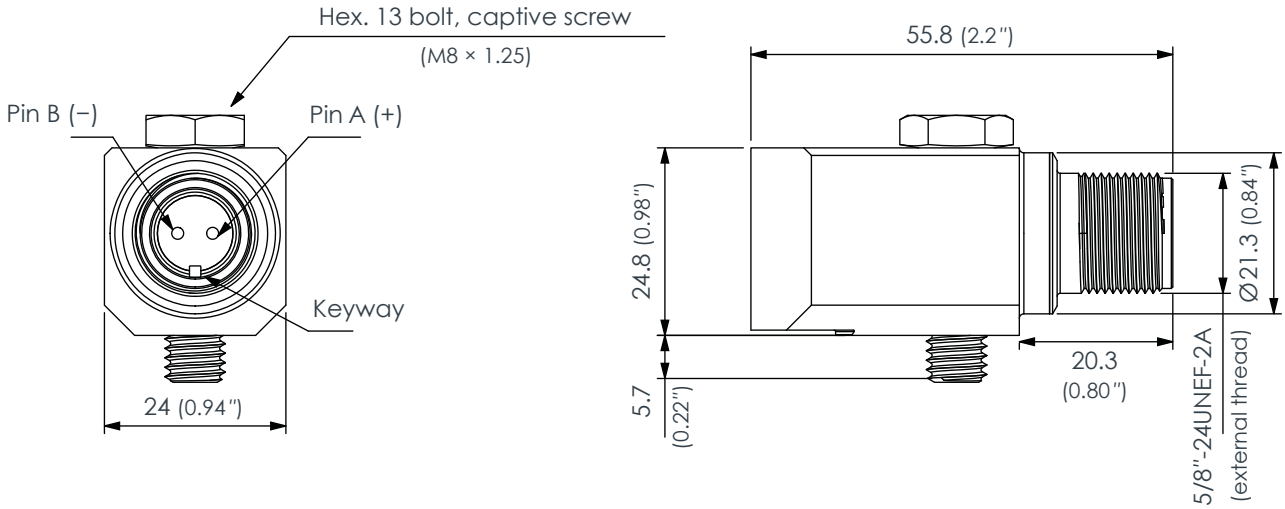
Stud or adaptor	: Captive screw (Hex. 13 bolt) with a M8 × 1.25 thread
Torque	: 2.4 N•m (1.8 lb-ft). Refer also to the *CExxx and PVxxx vibration sensors (piezoelectric accelerometers and piezoelectric velocity sensors) installation manual*.

Calibration

Dynamic calibration at factory. No subsequent calibration necessary.

MECHANICAL DRAWINGS

CE630 accelerometer



Notes
All dimensions in mm (in) unless otherwise stated.
The Hex. 13 bolt, captive screw has a housing thread of M8 × 1.25.
The CE630 sensor mates with MIL-C/DTL-5015 type connectors.
Not all combinations of sensor ordering option codes (**A**, **B**, **C** and **H**) are available.
See also **Ordering information on page 6** and the ECxxx cable assemblies in **Accessories on page 7**.

Ordering number (PNR):
444 - 630 - 000 - 111 — **A** — **B** — **C** — **H**

Environment (A)	
Standard	1
Explosive (Ex)	2

Housing thread (H)	
08	M8 × 1.25

Sensitivity (B)	
100 mV/g	100
500 mV/g	500

Connector (C)	
01	MIL-C-5015-10SL-4P

ORDERING INFORMATION

To order, please specify the version(s) of the CE630 piezoelectric accelerometer with integrated electronics required …

Standard (non-Ex) versions:

Type	Designation	Ordering number (PNR)
CE630	100 mV/g sensor	444-630-000-111-A1-B100-C01-H08
CE630	500 mV/g sensor	444-630-000-111-A1-B500-C01-H08

Ex versions (for use in hazardous areas):

Type	Designation	Ordering number (PNR)
CE630	100 mV/g sensor	444-630-000-111-A2-B100-C01-H08

Notes

Only CE630 sensors with the specific ordering numbers (PNRs) listed above are available to order.
That is, not all combinations of sensor ordering option codes (A, B, C and H) are available.
For example, Ex versions of the CE630 sensor with a sensitivity of 500 mV/g are not available.

ACCESSORIES

Optional

Item	Type	Part number (PNR)
• Cable assemblies	EC318. Standard version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable.	922-318-000-002
	EC318. Standard version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable and cable protection (flexible stainless-steel hose).	922-318-000-403
	EC319. Splashproof version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable.	922-319-000-002
	EC319. Splashproof version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable and cable protection (sealed, flexible stainless-steel hose).	922-319-000-103
	EC622. Standard version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire Polyurethane (PUR) cable, IP67 cable boot (overmold).	922-622-000-001
	EC632. Higher-temp. version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire Teflon® FEP cable, IP67 cable boot (overmold).	922-632-000-001
	EC632. Higher-temp. version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire Teflon® FEP cable, IP67 cable boot (overmold) and cable protection (stainless steel (AISI 316L) overbraid).	922-632-000-101

Notes

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

When ordering a EC31x cable assembly, the ordering option code -L or -U is used to specify the overall cable length. EC31x cable assemblies can be specified with any cable length.

When ordering a EC6x2 cable assembly, the ordering option code -L is used to specify the overall cable length. EC6x2 cable assembles must be specified with a standard length of 2, 5, 10, 15, 20 or 30 m (corresponding to ordering option codes of L2000, L5000, L10000, L15000, L20000 or L30000, respectively).

Refer to the cable assembly product drawings for further information.

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

RELATED PRODUCTS

CE620	Piezoelectric accelerometer (100 or 500 mV/g output)	: Refer to corresponding data sheet
CE687	Piezoelectric accelerometer (4 to 20 mA output proportional to g)	: Refer to corresponding data sheet
PV660	Piezoelectric velocity sensor (4 mV/mm/s output)	: Refer to corresponding data sheet
PV685	Piezoelectric velocity sensor (4 to 20 mA output proportional to mm/s)	: Refer to corresponding data sheet

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