

DATA SHEET

Vibro-Meter®

CE687 piezoelectric accelerometer with integrated electronics



KEY FEATURES AND BENEFITS

- From the Vibro-Meter® product line
- Current output signal: 4 to 20 mA proportional to 0 to 1, 2, 5, 10 or 20 g
- Frequency response: 2 Hz to 1 kHz
- Temperature range: -25 to 90°C
- Ground isolated from case
- Isolated electronics for reduced noise
- 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 CE687 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 CE687 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 4 to 20 mA loop-powered vibration sensor (vibration transmitter) that provides a vibration output signal in a current loop. The CE687 is available with a sensitivity of 4 to 20 mA proportional to 0 to 1, 2, 5, 10 or 20 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

Note: Unless otherwise stated, all values listed are typical values, referenced at 23°C (73°F), 24 V_{DC} supply, 4 mA constant current and 80 Hz.

Operating

Sensitivity	: 4 to 20 mA proportional to 0 to 1, 2, 5, 10 or 20 g RMS ±5% (full scale)
Dynamic range	: 50 g peak
Transverse sensitivity	: <5%
Linearity	: <1% up to full scale
Frequency response	
• 2 Hz to 1 kHz	: ±10%
Resonant frequency	: 5 kHz nominal
Temperature sensitivity	: 0.08% / °C

Electrical

Power supply voltage (for current loop)	: 12 to 32 V _{DC} . Note: 4 to 20 mA current loop voltage between pins A+ and B-.
Grounding	: Electronics in Faraday cage, isolated from body
Reversed polarity	: Protected

Environmental

Temperature range	: -25 to 90°C (-13 to 194°F)
Protection rating (according to IEC 60529)	: IP67


SPECIFICATIONS *(continued)*

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	Baseefa 16 ATEX 0027 X II 1 GD (Zones 0, 1, 2) Ex ia IIC T4 Ga Ex ia IIIC T135°C Da
International	IECEx certificate of conformity	IECEx BAS 16.0030X 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) that is available from Meggitt SA.

Approvals

- Conformity : CE marking, European Union (EU) declaration of conformity
- 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
Dimensions	: See Mechanical drawings on page 5
Weight	: 150 g (0.33 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+	: Loop positive (+)
• Pin B-	: Loop negative (-)
Recommended cable assemblies	: EC602, EC612, EC318 or EC319 (see Accessories on page 6)

Mounting

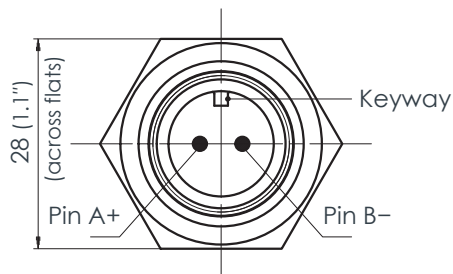
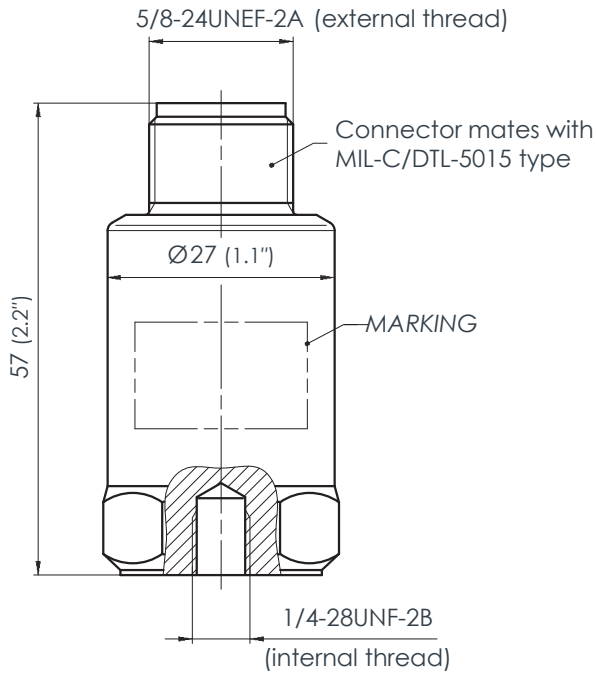
Stud or adaptor	: 1/4-28UNF (see Accessories on page 6)
Torque	: 8 N•m (5.9 lb-ft). Refer also to the <i>CExxx and PVxxx vibration sensors (piezoelectric accelerometers and piezoelectric velocity sensors) installation manual.</i>

Calibration

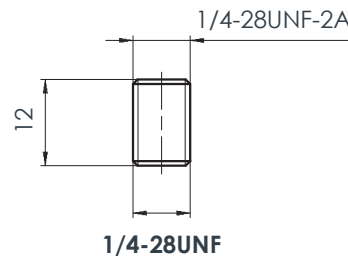
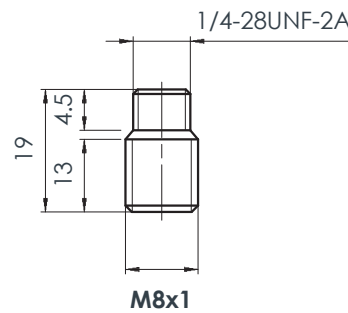
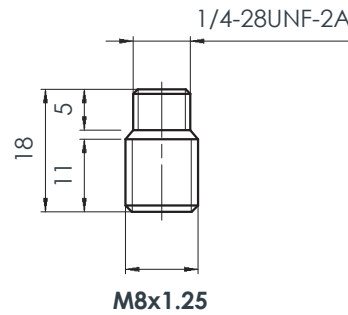
Dynamic calibration at factory. No subsequent calibration necessary.

MECHANICAL DRAWINGS

CE687 accelerometer



Adaptor studs



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

ORDERING INFORMATION

To order please specify

Type	Designation	Part number (PNR)
CE687	Piezoelectric accelerometer	See below

Ordering number: 444 - 687 - 000 - 011 - **A** - **B**

Environment (A)		Sensitivity (B)	
Standard	1	01	4 to 20 mA proportional to 0 to 1 g
Explosive (Ex i)	2	02	4 to 20 mA proportional to 0 to 2 g
		05	4 to 20 mA proportional to 0 to 5 g
		10	4 to 20 mA proportional to 0 to 10 g
		20	4 to 20 mA proportional to 0 to 20 g

ACCESSORIES

Supplied

Item	Type	Part number (PNR)
• Adaptor studs	M8x1.25 (1/4-28UNF-2A to M8x1.25)	
	M8x1 (1/4-28UNF-2A to M8x1)	
	1/4-28UNF (1/4-28UNF-2A to 1/4-28UNF-2A)	

Note: One of each type of adaptor stud is supplied with a CE687, that is, one M8x1.25, one M8x1 and one 1/4-28UNF.

Optional

Item	Type	Part number (PNR)
• Cable assemblies	EC602 (Standard version with a 2-pin MIL-C/DTL-5015 type connector and ETFE 2-wire cable)	922-602-000-001
	EC612 (Standard version with a 2-pin MIL-C/DTL-5015 type connector and ETFE 2-wire cable with metallic overbraid)	922-612-000-001
	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

ACCESSORIES (continued)

Item	Type	Part number (PNR)
	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.		
• 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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