



## CP 235

# Piezoelectric pressure transducer

### FEATURES

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- » From the Vibro-Meter® product line
- » Acceleration compensated
- » Designed for use in gas turbines
- » Certified for use in potentially explosive atmospheres
- » High reliability
- » Wide temperature range:  
-55 to 520 °C
- » Frequency response:  
2 to 10000 Hz
- » High sensitivity:  
Min. 750 pC/bar
- » Weight:  
Transducer head: 50 g  
Integral MI cable: 140g/m



CP 235



### DESCRIPTION

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The use of man-made piezoelectric material in the CP 235 dynamic pressure transducer makes it an extremely stable and reliable device.

The transducer is applicable to either long-term monitoring or development testing. It has been

specially designed to minimise sensitivity to acceleration.

It is fitted with an integral mineral insulated (MI) cable with twin conductors that is terminated with a Vibro-Meter high-temperature connector.



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## SPECIFICATIONS

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### General

Input power requirements	: None
Signal transmission	: 2-pole system insulated from casing, charge output
Signal processing	: Charge converter

### Operating

(at +23°C ±5°C)

Sensitivity (at 2 Hz)	: 750 pC/bar (52 pC/psi) min.
Static pressure (on sensing head)	: 0.1 to 20 bar
Dynamic measuring range (random)	: 0.00005 to 5 bar nom.
Overload capacity (spikes)	: Up to 100 bar (1450 psi) (static + dynamic components)
Linearity	: ≤±1% over dynamic measuring range
Acceleration sensitivity	
• 10 Hz to 2.5 kHz	: ≤0.15 pC/g (0.0002 bar/g, ≤0.0029 psi/g)
• 2.5 kHz to 5 kHz	: ≤0.375 pC/g (0.0005 bar/g, ≤0.0073 psi/g)
Resonant frequency	: >55 kHz (along sensitive axis)
Frequency response	: 2 to 10000 Hz ± 5% (lower cut-off frequency is determined by the charge converter used)
Capacitance (nominal)	
• Pole to pole	: 700 pF for transducer + 200pF/m for cable
• Pole to casing	: 10 pF for transducer + 300 pF/m for cable
Internal insulation resistance	: Min. 10 <sup>9</sup> Ω (5x10 <sup>4</sup> Ω at 520°C)
Mounting torque	: Nominally 5.5 N•m (corresponding to qualification of product). Maximum value of 10 N•m. Note: A hole (Ø1) is provided for locking wire. See Mechanical drawings.

### Environmental

Temperature range	: -55 to +520°C (-67 to 968°F) continuous operation
Shock acceleration	: ≤1000 g peak (half sine-wave, 1 ms duration) along sensitive axis
Corrosion, humidity	: INCONEL® 600, hermetically welded

**SPECIFICATIONS** (continued)

**Environmental – explosive atmospheres**

Available in Ex approved versions for use in hazardous locations

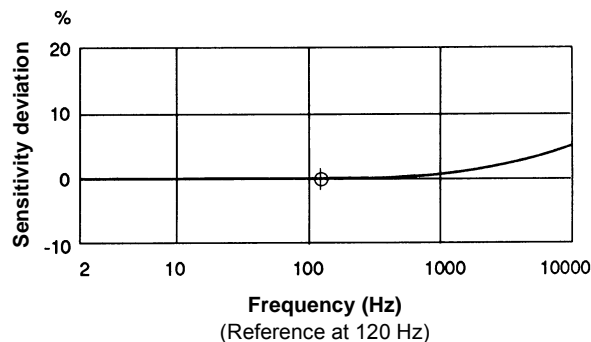
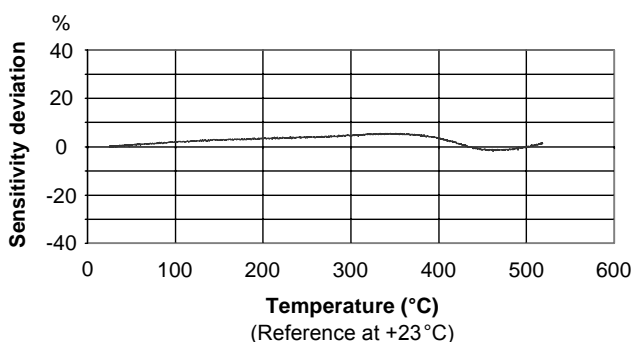
Type of protection Ex i: intrinsic safety		
Europe	EC type examination certificate	LCIE 02 ATEX 6105 X II 2 G (Zones 1, 2) Ex ib IIC T6 ... 560°C Gb
North America	cCSAus certificate of compliance	cCSAus 1636189 Class I, Division 1, Groups A, B, C, D Ex ia T6 to T1
International*	IECEX certificate of conformity	IECEX LCI 06.0007X Ex ib IIC T6 ... 560°C Gb
China*	NEPSI certificate of conformity	GYJ12.1449X Ex ib IIC T6 to T560°C Gb
Korea*	KGS certificate of conformity	12-GA4BO-0397X Ex ib IIC T6 to T560°C

Type of protection Ex nA: non-sparking apparatus		
Europe	Voluntary type examination certificate	LCIE 09 ATEX 1039 X II 3G (Zone 2) Ex nA IIC T6 ... 560°C Gc
North America*	cCSAus certificate of compliance	cCSAus 1636189 Class I, Division 2, Groups A, B, C, D Ex nA IIC T6 to T1 Gc Class I, Zone 2 AEx nA IIC T6 to T1 Gc
International*	IECEX certificate of conformity	IECEX LCI 10.0013X Ex nA IIC T6 ... 560°C Gc

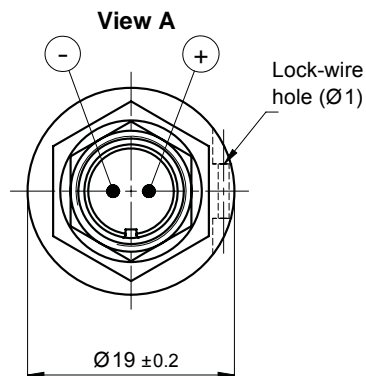
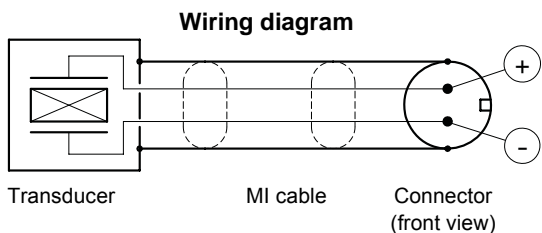
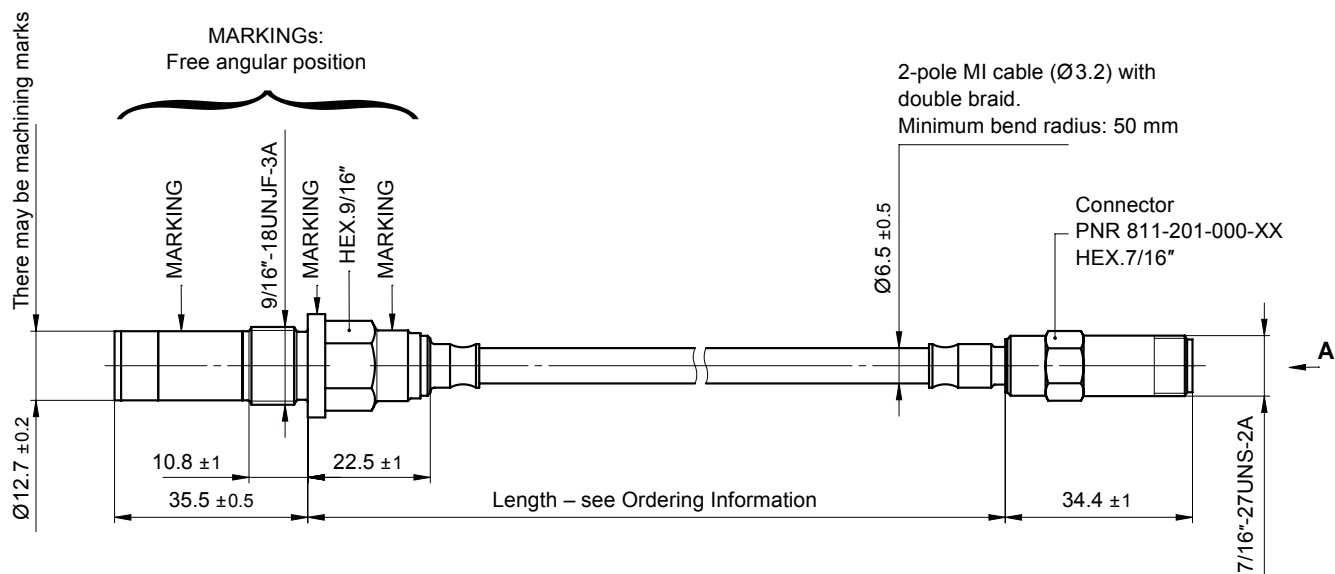
\*Not engraved on the product marking.

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

**TYPICAL RESPONSE CURVES**



MECHANICAL DRAWINGS



Note: All dimensions are in mm unless otherwise stated.

ORDERING INFORMATION

To order please specify

Type	Designation
CP 235	Piezoelectric pressure transducer

Ordering number  
143-235-000-0XX

- 12 : 2 m cable length
  - 22 : 5 m cable length
- Refer to sales drawing  
143-235-000D012.

Headquartered in the UK, Meggitt PLC is a global engineering group specializing in extreme environment components and smart sub-systems for aerospace, defence and energy markets.

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, Endevco, 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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In this publication, a dot (.) is used as the decimal separator and thousands are separated by thin spaces. Example: 12345.67890.

## Sales offices

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