

## Piezoelectric Pressure Transducer

### FEATURES

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- Acceleration compensated
- Designed for use in gas turbines
- Certified for use in potentially explosive atmospheres
- High reliability
- Wide temperature range  
-55°C (-67°F) to 520°C (968°F)
- Frequency response  
2 Hz to 10 000 Hz  $\pm$  5%
- High sensitivity  
Min. 750 pC/bar (52 pC/psi)
- Weight  
Transducer head: 50 g  
Integral MI cable : 140g/m



### 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.

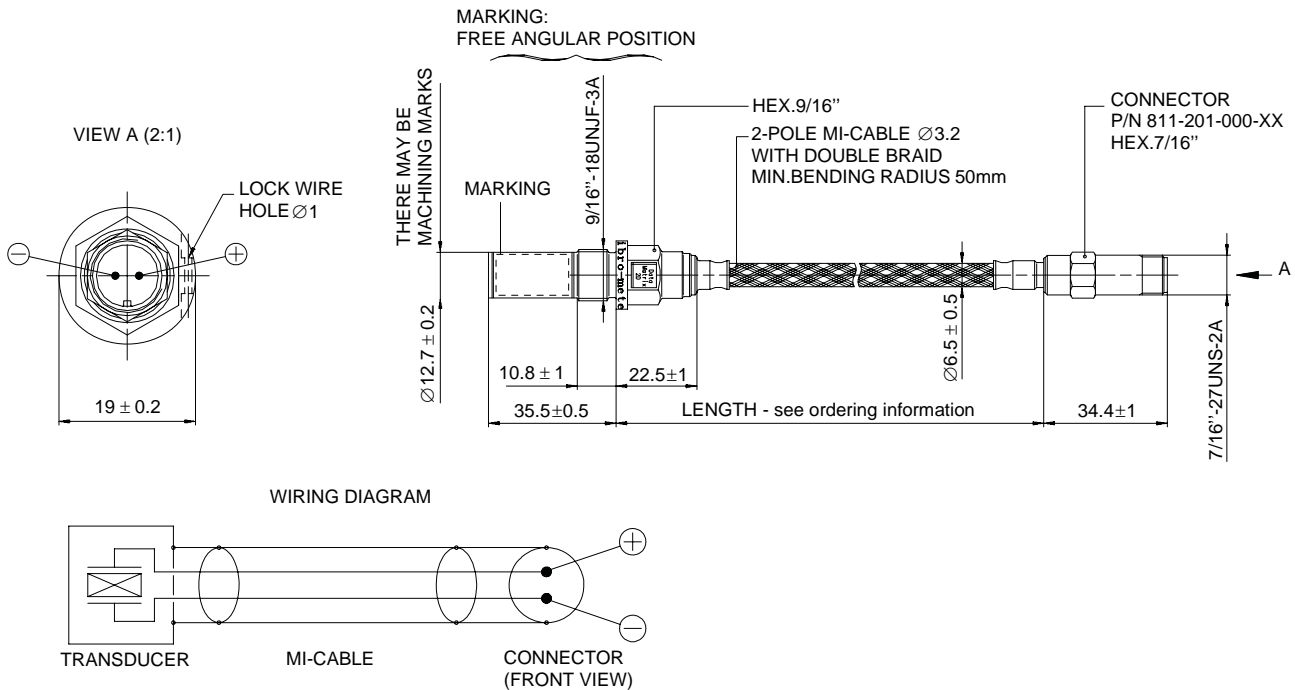
The transducer is applicable to either long-term monitoring or development testing. It has been specially designed to minimise sensitivity to acceleration.

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



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**MECHANICAL DIAGRAM**



**SPECIFICATIONS**

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) : Min. 750 pC/bar (52 pC/psi)  
 Static pressure (on sensing head) : 0.1 to 20 bar  
 Dynamic measuring range (random) : 0.00005 bar to 5 bar nom.  
 Overload capacity (spikes) : Up to 100 bar (1450 psi)  
 (static + dynamic components)  
 Linearity : ≤ ±1% over dynamic measuring range  
 Acceleration sensitivity  
 • From 10 Hz to 2.5 kHz : ≤ 0.15 pC/g (≤ 0.0002 bar/g, ≤ 0.0029 psi/g)  
 • From 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 10 000 Hz ± 5% (lower cut-off frequency is determined by the charge converter used)

### SPECIFICATIONS (Continued)

Capacitance (nominal)	
• Pole to pole	: 700 pF for transducer + 200pF/m of cable
• Pole to casing	: 10 pF for transducer + 300 pF/m of cable
Internal insulation resistance	: Min. $10^9 \Omega$ ( $5 \times 10^4 \Omega$ at 520°C)
Mounting torque *	: Nominally 5.5 Nm (corresponding to qualification of product) Maximum value of 10 Nm

\* A hole ( $\varnothing 1$ ) is provided for locking wire - see drawing

### ENVIRONMENTAL

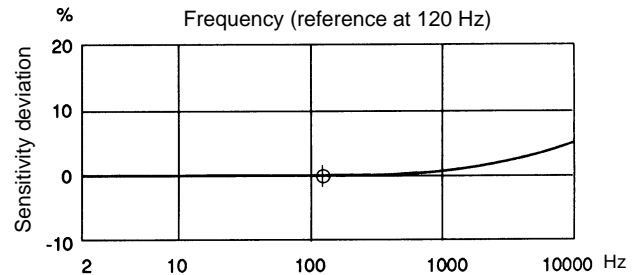
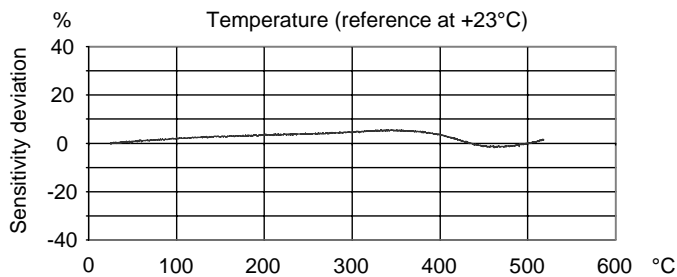
Temperature range	: -55°C to +520°C (continuous operation)
Shock acceleration	: < 1000 g peak (half sine 1 ms) along sensitive axis
Corrosion, humidity	: Inconel 600, hermetically welded
Use in explosive atmospheres	
• EC type examination certificate	: LCIE 02 ATEX 6105 X II 2 G (Zone 1, 2) Ex ib IIC T6 to T560



For specific parameters of the mode of protection concerned and special conditions for safe use, please refer to the "EC type examination certificate" that is available from Vibro-Meter SA on demand.

• cCSAus standard	: Certificate 1636189, Class I, Div. 1, Groups A, B, C, D Ex ia T6 to T1
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### TYPICAL RESPONSE



**ORDERING INFORMATION**

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To order please specify :

Type	Designation
CP 235	Piezoelectric Pressure Transducer

Ordering Number
143-235-000-0

XX

11

: Cable length 2 m

21

: Cable length 5 m



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In this publication, a dot (.) is used as the decimal separator and thousands are separated by spaces. Example : 12 345.678 90.

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**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)

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