

Piezoelectric Pressure Transducer

FEATURES

- 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

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

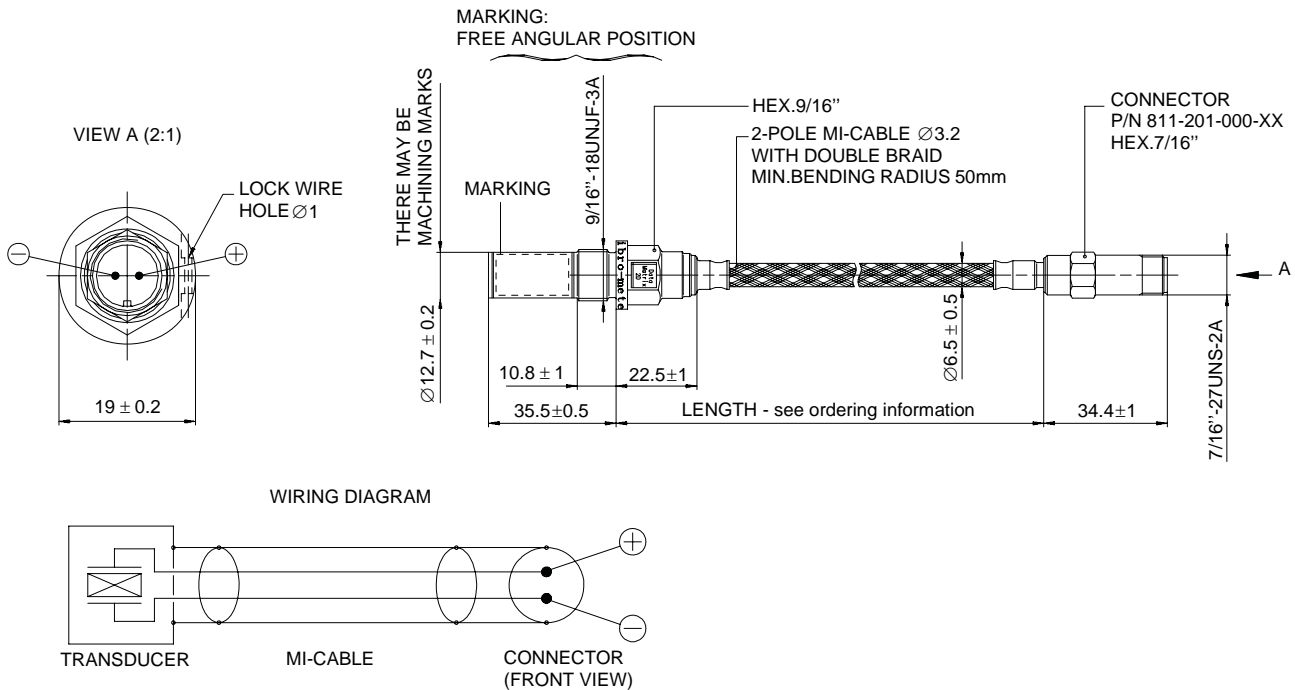
The transducer is applicable to either long-term monitoring or development testing. It has been specially designed to minimise sensitivity to acceleration.

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 $+23^{\circ}\text{C} \pm 5^{\circ}\text{C}$)

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 : $\leq \pm 1\%$ 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 $\pm 5\%$ (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

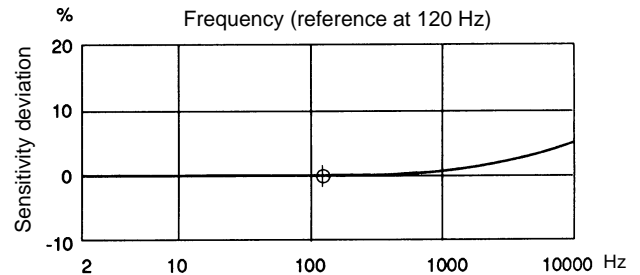
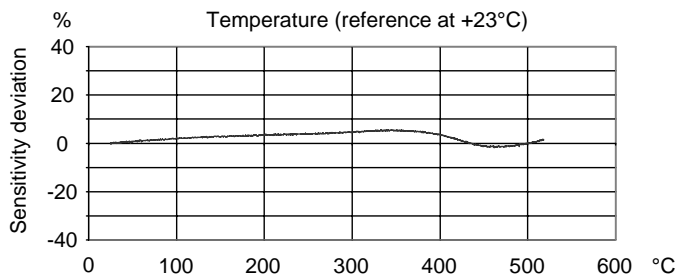
- Temperature range : -55°C to +520°C (continuous operation)
- Shock acceleration : < 1000 g peak (half sine 1 ms) along sensitive axis
- Corrosion, humidity : Inconel 600, hermetically welded
- Use in explosive atmospheres
- EC type examination certificate : LCIE 02 ATEX 6105 X
II 2 G (Zone 1, 2) Ex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

TYPICAL RESPONSE



ORDERING INFORMATION

To order please specify :

Type	Designation
CP 235	Piezoelectric Pressure Transducer

Ordering Number
143-235-000-0

XX

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: 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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