



Piezoelectric pressure transducer

FEATURES

- Designed for use in gas turbines
- Temperature range :
-70 °C to 560 °C (-94 °F to 1 050 °F)
- Outstanding thermal behaviour (no pyroelectricity)
- Sensitivity virtually constant over product lifetime
- Very low response threshold
- Internal case insulation



DESCRIPTION

The use of piezoelectric single-crystal in the CP 502 dynamic pressure transducer makes it an extremely stable and reliable device.

The transducer is applicable to either long-term monitoring of pressure pulsation in gas turbines or development testing.

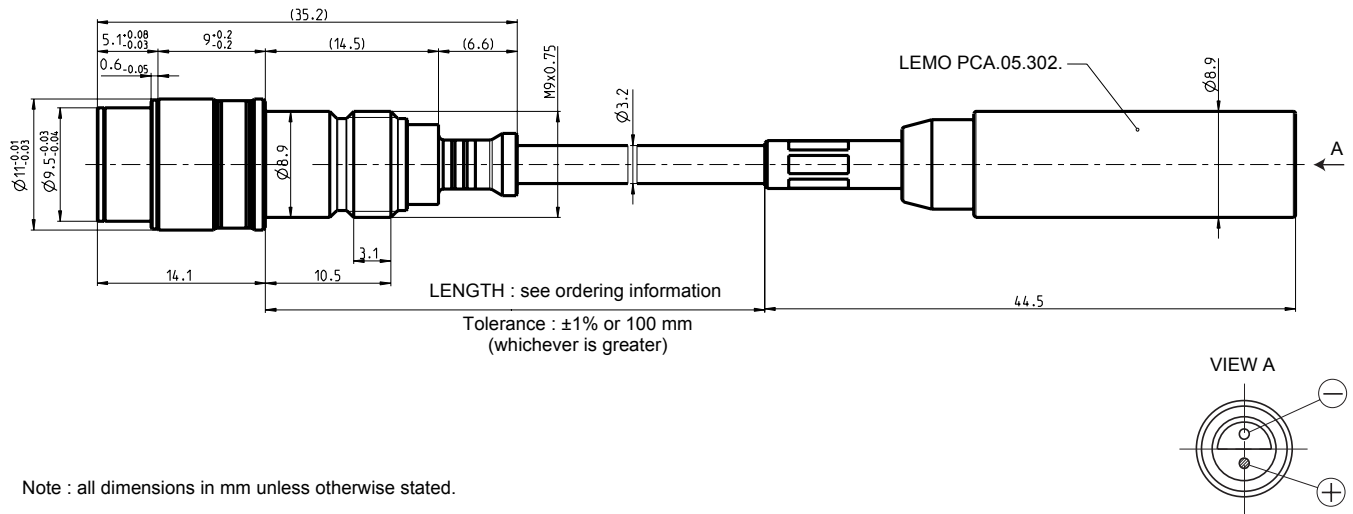
The industrial-grown single-crystal GaPO_4 guarantees excellent signal quality and constant sensitivity.

It is fitted with an integral mineral insulated cable (twin conductors) which is terminated with a LEMO connector.



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MECHANICAL DRAWING



SPECIFICATIONS

GENERAL

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

OPERATING

Sensitivity (typical)	: 85 pC/bar (5.9 pC/psi)
Dynamic measuring range (random)	: 0 to 50 bar (0 to 725 psi)
Burst pressure	: >100 bar (>1 450 psi)
Linearity	: ≤ 0.5% over dynamic measuring range
Acceleration sensitivity	
• Axial	: ≤ 2 mbar/g (≤ 0.03 psi/g)
• Radial	: ≤ 0.2 mbar/g (≤ 0.003 psi/g)
Frequency response	: 2 to 15 000 Hz ±5% (lower cut-off frequency is determined by the electronics used)
Resonant frequency	: > 50 kHz (along sensitive axis)
Transducer capacitance (including 1 m cable)	: 122 pF nominal pole/pole, 157 pF nominal pole/ground
Internal insulation resistance	: > 10 ¹⁰ Ω at 25 °C (77 °F), > 10 ⁶ Ω at 560 °C (1 050 °F)

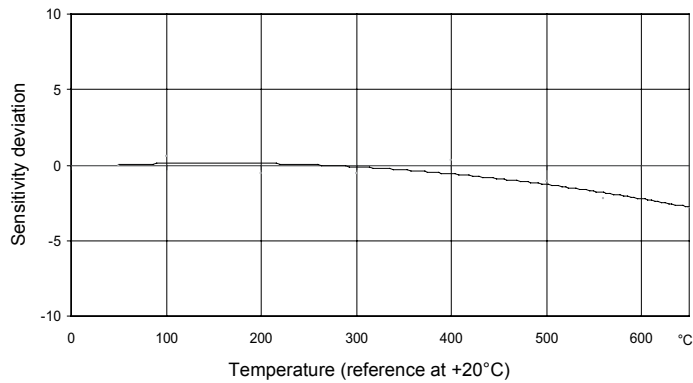
ENVIRONMENTAL

Temperature range (continuous operation)	: -70 °C to +560 °C (-94 °F to +1 050 °F)
Housing material	: Nimonic 90, hermetically welded
Mounting torque	: See mechanical drawing
Connection type	: 2-pole hard line cable (ø3.2 mm), insulated from casing, LEMO Connector

CALIBRATION

ISO 9001 certified calibration at +20°C with dead weight tester (3, 6, 8, 10, 12, 30, 50 bar). Sensitivity and linearity are determined according to DIN 16086.

TYPICAL RESPONSE CURVE



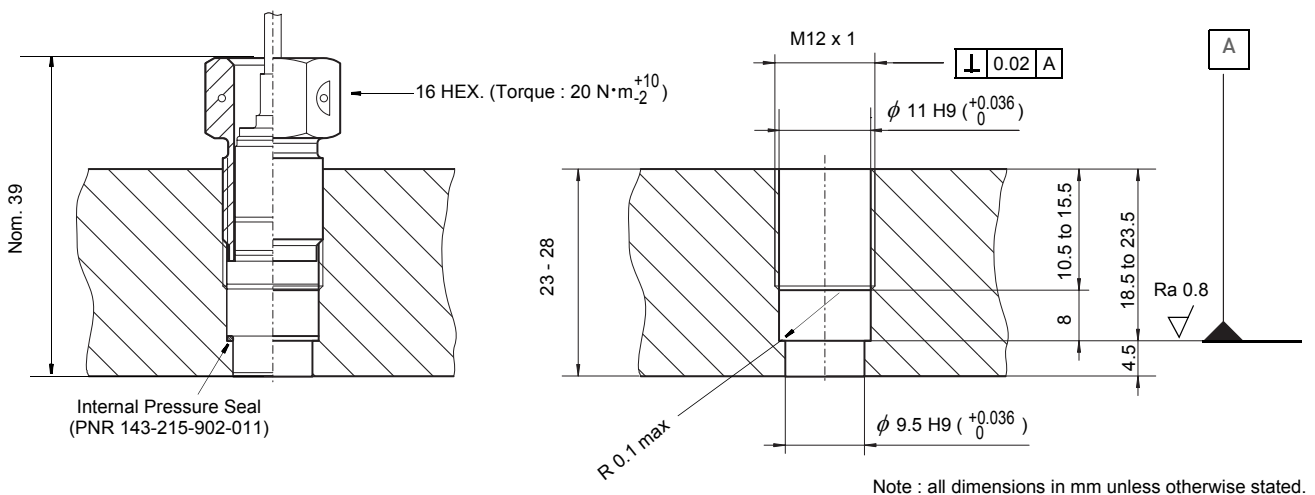
ORDERING INFORMATION

To order please specify :

Type	Designation	Ordering Number	Cable length
CP 502	Piezoelectric pressure transducer	143-502-00-011	2.5 m

ACCESSORIES

MA 104 Mounting Adapter for CP 502 (to be used with VM Lemo Connector)



Designation
MA 104 Mounting adapter

Ordering Number
809-104-000-011

ACCESSORIES (Continued)

CP 50X Pressure Seals

Designation	Ordering Number
MA Internal pressure seal	143-215-902-011
MA External pressure seal	143-215-903-011



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