

# Gas Turbine Pressure Sensor Type P-2



This new sensor is designed for monitoring pressure pulsations in gas turbines, also known as combustor rumble, humming or screech. Its characteristics make it ideally suited for both, serial and R&D applications. The sensors patented sensing element, with Crystal Match™ technology, enables exceptional signal qualities over the entire temperature range. The industrial grown single-crystal GaPO<sub>4</sub> guarantees excellent signal quality and constant sensitivity.

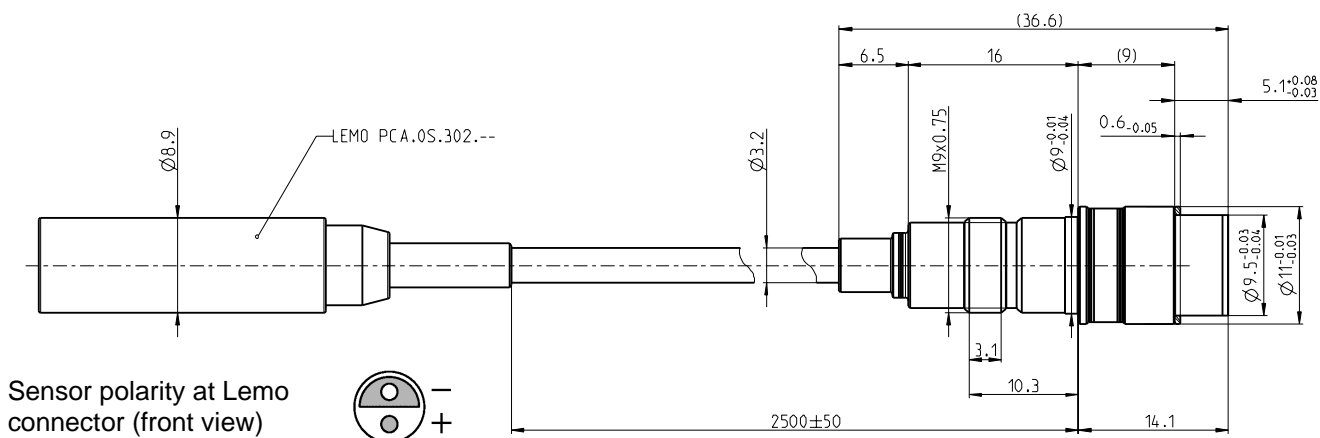
## BENEFITS

- Excellent signal quality
- High temperature stability (560°C / 1050°F)
- Outstanding thermal behavior (no pyroelectricity)
- Virtually constant sensitivity over the entire lifetime
- Very low response threshold
- Internal case insulation

## SPECIFICATIONS

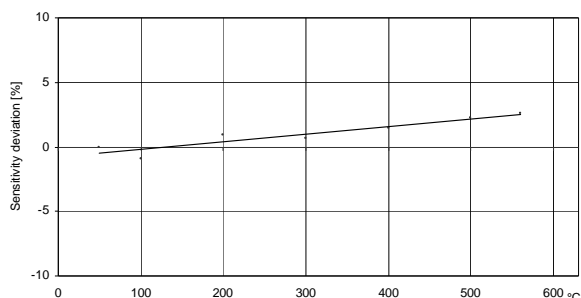
Operating principle	Piezoelectric, charge output
Sensing element	GaPO <sub>4</sub> (gallium phosphate)
Dynamic measuring range	0 ... 30 bar, (0 ... 435 psi)
Overload range	50 bar, (725 psi)
Sensitivity	90 pC/bar, (6.2 pC/psi)
Linearity	≤ 0.5% (0...50 bar, 0...725 psi)
Operating temperature	-70 °C ... +560°C, (-94°F ... +1050°F)
Internal insulation resistance	> 10 <sup>10</sup> Ω (25°C / 77°F), > 10 <sup>6</sup> Ω (560°C / 1050°F)
Acceleration sensitivity	axial ≤ 2 mbar/g (0.03 PSI/g), radial ≤ 0.2 mbar/g (0.003 PSI/g)
Frequency range	2 Hz to 15 kHz (resonant frequency > 50kHz)
Capacitance (nominal, incl. 1m cable)	122 pF pole/pole, 157 pF pole/ground
Mounting torque	7 Nm
Housing material	Nimonic 90, hermetically welded
Connection type	2-pole hard line cable, insulated from casing, LEMO Connector

## SENSOR DIMENSIONS

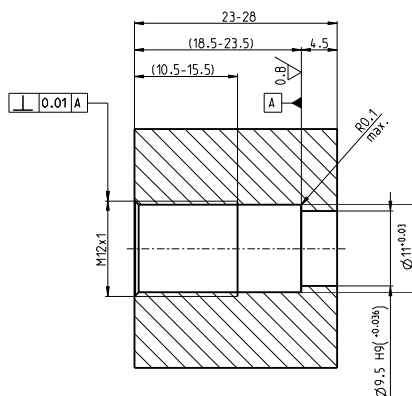


## Calibration and thermal Sensitivity

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



## MOUNTING BORE DIMENSIONS



## Accessories

- Mounting adapter M12x1
- Sealing ring (TiAlN coated)

Piezocryst reserves the right to change specifications and accessories without notice.