

# Gas Turbine Pressure Sensor

## Type P-6



This new sensor is designed for monitoring pressure pulsations in gas turbines, also known as combustor rumble, humming or screech. The sensor is active acceleration compensated, 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 constant sensitivity and an excellent performance at high temperatures.

### BENEFITS

- Active acceleration compensation
- High temperature stability (750°C / 1380°F)
- Outstanding thermal behavior (no pyroelectricity)
- Virtually constant sensitivity over the entire lifetime
- Internal case insulation

### SPECIFICATIONS

Operating principle	Piezoelectric, charge output
Sensing element	GaPO <sub>4</sub> (gallium phosphate)
Dynamic measuring range	0 ... 50 bar, (0 ... 725 psi)
Burst pressure	>100 bar, (1450 psi)
Sensitivity	85 pC/bar, (5.9 pC/psi)
Linearity	≤ 0.5% (0...50 bar, 0...725 psi)
Operating temperature (continuous)	-70 °C ... +700 °C, (-94 °F ... +1290 °F)
Maximum temperature	+750 °C, (+1380 °F)
Internal insulation resistance	> 10 <sup>10</sup> Ω (25 °C / 77 °F), > 10 <sup>6</sup> Ω (700 °C / 1290 °F)
Acceleration sensitivity	axial ≤ 0.25 mbar/g (0.0036 psi/g), radial ≤ 0.2 mbar/g (0.003 psi/g)
Frequency range	2 Hz to 15 kHz (resonant frequency > 50 kHz)
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 (ø3.2 mm), insulated from casing, LEMO Connector

