



IDAC 105

Piezoelectric Pressure Sensor

Special characteristics

- Compact construction
- High output signal with extended pressure range
- High natural frequency
- Constant sensitivity across the entire service life

Description

The sensor was developed for dynamic and quasistatic pressure detection up to 500 bar. The sensor element with Crystal Match™ technology enables exceptional signal detection across the entire temperature range. The monocrystalline GaPO₄ sensor element allows constant sensitivity and thus ensures excellent performance. Thanks to its size (M5x0.5 thread) and its pressure range, the sensor is suitable for a broad range of applications.

Applications

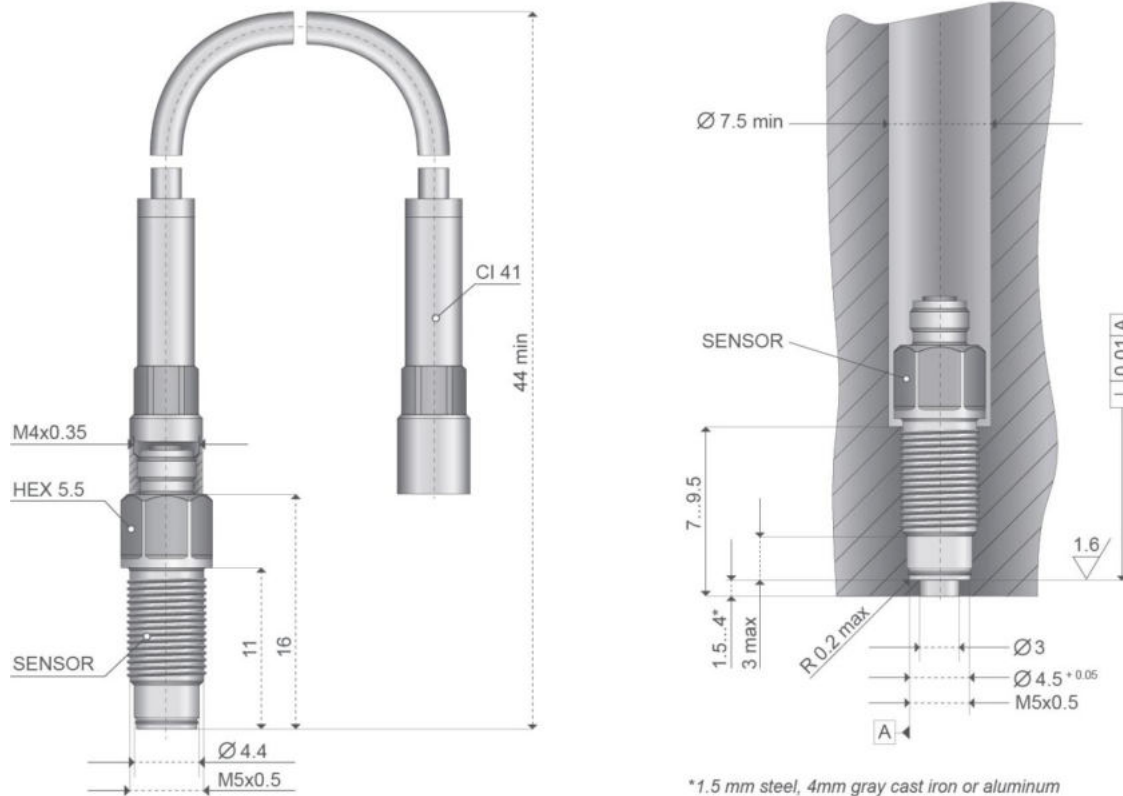
Laboratory applications

Test stands

Technical Data

Functional principle		Piezoelectric
Sensor element		GaPO ₄ (Gallium phosphate)
Nominal pressure range	[bar]	0 ... 500 (0 ... 7250 psi)
Overload	[bar]	550 (8000 psi)
Sensitivity	[pC/bar]	19 (1.3 pC/psi)
Linearity	[%/FSO]	≤ ± 0.3 (0 ... 300 bar, 0 ... 4350 psi) ≤ ± 0.5 (0 ... 500 bar, 0 ... 7250 psi)
Operating temperature	[°C]	-50 ... 120 (-58 ... 248 °F)
Sensitivity coefficient	[°C ⁻¹]	-2.1*10 ⁻⁴
Insulation resistance	[Ω]	> 10 ¹³ (25 °C / 77 °F)
Acceleration sensitivity	(typ.)	axial: ≤ 0.05 mbar/g (0.0004 psi/g) radial: ≤ 0.15 mbar/g (0.0002 psi/g)
Shock	[g]	> 2000
Natural frequency	[kHz]	170
Capacitance (nominal)	[pF]	7.5
Tightening torque	[Nm]	1.5
Housing material		Stainless steel, hermetically welded

Dimensions in mm and mounting



The sensor can be screwed directly into the object to be measured. The sensor front side ($\text{Ø } 4.4 \text{ mm}$) seals the sensor in the mounting hole. Rapid changes in pressure are best detected when the volume in front of the membrane is kept as small as possible.

All cables can be removed.

Teflon piezo input cable (1 m) is included in the scope of supply.

Accessories

Name	quantity	BDS-order number
Piezo Input cable Teflon	2 m	BDV4712
Piezo Input cable Teflon	3 m	BDV5041
Piezo Input cable steel braid	1 m	BDV2444
Piezo Input cable steel braid	2 m	BDV2446
Piezo Input cable steel braid	3 m	BDV4954
Piezo Input cable Viton	1 m	BDV4707
Piezo Input cable Viton	2 m	BDV4708
Piezo Input cable Viton	3 m	BDV5806
M4/0.35 to BNC coupling	piece	BDU2077