

IDAC 105 K

Piezoelectric Pressure Sensor

Special characteristics

- ▶ Compact construction
- ▶ Extended pressure range
- ▶ High temperature resistance (400 °C / 752 °F)
- ▶ High natural frequency
- ▶ Constant sensitivity across the entire service life



Description

The sensor was developed for dynamic and quasistatic pressure detection up to 300 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 temperature resistance up to 400 °C, the sensor is suitable for a broad range of applications.

Applications

Test stands

Development and quality assurance

Technical Data

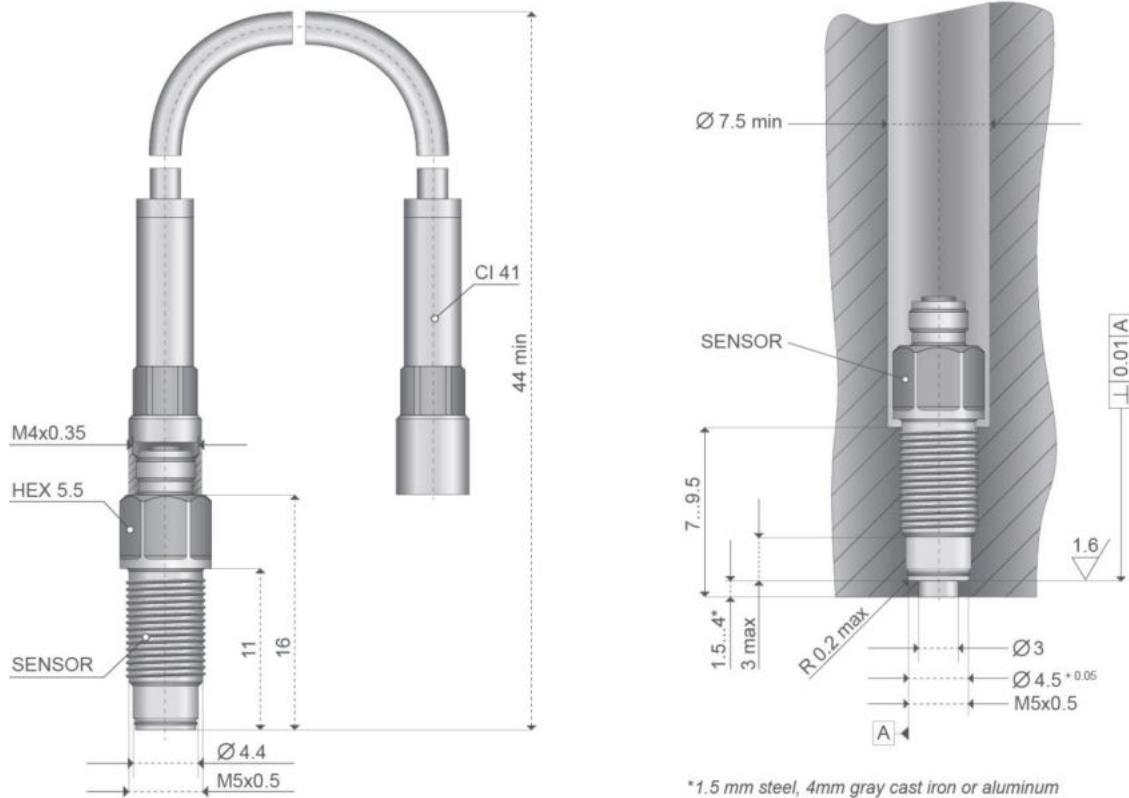
Functional principle	Piezoelectric	
Sensor element	GaPO ₄ (Gallium phosphate)	
Nominal pressure range	[bar]	0 ... 300 (0 ... 4350 psi)
Overload	[bar]	350 (5075 psi)
Sensitivity	[pC/bar]	19 (1.3 pC/psi)
Linearity	[%/FSO]	≤ ± 0.3 (0 ... 300 bar, 0 ... 3625 psi)
Operating temperature	[°C]	-40 ... 400 (-40 ... 752 °F)
Sensitivity coefficient	[°C ⁻¹]	-2.1*10 ⁻⁴
Insulation resistance	[Ω]	> 10 ¹³ (25 °C / 77 °F), > 10 ⁹ (400 °C / 752 °F)
Acceleration sensitivity	(typ.)	axial: ≤ 0.03 mbar/g (0.004 psi/g) radial: ≤ 0.15 mbar/g (0.002 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	

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Dimensions in mm and mounting



The sensor can be screwed directly into the object to be measured. The sensor front side ($\varnothing 4.4$ 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