DAC 106U

Piezoelectric Pressure Sensor

Special characteristics

- Compact construction
- High temperature resistance (350 °C / 662 °F)
- High natural frequency
- Constant sensitivity across the entire service life

Description

The sensor was developed for dynamic and quasistatic pressure detection up to 650 bar. The monocrystalline $GaPO_4$ sensor element allows constant sensitivity and thus ensures excellent performance. The Double Shell™ construction of the sensor decouples the measuring crystals from external mechanical influences. Precise measurements in diverse situations are thus possible. Thanks to its size (M5x0.5 thread) and its high-pressure capability, the sensor is suitable for a broad range of applications.

Applications

High-pressure measurements with extreme pressure peaks in extremely confined spaces

Technical Data		
Functional principle		Piezoelectric
Sensor element		$GaPO_4$ (Gallium phosphate)
Nominal pressure range	[bar]	0 ... 650 (0 ... 1200 psi)
Overload	[bar]	1000 (14500 psi)
Service life		10^8
Sensitivity (nominal)	[pC/bar]	approx. 1.5 (0,1 pC/psi)
Linearity	[%]	≤ ± 0.3 0 ... 150 bar FSO (0 ... 2200 bar psi FSO) ≤ ± 0.5 0 ... 300 bar FSO (0 ... 4400 bar psi FSO)
Operating temperature	[°C]	-40 … 350 (-40 … 662 °F)
Insulation resistance at 20 °C	[Ω]	≥ 10^{13}
Acceleration sensitivity	(typ.)	< 0.5 mbar/g (0.0007 psi/g)
Shock	[g]	≥ 2000
Natural frequency	[kHz]	> 400
Capacitance	[pF]	4
Tightening torque	[Nm]	1.5 (1.1 lbft)
Thermal sensitivity		≤ 1 % 20 ... 400 °C ≤ ± 0.35 % 250 ± 100 °C
Thread diameter (front sealing)		M5x0.5
Cable connection (negative)		M3x0.35
Weight (without cable)	[g]	1.5 (0.05 oz.)
Housing material		Nickel superalloy, hermetically welded

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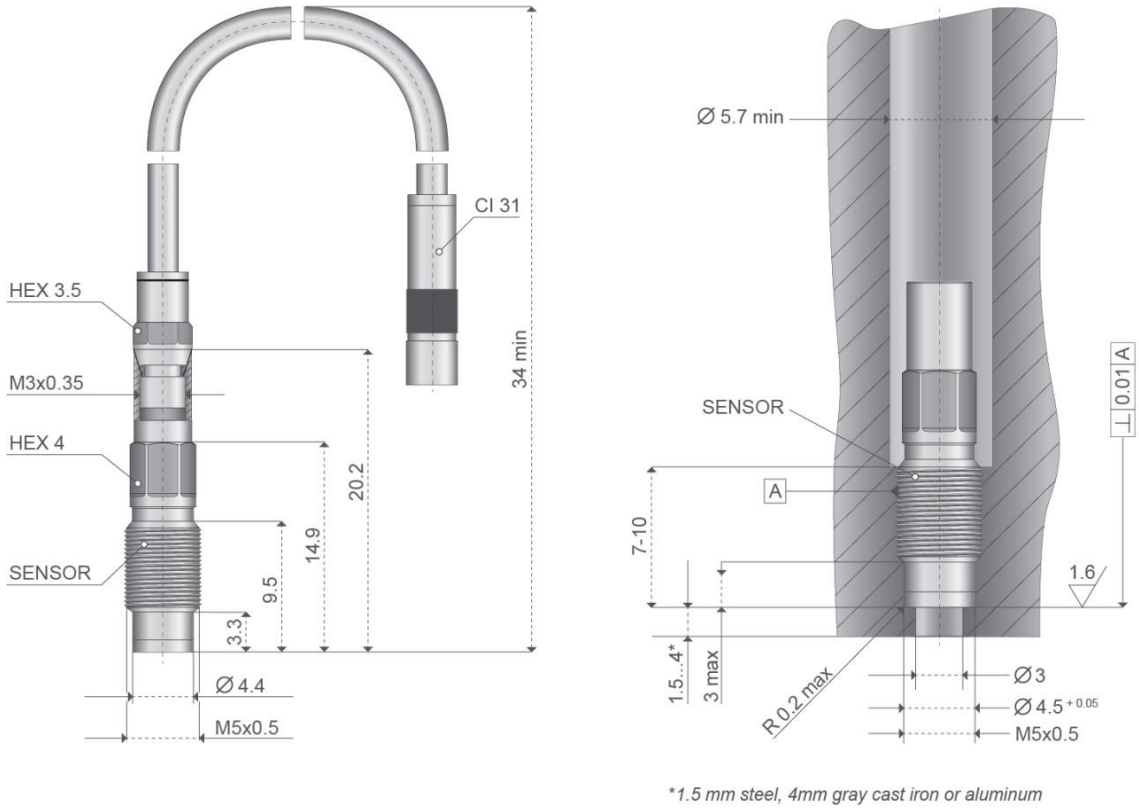
Dimensions in mm and mounting



*1.5 mm steel, 4mm gray cast iron or aluminum

The sensor can be screwed directly into the object to be measured. The sensor front side (Ø 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

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BD|SENSORS pressure measurement