

# DAC 103

## Piezoelectric Pressure Sensor

### Special characteristics

- Active acceleration compensation
- 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 250 bar. Due to its active acceleration compensation, the sensor returns an exact signal even on heavily vibrating systems. 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

For heavily vibrating systems

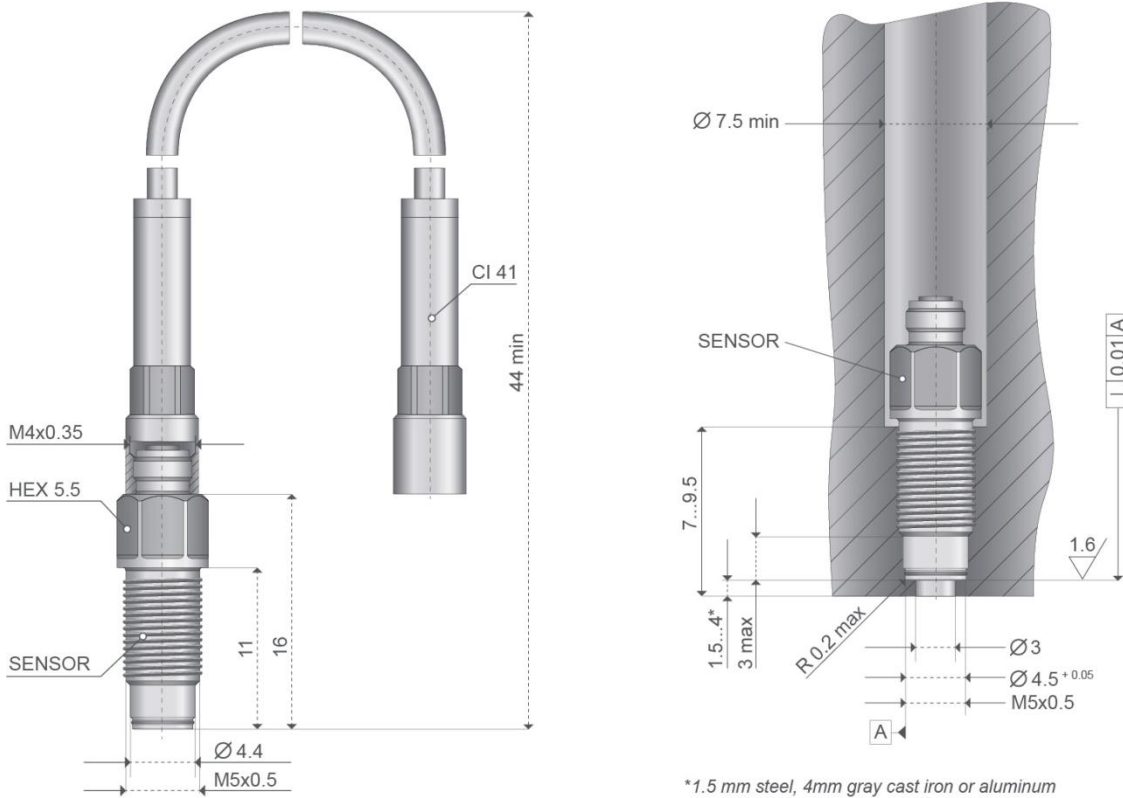
For high mechanical load

Turbochargers, closing valves

### Technical Data

Functional principle	Piezoelectric
Sensor element	GaPO <sub>4</sub> (Gallium phosphate)
Nominal pressure range [bar]	0 ... 250 (0 ... 3625 psi)
Overload [bar]	300 (4350 psi)
Sensitivity [pC/bar]	16 (1.1 pC/psi)
Linearity [%/FSO]	≤ ± 0.3 (0 ... 250 bar, 0 ... 3625 psi)
Operating temperature [°C]	-40 ... 400 (-40 ... 752 °F)
Sensitivity coefficient [°C <sup>-1</sup> ]	-2.1*10 <sup>-4</sup>
Insulation resistance [Ω]	> 10 <sup>13</sup> (25 °C / 77 °F), > 10 <sup>9</sup> (400 °C / 752 °F)
Acceleration sensitivity (typ.)	axial: ≤ 0.05 mbar/g (0.0007 psi/g) radial: ≤ 0.15 mbar/g (0.0002 psi/g)
Shock [g]	> 7000
Natural frequency [kHz]	165
Capacitance (nominal) [pF]	8.5
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 ( $\varnothing 4.4$  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