

Piezoelectric Pressure Sensor

Type G-1



This sensor is designed for monitoring dynamic pressure and quasistatic pressure up to 250bar. The sensors patented sensing element, with Crystal Match™ technology, enables exceptional signal qualities over the entire temperature range. The industrial grown single-crystal GaPO₄ guarantees constant sensitivity and an excellent performance at high temperatures.

BENEFITS

- High output signal
- Internal heat conducting element.
- High linearity throughout the entire pressure and temperature range
- High temperature stability (400 °C / 752 °F)
- Virtually constant sensitivity over the entire lifetime

SPECIFICATIONS

Operating principle	Piezoelectric, charge output
Sensing element	GaPO ₄ (gallium phosphate)
Dynamic measuring range	0 ... 250 bar, (0 ... 3625 psi)
Overload pressure	300 bar, (4350 psi)
Sensitivity	35 pC/bar, (2.4 pC/psi)
Linearity	≤ 0.3 (0.1%)* % FSO (0...250 bar, 0...3625 psi)
Operating temperature (continuous)	-50 °C ... +400 °C, (-58 °F ... +688 °F)
Sensitivity coefficient (typ.)	+1.5*10 ⁻⁵ °C ⁻¹
Internal insulation resistance	> 10 ¹³ Ω (25 °C / 77 °F), > 10 ⁹ Ω (400 °C / 688 °F)
Acceleration sensitivity	axial ≤ 2 mbar/g (0.03 psi/g), radial ≤ 0.2 mbar/g (0.003 psi/g)
Natural Frequency	85 kHz
Capacitance (nominal)	8 pF pole/ground
Mounting torque (for mounting screw)	10 Nm
Housing material	stainless steel, hermetically welded

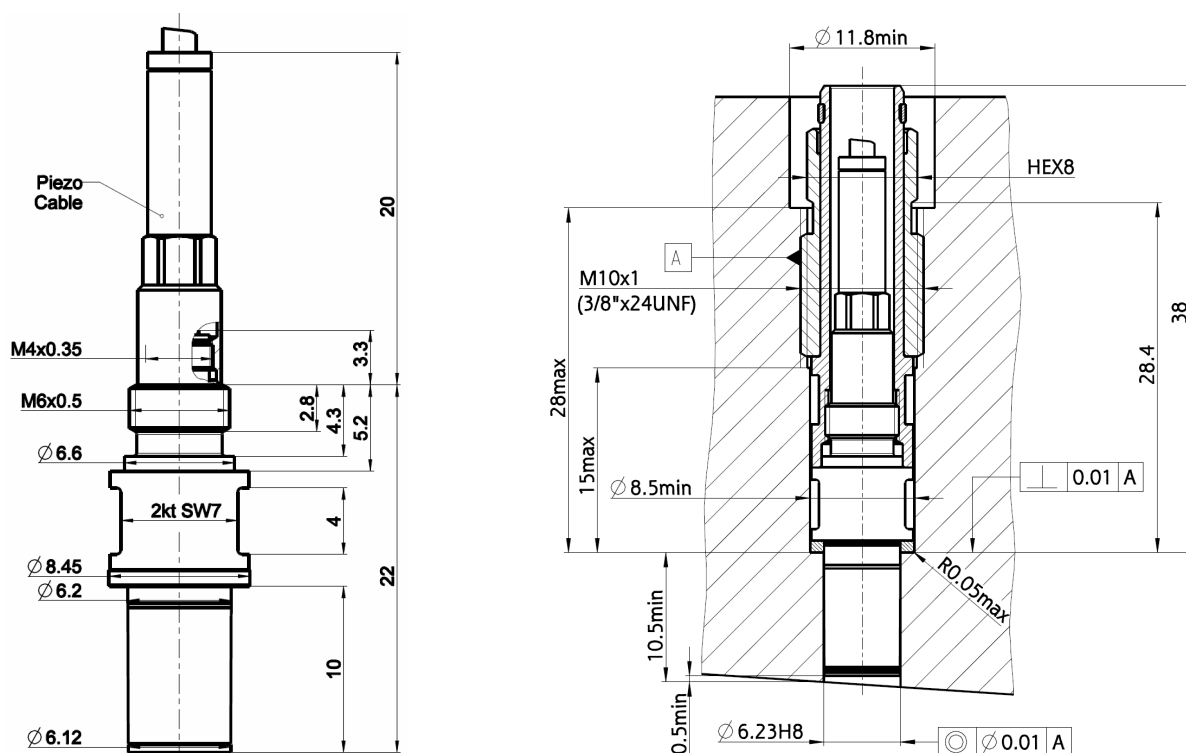
*) selected transducers on request

DESCRIPTION

Pressure that is applied to the membrane of the sensor introduces force to the high sensitive piezo crystal elements. Four of these transversally arranged sensing elements are enclosed by a special heat conducting element. This additional measure in combination with the unique crystal material (GaPO_4) guarantees the very stable operation trough the entire temperature range. The sensor behavior typically changes less than 0.7% between 20 °C and 400 °C.

MOUNTING & SENSOR DIMENSIONS

The sensor can be mounted with the mounting adapter directly to the measuring object. The sensor shoulder ($\text{Ø}8.45\text{mm}$) seals the sensor in the mounting bore. High frequent pressure changes can be measured best, when the additional volume in front of the membrane is kept small.



All dimensions are in mm, the piezo cables are detachable.

ACCESSORIES

- Piezo input cable, standard: 1m (BV2443), 2m (BV2445)
- Piezo input cable, steel braided: 1m (BV2444), 2m (BV2446)
- BNC coupling (EU2077)
- Mounting adaptor (WG0142)
- Gasket (YF0572)

Piezocryst reserves the right to change specifications and accessories without notice.