PIEZOCRYST
ADVANCED SENSORICS GMBH

Piezoelectric Pressure Sensor

Measuring ranges up to
350 bar
5070 psi

- ✓ High output signal
- ✓ Internal heat conducting element
- ✓ High temperature stability (400°C / 750°F)
- ✓ Virtually constant sensitivity over the entire lifetime

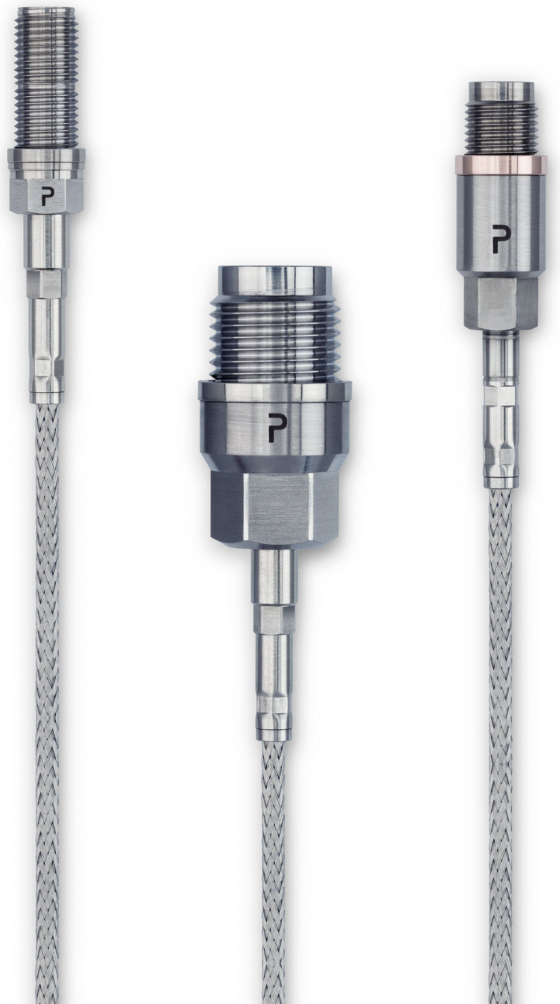
Measurements in R&D differ profoundly from those for serial applications. Boundary conditions like temperature, mounting environment, mechanical stress or heat flux are not fully evaluated. Furthermore testing time is usually limited and the measurement position new, so there is no or only few data for comparison. This complex situation demands sensors which deliver a reliable signal which is not influenced by other physical quantities. On top, there should be different sensor configurations for easy integration into the setup.

The P-series is designed for monitoring dynamic pressure and quasistatic pressure up to 350 bar and features a high accuracy which makes the sensors also suitable for precise thermodynamic analyses. The sensors' patented sensing element, with Crystal Match™ technology, enables exceptional signal qualities over the entire temperature range. The Double Shell™ design gives high mechanical isolation from influences of the mounting bore and decouples the piezoelectric elements from negative influences of mechanical stress.

-50°C — up to 400 °C

continious operation

CE



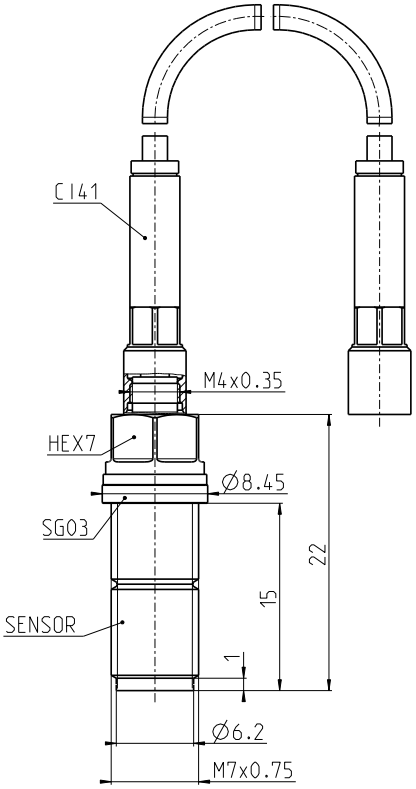
Specifications

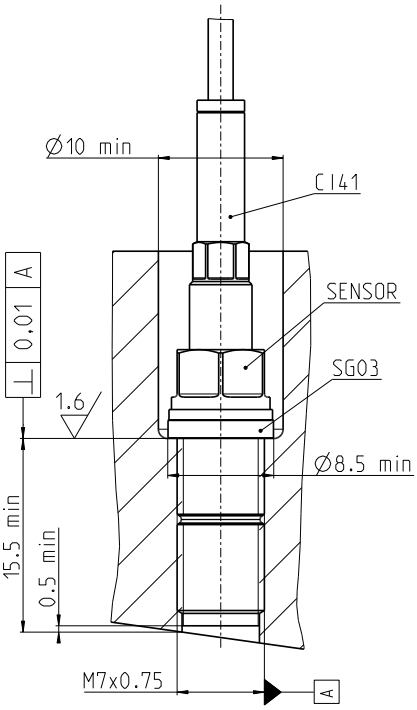
Name	P1-A1	P2-A1	P2-B1	P3-A1	P3-A2
Operating principle	Piezoelectric, charge output				
Sensing element	GaPO4 (gallium phosphate)				
Dynamic measuring range					
0 ... 250 bar (0 ... 3625 psi)	•	•		•	•
0 ... 300 bar (0 ... 4351 psi)			•		
Overload pressure					
300 bar (4350 psi)	•	•		•	•
350 bar (5076 psi)			•		
Sensitivity (nominal)					
20 pC/bar (1.38 pC/psi)				•	•
35 pC/bar, (2.4 pC/psi)	•		•		
45 pC/bar (3.1 pC/psi)		•			
Linearity					
≤ ± 0.3% FSO (0...250 bar, 0...3625 psi)	•	•	•		
≤ ± 0.5% FSO (0...300 bar, 0...4351 psi)				•	•
Operating temperature (continuous)					
-40°C ... +350°C, (-40°F ... +662°F)				•	•
-40°C ... +400°C, (-40°F ... +752°F)	•	•	•		
Sensitivity coefficient	$+1.5*10^{-5}$ °C^{-1}				
Internal insulation resistance	> 10^{13} Ω (25°C / 77°F)				
Acceleration sensitivity (typ.)					
axial ≤ 0.2 mbar/g (0.003 psi/g),		•			•
axial ≤ 1 mbar/g (0.015 psi/g)				•	
axial ≤ 1.3mbar/g (0.019 psi/g)			•		
axial ≤ 2 mbar/g (0.03 psi/g), radial ≤ 0.2 mbar/g (0.003 psi/g)	•				
Shock resistance	>2000 g				
Natural Frequency					
85 kHz	•				
90 kHz				•	•
92 kHz		•			
100 kHz			•		
Capacitance (nominal)					
7 pF pole/ground				•	•
8 pF pole/ground	•	•			
12 pF pole/ground			•		
Mounting torque	3 Nm	6 Nm			20 .. 25 Nm
Housing material	Stainless steel, hermetically welded				

Dimensions	P1-A1	P2-A1	P2-B1	P3-A1	P3-A2
Type 1	•				
Type 2		T = M4x0.35	T = M3x0.35		
Type 3				•	
Type 4					•
Connector	M4x0.35	M4x0.35	M3x0.35	M4x0.35	M4x0.35

Sensor & Mount Dimensions

Type 1





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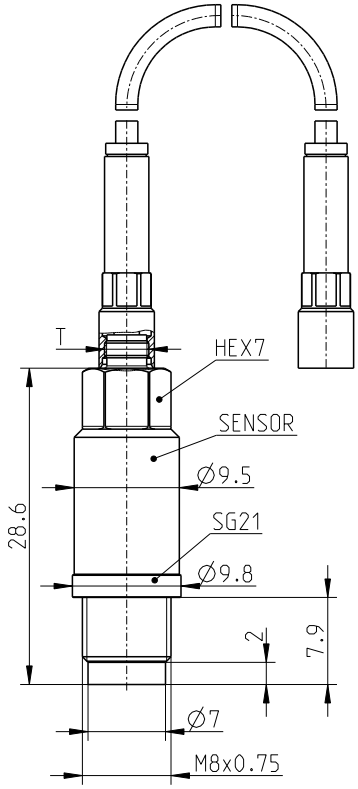
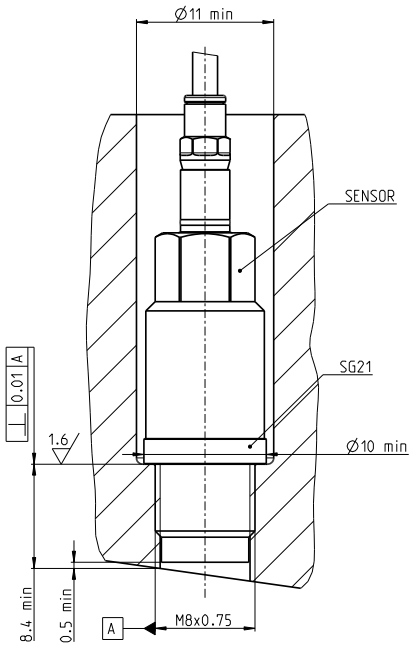
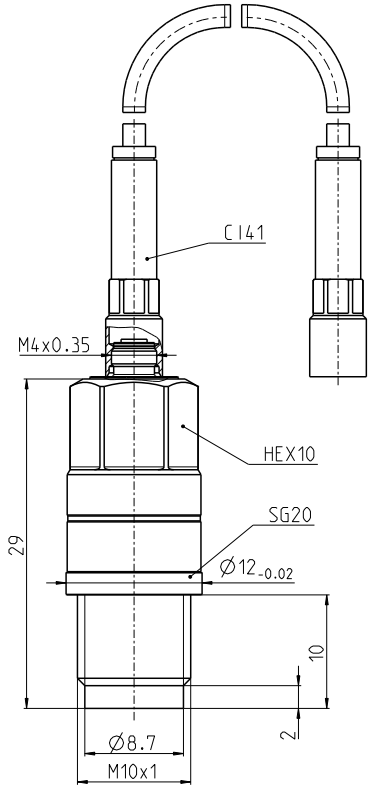
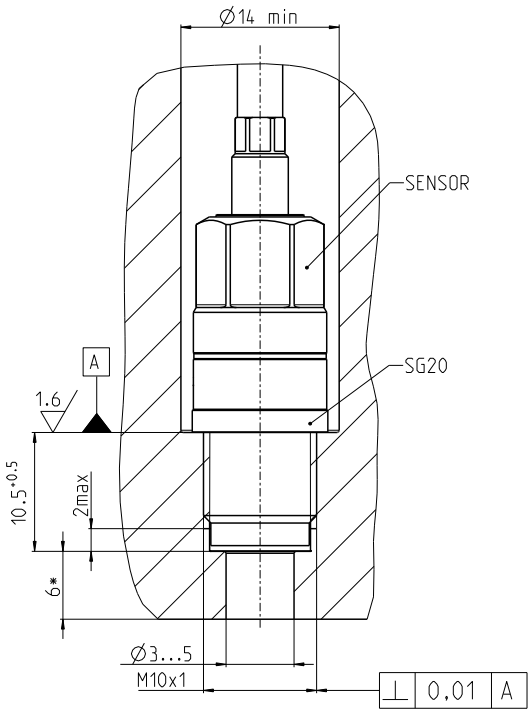




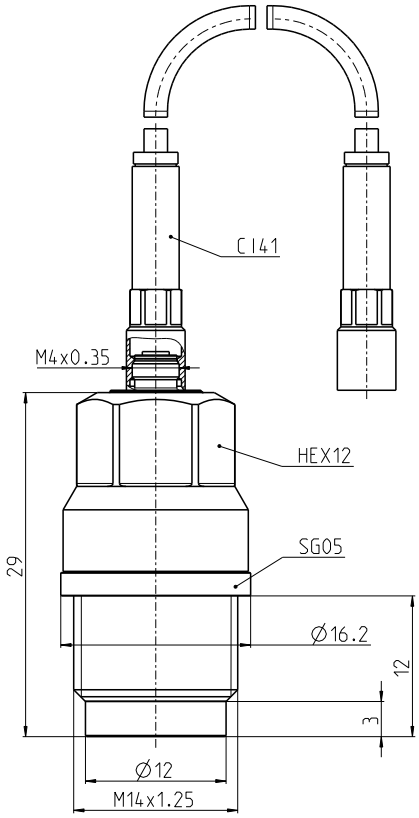
Type 3

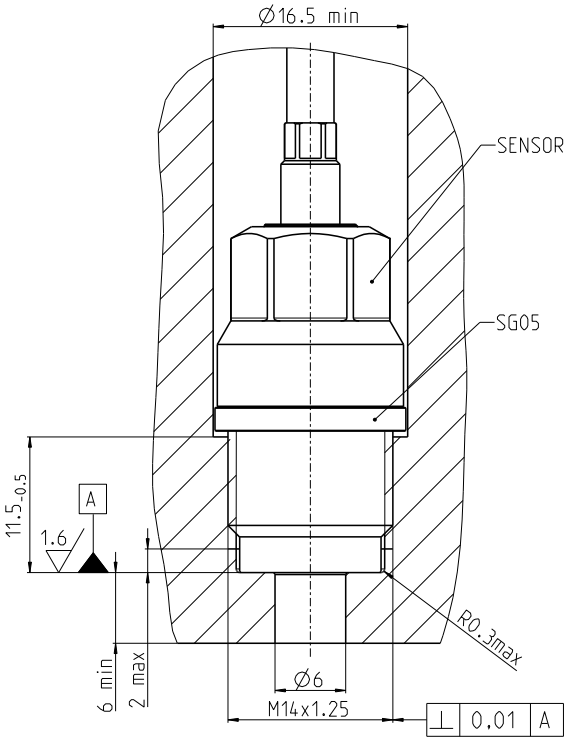




All dimensions are in mm.

Type 4





Scope of Supply

Name	Scope of supply
Sensor	✓
Cable	1m Teflon™ cable
Coupling	M4x0.35 to BNC coupling
Gaskets	✓
Accessory kit	Protection cap and 2 spare o-rings
Calibration sheet	✓
Documentation	✓

Customer support

We are reachable by phone:

+43 316 787 530

Write us an E-Mail and we get back to you

info@piezocryst.com

Piezocryst
Advanced Sensorics GmbH
Hans-List-Platz 1 | A-8020 Graz
Austria