

Piezoelectric Pressure Sensor

- ✓ Compact Design with M5x0,5 thread
- ✓ Various pressure ranges up to 1000 bar (14500 psi)
- ✓ High temperature stability up to 400 °C (750 °F)
- ✓ Wide range of applications
- ✓ Virtually constant sensitivity over the entire lifetime

The S-Series sensors are widely used for complex measurement tasks of fast or high frequent events where robustness, precision and repeatability are key requirements. Offering a wide pressure and temperature range Piezocryst's S-Series combines unique features in a compact size with an M5x0,5 mounting thread. Various cable options, accessories and adapters for installation and different sealing options qualify these versatile sensors as solution for many applications.

Piezocryst's GaPO₄ crystal elements, tailored material selection and minimal tolerances in production make these sensors highly precise instruments that deliver a reliable, undistorted signal even during high temperature gradients. The double shell decouples the sensing elements from mechanical impact and its well-proven design elements guarantee highest durability and constant performance over the entire lifetime.

Questi prodotti sono distribuiti e supportati in Italia da:

**Instrumentation
Devices**

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Specifications

Name	S1-A1	S1-A2	S1-B1	S1-B2	S1-C1	S1-K2	S1-L1	S1-R1	S1-R2	S2-A1	S2-K2
Operating principle	Piezoelectric, charge output										
Sensing element	GaPO ₄ (gallium phosphate)										
Dynamic measuring range											
0 ... 250 bar, (0 ... 3625 psi)	•	•						•	•		
0 ... 300 bar, (0 ... 4350 psi)			•	•							
0 ... 500 bar, (0 ... 7250 psi)					•	•					
0 ... 650 bar, (0 ... 9430psi)							•				
0 ... 1000 bar, (0 ... 14500 psi)										•	•
Overload pressure											
300 bar, (4350 psi)	•	•						•	•		
350 bar, (5075 psi)			•	•							
550 bar, (8000 psi)						•					
600 bar, (8700 psi)					•						
700 bar, (10150 psi)							•				
1000 bar, (14500 psi)										•	•
Sensitivity (nominal)											
1,5 pC/bar (0.1 pC/psi)										•	•
10 pC/bar, (0.69 pC/psi)					•		•				
15 pC/bar (1 pC/psi)								•			
16 pC/bar, (1.1 pC/psi)									•		
19 pC/bar, (1.3 pC/psi)	•	•	•	•		•					
Linearity											
≤ ± 0.3% FSO	•	•	•	•		•		•	•		
≤ ± 0.5% FSO					•		•			•	•
Operating temperature											
-55°C ... +120°C, (-67°F ... +250°F)						•	•				
-55°C ... +350°C (-67°F ... +660°F)										•	•
-55°C ... +400°C, (-67°F ... +750°F)	•	•	•	•	•			•	•		
Thermal sensitivity change *	1 %		2 %						6 %		
Internal insulation resistance	> 10 ¹³ Ω (25°C / 77°F), > 10 ⁹ Ω (400°C / 752°F)										
Acceleration sensitivity (typ.)											
axial ≤ 0.05 mbar/g (0.0007 psi/g), radial ≤ 0.15 mbar/g (0.002 psi/g)										•	
axial ≤ 0.3 mbar/g (0.004 psi/g), radial ≤ 0.15 mbar/g (0.002 psi/g)	•	•	•	•		•					
axial ≤ 0.5 mbar/g (0.007 psi/g)					•		•			•	•
axial ≤ 0.8 mbar/g (0.011 psi/g)								•			
Shock resistance	>2000 g								>7000g		>2000 g
Natural Frequency	160 kHz		170 kHz					160 kHz	165 kHz	400 kHz	
Capacitance (nominal)	7.5 pF pole/ground										
Mounting torque	1.5 Nm										2 Nm
Sensor and mount	Type 1	Type 2	Type 1	Type 2	Type 1	Type 2	Type 1	Type 1	Type 2	Type 1	Type 3

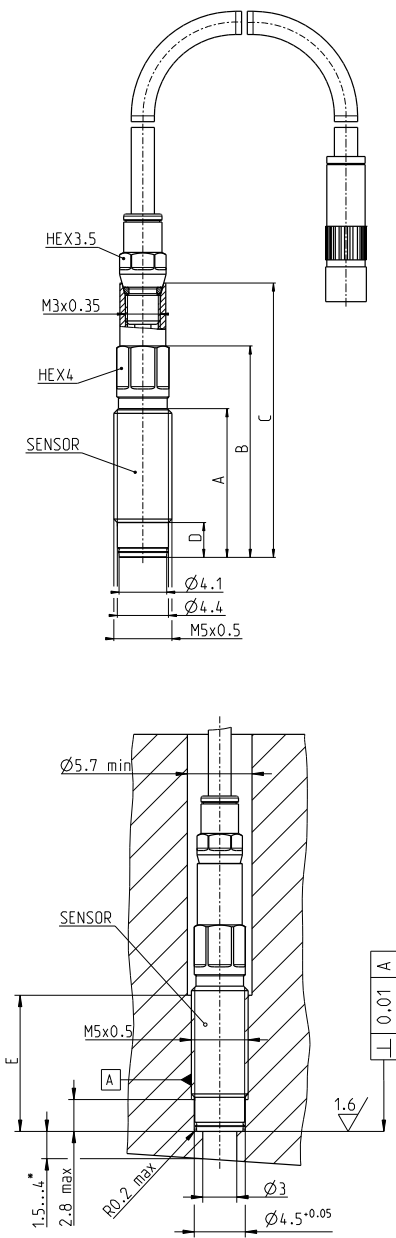
* Within temperature and pressure range of sensor

Sensor & Mount Dimensions

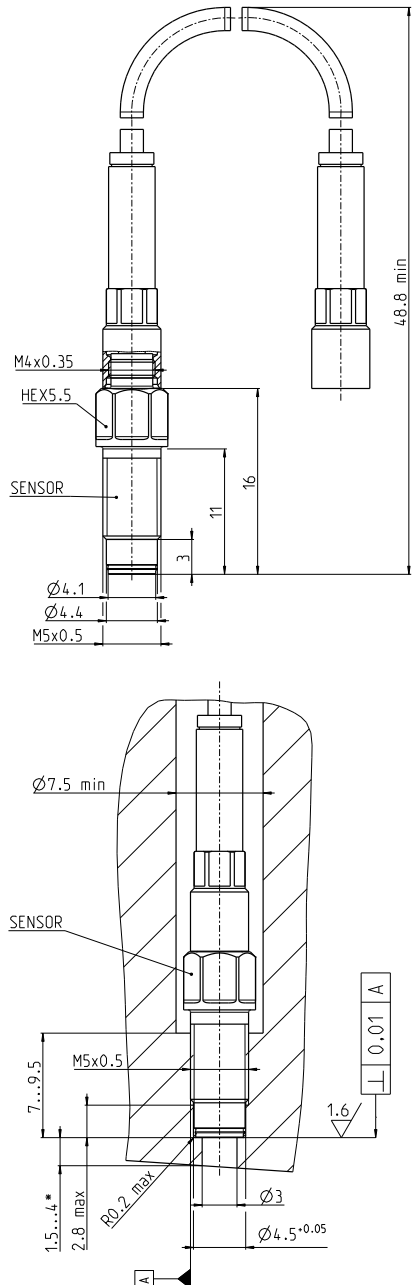
Name	S1-A1	S1-B1	S1-C1	S1-L1	S1-R1	S2-A1
Dimensions Type 1						
A	13 mm		9.9 mm *		12 mm	9.5 mm *
B	18.2 mm		15.2 mm *		16.9 mm	14.9 mm *
C	23.6 mm		20.7 mm *		22 mm	20.3 mm *
D	3 mm		3.9 mm *		3 mm	3.5 mm *

* including flame arrestor

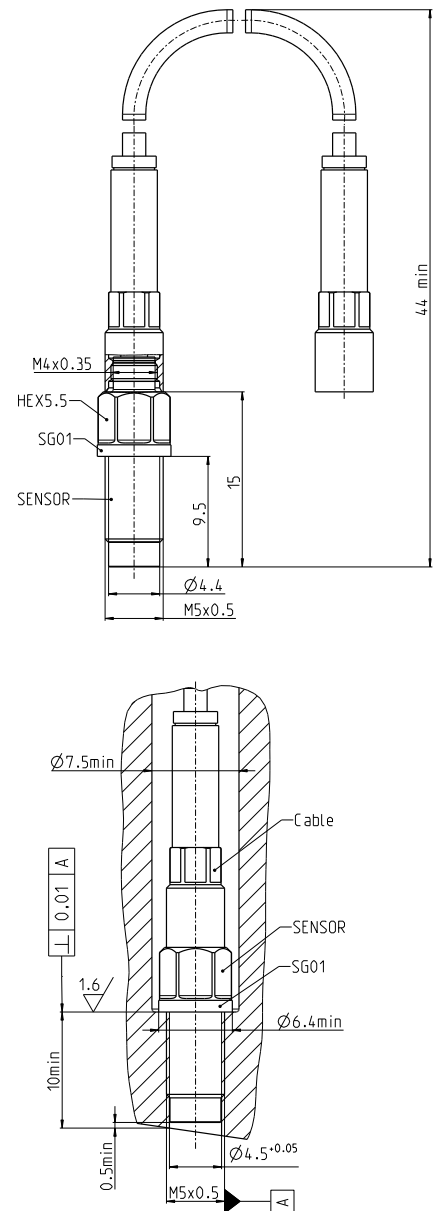
Type 1



Type 2



Type 3



All dimensions are in mm.

Scope of Supply

Name	Scope of supply
Sensor	✓
Cable	1m Teflon™ cable (M4x0.35 to M4x0.35 or M3x0.35 to M3x0.35)
Coupling	M4x0.35 to BNC coupling or M3x0.35 to BNC coupling
Accessory kit	Protection cap and 2 spare O-rings
Calibration sheet	✓
Documentation	✓

Accessories

Cable / Extension cables	1 ... 10m Teflon™ coated cable	M3x0.35 to M3x0.35 M3x0.35 to UNF M4x0.35 to M4x0.35 M4x0.35 to UNF
	1 ... 3m Metal shielded - Viton™ coated cable	
	1 ... 3m Viton™ oil proof cable	
Couplings	M3x0.35 neg. to BNC pos. M4x0.35 neg. to BNC pos. M4x0.35 neg. to M4x0.35 neg. M4x0.35 neg. to M4x0.35 pos.	
Machining tool for mount	Step drill, tap drill, reaming tools	
Mounting tool	Mounting tool set	Mounting socket Torque wrench Dismounting tool
	Cable mounting tool	HEX3.5 or HEX4
Flame arrestors	✓	
Dummy plugs	✓	
Dummy removal tool	✓	
Mounting paste	✓	

See the additional accessories sheet for more details.

Customer support

We are reachable
by phone:

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Write us an E-Mail and we'll get back
to you as soon as we can.

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