



P05 Series

Miniature Pressure Transducer

XRI's P05 series pressure transducer is a miniature, multi-function, high-precision pressure sensor, utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI and EMD anti-interference design, and stainless steel internal and external parts. All make P05 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications. It's small, with selectable pressure range, and with strong over pressure protection capability. The sensor can provide a variety of different electrical output methods. Currently this series offers absolute and sealed gauge measurement modes.

About Us

- *XRI Innovation, Inc. (XRI) is a vertically integrated company aimed at reaching the pinnacle of sensing-with innovative and modern designs and manufacturing technologies.*
- *XRI is committed to offering high-end products with technology innovation, quality control and production efficiency.*
- *Portfolio includes pressure, temperature, flow, position, displacement, rotational speed, gas and others. The products are positioned for high-end applications, especially in aerospace, precision manufacturing, oil and gas and transportation vehicles.*
- *XRI adheres to the principle that company employees as a team are the most valuable asset, and focuses on building a company that values reliability, devotion and innovation.*
- *XRI firmly believes that 'Satisfying Customers' Wants is the Primary Mission of XRI.'*

Specifications

Physical properties

Item	Description
Pressure Range ¹	0~35MPa Absolute or Sealed gage
Proof Pressure ²	2 x FS ⁵
Burst Pressure ³	3 x FS ⁵
Working Principle	Four arm full Wheatstone bridge MEMS sensor

Mechanical Properties

Item	Description
Pressure Connector	See model selection page
Vibration Effects on Sensor Accuracy	< 1ppmFS ⁵ /g
Vibration Resistance	20g Max 10-2500HZ; Shock <20ms
Exposed Material	17-4PH SS
Test Medium	All fluid compatible with 316L / 17-4PH SS
Weight	13g Max. Cable and connector weight extra

Temperature Properties⁴

Item		Description
Compensated Temperature Range		See model selection page
Storage Temperature		-55°C~150°C
Accuracy (Combined best Fit Straight Line Nonlinearity, Repeatability and Hysteresis)		±0.1% FS ⁵ (Typical) , ±0.5% FS ⁵ Max
Temperature Sensitivity	EB	Zero Offset: ±1.5% FS ⁵ / 100°C (Typical)
		Full Scale: ±1.5% / 100°C (Typical)
	ED	Total Error ⁶ : <0.5% FS ⁵ /100°C

Electrical Performance

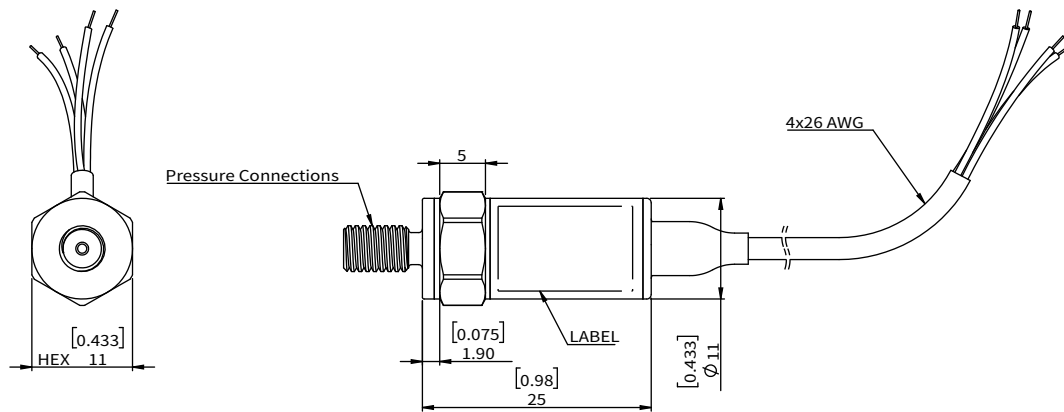
Item	Description
Excitation / Output Options	See model selection page
Warm Up Time	EB < 1ms
	ED < 200ms
Room Temperature Zero Offset	EB ±5mV
	ED 0.5±0.25V
Room temperature full scale output	EB 100±5mV
	ED 4.5±0.25V
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Input Impedance	EB > 5000Ω
Max Input Current	ED < 25mA
Output Impedance	EB 5000Ω (典型值)
	ED < 150 Ω
Long Term Stability	Not exceeding 0.1% FS ⁵ / year
Electrical Connection Options	See model selection page

Electrical Interface Description:

Electrical Connector	Cable conductor colors	Function	
		EB	ED
E8	Red	Vin+	Vin+
	Green	Vout+	Vout+
	White	Vout-	
	Black	Vin-	Vin-

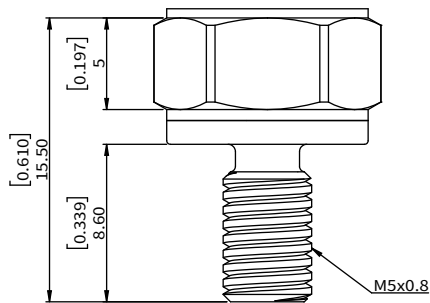
- 1: Also offers composite ranges such as from 5-100kPa Absolute Pressure .
 2: Pressure exposure not exceeding proof pressure does not affect transducer performance .
 3: Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged.
 4: Temperature effects are related to sensor accuracy variations within the compensation temperature range.
 5: FS= Full scale
 6: Error based on deviations away from the best endpoint fit straight line baseline calibration.

Outline Drawing (mm [inch])

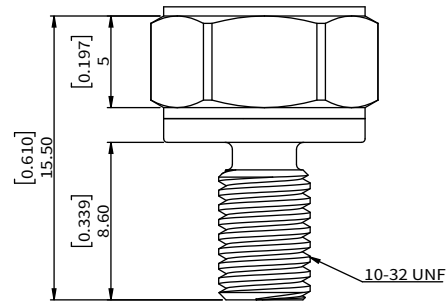


Pressure Connections drawing (mm [inch])

P28

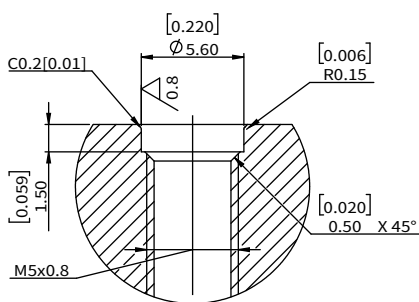


P29

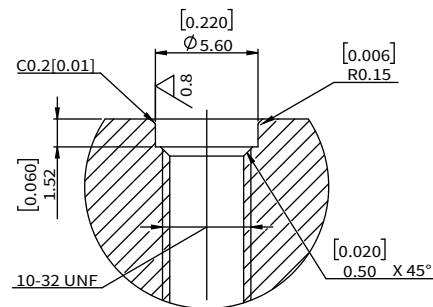


Installation drawing (mm [inch])

For P28



For P29



O-RING Recommendation: Ø3.5x1.5 mm

INSTALLATION TORQUE: 1 Nm (2 Nm max.)

Configuration Guide

Base Model

P05

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Electrical Properties

EB 0~100mV output, 8~16V supply, 4-wire, high-frequency response, output independent of supply voltage

ED 0.5~4.5V output, 8~32V power supply, high precision digital compensation, 3-wire

:

Electrical Connector

E8 4x30AWG (1m length) cable

Other choices available upon request

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Pressure Connections

P28 M5x0.8 male

P29 10-32 UNF male

Other choices available upon request

:

Temperature Compensation

TA 25°C~80°C

TB -20°C~125°C

TC -40°C~125°C

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(Full Scale Pres- sure Range)				Pressure types	
			(0-35)MPa	A	Absolute
			(0-35)MPa	S	Sealed Gage

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Special requests

Details in purchase order

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Example: P05 -EB -E8 -P28 -TA -(0-20)MPa A -S

