



**XRI**

# CATALOG

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**XR INNOVATIONS PTE. LTD.**

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**CATALOG**

R & D / DESIGN / MANUFACTURE

## COMPANY PROFILE

XR INNOVATIONS PTE.LTD.(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.'



# CATALOG

- ◆ P05 Series —Miniature Pressure Transducer
- ◆ P08 Series —Miniature Pressure Transducer
- ◆ P10 Series —Miniature Pressure Transducer
- ◆ P15 Series —Miniature OEM Pressure Transducer
- ◆ P25 & PD25 Series —General Purpose Pressure Transducer
- ◆ PWT08 Series —Miniature Pressure Transducer
- ◆ PWT10 Series —Miniature Pressure Transducer
- ◆ PWT25&PDWT25 Series—Wide Temperature Range High Accuracy Pressure

Transducer



# 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 anti-interference design, 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 a selectable pressure range and strong overpressure 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

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# Specifications

## Physical properties

Item	Description
Range <sup>1</sup>	Absolute or Sealed gage
Unit	MPa                      PSI
Measurement Range	0-2                              0-300
	0-5                              0-700
	0-10                             0-1500
	0-35                            0-5000
	0-70                            0-10000
	Note: Other non-standard ranges or units can be customized
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL
	A2: 0.1% FS <sup>5</sup> BFSL
	*Other choices available upon request
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Sensitivity	< 1ppmFS <sup>5</sup> /g
Vibration Resistance	20g, Max 10-2500Hz; Shock<20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 13g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description	
Compensated Temperature Range	-40°C~125°C or within this range	
Operating and Storage Temperature Range	-55°C~150°C	
Temperature Change Coefficient or Total Error Band <sup>6</sup>	EA, EB	
	Thermal Zero Shift	< ±1.5% FS <sup>5</sup> /100°C
	Thermal Sensitivity Shift	< ±1.5% FS <sup>5</sup> /100°C
	ED	
	Total Error Band <sup>6</sup>	<0.5% FS <sup>5</sup> /100°C

## Electrical Properties

Item	Description
Excitation/Output	See configuration guide
Electrical Circuit Bandwidth	EA, EB MEMS sensor resonant frequency ≥ 400KHz
	ED Electrical Circuit bandwidth approx 5Hz @3DB
Actual Frequency Response	EA, EB are limited by the acoustic characteristics of the cavity. Fluids medium is approx 5KHz @3DB
	ED ≤ 5Hz @3DB Note: Transducer frequency response is also related to how the transducer is installed. See XRI's official website www.XRIINC.com—Application Notes Section or consult XRI's after-sales service department for details.
Power-up Time	EA, EB < 1ms
	ED < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value
	*Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	ED < 25mA
Input Impedance	EA, EB > 5000 Ω
Output Impedance	EA, EB 5000 Ω (Typical)
	ED < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

## Electrical Connection Definition

Connection Type	Pin or wire color	Purpose		
		EA	EB	ED
E8	Red	Vin+	Vin+	Vin+
	Green	Vout+	Vout+	Vout+
	White	Vout-	Vout-	
	Black	Vin-	Vin-	Vin-

1: 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.

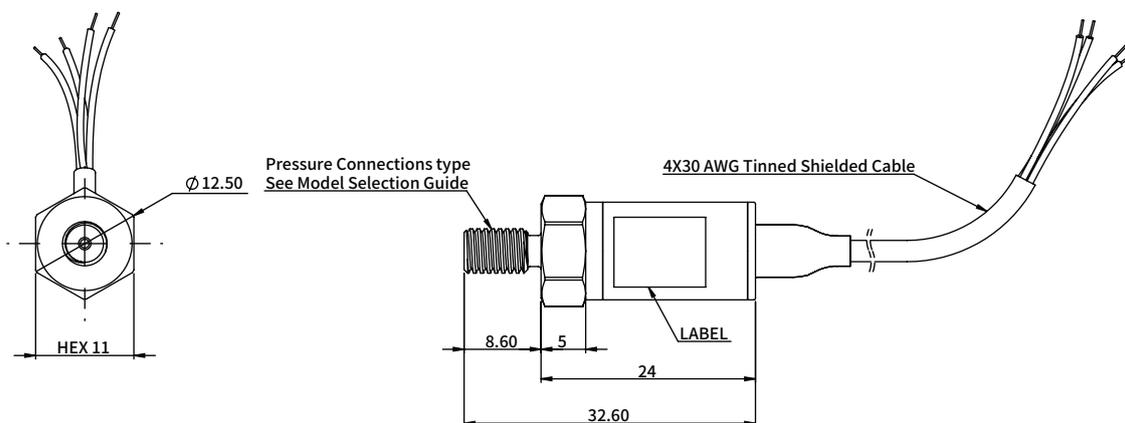
4: Temperature effects are related to sensor accuracy variations within the compensation temperature range.

5: FS= Full scale.

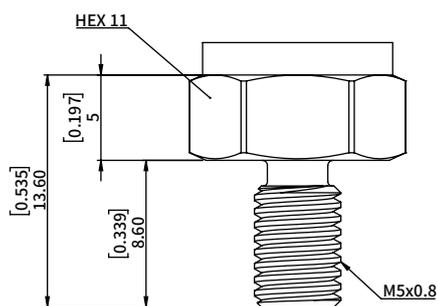
6: Error based on deviations away from the best endpoint fit straight line calibration.

7: Reference to ISA 37.1-1975(R1982).

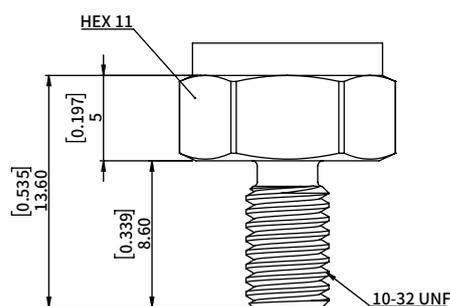
# Transducer outline dimensions



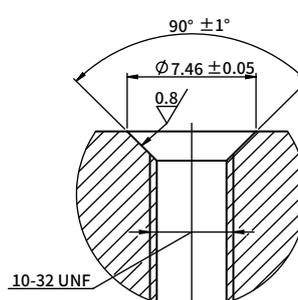
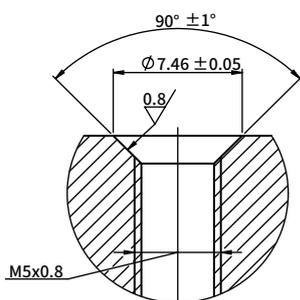
## Pressure connection and Installation guide



P30



P31



Mounting Torque: 0~35 MPaA, 6.5N.m

O-Ring: 3.5x1.5 mm, O-Ring property needs be compatible to measurement media types.

# Configuration guide

## Base Model P05

### Electrical Properties

EA 0~100mv output, 10VDC supply, output proportional to supply voltage, 4-wire

EB 0~100mv output, 8-16VDC supply, output independent of supply voltage, 4-wire

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

### Electrical Connector

E8 4x30AWG (1m length) Tinned Shielded cable

Other choices available upon request

### Pressure Connections

P30 M5x0.8 External Thread

P31 10-32 UNF External Thread

Other choices available upon request

### Temperature Compensation

TA 25°C~80°C      TE -10°C~50°C

TB -20°C~125°C    TF -20°C~80°C

TC -40°C~125°C    TG -40°C~80°C

### Accuracy

A1 0.2%FS BFSL

A2 0.1%FS BFSL

Other choices available upon request

### Calibration report

CA 6 points room temperature pressure calibration data

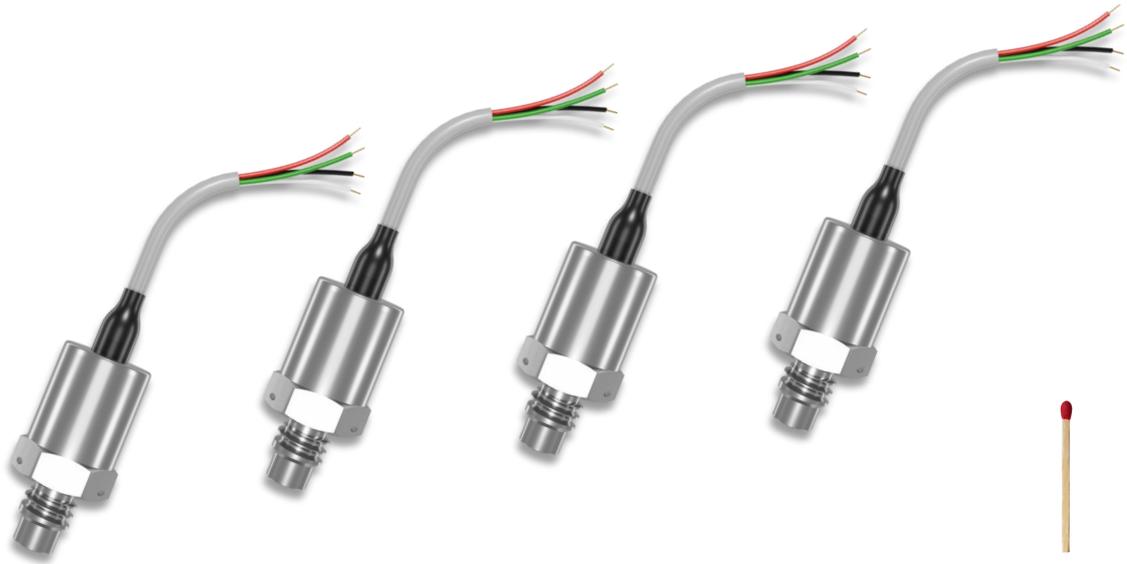
CB 5 temperature points pressure data

Range	Unit	Pressure types
(0-35)	MPaA	Absolute
(0-35)	MPaS	Sealed Gage

### Special requests

S: Refer to the purchase contract

Example: P05 -EB -E8 -P30 -TA -A1 -CA -(0-20)MPaA -S



# P08 Series

## Miniature Pressure Transducer

XRI's P08 series pressure transducer is a small, multi-function, high-precision pressure sensor, utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI anti-interference design, stainless steel internal and external parts. All make P08 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications. It's small, with a selectable pressure range and 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.

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# Specifications

## Physical properties

Item	Description
Range <sup>1</sup>	Absolute or Sealed gage
Unit	MPa                      PSI
	0-2                              0-300
	0-5                              0-700
Measurement Range	0-10                            0-1500
	0-35                            0-5000
	0-70                            0-10000
	Note: Other non-standard ranges or units can be customized
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL
	A2: 0.1% FS <sup>5</sup> BFSL
	*Other choices available upon request
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>
Working Principle	Full four arm Wheatstone bridge MEMS sensor
Sensor Resonant Frequency	> 400KHz

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Sensitivity	< 1ppm FS <sup>5</sup> /g
Vibration Resistance	20g, Max 10-2500Hz; Shock < 20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 15g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description	
Compensated Temperature Range	-40°C~125°C or within this range	
Operating and Storage Temperature Range	-55°C~150°C	
	EA, EB	
Temperature Change Coefficient or Total Error Band <sup>7</sup>	Thermal Zero Shift	< ±1.5% FS <sup>5</sup> /100°C
	Thermal Sensitivity Shift	< ±1.5% FS <sup>5</sup> /100°C
	ED	
	Total Error Band <sup>6</sup>	< 0.5% FS <sup>5</sup> /100°C

## Electrical Properties

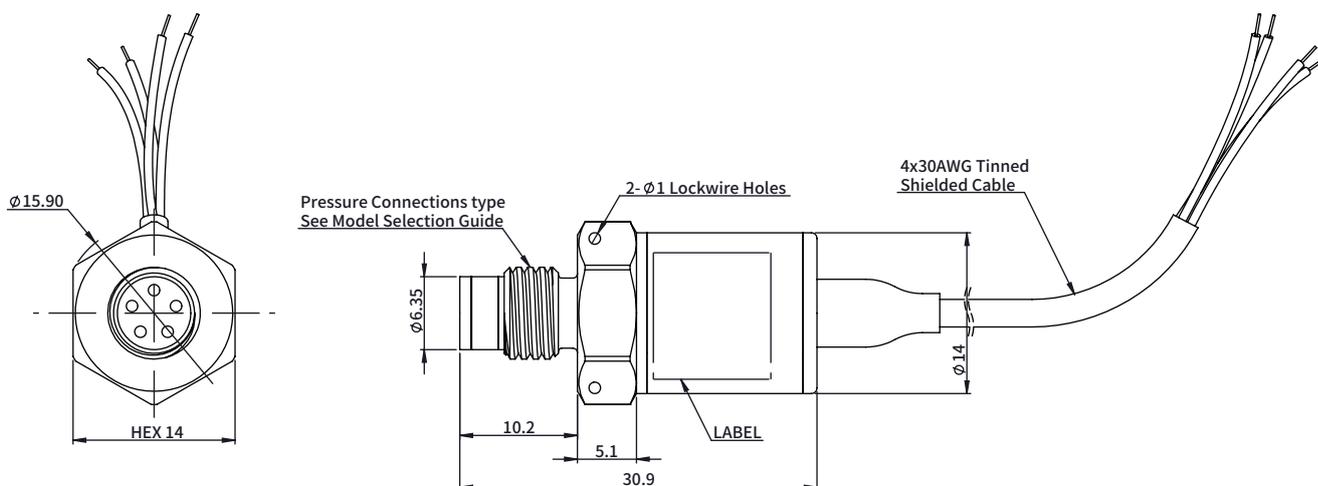
Item	Description
Excitation/Output	See configuration guide
Electrical Circuit Bandwidth	EA, EB MEMS sensor resonant frequency ≥ 400KHz
	ED Electrical Circuit bandwidth approx 5Hz @3DB
Actual Frequency Response	EA, EB ≤ MEMS sensor resonant frequency @3DB
	ED ≤ 5Hz @3DB
Power-up Time	EA, EB < 1ms
	ED < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value *Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	ED < 25mA
Input Impedance	EA, EB > 5000 Ω
Output Impedance	EA, EB 5000 Ω (Typical)
	ED < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

## Electrical Connection Definition

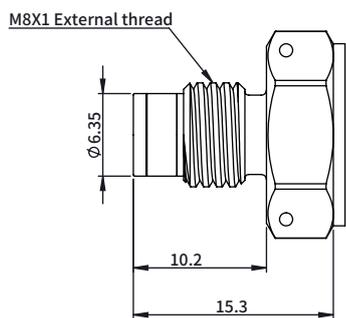
Connection Type	Pin or wire color	Purpose		
		EA	EB	ED
E8	Red	Vin+	Vin+	Vin+
	Green	Vout+	Vout+	Vout+
	White	Vout-	Vout-	
	Black	Vin-	Vin-	Vin-

- Offers composite ranges such as from 5~100kPa Absolute Pressure.
- Pressure exposure not exceeding proof pressure does not affect transducer performance.
- Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged.
- Temperature effects are related to sensor accuracy variations within the compensation temperature range.
- FS= Full scale.
- Error based on deviations away from the best endpoint fit straight line calibration.
- Reference to ISA 37.1-1975(R1982).

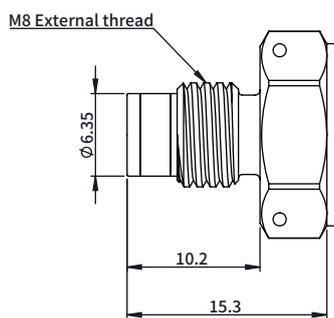
## Transducer outline dimensions



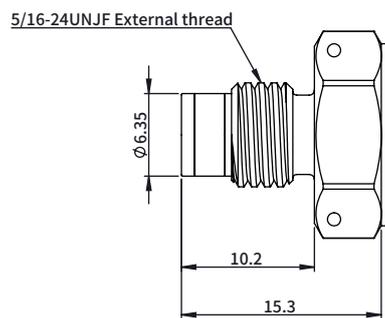
## Pressure connection and Installation guide



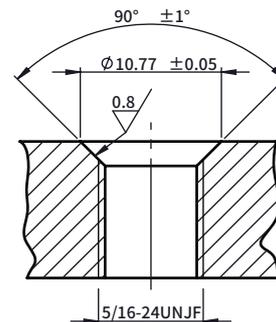
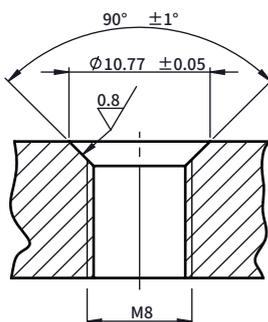
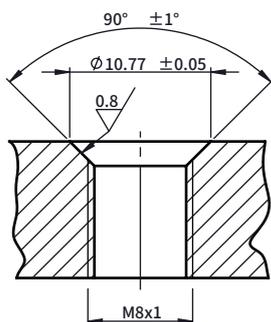
**P19**



**P20**



**P22**



Mounting Torque: 0~35MPaA, 10N.m  
 35~70MPaA, 22N.m

O-Ring: ID 6.07mm, Cross Section Diameter 1.63mm, O-Ring property needs be compatible to measurement media types

# Configuration guide

## Base Model P08

### Electrical Properties

EA 0~100mv output, 10VDC supply, output proportional to supply voltage, 4-wire

EB 0~100mv output, 8-16VDC supply, output independent of supply voltage, 4-wire

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

### Electrical Connector

E8 4x30AWG (1m length) Tinned Shielded cable

Other choices available upon request

### Pressure Connections

P19 M8x1 External Thread

P20 M8 External Thread

P22 5/16-24 UNJF External Thread

Other choices available upon request

### Temperature Compensation

TA 25°C~80°C      TE -10°C~50°C

TB -20°C~125°C      TF -20°C~80°C

TC -40°C~125°C      TG -40°C~80°C

### Accuracy

A1 0.2%FS BFSL

A2 0.1%FS BFSL

Other choices available upon request

### Calibration report

CA 6 points room temperature pressure calibration data

CB 5 temperature points pressure data

Range	Unit	Pressure types
(0-70)	MPaA	Absolute
(0-70)	MPaS	Sealed Gage

### Special requests

S: Refer to the purchase contract

Example: P08 -EB -E8 -P19 -TA -A1 -CA -(0-20) MPaA -S



# P10 Series

## Miniature Pressure Transducer

XRI's P10 series pressure transducer is a small, multi-function, high-precision pressure sensor, utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI anti-interference design, stainless steel internal and external parts. All make P10 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications. It's small, with a selectable pressure range and 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.

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# Specifications

## Physical properties

Item	Description	
Range <sup>1</sup>	Absolute or Sealed gage	
Unit	MPa	PSI
	0-1	0-150
	0-2	0-300
	0-5	0-700
Measurement Range	0-10	0-1500
	0-35	0-5000
	0-70	0-10000
	Note: Other non-standard ranges or units can be customized	
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL A2: 0.1% FS <sup>5</sup> BFSL	
	*Other choices available upon request	
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>	
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>	
Working Principle	Full four arm Wheatstone bridge MEMS sensor	
Sensor Resonant Frequency	> 400KHz	

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Sensitivity	< 1ppmFS <sup>5</sup> /g
Vibration Resistance	20g, Max 10-2500Hz; Shock<20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 24.5g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description
Compensated Temperature Range	-40°C~125°C or within this range
Operating and Storage Temperature Range	-55°C~150°C
	EA, EB
Temperature Change Coefficient or Total Error Band <sup>7</sup>	Thermal Zero Shift < ±1.5% FS <sup>5</sup> /100°C
	Thermal Sensitivity Shift < ±1.5% FS <sup>5</sup> /100°C
	EC, ED, EE, EF
	Total Error Band <sup>6</sup> < 0.5% FS <sup>5</sup> /100°C

## Electrical Properties

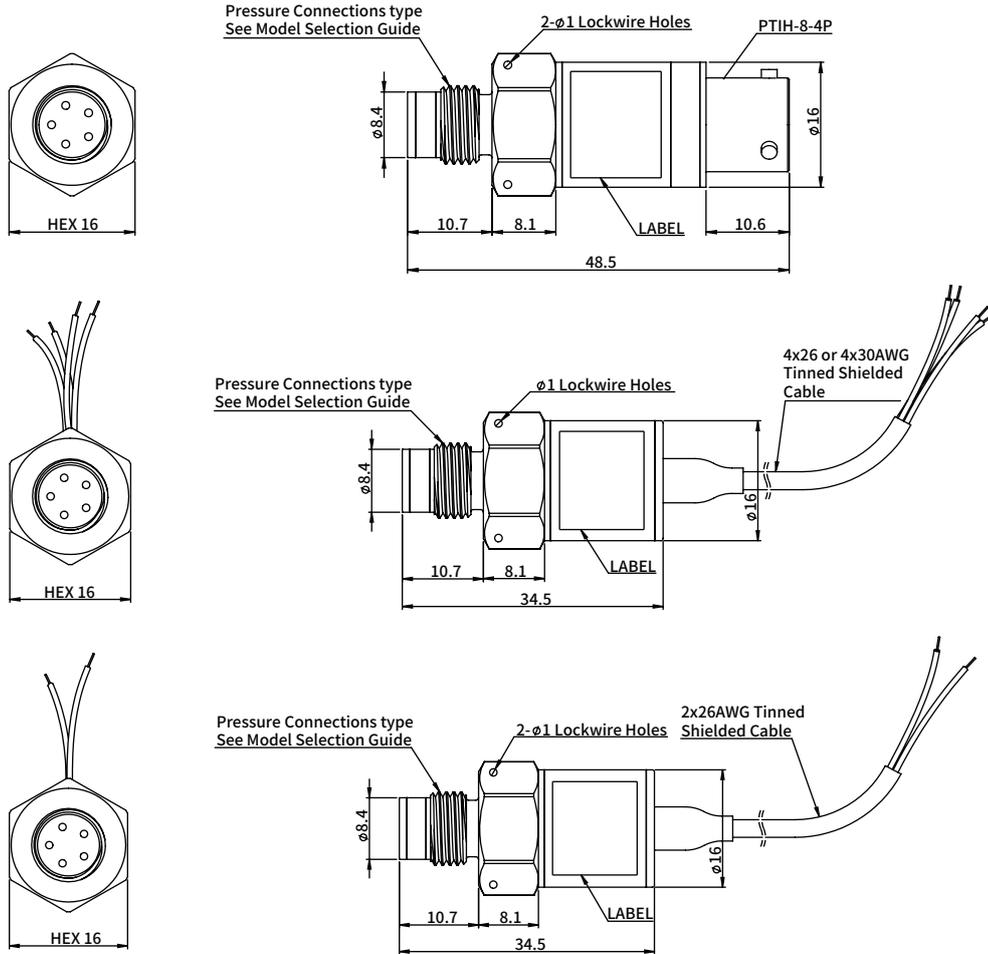
Item	Description
Excitation/Output	See configuration guide
Electrical Circuit Bandwidth	EA, EB MEMS sensor resonant frequency ≥ 400KHz EC, ED, EE, EF Electrical Circuit bandwidth approx 5Hz @3DB
	EA, EB ≤ MEMS sensor resonant frequency @3DB EC, ED, EE, EF ≤ 5Hz @3DB
Actual Frequency Response	Note: Transducer frequency response is also related to how the transducer is installed. See XRI's official website <a href="http://www.XRIINC.com">www.XRIINC.com</a> —Application Notes Section or consult XRI's after-sales service department for details.
Power-up Time	EA, EB < 1ms EC, ED, EE, EF < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value *Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	EC, ED, EE, EF < 25mA
Input Impedance	EA, EB > 5000 Ω
Output Impedance	EA, EB 5000 Ω (Typical) EC, ED, EE, EF < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

## Electrical Connection Definition

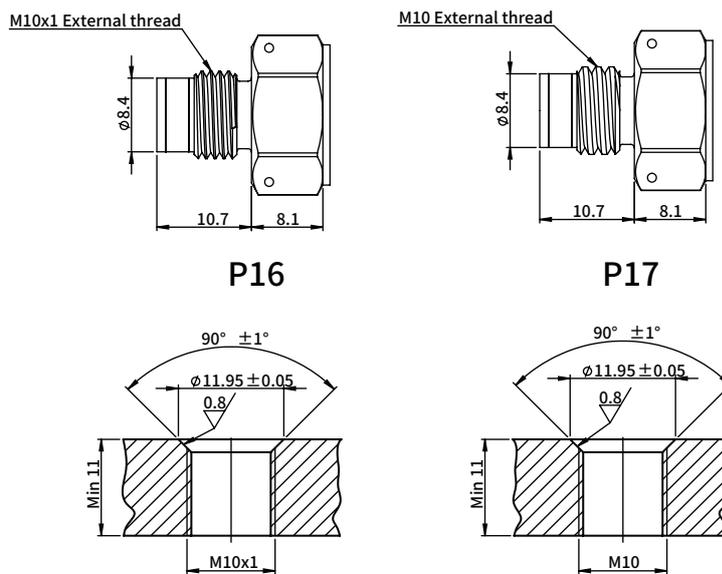
Connec- tion Type	Pin or wire color	Purpose					
		EA	EB	EC	ED	EE	EF
E5	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E8, E14	Red	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+		Vout+	Vout+	Vout+
	White	Vout-	Vout-			Vout-	Vout-
	Black	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E9	Red			Vin+			
	Black			Vin-			

- Offers composite ranges such as from 5~100kPa Absolute Pressure.
- Pressure exposure not exceeding proof pressure does not affect transducer performance.
- Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged.
- Temperature effects are related to sensor accuracy variations within the compensation temperature range.
- FS= Full scale.
- Error based on deviations away from the best endpoint fit straight line calibration.
- Reference to ISA 37.1-1975(R1982).

# Transducer outline dimensions



# Pressure connection and Installation guide



Mounting Torque: 0~35MPaA, 10N.m

35~70MPaA, 22N.m

O-Ring: ID 7.65mm, Cross Section Diameter 1.63mm, O-Ring property needs be compatible to measurement media types

# Configuration guide

## Base Model P10

### Electrical Properties

- EA 0~100mv output, 10VDC supply, output proportional to supply voltage, 4-wire
- EB 0~100mv output, 8~16VDC supply, output independent of supply voltage, 4-wire
- EC 4~20mA output , 12~28VDC power supply, high precision digital compensation, 2-wire
- ED 0.5~4.5V output, 8~32VDC power supply, high precision digital compensation, 3-wire
- EE 0~5V output, 8~32VDC power supply, high precision digital compensation, 4-wire, output common mode 2.5V (typical)
- EF 0~10V output, 14~32VDC power supply, high precision digital compensation, 4-wire, output common mode 5V (typical)

### Electrical Connector

- E5 PTIH-8-4P
- E8 4x30AWG (1m length) Tinned Shielded cable
- E9 2x26AWG (1m length) Tinned Shielded cable
- E14 4x26AWG (1m length) Tinned Shielded cable

Other choices available upon request

### Pressure Connections

- P15 3/8-24 UNJF External Thread
- P16 M10×1 External Thread
- P17 M10 External Thread

Other choices available upon request

### Temperature Compensation

- |    |             |    |            |
|----|-------------|----|------------|
| TA | 25°C~80°C   | TE | -10°C~50°C |
| TB | -20°C~125°C | TF | -20°C~80°C |
| TC | -40°C~125°C | TG | -40°C~80°C |

### Accuracy

- A1 0.2%FS BFSL
- A2 0.1%FS BFSL

Other choices available upon request

### Calibration report

- CA 6 points room temperature pressure calibration data
- CB 5 temperature points pressure data

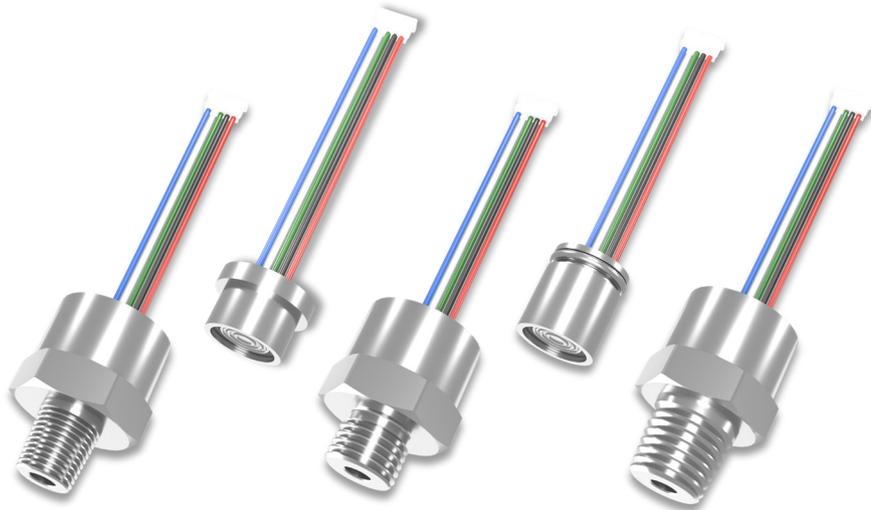
### Range Unit Pressure types

- |        |      |             |
|--------|------|-------------|
| (0-70) | MPaA | Absolute    |
| (0-70) | MPaS | Sealed Gage |

### Special requests

S : Refer to the purchase contract

Example: P10 -EA -E9 -P17 -TA -A1 -CA -(0-20) MpaA -S



# P15 Series

## Miniature OEM Pressure Transducer

XRI's P15 series pressure transducer is a small diameter, multi-configuration, highly reliable and accurate pressure sensor. The simple outline design allows the user to install with mechanical fixtures or weld onto end-use equipment. Each transducer is calibrated and the data of temperature and pressure is provided, allowing the customer to integrate into systems through its centralized data acquisition and processing capability. This methodology provides the best optimization of accuracy and cost at the end-use system level. Alternatively, compensated units can be provided through special order.

Each transducer is built with an oil-filled capsule with a micro machined silicon MEMS pressure chip, providing robust medium compatibility. Standard configurations are made of stainless steel; however, Inconel and Hastelloy alloys are available for corrosive environments, such as those in the oil and gas industry. P15 series is especially suitable for use in semiconductor manufacturing where hazardous gases are used. Semiconductor grade "clean" packaging is available.

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- 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.
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XRI is a "continuous improvement" company. Its product [datasheets](#) evolve as technology advances. Most update versions are on [www.XRIINC.com](http://www.XRIINC.com)

# Specifications

## Physical properties

Item	Description
Range <sup>1</sup>	Absolute, Sealed gage or Gauge
Unit	MPa                      PSI
	0-0.01                    0-1.5
	0-0.02                    0-3
	0-0.05                    0-7
Gauge Measurement Range	0-0.1                    0-15
	0-0.2                    0-30
	0-0.5                    0-70
	Note: Other non-standard ranges or units can be customized
	0-1                        0-150
	0-2                        0-300
	0-5                        0-700
Absolute and Sealed gage Measurement Range	0-10                    0-1500
	0-35                    0-5000
	0-70                    0-10000
	Note: Other non-standard ranges or units can be customized
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFUL A2: 0.1% FS <sup>5</sup> BFUL *Other choices available upon request
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>
Supply current	1.0mA (Typical) ; 2.0mA (Max)
Supply voltage	5V (Typical); 10V (Max)
Output Sensitivity	10~20mV / V @25°C
Zero Offset	±10mV / V @25°C
Bridge Resistance	3000~6000 Ohms @25°C
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Insulation Resistance	> 100 MΩ @ 50VDC
Weight	Depends on Configuration Guide

## Mechanical Properties

Item	Description
Vibration Resistance	< 20g Max, 10-2500Hz;
Housing Material	316LSS, HC-276, Inconel718 or 17-4 PH (*Other choices available upon request)
	10x1.5mm Viton(-20°C~200°C)
O-Ring	10x1.5mm Fluorosilicone (<-20°C)

## Temperature Properties<sup>4</sup>

Item	Description
Storage Temperature Range	-55°C~150°C
Temperature Coefficient of Bridge Resistance	2.5K ~ 3.5K PPM/°C
Temperature Coefficient of Sensitivity	-1.5K ~ -2.5 K PPM/°C
Temperature Coefficient of Zero Offset	±25 μV/V/°C

## Configuration guide

### Base Model P15

#### Electrical Connector

E10 Color wires TFE 5x26AWG + MOLEX electrical connector

E11 Color wires TFE 5x26AWG

Other choices available upon request

#### Pressure Connections

P23 Rear ring radial seal

P24 Back support

P26 1/4 NPT External Thread

P28 1/8 NPT External Thread

P29 7/16-20 UNF External Thread

Other choices available upon request

#### Accuracy

A1 0.2%FS BFUL

A2 0.1%FS BFUL

Other choices available upon request

#### Calibration report

CA 6 points room temperature pressure calibration data

CB 5 temperature points pressure data

#### Range      Unit      Pressure types

(0-35)      MPaA      Absolute

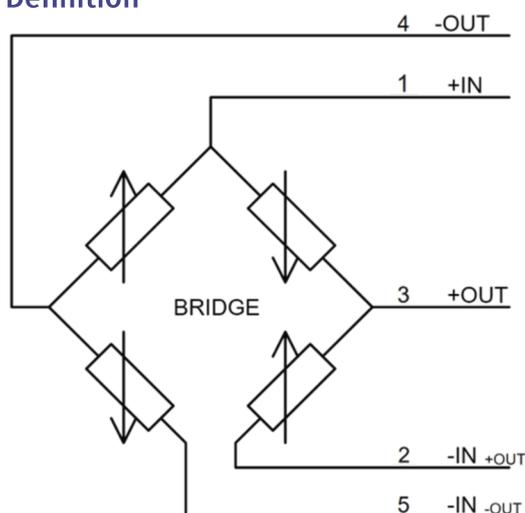
(0-35)      MPaS      Sealed Gage

#### Special requests

S: Refer to the purchase contract

Example: P15 -E10 -P23 -A1 -CA -(0-20) MPaA -S

## Pin Definition



1: 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.

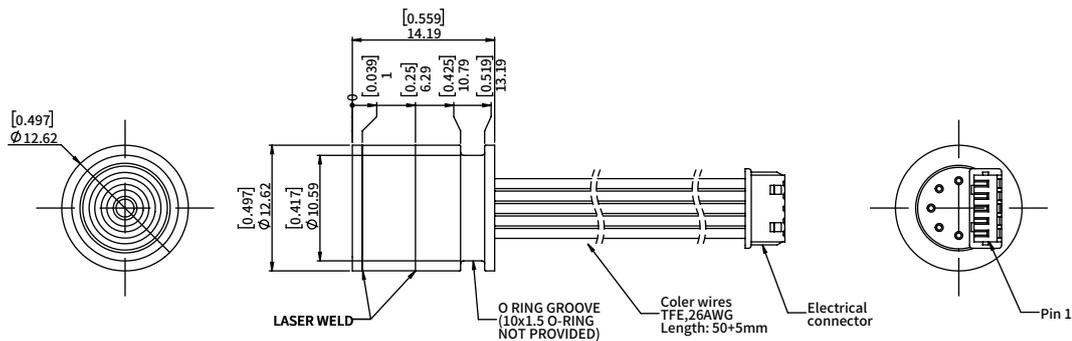
5: FS= Full scale.

6: Error based on deviations away from the best endpoint fit straight line calibration.

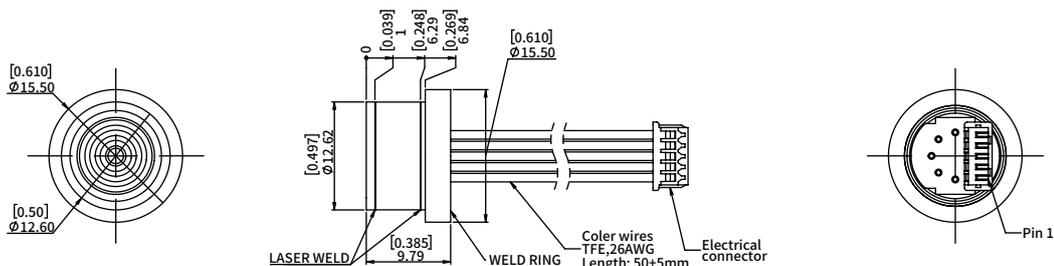
7: Reference to ISA 37.1-1975(R1982).

# Outline dimensions and Pressure connection (mm [inch])

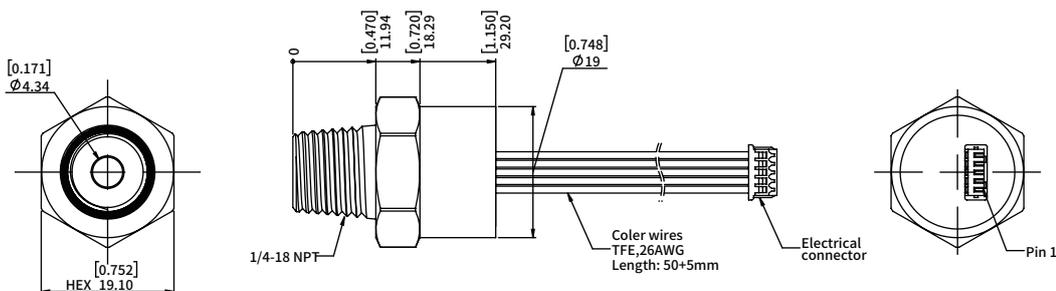
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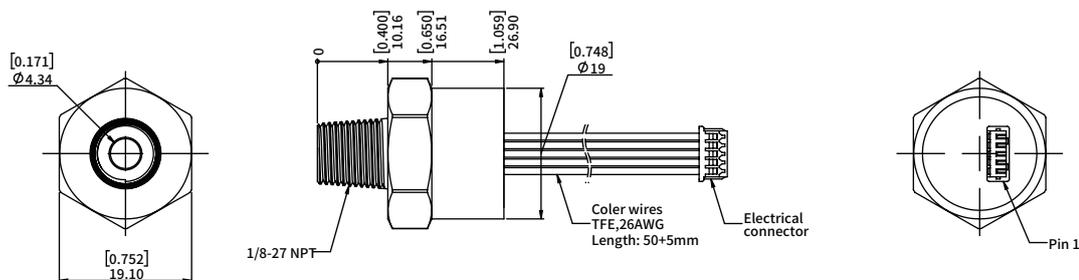
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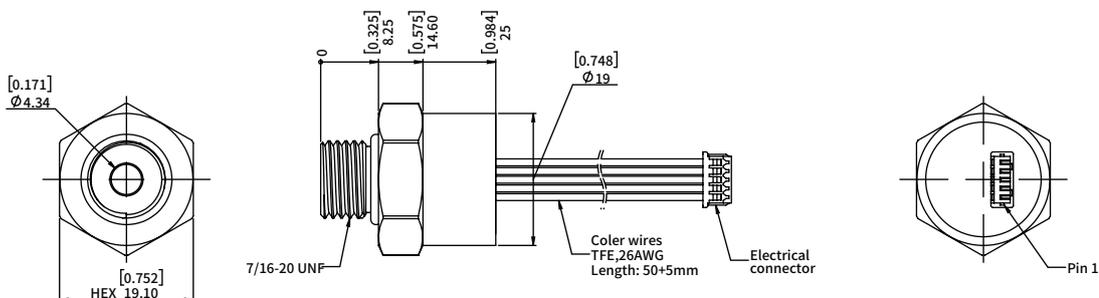
P26:



P28:

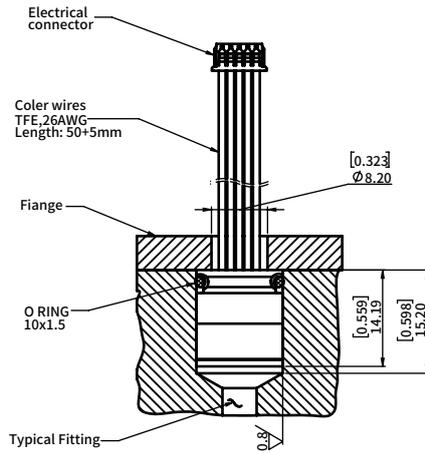


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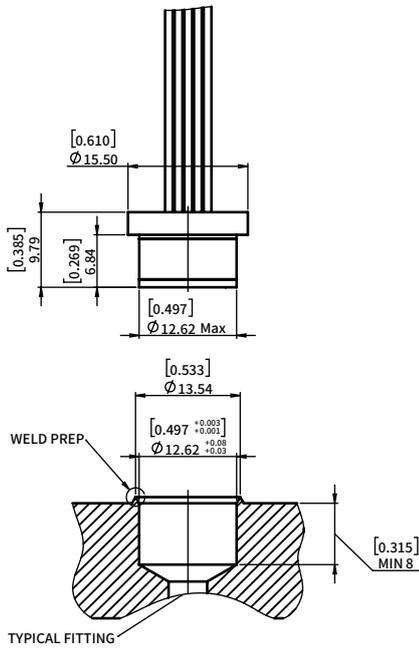


# Installation guide (mm [inch])

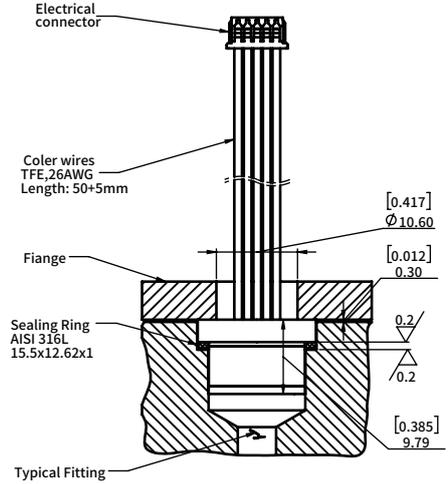
**P23:**



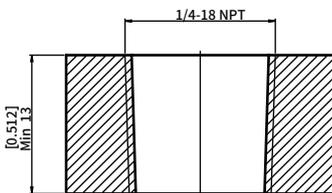
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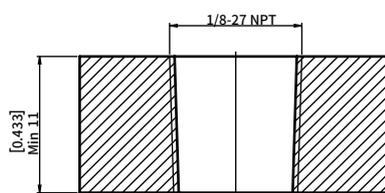
**P24:**



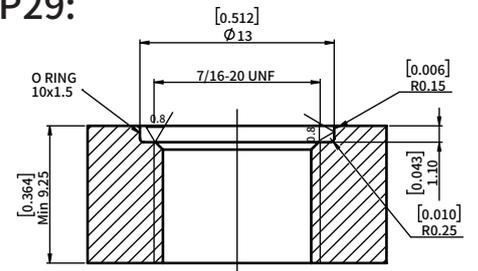
**P26:**



**P28:**



**P29:**





# P25&PD25 Series

## General Purpose Pressure Sensors

XRI's P25 series pressure sensor is a general purpose, multi-functional, high accuracy pressure sensor. Utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI anti-interference design, stainless steel internal and external parts. All make P25 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications. The series is configured with a variety of pressure connections and can provide a number of different electrical output signals and methods. The sensors offer a high degree of overload tolerance and measurement safety through their solid, all stainless steel construction. The highly modular design allows customers to quickly meet special customization requirements.

The PD25 differential pressure version is designed with a wet/wet differential pressure configuration as its base model. This innovative design accommodates dry/dry, dry/wet, and wet/wet differential pressure applications while maintaining consistent pricing and high cost-effective, eliminating the complexities of selecting between dry/dry, dry/wet, and wet/wet differential pressure types. It reflects XRI's corporate philosophy: "Customer First, Service First, Quality First."

### 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.

XRI is a "continuous improvement" company. Its product [datasheets](#) evolve as technology advances. Most update versions are on [www.XRIINC.com](http://www.XRIINC.com)

# Specifications

## Physical properties

Item	Description	
Range <sup>1</sup>	Absolute, Sealed gage , Gauge or Differential	
Unit	MPa	PSI
Absolute and Sealed gage Measurement Range	0-1	0-150
	0-2	0-300
	0-5	0-700
	0-10	0-1500
	0-35	0-5000
	0-70	0-10000
	Note: Other non-standard ranges or units can be customized	
Gage and Differential Measurement Range	0-0.01	0-1.5
	0-0.02	0-3
	0-0.05	0-7
	0-0.1	0-15
	0-0.2	0-30
	0-0.5	0-70
	0-1	0-150
	0-2	0-300
	0-5	0-700
		Note: Other non-standard ranges or units can be customized
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL A2: 0.1% FS <sup>5</sup> BFSL *Other choices available upon request	
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>	
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>	

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Resistance	20g, Max 10-2500Hz; Shock <20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 140g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description
Compensated Temperature Range	-40°C~125°C or within this range
Operating and Storage Temperature Range	-55°C~150°C
Temperature Change Coefficient or Total Error Band <sup>7</sup>	EA, EB Thermal Zero Shift < ±1.5% FS <sup>5</sup> /100°C
	Thermal Sensitivity Shift < ±1.5% FS <sup>5</sup> /100°C
	EC, ED, EE, EF Total Error Band <sup>6</sup> < 0.5% FS <sup>5</sup> /100°C

## Electrical Properties

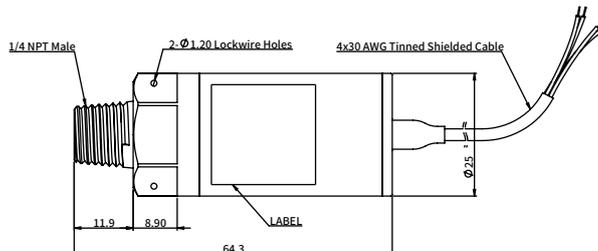
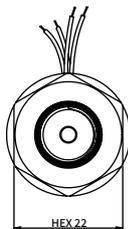
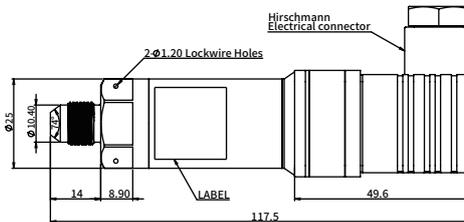
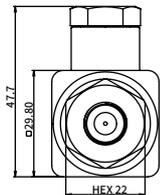
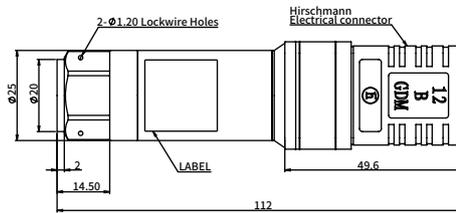
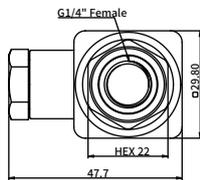
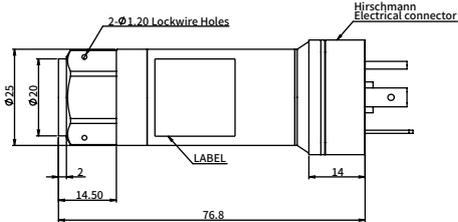
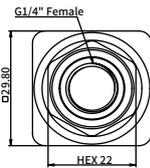
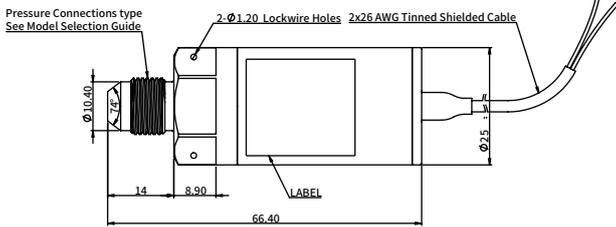
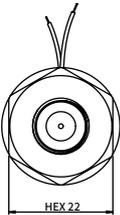
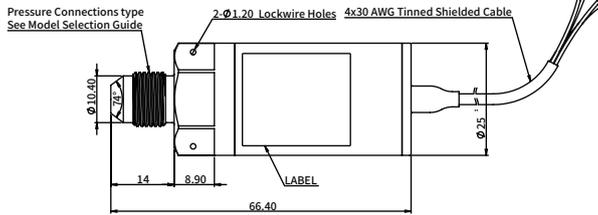
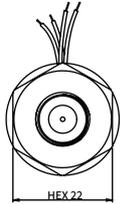
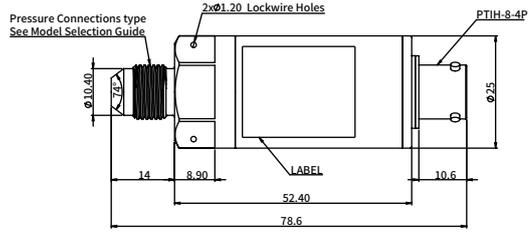
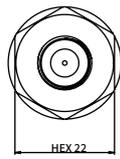
Item	Description
Excitation/Output	See configuration guide
Actual Frequency Response	For static measurements, actual frequency response is approx 5Hz @3DB Note: Transducer frequency response is also related to how the transducer is installed. See XRI's official website <a href="http://www.XRIINC.com">www.XRIINC.com</a> —Application Notes Section or consult XRI's after-sales service department for details.
	EA, EB < 1ms
Power-up Time	EC, ED, EE, EF < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value *Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	EC, ED, EE, EF < 25mA
Input Impedance	EA, EB > 5000 Ω EA, EB 5000 Ω (typical)
Output Impedance	EC, ED, EE, EF < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

- Offers composite ranges such as from 5~100kPa Absolute Pressure.
- Pressure exposure not exceeding proof pressure does not affect transducer performance.
- Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged.
- Temperature effects are related to sensor accuracy variations within the compensation temperature range.
- FS= Full scale.
- Error based on deviations away from the best endpoint fit straight line calibration.
- Reference to ISA 37.1-1975(R1982).

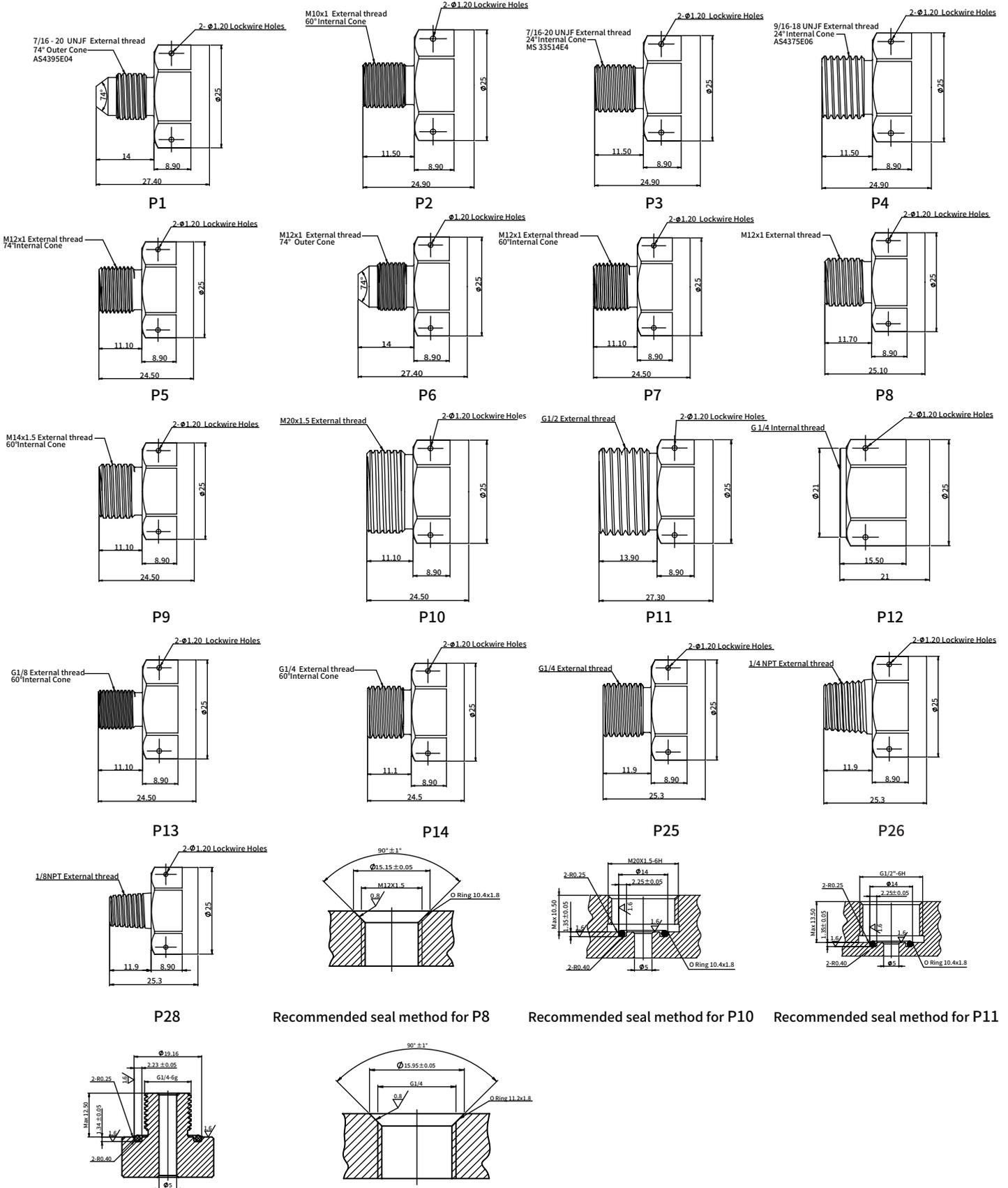
# Electrical Connection Definition

Connection Type	Pin or wire color	Purpose					
		EA	EB	EC	ED	EE	EF
E1	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	E/5						
	F/6						
E2	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	E/5						
	F/6						
E3	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	E/5						
E4	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E5	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E6	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E7	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E8	Red	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+		Vout+	Vout+	Vout+
	White	Vout-	Vout-			Vout-	Vout-
	Black	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E9	Red			Vin+			
	Black			Vin-			
E12	1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	2	Vout+	Vout+		Vout+	Vout+	Vout+
	3	Vout-	Vout-			Vout-	Vout-
	E	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-

# Transducer outline dimensions



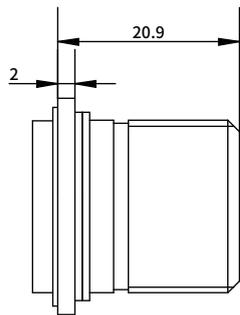
# Pressure connection



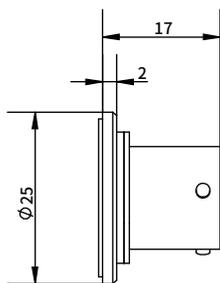
Recommended seal method for P12

Recommended seal method for P25

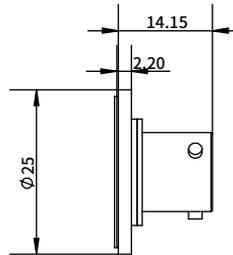
# Electrical Connector



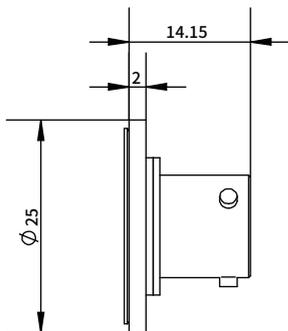
**E1**  
6 Pin, D38999/25YB98PN



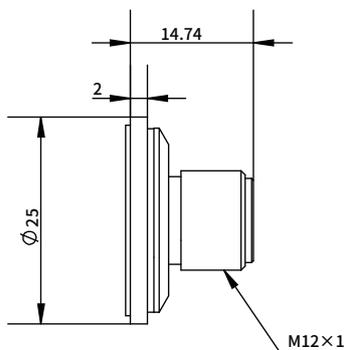
**E2**  
6 Pin, MIL-C-26482 Series II Shell Size 10



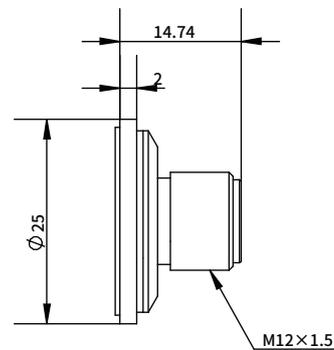
**E4**  
4 Pin, MIL-C-26482 Series I Shell Size 8



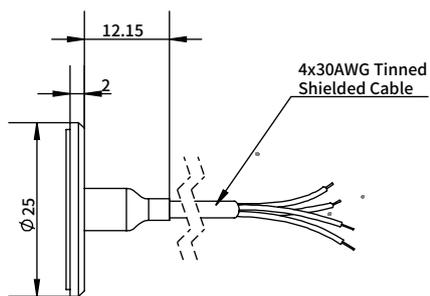
**E5**  
PTIH-8-4P



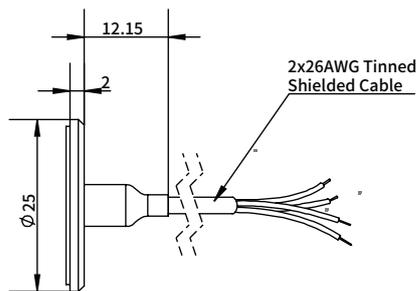
**E6**  
4 Pin M12x1



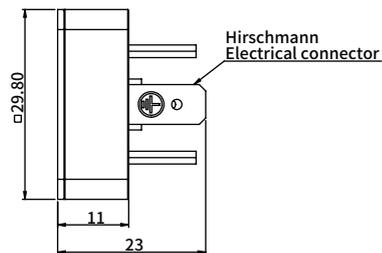
**E7**  
4 Pin M12x1.5



**E8**  
4x30AWG (1m length) Tinned Shielded Cable



**E9**  
2x26AWG (1m length) Tinned Shielded Cable



**E12**  
DIN43650

# Configuration guide

## Base Model

P25 Absolute, Sealed gage

PD25 Gage and Differential

### Electrical Properties

EA	0~100mv output, 10VDC supply, output proportional to supply voltage, 4-wire
EB	0~100mv output, 8~16VDC supply, output independent of supply voltage, 4-wire
EC	4~20mA output, 12~28VDC power supply, high precision digital compensation, 2-wire
ED	0.5~4.5V output, 8~32VDC power supply, high precision digital compensation, 3-wire
EE	0~5V output, 8~32VDC power supply, high precision digital compensation, 4-wire, output common mode 2.5V (typical)
EF	0~10V output, 14~32VDC power supply, high precision digital compensation, 4-wire, output common mode 5V (typical)

### Electrical Connector

E1	6 Pin D38999/25YB98PN	E6	4 Pin M12×1
E2	6 Pin MIL-C-26482 Aviation Connector, Series 1, Size 10 Shell	E7	4 Pin M12×1.5
E3	5 Pin MS83723/90Y1005PN	E8	4x30AWG (1m length) Tinned Shielded cable
E4	4 Pin MIL-C-26482 Aviation Connector, Series 1, Size 8 Shell	E9	2x26AWG (1m length) Tinned Shielded cable
E5	PTIH-8-4P	E12	DIN43650 Removable (* Within -40~80°C)

Other choices available upon request

### Pressure Connections

P1	7/16-20 UNJF External Thread (74° External taper, AS4395E04)	P10	M20×1.5 External Thread
P2	M10×1 External Thread (60° Internal taper)	P11	G1/2 External Thread
P3	7/16-20 UNJF External Thread (24° Internal taper, MS33514E4)	P12	G1/4 Internal Thread
P4	9/16-18 UNJF (24° Internal taper, AS4375E06)	P13	G1/8 External Thread (60° Internal taper)
P5	M12×1 External Thread (74° Internal taper)	P14	G1/4 External Thread (60° Internal taper)
P6	M12×1 External Thread (74° External taper)	P25	G1/4 External Thread
P7	M12×1 External Thread (60° Internal taper)	P26	1/4 NPT External Thread
P8	M12×1.5 External Thread	P28	1/8 NPT External Thread
P9	M14×1.5 External Thread (60° Internal taper)		

Other choices available upon request

### Temperature Compensation

TA	25°C~80°C	TE	-10°C~50°C
TB	-20°C~125°C	TF	-20°C~80°C
TC	-40°C~125°C	TG	-40°C~80°C

### Accuracy

A1	0.2%FS BFSL
A2	0.1%FS BFSL

Other choices available upon request

### Calibration report

CA	6 points room temperature pressure calibration data
CB	5 temperature points pressure data

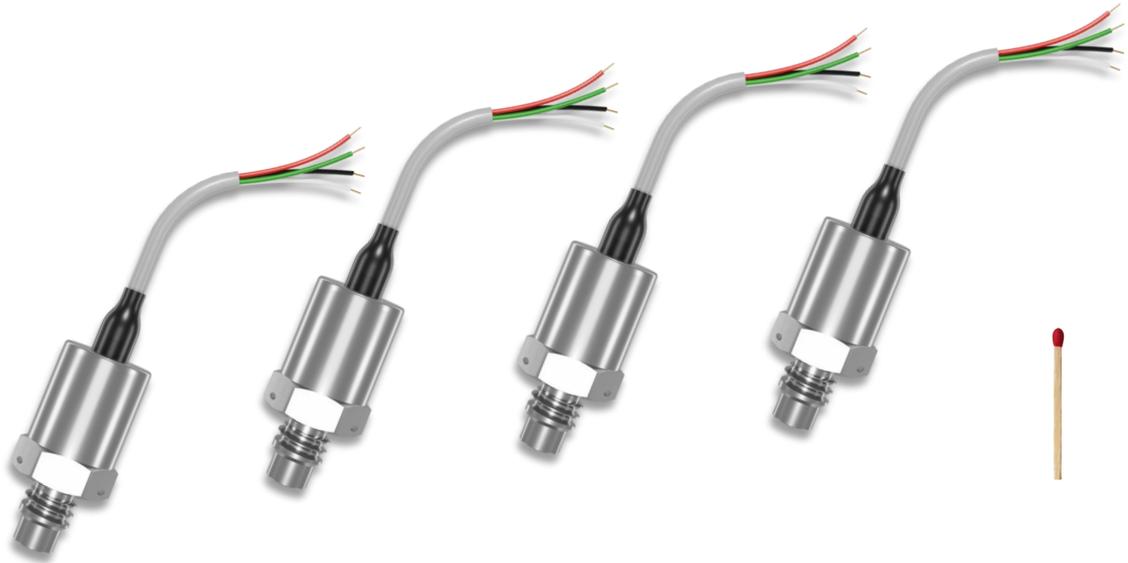
### Range Unit Pressure types

(0-70)	MPa A	Absolute
(-0.1~5)	MPa G	Gage
(-0.1~70)	MPa S	Sealed Gage
(-1.5~5)	MPa D	Differential

### Special requests

S: Refer to the purchase contract

Example: P25 -EA -E3 -P6 -TA -A1 -CA -(0-20)MPaA -S



# PWT08 Series

## Miniature Pressure Transducer

XRI's PWT08 series pressure transducer is a wide compensated temperature range, small, multi-function, high-precision pressure sensor, utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI anti-interference design, stainless steel internal and external parts. All make PWT08 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications and provides electronic circuits with a frequency bandwidth of 10kHz. It's small, with a selectable pressure range and 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.*
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XRI is a "continuous improvement" company. Its product [datasheets](#) evolve as technology advances. Most update versions are on [www.XRIINC.com](http://www.XRIINC.com)

# Specifications

## Physical properties

Item	Description
Range <sup>1</sup>	Absolute or Sealed gage
Unit	MPa                      PSI
Measurement Range	0-2                              0-300
	0-5                              0-700
	0-10                             0-1500
	0-35                             0-5000
	0-70                             0-10000
	Note: Other non-standard ranges or units can be customized
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL
	A2: 0.1% FS <sup>5</sup> BFSL
	*Other choices available upon request
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>
Working Principle	Full four arm Wheatstone bridge MEMS sensor
Sensor Resonant Frequency	> 400KHz

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Sensitivity	< 1ppmFS <sup>5</sup> /g
Vibration Resistance	20g, Max 10-2500Hz; Shock<20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 15g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description
Compensated Temperature Range	-55°C~150°C or within this range
Operating and Storage Temperature Range	-55°C~150°C
Temperature Change Coefficient or Total Error Band <sup>7</sup>	ED < 0.25% FS <sup>5</sup> /100°C

## Electrical Properties

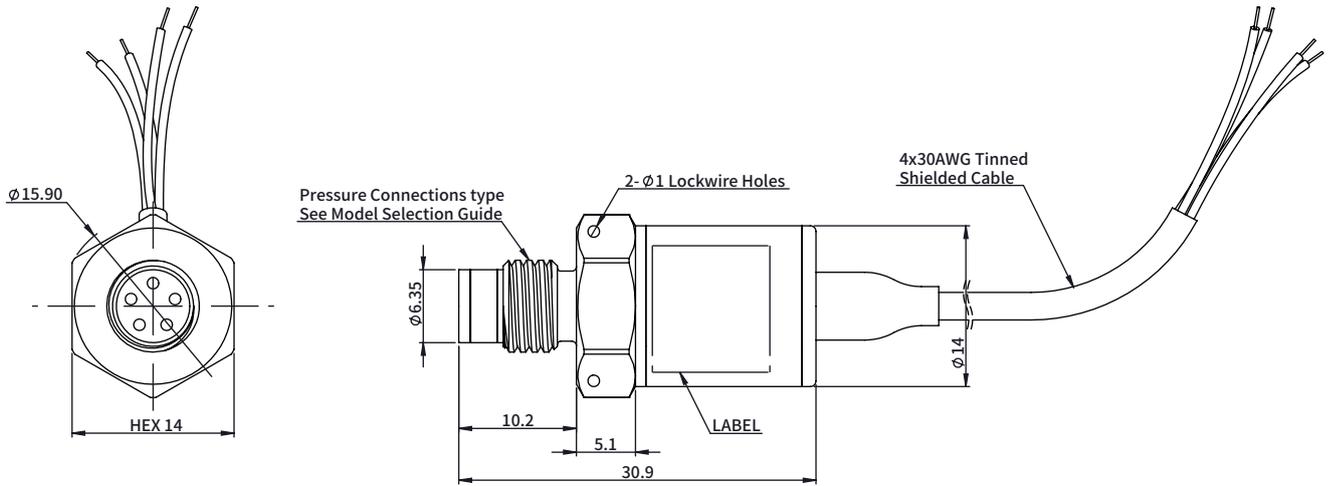
Item	Description
Excitation/Output	See configuration guide
Electrical Circuit Bandwidth	ED Electrical Circuit bandwidth approx 10KHz @3DB  ED ≤ 10KHz @3DB
Actual Frequency Response	Note: Transducer frequency response is also related to how the transducer is installed. See XRI's official website www.XRIINC.com—Application Notes Section or consult XRI's after-sales service department for details.
Power-up Time	ED < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value  *Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	ED < 25mA
Output Impedance	ED < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

## Electrical Connection Definition

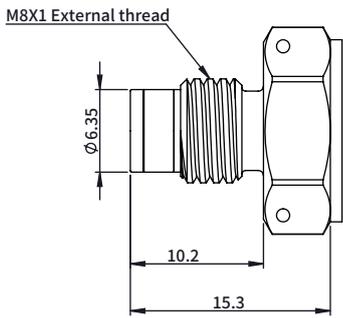
Connection Type	Pin or wire color	Purpose
		ED
E8	Red	Vin+
	Green	Vout+
	White	
	Black	Vin-

- 1: 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 calibration.
- 7: Reference to ISA 37.1-1975(R1982).

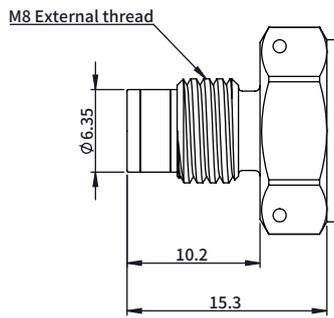
# Transducer outline dimensions



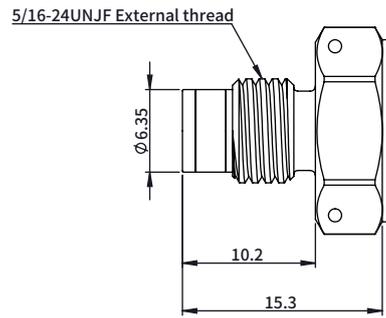
# Pressure connection and Installation guide



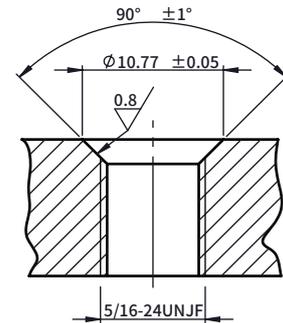
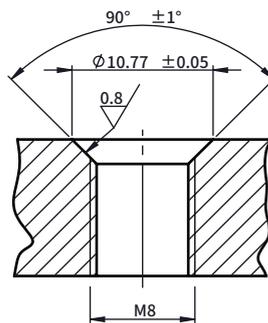
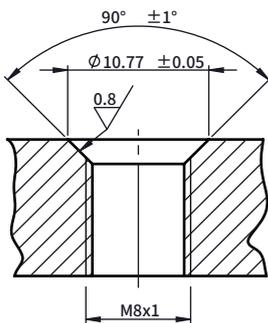
**P19**



**P20**



**P22**



Mounting Torque: 0~35MPaA, 10N.m  
 35~70MPaA, 22N.m

O-Ring: ID 6.07mm, Cross Section Diameter 1.63mm, O-Ring property needs be compatible to measurement media types

# Configuration guide

## Base Model PWT08

### Electrical Properties

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

### Electrical Connector

E8 4x30AWG (1m length) Tinned Shielded cable

Other choices available upon request

### Pressure Connections

P19 M8x1 External Thread

P20 M8 External Thread

P22 5/16-24 UNJF External Thread

Other choices available upon request

### Temperature Compensation

TA 25°C~80°C                      TE -10°C~50°C

TB -20°C~125°C                    TF -20°C~80°C

TC -40°C~125°C                    TG -40°C~80°C

TD -55°C~150°C

### Accuracy

A1 0.2%FS BFSL

A2 0.1%FS BFSL

Other choices available upon request

### Calibration report

CA 6 points room temperature pressure calibration data

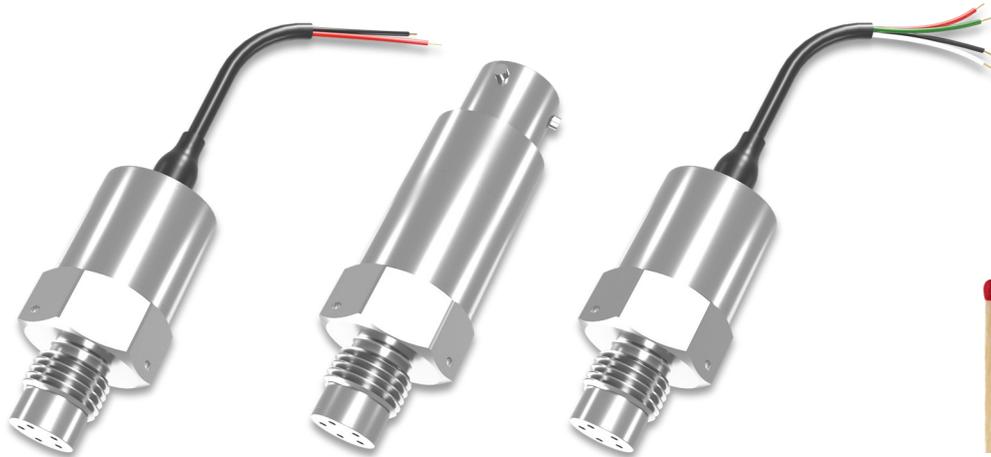
CB 5 temperature points pressure data

Range	Unit	Pressure types
(0-70)	MPaA	Absolute
(0-70)	MPaS	Sealed Gage

### Special requests

S : Refer to the purchase contract

Example: PWT08 -ED -E8 -P19 -TA -A1 -CA -(0-20) MPaA -S



# PWT10 Series

## Miniature Pressure Transducer

XRI's PWT10 series pressure transducer is a wide compensated temperature range, small, multi-function, high-precision pressure sensor, utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI anti-interference design, stainless steel internal and external parts. All make PWT10 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications and provides electronic circuits with a frequency bandwidth of 10kHz. It's small, with a selectable pressure range and 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.

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# Specifications

## Physical properties

Item	Description	
Range <sup>1</sup>	Absolute or Sealed gage	
Unit	MPa	PSI
	0-1	0-150
	0-2	0-300
	0-5	0-700
Measurement Range	0-10	0-1500
	0-35	0-5000
	0-70	0-10000
	Note: Other non-standard ranges or units can be customized	
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL	
	A2: 0.1% FS <sup>5</sup> BFSL	
	*Other choices available upon request	
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup>	
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup>	
Working Principle	Full four arm Wheatstone bridge MEMS sensor	
Sensor Resonant Frequency	> 400KHz	

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Sensitivity	< 1ppmFS <sup>5</sup> /g
Vibration Resistance	20g, Max 10-2500Hz; Shock<20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 24.5g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description
Compensated Temperature Range	-55°C~150°C or within this range
Operating and Storage Temperature Range	-55°C~150°C
	EA, EB
Temperature Change Coefficient or Total Error Band <sup>7</sup>	Thermal Zero Shift < ±1.5% FS <sup>5</sup> /100°C
	Thermal Sensitivity Shift < ±1.5% FS <sup>5</sup> /100°C
	EC, ED, EE, EF
	Total Error Band <sup>6</sup> < 0.25% FS <sup>5</sup> /100°C

## Electrical Properties

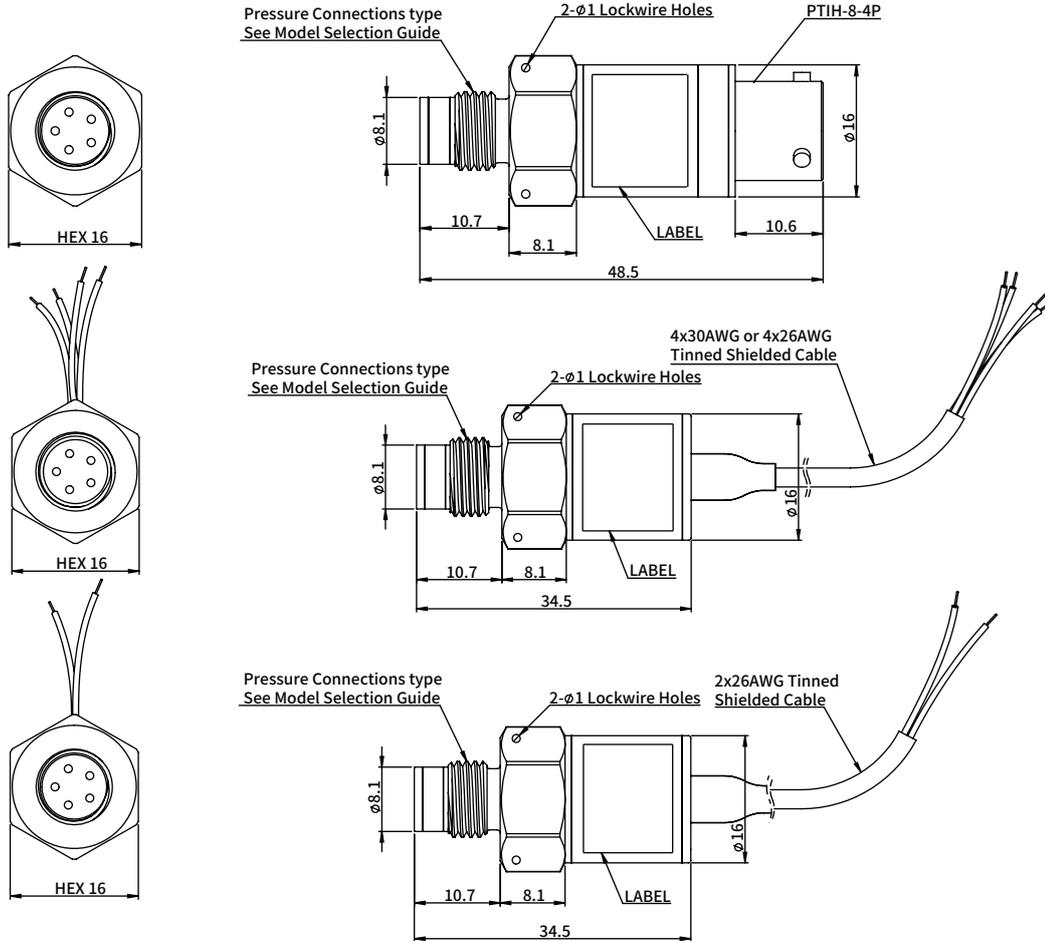
Item	Description
Excitation/Output	See configuration guide
Electrical Circuit Bandwidth	EA, EB MEMS sensor resonant frequency ≥ 400KHz EC, ED, EE, EF Electrical Circuit bandwidth approx 10KHz @3DB
Actual Frequency Response	EA, EB ≤ MEMS sensor resonant frequency @3DB EC, ED, EE, EF ≤ 10KHz @3DB Note: Transducer frequency response is also related to how the transducer is installed. See XRI's official website www.XRIINC.com—Application Notes Section or consult XRI's after-sales service department for details.
Power-up Time	EA, EB < 1ms EC, ED, EE, EF < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value *Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	EC, ED, EE, EF < 25mA
Input Impedance	EA, EB > 5000 Ω
Output Impedance	EA, EB 5000 Ω (Typical) EC, ED, EE, EF < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

## Electrical Connection Definition

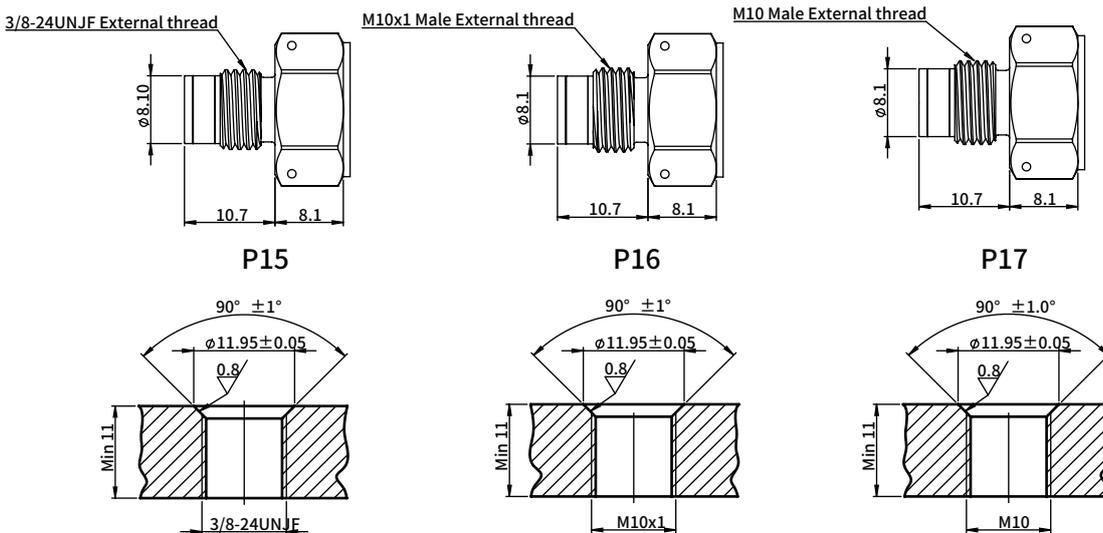
Conne- ction Type	Pin or wire color	Purpose					
		EA	EB	EC	ED	EE	EF
E5	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E8、E14	Red	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+		Vout+	Vout+	Vout+
	White	Vout-	Vout-			Vout-	Vout-
E9	Black	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	Red			Vin+			
	Black			Vin-			

- Offers composite ranges such as from 5~100kPa Absolute Pressure.
- Pressure exposure not exceeding proof pressure does not affect transducer performance.
- Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged.
- Temperature effects are related to sensor accuracy variations within the compensation temperature range.
- FS= Full scale.
- Error based on deviations away from the best endpoint fit straight line calibration.
- Reference to ISA 37.1-1975(R1982).

# Transducer outline dimensions



# Pressure connection and Installation guide



Mounting Torque: 0~35MPaA, 10N.m

35~70MPaA, 22N.m

O-Ring: ID 7.65mm, Cross Section Diameter 1.63mm, O-Ring property needs be compatible to measurement media types

# Configuration guide

## Base Model PWT10

### Electrical Properties

- EA 0~100mv output, 10VDC supply, output proportional to supply voltage, 4-wire
- EB 0~100mv output, 8~16VDC supply, output independent of supply voltage, 4-wire
- EC 4~20mA output, 12~28VDC power supply, high precision digital compensation, 2-wire
- ED 0.5~4.5V output, 8~32VDC power supply, high precision digital compensation, 3-wire
- EE 0~5V output, 8~32VDC power supply, high precision digital compensation, 4-wire, output common mode 2.5V (typical)
- EF 0~10V output, 14~32VDC power supply, high precision digital compensation, 4-wire, output common mode 5V (typical)

### Electrical Connector

- E5 PTIH-8-4P
- E8 4x30AWG (1m length) Tinned Shielded cable
- E9 2x26AWG (1m length) Tinned Shielded cable
- E14 4x26AWG (1m length) Tinned Shielded cable

Other choices available upon request

### Pressure Connections

- P15 3/8-24 UNJF External Thread
- P16 M10×1 External Thread
- P17 M10 External Thread

Other choices available upon request

### Temperature Compensation

- TA 25°C~80°C TE -10°C~50°C
- TB -20°C~125°C TF -20°C~80°C
- TC -40°C~125°C TG -40°C~80°C
- TD -55°C~150°C

### Accuracy

- A1 0.2%FS BFSL
- A2 0.1%FS BFSL

Other choices available upon request

### Calibration report

- CA 6 points room temperature pressure calibration data
- CB 5 temperature points pressure data

### Range Unit Pressure types

- (0-70) MPaA Absolute
- (0-70) MPaS Sealed Gage

### Special requests

S : Refer to the purchase contract

Example: PWT10 -EA -E9 -P17 -TA -A1 -CA -(0-20) MPaA -S



# *PWT25 & PDWT25 Series*

## Wide Temperature Range High Accuracy Pressure Sensor

XRI's PWT25 series pressure sensor is a wide temperature range, multi-function, high accuracy pressure sensor. Utilizing advanced micro-machined silicon MEMS technology, unique oil-filled sensing capsule, robust EMI anti-interference design, stainless steel internal and external parts. All make PWT25 a pressure sensor with high precision, high reliability, and suitable for a variety of measurement applications. It furthermore provides electronic circuitry with a 10KHz frequency bandwidth. The series is configured with a variety of pressure connections and can provide a number of different electrical output signals and methods. The sensors offer a high degree of overload protection and measurement safety through their solid, all stainless steel construction. The highly modular design allows customers to quickly meet special customization requirements.

The PDWT25 differential pressure version is designed with a wet/wet differential pressure configuration as its base model. This innovative design accommodates dry/dry, dry/wet, and wet/wet differential pressure applications while maintaining consistent pricing and high cost-effective, eliminating the complexities of selecting between dry/dry, dry/wet, and wet/wet differential pressure types. It reflects XRI's corporate philosophy: "Customer First, Service First, Quality First."

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# Specifications

## Physical properties

Item	Description
Range <sup>1</sup>	Absolute, Sealed gage , Gauge or Differential
Unit	MPa                      PSI
Absolute and Sealed gage Measurement Range	0-1                              0-150
	0-2                              0-300
	0-5                              0-700
	0-10                             0-1500
	0-35                             0-5000
	0-70                             0-10000
	Note: Other non-standard ranges or units can be customized
Gage and Differential Measurement Range	0-0.01                         0-1.5
	0-0.02                         0-3
	0-0.05                         0-7
	0-0.1                            0-15
	0-0.2                            0-30
	0-0.5                            0-70
	0-1                                0-150
	0-2                                0-300
	0-5                                0-700
	Note: Other non-standard ranges or units can be customized
Accuracy (Combined Non-Linearity, Hysteresis and Repeatability <sup>7</sup> )	A1: 0.2% FS <sup>5</sup> BFSL
	A2: 0.1% FS <sup>5</sup> BFSL
	*Other choices available upon request
Over Pressure <sup>2</sup>	2 x FS <sup>5</sup> (Negative pressure side shall not exceed 1.5 MPa)
Burst Pressure <sup>3</sup>	3 x FS <sup>5</sup> (Negative pressure side shall not exceed 1.5 MPa)

## Mechanical Properties

Item	Description
Pressure Connection	See configuration guide
Vibration Resistance	20g, Max 10-2500Hz; Shock<20ms
Housing Material	Typically 316L/17-4PH (*Other choices available upon request)
Test Medium	All gases and fluids compatible with 316L/17-4PH
Weight	≤ 140g; Cable and connector weight extra

## Temperature Properties<sup>4</sup>

Item	Description	
Compensated Temperature Range	-55°C~150°C or within this range	
Operating and Storage Temperature Range	-55°C~150°C	
Temperature Change Coefficient or Total Error Band <sup>7</sup>	EA, EB	
	Thermal Zero Shift	< ±1.5% FS <sup>5</sup> /100°C
	Thermal Sensitivity Shift	< ±1.5% FS <sup>5</sup> /100°C
Total Error Band <sup>6</sup>	EC, ED, EE, EF	
		< ±0.25% FS <sup>5</sup> /100°C

## Electrical Properties

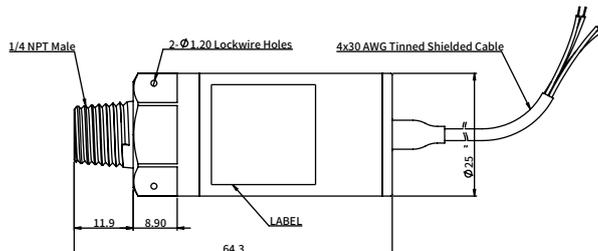
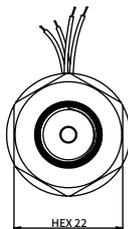
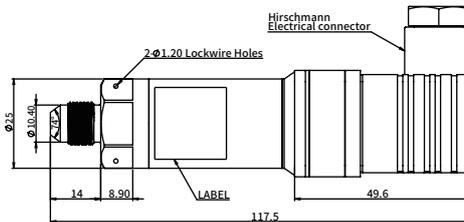
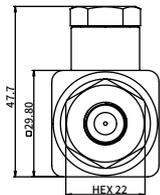
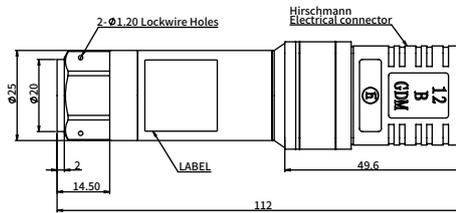
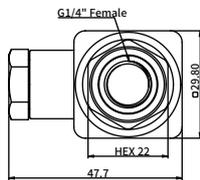
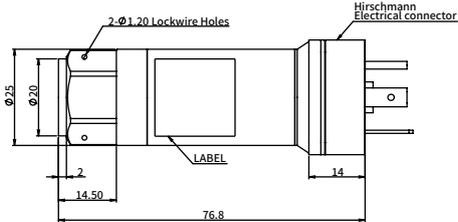
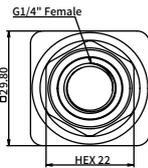
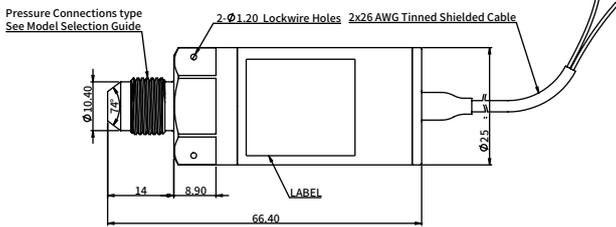
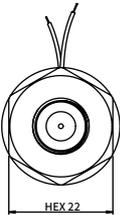
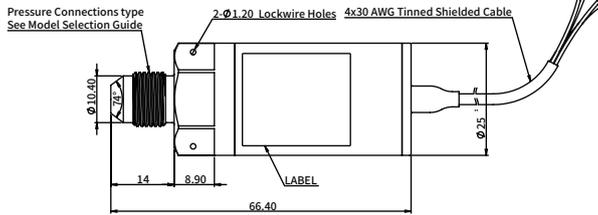
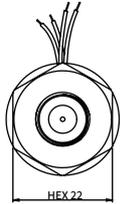
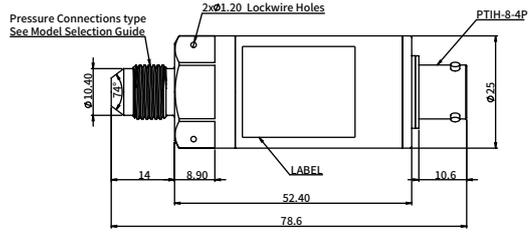
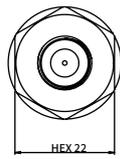
Item	Description
Excitation/Output	See configuration guide
Electrical Circuit Bandwidth	10KHz @3DB
Actual Frequency Response	This series is limited by the acoustic characteristics of the cavity. Fluids medium is approx 10KHz @3DB
	Note: Transducer frequency response is also related to how the transducer is installed. See XRI's official website www.XRIINC.com—Application Notes Section or consult XRI's after-sales service department for details.
Power-up Time	EA, EB < 1ms
	EC, ED, EE, EF < 200ms
Zero and Full Scale Output (Room Temperature)	Within ±5% of nominal value *Other choices can be customized
Insulation Resistance	≥ 100MΩ @50VDC
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS
Max operating current	EC, ED, EE, EF < 25mA
Input Impedance	EA, EB > 5000 Ω
	EA, EB 5000 Ω (typical)
Output Impedance	EC, ED, EE, EF < 150 Ω
Long-term Stability	Typically within ±0.1%FS <sup>5</sup>
Electrical Connection	See configuration guide, customizable

- Offers composite ranges such as from 5~100kPa Absolute Pressure.
- Pressure exposure not exceeding proof pressure does not affect transducer performance.
- Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged.
- Temperature effects are related to sensor accuracy variations within the compensation temperature range.
- FS= Full scale.
- Error based on deviations away from the best endpoint fit straight line calibration.
- Reference to ISA 37.1-1975(R1982).

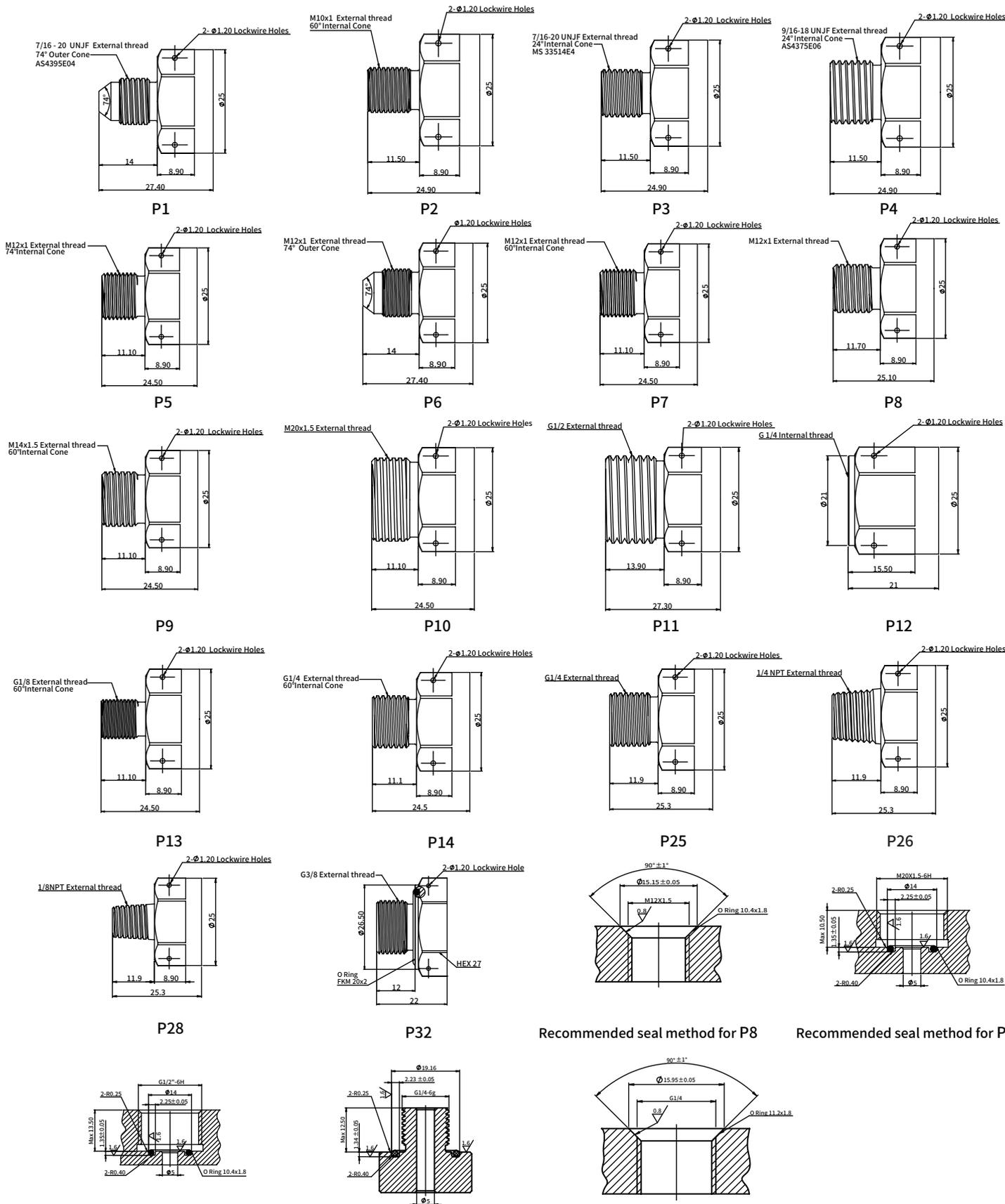
# Electrical Connection Definition

Connection Type	Pin or wire color	Purpose					
		EA	EB	EC	ED	EE	EF
E1	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	E/5						
	F/6						
E2	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	E/5						
	F/6						
E3	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
	E/5						
E4	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E5	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E6	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E7	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vout-	Vout-
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E8	Red	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+		Vout+	Vout+	Vout+
	White	Vout-	Vout-			Vout-	Vout-
	Black	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E9	Red			Vin+			
	Black			Vin-			
E12	1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	2	Vout+	Vout+		Vout+	Vout+	Vout+
	3	Vout-	Vout-			Vout-	Vout-
	E	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-

# Transducer outline dimensions



# Pressure connection

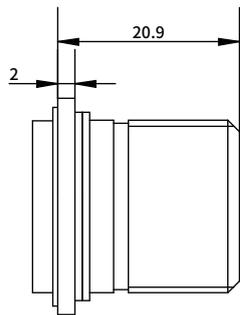


Recommended seal method for P11

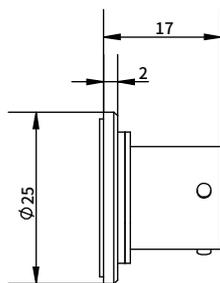
Recommended seal method for P12

Recommended seal method for P25

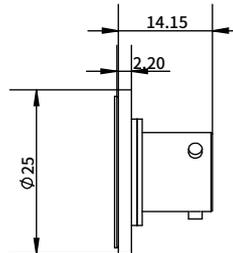
# Electrical Connector



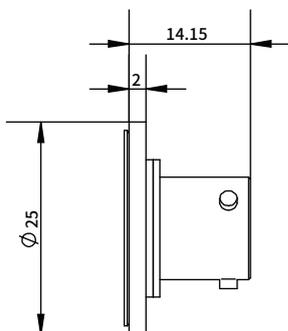
**E1**  
6 Pin, D38999/25YB98PN



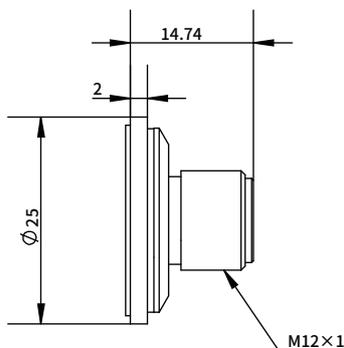
**E2**  
6 Pin, MIL-C-26482 Series II Shell Size 10



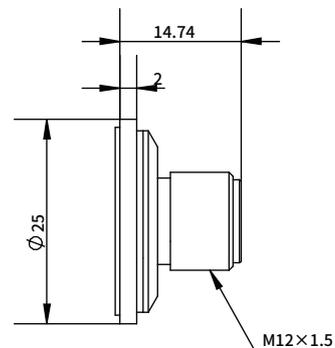
**E4**  
4 Pin, MIL-C-26482 Series I Shell Size 8



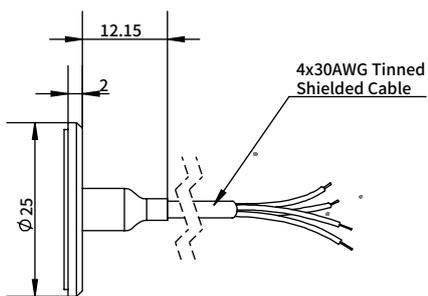
**E5**  
PTIH-8-4P



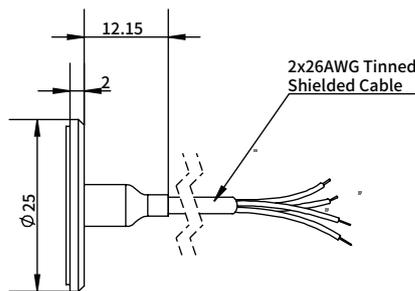
**E6**  
4 Pin M12x1



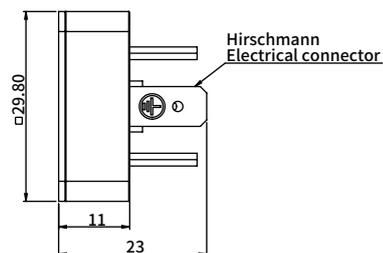
**E7**  
4 Pin M12x1.5



**E8**  
4x30AWG (1m length) Tinned Shielded Cable



**E9**  
2x26AWG (1m length) Tinned Shielded Cable



**E12**  
DIN43650

# Configuration guide

## Base Model

PWT25 Absolute, Sealed gage

PDWT25 Gage and Differential

### Electrical Properties

EA	0~100mv output, 10VDC supply, output proportional to supply voltage, 4-wire
EB	0~100mv output, 8-16VDC supply, output independent of supply voltage, 4-wire
EC	4~20mA output, 12~28VDC power supply, high precision digital compensation, 2-wire
ED	0.5~4.5V output, 8~32VDC power supply, high precision digital compensation, 3-wire
EE	0~5V output, 8~32VDC power supply, high precision digital compensation, 4-wire, output common mode 2.5V (typical)
EF	0~10V output, 14~32VDC power supply, high precision digital compensation, 4-wire, output common mode 5V (typical)

### Electrical Connector

E1	6 Pin D38999/25YB98PN	E6	4 Pin M12×1
E2	6 Pin MIL-C-26482 Aviation Connector, Series 1, Size 10 Shell	E7	4 Pin M12×1.5
E3	5 Pin MS83723/90Y1005PN	E8	4x30AWG (1m length) Tinned Shielded cable
E4	4 Pin MIL-C-26482 Aviation Connector, Series 1, Size 8 Shell	E9	2x26AWG (1m length) Tinned Shielded cable
E5	PTIH-8-4P	E12	DIN43650 Removable (* Within -40~80°C)

Other choices available upon request;

Electrical connectors E6, E7, and E12 are not compatible with the compensated temperature TD.

### Pressure Connections

P1	7/16-20 UNJF External Thread (74° External taper, AS4395E04)	P10	M20×1.5 External Thread
P2	M10×1 External Thread (60° Internal taper)	P11	G1/2 External Thread
P3	7/16-20 UNJF External Thread (24° Internal taper, MS33514E4)	P12	G1/4 Internal Thread
P4	9/16-18 UNJF (24° Internal taper, AS4375E06)	P13	G1/8 External Thread (60° Internal taper)
P5	M12×1 External Thread (74° Internal taper)	P14	G1/4 External Thread (60° Internal taper)
P6	M12×1 External Thread (74° External taper)	P25	G1/4 External Thread
P7	M12×1 External Thread (60° Internal taper)	P26	1/4 NPT External Thread
P8	M12×1.5 External Thread	P28	1/8 NPT External Thread
P9	M14×1.5 External Thread (60° Internal taper)	P32	G3/8 External Thread

Other choices available upon request

### Temperature Compensation

TA	25°C~80°C	TE	-10°C~50°C
TB	-20°C~125°C	TF	-20°C~80°C
TC	-40°C~125°C	TG	-40°C~80°C
TD	-55°C~150°C		

### Accuracy

A1	0.2%FS BFSL
A2	0.1%FS BFSL

Other choices available upon request

### Calibration report

CA	6 points room temperature pressure calibration data
CB	5 temperature points pressure data

Range	Unit	Pressure types
(0-70)	MPa A	Absolute
(-0.1~5)	MPa G	Gage
(-0.1~70)	MPa S	Sealed Gage
(-1.5~5)	MPa D	Differential

### Special requests

S : Refer to the purchase contract

Example: PWT25 -EC -E3 -P6 -TA -A1 -CA -(0-20)MPaA -S

# INNOVATION

Precision/Dependability/Value



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