

# *PWT25 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 and EMD anti-interference design, and 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.

### *About Us*

- *XRI Innovation, Inc. (XRI) is a vertically integrated XRI 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
Range <sup>1</sup>	Absolute pressure: 0~70MPa selectable
	Sealed gauge pressure: 0~70MPa selectable
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
Exposed Material	316L with 17-4PH SS optional
Test Medium	All fluid compatible with 316L / 17-4PH SS
Weight	140g Max. Cable and connector weight extra

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

Item	Description
Compensated Temperature Range	See configuration guide
Storage Temperature	-55°C~150°C
Accuracy (Combined best Fit Straight Line Nonlinearity, Repeatability and Hysteresis)	±0.1% FS <sup>5</sup> (Typical), ±0.5% FS <sup>5</sup> Max
Total Error <sup>6</sup> :	< ±0.2% FS <sup>5</sup> /100°C

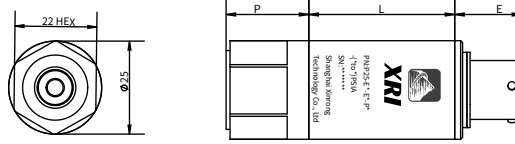
### Electrical Performance

Item	Description	
Excitation / Output Options	See configuration guide	
Circuit Bandwidth	10KHz	
Warm Up Time	EC, ED, EE, EF < 200ms	
Room Temperature Zero Offset	EC	4mA
	ED EF	0.5±0.25V
	EE	±0.25V
	EF	±0.5V
Room temperature full scale output	EC	20mA
	ED	4.5±0.25V
	EE	5±0.25V
EF	10±0.5V	
Insulation Resistance	≥ 100MΩ @50VDC	
Dielectric Strength	Leakage current ≤ 5mA @50VAC RMS	
Max Input Current	< 25mA	
Output Impedance	< 150 Ω	
Long Term Stability	Not exceeding 0.1% FS <sup>5</sup> / year	
Electrical Connection Options	See configuration guide	

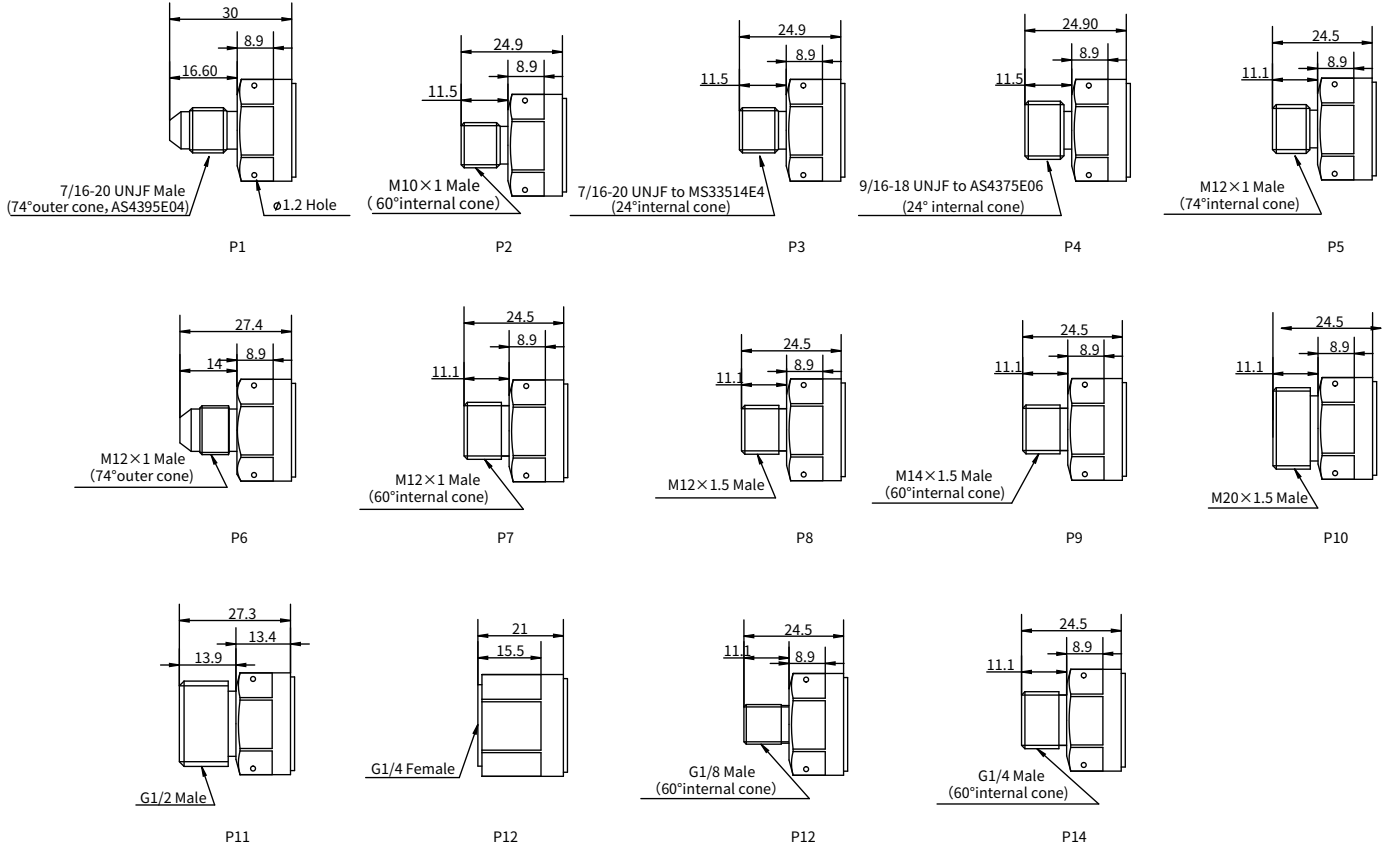
### Electrical Interface Description:

Electrical connector	Pin/Wire color	Function									
		EA	EB	EC	ED	EE	EF	EG	EH	EJ	EK
E5	A/1	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	B/2	Vout+	Vout+		Vout+	Vout+	Vout+		Vout+	Vout+	Vout+
	C/3	Vout-	Vout-			Vcom(2.5V)	Vcom(5V)			Vcom(2.5V)	Vcom(5V)
	D/4	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E8	Red	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+	Vin+
	Green	Vout+	Vout+		Vout+	Vout+	Vout+		Vout+	Vout+	Vout+
	White	Vout-	Vout-			Vcom(2.5V)	Vcom(5V)			Vout-	Vout-
	Black	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-	Vin-
E9	Red			Vin+				Vin+			
	Black			Vin-				Vin-			

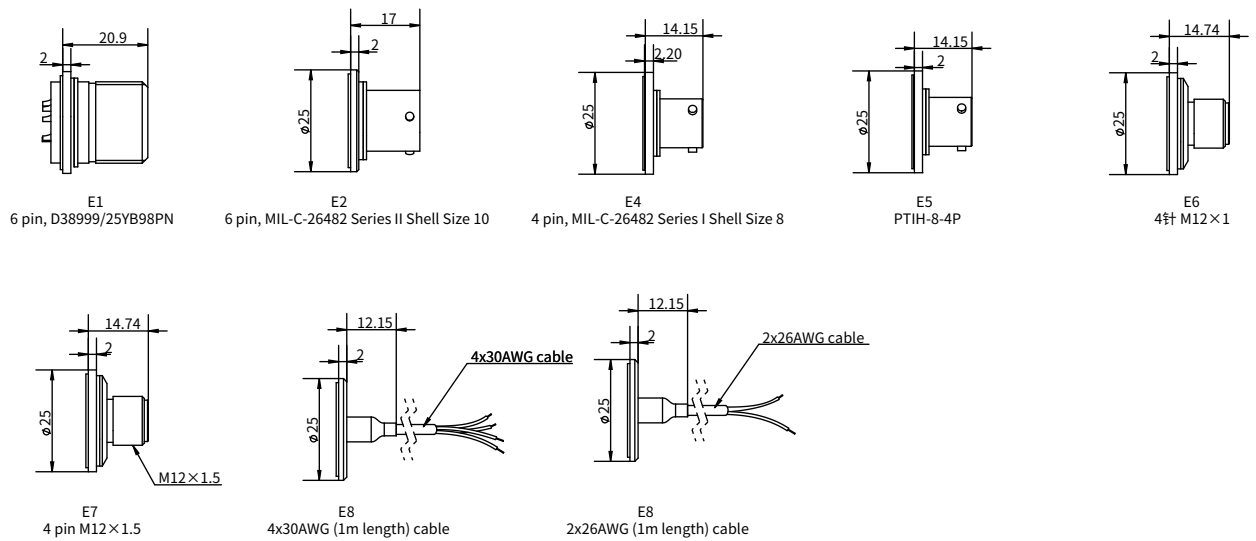
- 1: Also offers composite ranges such as from 5-100kPa Absolute Pressure .
- 2: Pressure exposure not exceeding proof pressure does not affect transducer performance .
- 3: Burst Pressure is a safety upper limit. Over this value transducer may be permanently damaged .
- 4: Temperature effects are related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



## Pressure Connection Drawing



## Electrical Connector Drawing



# Configuration Guide

**Base Model**

**PWT25**

**Electrical Properties**

- EC 4~20mA output, 12~28V power supply, high precision digital compensation, 2-wire
- ED 0.5~4.5V output, 8~32V power supply, high precision digital compensation, 3-wire
- EE 0~5V output, 8~32V supply, high precision digital compensation, 4-wire, output common mode 2.5V (typical)
- EF 0~10V output, 12~32V 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 Series II Shell Size 10 | E7 4 pin M12×1.5             |
| E3 5 pin, MS83723/90V1005PN                   | E8 4x30AWG (1m length) cable |
| E4 4 pin, MIL-C-26482 Series I Shell Size 8   | E9 2x26AWG (1m length) cable |
| E5 PTIH-8-4P                                  |                              |

**Other choices available upon request**

**Pressure Connections**

- |  |                                     |
|--|-------------------------------------|
| P1 7/16-20 UNJF Male (74° outer cone, AS4395E04) | P8 M12×1.5 Male                     |
| P2 M10×1 Male (60° internal cone)                | P9 M14×1.5 Male (60° internal cone) |
| P3 7/16-20 UNJF to MS33514E4 (24° internal cone) | P10 M20×1.5 Male                    |
| P4 9/16-18 UNJF to AS4375E06 (24° internal cone) | P11 G1/2 Male                       |
| P5 M12×1 Male (74° internal cone)                | P12 G1/4 Female                     |
| P6 M12×1 Male (74° outer cone)                   | P13 G1/8 Male (60° internal cone)   |
| P7 M12×1 Male (60° internal cone)                | P14 G1/4 Male (60° internal cone)   |

**Other choices available upon request**

**Temperature Compensation**

- TA 25°C~80°C
- TB -20°C~125°C
- TC -40°C~125°C
- TD -55°C~150°C

**(Full Scale Pressure Range)**

- (0-70)MPa
- (0-70)MPa

**Pressure types**

- A Absolute
- S Sealed Gage

**Special requests**

**S**Details in purchase order

**Example: PWT25-ED-E5-P6-TD-(0-20)MPa A -S**

