



P9000

SPECIFICATIONS

- High accuracy through digital compensation
- High thermal stability
- Rugged stainless steel construction
- Ideal for test stands
- High burst pressure limit

FEATURES

- Guaranteed Accuracy of better than $\pm 0.08\%$ F.R.O.
- Rugged Stainless Steel Construction
- Pressure Ranges: 0-75 psi to 10,000 psi (0-5 bar to 0-700 bar)
- 5x Overload Capacity
- IP67, NEMA 4x Rated
- Long Term Stability 0.1% F.R.O. per annum
- Thermal Performance: $< 0.002\%$ F.R.O./°F ($< 0.004\%$ F.R.O./°C)
- CE Certified

APPLICATIONS

- Hydraulic and Pneumatic Controls
- Steel and Aluminum Rolling Mills
- Pulp and Paper Mills
- Automotive Test Stands
- Power Generation
- Off-Shore Oil Exploration

The P9000 Series is a range of advanced, digitally compensated pressure transducers. The unique design of the P9000 pressure transducer utilizes the proven reliability of strain gauge technology and innovative digital compensation electronics. The synergy of these technologies results in an instrument grade pressure transducer. Available in pressure ranges from 75 psi to 10,000 psi (5 bar to 700 bar), the P9000 series can be configured with a variety of pressure ports, electrical outputs, and termination options to meet most pressure sensing needs.

The P9000 Series incorporates 12 bit digital compensation electronics to ensure precise calibration of all critical parameters. This unique circuit design also provides a significant advantage of maintaining a true analog “thru-path” resulting in an exceptionally fast response of 1000 Hz without a sacrifice in accuracy. Error contribution sources are digitally corrected to guarantee repeatable performance and eliminate the need for user calibration. Combined nonlinearity hysteresis and non-repeatability errors are guaranteed to be less than $\pm 0.08\%$ F.R.O. with total thermal error limited to 0.004% F.R.O./°C over an extended industrial temperature range of -4°F to 176°F (-20°C to 80°C).

The P9000 series delivers the advantages of a 17-4 PH diaphragm offering a true stainless steel isolation barrier with high burst pressures, at 20x the rated pressure, and a proof pressure up to 5x the rated pressure. Housed in a rugged 316 stainless steel, NEMA 4X, IP67 enclosure with guaranteed shock resistance of up to 1000g for 2msec, and vibration to $\pm 20g$, the P9000 provides a robust solution for a wide variety of demanding pressure applications and environments.

Available in both cable and connector outlets, the P9000 is offered in two electronic outputs: four-wire 0-10 V and a four wire 0-5 V version. The P9000 can be configured to give 3-wire 1 to 6V or 1 to 11V output. All P9000 units are constructed under an ISO 9001 environment. Each unit is serialized and shipped with a calibration certificate guaranteeing the highest quality and reliability found in an instrument grade pressure transducer.

For parts requiring RoHS compliance, please contact factory.

PERFORMANCE SPECS

Series	P9060	P9070
Model Number	P906X	P907X
Input Voltage	10 to 36V _{DC}	15 to 36V _{DC}
Current (mA max)	<6	<6
Output (F.R.O)	5V \pm 0.3%	10V \pm 0.3%
Impedance (Ω)	<1	<1
Load Resistance (Ω min.)	1000	2000
Frequency Response	1 kHz	1kHz
Combined Non-linearity, Hysteresis and Non-repeatability		
High Range % F.R.O. (BSL)	< \pm 0.05 typ	< \pm 0.05 typ
	< \pm 0.08% max	< \pm 0.08% max
Combined Thermal Zero & Sensitivity Error: (calculated from end points of temp. range) The output will not deviate from 20°C by more than 0.5% F.R.O., over a temperature range of -20 to +80°C.		
% F.R.O./ °F	< \pm 0.002	< \pm 0.002
% F.R.O./ °C	< \pm 0.004	< \pm 0.004
Residual Unbalance % F.R.O.	0 Volts \pm 0.3%	0 Volts \pm 0.3%
Weight oz (gm) max (0001 version)		
Connector Version	5.11 (145)	5.11 (145)
Cable Version	6.35 (180)	6.35 (180)

COMMON SPECIFICATIONS

Unless otherwise noted: all specifications are at 20°C. TE reserves the right to update and change these specifications without notice.

Pressure Ranges

High	psi	0-75, 100, 150, 200, 250, 350, 500, 750, 1000, 1500, 2200, 3500, 5000, 7500, 10,000
	bar	0-5, 7, 10, 15, 20, 25, 35, 50, 70, 100, 150, 200, 250, 350, 500, 700
DIN	bar	6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600

Pressure References

High Pressure Range	Vented gauge ¹	0 – 75 to 0 – 350 psi
	Absolute and sealed gauge	0 – 75 psi to 0 – 10 ksi
Pressure Limit	>5X full range pressure or 12,000psi (830 bar), whichever less. Will not cause a zero offset exceeding 0.04% FRO (recoverable within a few hours)	
Burst Pressure	>20X full range pressure or 22,000psi (1520 bar), whichever less	
Pressure Media	Liquids or gases compatible with 17-4PH and 17-7 PH stainless steel or Inconel 625	
Combined non-linearity, hysteresis, and non-repeatability (High range)	Typ	Max
	<±0.05% F.R.O.*	±0.08% F.R.O.*

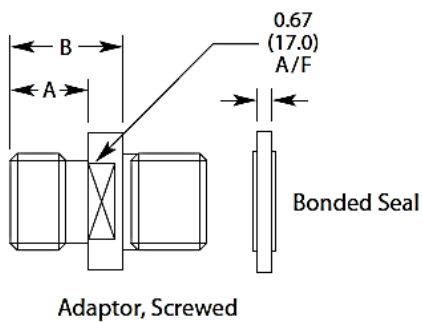
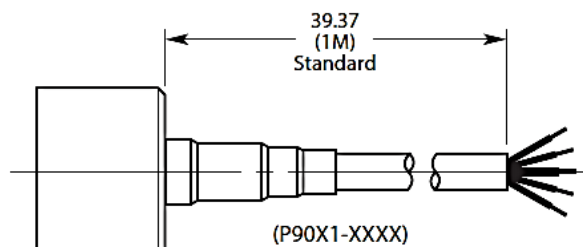
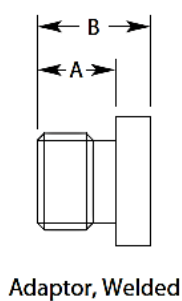
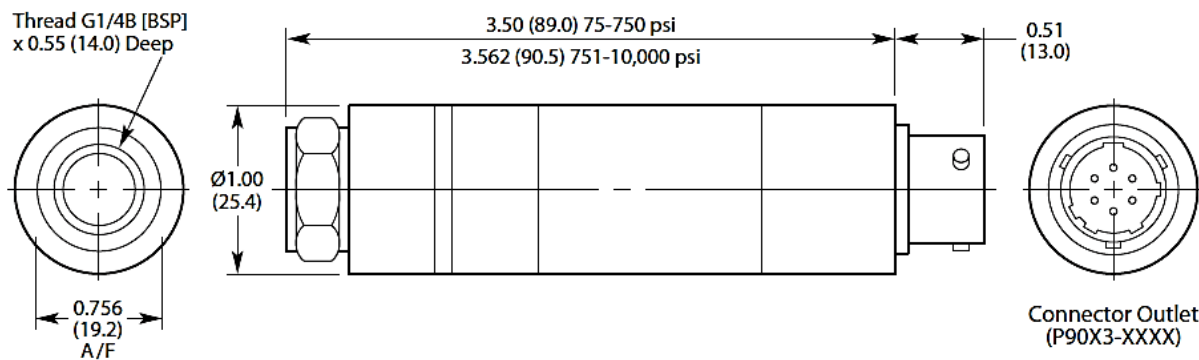
Temperature Range

Operable	-40°C – 100°C [-40°F – 212°F]	
Compensated	-20°C – 80°C [-4°F – 176°F]	
Storage	-40°C – 120°C [-40°F – 257°F]	
Humidity	95% Relative	
Connector/Cable Version	Immersible to IP67 (fluid must not enter the ends of the cable)	
Acceleration Response	Above 500 psi (35 bar)	±0.02% F.R.O./g
	Below 500 psi (35 bar)	±0.10% F.R.O./g
Vibration	Surpasses MIL STD810C Method 514-2 Curve L	
Shock	1000g for 2ms will not damage the sensor	
EMC	The P906X and P907X series are CE marked, and when correctly installed comply with the EMC Directive 89/336/EEC Generic Standards for Residential Commercial, Light Industrial and Industrial environments.	
Insulation Resistance	500 MΩ @ 50V _{DC}	

*Best Straight Line

¹ Vented gauge units must only be used in dry, non-corrosive environments and will breathe through the cable vent tube or hole in the 6-way receptacle. Otherwise, the manufacturer's warranty is voided.

DIMENSIONS



ADAPTERS

Dimensions in (mm)

Welded

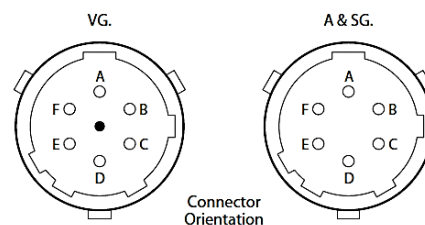
<u>Thread Size</u>	<u>Code</u>	<u>A</u>	<u>B</u>
G1/4A (BSP) (F)	0002	0.46 (11.7)	0.67 (16.9)
M14 x 1.5 (M)	0003	0.40 (10.2)	0.61 (15.4)
7/16" -20UNF-2A (M)	0004	0.56 (14.3)	0.77 (19.5)
1/4" -18NPT (M)	0005	0.55 (14.0)	0.76 (19.2)
M10 x 1.0 (F)	0006	-	0.60 (15.2)
1/4" -18NPT (F)	0009		

Screwed

<u>Thread Size</u>	<u>Code</u>	<u>A</u>	<u>B</u>
G1/4A (BSP) (F)	0022	0.46 (11.7)	0.70 (17.8)
M14 x 1.5 (M)	0023	0.40 (10.2)	0.62 (15.8)
7/16" -20UNF-2A (M)	0024	0.56 (14.3)	0.78 (19.8)
1/4" -18NPT (M)	0025	0.55 (14.0)	0.80 (20.4)
M10 x 1.0 (F)	0026	-	0.60 (15.2)

CONNECTIONS

<u>Cable</u>	<u>Connector**</u>	
Red*	Pin A*	Excitation (+)
White	Pin D	Excitation (-)
Yellow	Pin B	Output (+)
Blue*	Pin C*	Output (-)
Violet	Pin E	No Connection
Grey	Pin F	Factory use only



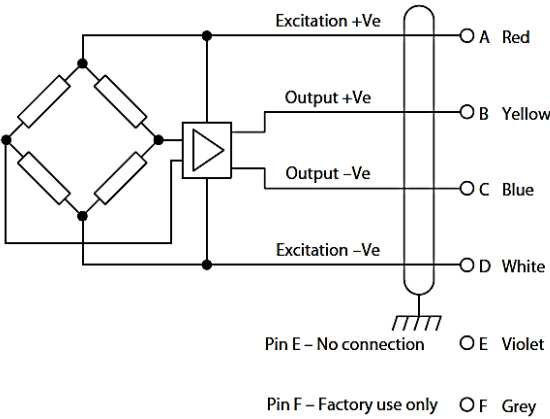
Note: Screen is connected to the case for CE marked units.

* 2-wire connections

**Vented gauge units must breathe through the receptacle (mating connector must have a vent hole)

WIRING

P906X and P907X



OUTPUT

Code	Output Signal	Supply Voltage
6	0 – 5V	10 – 36V
7	0 – 10V	15 – 36V

ORDERING INFORMATION

P90 0 0 – 00 2 5 – 005 PS A 06

Output	
Code	Output Signal
6	0 – 5V
7	0 – 10V

Electrical Connections	
1	Cable Outlet
3	Connector Outlet
6	Cable Outlet (CR)
8	Connector Outlet (CR)

(CR)=Corrosion Resistant Wetted Parts
Electrical Connections shown are High Range

Connector	
0	Welded
2	Screwed in

Pressure Port	
1	1/4" BSP Female
2	1/4-19 BSP Male
3	M14x1.5 Male
4	7/16-20UNF 2A Male
5	1/4-18 NPT
6	M10x1mm Ermeto Female
9	1/4"-18 NPT Female

Cable Length	
Insert double digit length ≤20 meters. Example: For 5 meter, insert 05.	
Unit comes standard with 1 meter cable	

Pressure Reference	
V	Vented Gauge
S	Sealed
A	Absolute

Pressure Unit	
BA	Bar
PS	Psi

Pressure Range		
High psi	High bar	DIN bar
0-75	0-5	6
100	7	10
150	10	16
220	15	25
300	20	40
350	25	60
500	35	100
750	50	160
1000	70	250
1500	100	400
2200	150	600
3000	200	
3500	250	
5000	350	
7500	500	
10000	700	

Use 3 digit only for Pressure range.
Example: For 7500, use 7k5

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