

# P1200 Series

## Pressure Transducer

The P1200 Series pressure transducers and transmitters provide high accuracy pressure measurement of liquids and gases. These robust transducers combine hybrid electronics with highly reliable strain gauge sensing technology to offer superior performance in rugged applications. Constructed from media compatible 17-4 pH stainless steel, the P1200 provides exceptional performance in extreme environments.

Accuracy of the P1200 is guaranteed to be within  $\pm 0.20\%$  F.R.O. over a wide temperature compensated range of  $-20^{\circ}$  to  $80^{\circ}\text{C}$ . The P1200 is available with either cable or connector terminations and offers a variety of outputs including 0-20 mV, 0-100 mV, 0-5 V and 4-20 mA. Six selectable pressure ports are available to suit most application requirements. Pressure ranges include 0-75 psi to 10,000 psi (0-5 bar to 700 bar) and can be referenced in absolute, sealed or vented gauge. The P1200 Series maintains a high burst rate of greater than 20x the rated pressure and 5x overpressure limit without damage to the sensor due to a positive overtravel stop.



### Applications

- Vehicle brake system monitoring**
- Gas production**
- Farm machinery**
- Hydraulic control monitoring**

### Features

- Typical accuracy of  $< \pm 0.15\%$  F.R.O.**
- Cable/connector termination**
- Stainless steel media isolated**
- 5x overpressure protection**
- High and low level output**

### Common Specifications

#### Pressure Ranges

**High (psi)** ..... 0-75; 100; 150; 220; 250; 350; 500; 750; 1000; 1500; 2200; 2900; 3500; 5000; 7500; 10,000  
**(bar)** ..... 0-5; 7; 10; 15; 20; 25; 35; 50; 70; 100; 150; 200; 250; 350; 500; 700

**Pressure References** ..... Vented gauge (Sensors should only breathe dry noncorrosive gases. Sealed gauge and absolute to special order.)

**Pressure Limit** .....  $>5x$  full range pressure or 12,000 psi (830 bar), whichever is less.

**Burst Pressure** .....  $>20x$  full range pressure or 22,000 psi (1,520 bar), whichever is less

**Pressure Media** ..... Liquids or gases compatible with 17-4 pH stainless steel

#### Combined Nonlinearity, Hysteresis

**and Nonrepeatability** .....  $< \pm 0.15\%$  F.R.O. (typ);  $\pm 0.20\%$  F.R.O. max (BSL) – high range

#### Temperature Range

**Operable** .....  $-65^{\circ}\text{F}$  to  $185^{\circ}\text{F}$  ( $-54^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ ) [P1221/4  $-65^{\circ}\text{F}$  to  $250^{\circ}\text{F}$  ( $-54^{\circ}\text{C}$  to  $120^{\circ}\text{C}$ )]

**Compensated** .....  $-4^{\circ}\text{F}$  to  $185^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ ) [P1221/4  $-4^{\circ}\text{F}$  to  $212^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$  to  $100^{\circ}\text{C}$ )]

#### Combined Thermal Zero

**and Sensitivity Shift** .....  $< \pm 0.010\%$  F.R.O./ $^{\circ}\text{F}$  ( $\pm 0.02\%$  F.R.O./ $^{\circ}\text{C}$ ) over compensated temperature range

#### Total Thermal Error Band\*

(including NLH) %F.R.O.  $-4^{\circ}$  to  $185^{\circ}\text{F}$  ( $-20^{\circ}$  to  $85^{\circ}\text{C}$ )  $\pm 1.2\%$  typical,  $\pm 2.0\%$  max. (over compensated temperature range)

**Shock Resistance** ..... 1000 g for 5 msec

**Vibration Resistance** ..... Surpasses MIL STD810C Method 514-2 Curve L and EUROCAE ED 14A/RTCA 160A

#### Humidity

**Connector Version** ..... 95% Relative humidity

**Cable Version** ..... Immersible to IP67

**EMC** ..... Emissions to EN55022 (CISPR 22) Limit B; Radiated Immunity to IEC 801-3 Level 3 10 V/m; Burst Transients to IEC 801-4 Level 3 (2kV); Electrostatic Discharge to IEC 801-2 Level 2 (4kV contact); Surges to IEC 801-5 class 3 (2kV)

**Insulation Resistance** ..... 500 Mohm at 50 VDC

**Specifications by Model** All specifications are at 77° F (25°C) unless otherwise noted

Series	P1220	P1230	P1240	P1260	P1280
Model Number	P1221/3	P1231/3	P1241/3	P1261/3	P1281/3
Input Voltage	10 VDC (12 V max)	10 VDC (12 V max)	10 VDC (12 V max)	18-32 VDC	10-36 VDC
Impedance (ohms)	1000 to 1600	-	-	-	-
Current (mA max)	10	12	12	25	-
Full Range Output ( $\pm 2\%$ )	20 mV	100 mV	5 VDC	5 VDC	4-20 mA (16 mA $\pm 2\%$ )
Impedance (ohms)	1000 $\pm 50$	<10	<10	<10	Load Resistance 1300 ohm (max) at 36 VDC
Current (mA max)	-	-	5	5	-
Residual Unbalance % F.R.O.	< $\pm 2$	< $\pm 2$	< $\pm 2$	< $\pm 2$	4.0 mA +2-0
Frequency Response	2.5 to 40 kHz	2 kHz	2 kHz	2 kHz	1000 Hz
Weight oz (gm)	3.4 (95)	4.4 (125)	4.4 (125)	4.4 (125)	4.4 (125)

**Dimensions** in (mm)

**Adapters**

Thread Size	Code Welded	A	B	Code Screw in	B
G1/4A (BSP) (F)	0001				
G1/4A (BSP) (M)	0002	0.46 (11.7)	0.67 (16.9)	0022	0.76 (17.6)
M14 x 1.5 (M)	0003	0.40 (10.2)	0.61 (15.4)	0023	0.61 (15.6)
7/16"-20UNF-2A (M)	0004	0.56 (14.3)	0.77 (19.5)	0024	0.77 (19.6)
1/4"-18NPT (M)	0005	0.55 (14.0)	0.76 (19.2)	0025	0.81 (20.6)
M10 x 1.0 (F)	0006	-	0.60 (15.2)	0026	0.60 (15.2)



**Input/Output**  
 2 - 20 mV output  
 3 - 100 mV output  
 4 - 5 V output (10 V supply)  
 6 - 5 V output (18-32 V supply)  
 8 - 4-20 mA output (10-36 V supply)

**Cable/Connector**  
 (Please reference to selected pressure range)  
 1 - Cable outlet  
 3 - Connector outlet

**Adaptor**  
 0 - Welded  
 2 - Screw in

**Pressure Port**  
 1 - 1/4 in BSP female  
 2 - 1/4 in BSP male  
 3 - M14 x 1.5 male  
 4 - 7/16 in 20 UNF 2A male  
 5 - 1/4 in 18 NPT male  
 6 - M10 x 1.0 female

**Unit**  
 B: bar  
 P: psi

**Pressure Reference**  
 A: absolute  
 S: sealed gauge  
 V: vented gauge

**Pressure Range**  
 (Enter full scale pressure range without units)  
 (psi) 0-75; 100; 150; 220; 250; 350; 500; 750; 1000; 1500; 2200; 2900; 3500; 5000; 7500; 10,000  
 (bar) 0-5; 7; 10; 15; 25; 35; 50; 70; 100; 150; 200; 250; 350; 500; 700

**Connections**

Cable	Connector**	
Red*	Pin 1	Excitation (+)
Yellow	Pin 2	Output (+)
Blue*	Pin 3	Output (-)
White	Pin 4	Excitation (-)
Grey	Pin 5	Not used
Violet		Not used

**How to Order**  
 Specify by transducer excitation, electrical interface, pressure port, pressure range, units, and pressure reference. Example: P1221-0005-BVG signifies a pressure transducer with 20 mV output, cable outlet, welded adaptor, and 1/4 inch-18 NPT male pressure port, ranged 0 to 10 bar vented gauge.

\* 2-wire transmitter connection, shield not connected to transducer



### CONTATO

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