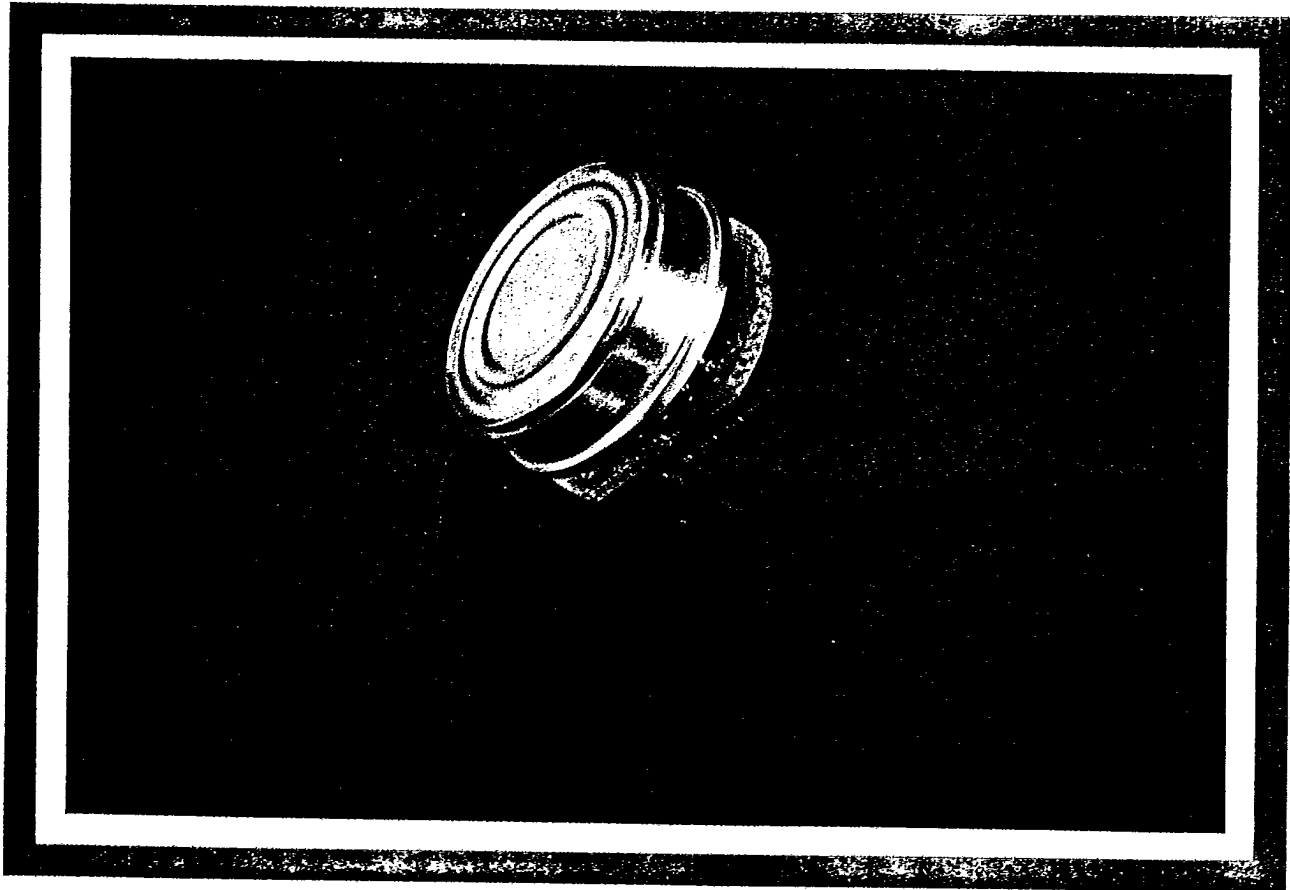


T-65-13

## Product Specifications

PSS 1220



## MODEL 1220 FLUSH MOUNT, ISO-TECHNOLOGY OEM STYLE PRESSURE TRANSDUCER

### DESCRIPTION

The Model 1220 Transducer is an OEM style, flush mount, pressure transducer which offers 0 to 100 mV output and is designed to be easily adapted by a customer with unique packaging requirements. It offers very reliable, consistent long term performance.

The sensor is a solid-state piezoresistive element which provides excellent stability and typical repeatabilities of  $\pm 0.02\%$ .

Using ISO-Technology design, the silicon sensor is protected from the process by a stainless steel media dia-

phragm. All media wetted parts are AISI Type 316L stainless steel (316L ss).

### FEATURES

- 3-year warranty
- Fully compensated and calibrated
- All 316L ss media wetted materials
- Compact package size

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**TYPICAL APPLICATIONS**

- Industrial control
- Infusion Pumps
- Diagnostics
- Refrigeration
- Environmental controls
- Pollution control

**PERFORMANCE SPECIFICATIONS**

**Accuracy** (Includes linearity, hysteresis, and repeatability. See Reference Conditions)

**Standard Performance (Max)**  $\pm 0.50\%$  of span-Terminal Based ( $\pm 0.25\%$  of span BFSL)

**Enhanced Performance (Max)**  $\pm 0.25\%$  of span-Terminal Based ( $\pm 0.13\%$  of span BFSL)

**Operating Temperature Range****Media Temperature**

-40 to +121°C (-40 to +250°F)

**Ambient Temperature**

-40 to +121°C (-40 to +250°F)

**Compensated Temperature Range**

-28 to +82°C (-20 to +180°F)

**Temperature Performance (over compensated range)****Standard Performance (Max)**

**Zero Error**  $\pm 0.0224\%/^{\circ}\text{C}$  ( $\pm 0.0125\%/^{\circ}\text{F}$ )

**Span Error**  $\pm 0.0224\%/^{\circ}\text{C}$  ( $\pm 0.0125\%/^{\circ}\text{F}$ )

**Enhanced Performance (Max)**

**Zero Error**  $\pm 0.0112\%/^{\circ}\text{C}$  ( $\pm 0.0063\%/^{\circ}\text{F}$ )

**Span Error**  $\pm 0.0112\%/^{\circ}\text{C}$  ( $\pm 0.0063\%/^{\circ}\text{F}$ )

**Repeatability**  $\pm 0.02\%$  of span

**Drift** Less than  $\pm 0.3\%$  of span over a six month period.

**RFI Effects** Typically less than 1% from 27 to 500 MHz for 5 V/m field intensity 1 m from the device.

**Overrange Effect** Zero shift is less than  $\pm 0.05\%$  of span after applying two times upper-range value or 7500 psi (whichever is less).

**Position Effect** The output changes less than 0.05% of span for a 90° tilt in any direction.

**Vibration Effect** The total effect (maximum effect at any point on the scale) at frequencies up to 200 Hz and amplitudes up to 6 mm (0.25 in) peak-to-peak or for accelerations up to 30 m/s<sup>2</sup> (3 "g"), whichever is smaller, is less than 0.1% of span.

**Calibration** Fixed range. Zero is calibrated to within  $\pm 2$  mV. Full scale is calibrated to true full scale within  $\pm 2$  mV.

**REFERENCE CONDITIONS**

**Media Temperature** 24  $\pm$  2°C (75  $\pm$  4°F)

**Ambient Temperature** 24  $\pm$  2°C (75  $\pm$  4°F)

**Vibration (in any plane)** 1 m/s<sup>2</sup> (0.1 "g") maximum

**Relative Humidity** 50  $\pm$  10%

**Ambient Pressure** 860 to 1060 mbar

**Supply Voltage** 10.000  $\pm$  0.001 V or 1.5  $\pm$  0.00015 mA, as applicable

**PHYSICAL SPECIFICATIONS**

**Pressure Connections** Flush diaphragm

**Overrange Protection** Will withstand pressure over-ranges up to two times upper-range value or 7500 psi (whichever is less) with negligible change in output.

**Material of Media Wetted Parts** 316L ss

**Fill Fluid** Dimethylsiloxane (DC-200). Less than 0.1 cc required.

**Mass** 22.5 g (0.8 oz)

**ELECTRICAL SPECIFICATIONS**

**Input Excitation**

**Voltage Input** 10.00 ±0.01 V (at 0.3 mA typ)  
**Current Input** 1.500 ±0.0015 mA (at 6 V typ)

**Excitation Limits**

**Voltage Input** 21.2 V max  
**Current Input** Increased input not recommended.

**Output (for zero pressure input)** 0.0 ±2 mV

**Output Span (for 0 to 100% input pressure change)**  
100 ±2 mV

**Output Common Mode Voltage**

**Voltage Input** 0.4 V typ  
**Current Input** 2 V typ

**Input Impedance**

**Voltage Input** 30 000 ohms typ; 20 000 ohms min;  
45 000 ohms max  
**Current Input** 4000 ohms typ; 2000 ohms min;  
6000 ohms max

**Output Impedance** 4500 ohms typ; 3500 ohms min;  
6000 ohms max

**Effect on Excitation Change** Output is ratiometric to input excitation.

**Response Time** When excited by an 80% (10% to 90%) input pressure change, the maximum time for the output to reach 90% of the final steady-state value is 100 microseconds.

**Isolation Voltage** 500 V dc or ac rms between the case and any input or output electrical connection will not cause damage.

**Electrical Connections**

**Standard** Four 0.025-inch square leads, 0.32-inch long, 0.10-inch spacing between leads.  
**Optional** Berg pin style mating connector with 6-inch, 22 gauge wires.

**MODEL CODE**

<b>PRESSURE RANGES</b>		<b>COMPENSATION</b>	
-05 = 0 to 25 psig/psia <sup>(a)</sup>	-16 = 0 to 2000 psig	-L = Laser trimmed compensation board attached	
-07 = 0 to 30 psig/psia	-17 = 0 to 3000 psig	-M = Laser trimmed compensation board unattached	
-08 = 0 to 50 psig/psia	-18 = 0 to 5000 psig <sup>(b)</sup>	<b>OPTION/ACCESSORIES</b> (Add only if desired)	
-09 = 0 to 100 psig/psia		-A = Enhanced accuracy and temperature performance.	
-10 = 0 to 150 psig/psia		-C = Mating connector with leads <sup>(c)</sup>	
-11 = 0 to 250 psig/psia			
-12 = 0 to 300 psig/psia			
-13 = 0 to 500 psig/psia			
-14 = 0 to 1000 psig/psia			
-15 = 0 to 1500 psig			
<b>TYPE</b>		<b>ORDER CODE</b>	
-G = Gauge Pressure		MODEL 1220	
-A = Absolute Pressure		Pressure Range	
<b>POWER SUPPLY</b>		Type	
-K = 10 V excitation		Power Supply	
-L = 1.5 mA excitation		Pressure Connection	
<b>PRESSURE CONNECTION</b>		Compensation	
-6 = Flush mount		Option/Accessories	

<sup>(a)</sup>For ranges below 25 psig/psia, consult factory

<sup>(b)</sup>Consult factory

<sup>(c)</sup>For evaluation units, -C mating connector (Option/Accessories) should be purchased for wiring convenience

**WIRING**

**Standard Electrical Connection**

Pin	Signal
A	-OUTPUT
B	+ INPUT
C	+ OUTPUT
D	-INPUT

**Optional Mating Connector Leads**

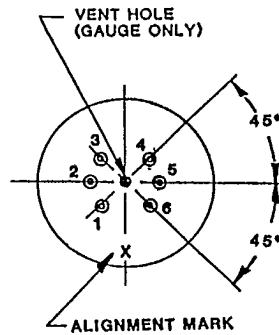
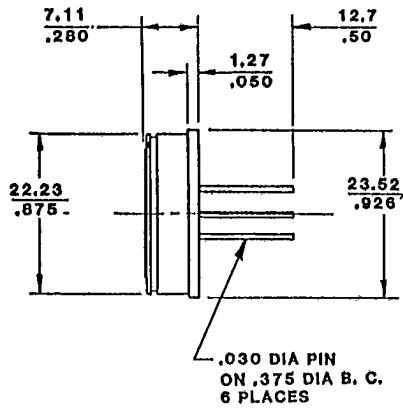
Wire Color	Signal
Red	+ INPUT
Black	-INPUT
Green	+ OUTPUT
White	-OUTPUT

Leads are 22 gauge, 6-inches long

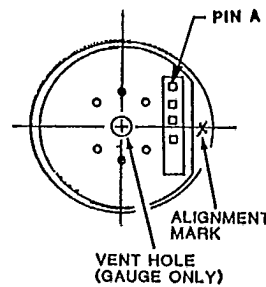
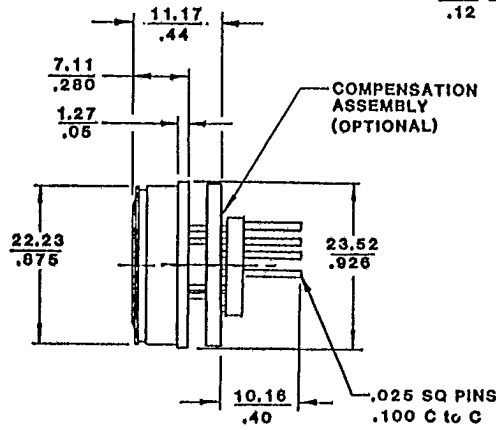
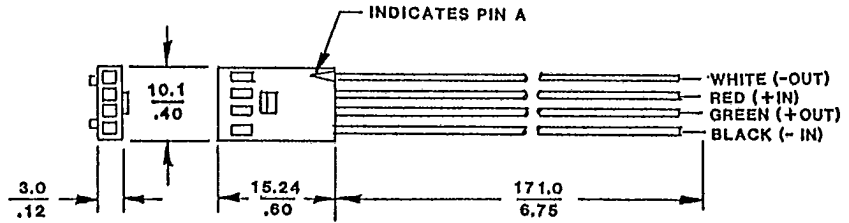
**3-YEAR WARRANTY**

Foxboro warrants the original purchaser that Foxboro-manufactured Model 1220 Transducers shall be free from defects in material and workmanship and agrees to either replace or repair free of charge, any such transducer which shall be returned to the factory within three (3) years from date of delivery, transportation charges prepaid by purchaser. Purchaser retains responsibility for application, corrosion resistance, and functional adequacy of transducer.

**DIMENSIONS—NOMINAL**



(COMPENSATION BOARD PROVIDED UNATTACHED)



**NOTE:**  
Mating connector compatible with compensation assembly only.

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