Model 1220 Low Pressure

PC Board Mountable Pressure Sensor 0-10" H₂O to 0-1 PSI

0-50 mV Output

Low Cost

Temperature Compensated



FEATURES

- Dual-in-line Package
- ▶ ±0.1% Non-linearity
- 1.0% Interchangeable Span (provided by current set resistor)
- ► Temperature Compensated
- ► Solid State Reliability
- ► Low Power

STANDARD RANGES

Range	psi	in H ₂ O
O to1	٠	•
0 to10	•	•



- Medical Instruments
- Air Flow Measurement
- > HVAC
- Process Control
- Factory Automation
- Leak Detection

DESCRIPTION

The Model 1220 is a temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration and intended for cost sensitive applications where excellent performance and long-term stability are required. The 1220 is a fixed voltage referenced, current set version, designed for 1% interchangeability to provide a 50 mV span at 1 PSI.

Integral temperature compensation is provided over a range of 0-50°C using laser-trimmed resistors. An additional lasertrimmed resistor is included to adjust the gain of an external differential amplifier. This provides sensitivity interchangeability of $\pm 1\%$.

The sensing element used in the low pressure Model 1220 includes a double bossed design that produces a sensor output of 100 mV (typical) at 1 PSI.

The 1220 is also available in ranges up to 0-100 PSI. For a compensated sensor using a gain set resistor as opposed to a current set resistor, please refer to the Model 1210.

DIMENSIONS



PERFORMANCE SPECIFICATIONS

Supply Voltage: See application schematic

Ambient Temperature: 25°C (Unless otherwise specified)

	PRESSURE RANGE							
	0 - 1 psi		0 - 10 in H₂0 (Note 10)					
PARAMETERS	MIN	TYP	МАХ	MIN	TYP	МАХ	UNITS	NOTES
Full Scale Output Span	49.5	50	50.5	24.75	25	25.25	mV	1
Zero Pressure Output			2			2	<u>+</u> mV	2
Pressure Non-linearity		0.1	0.25		0.05	0.1	±% Span	3
Pressure Hysteresis		0.01	0.05		0.01	0.1	±% Span	
Input & Output Resistance	2500	4400	6000	2500	4400	6000	Ω	
Temperature Error – Span		0.5	1.0		0.5	1.0	±% Span	4
Temperature Error – Zero		0.5	1.0		1.0	3.0	±% Span	4
Thermal Hysteresis – Zero		0.1			0.2		±% Span	4
Supply Current		1.5	2.0		1.5	2.0	mA	
Response Time (10% TO 90%)		1.0			1.0		mS	5
Output Noise		1.0			1.0		μV р-р	6
Output Load Resistance	2			2			MΩ	
Insulation Resistance (50 VDC)	50			50			MΩ	
Long Term Stability		0.2			0.5		±% Span/yr	
Pressure Overload			20			20	psi	
Operating Temperature	-40°C to +125°C							
Storage Temperature	-50°C to +150°C							
Media	Non-corrosive Gases Compatible with Wetted Materials							
Weight	3 Grams							

Notes

- 1. Output span of unamplified sensor.
- 2. Compensation resistors are in an integral part of the sensor package; no additional external resistors are required.
- 3. Best Fit Straight Line.
- 4. Temperature range: 0-50°C in reference to 25°C.
- 5. For a zero-to-full scale pressure step change.

CONNECTIONS



6. 10 Hz to 1kHz.

- 7. Tube length: L=470 \pm 5 mil, S=300 \pm 3 mil, N=no tube.
- 8. Lead pins can either be in the same or the opposite direction as the pressure tube. See Dimensions drawing for lead configurations.
- 9. Wetted materials are glass, ceramic, silicon, RTV, nickel, and aluminum.
- 10. O-10" water column performance is based on testing at 1 psi full scale pressure.

ORDERING INFORMATION

<u>1220 A - 001 G - 3 S</u>



APPLICATION SCHEMATIC



April 2000