

MODEL 1220 Low Pressure

PC Board Mountable Pressure Sensor

0-1 PSI

0-50 mV Output

Low Cost

Temperature Compensated

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



DESCRIPTION

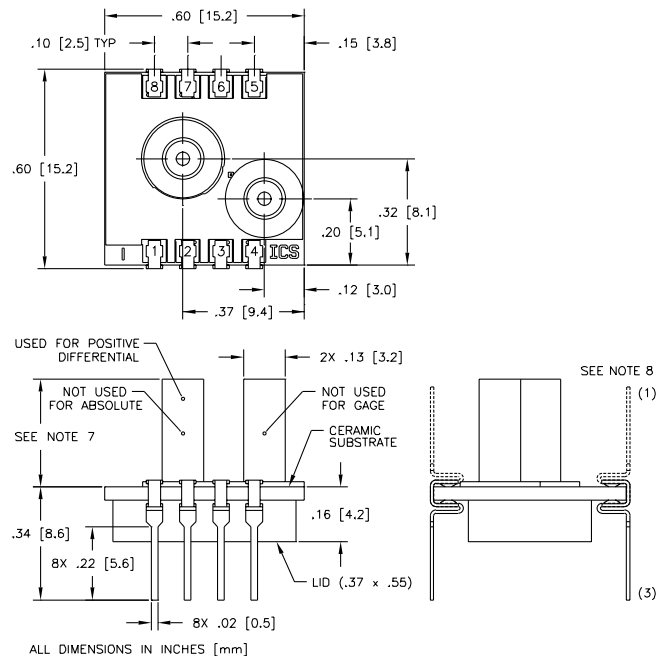
The Model 1220 is a temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration and intended for cost sensitive applications where excellent performance and long-term stability are required. The 1220 is a fixed voltage referenced, current set version, designed 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 laser-trimmed 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



FEATURES

- Dual-in-line Package
- $\pm 0.3\%$ Non-linearity
- 1.0% Temperature Performance (typical)
- 1.0% Interchangeable Span (provided by current set resistor)
- Temperature Compensated
- Solid State Reliability
- Low Power

STANDARD RANGES

Range	psi
0 to 1	•

PC Board Mountable Pressure Sensor

MODEL 1220 Low Pressure

PERFORMANCE SPECIFICATIONS

Supply Voltage: See application schematic
Ambient Temperature: 25°C (Unless otherwise specified)

PARAMETERS	PRESSURE RANGE 0 - 1 psi				NOTES
	MIN	TYP	MAX	UNITS	
Full Scale Output Span	49.5	50	50.5	mV	1
Zero Pressure Output			2	±mV	2
Pressure Non-linearity		0.2	0.3	±%Span	3
Pressure Hysteresis		0.01	0.05	±%Span	
Input & Output Resistance	2500	4400	6000	Ω	
Temperature Error - Span		0.5	1.0	±%Span	4
Temperature Error - Zero		0.5	1.0	±%Span	4
Thermal Hysteresis - Zero		0.1		±%Span	4
Response Time (10% to 90%)		1.0		mS	5
Output Noise		1.0		µV p-p	6
Output Load Resistance	2			MΩ	
Insulation Resistance (50 VDC)	50			MΩ	
Long Term Stability		0.2		±%Span/yr	
Pressure Overload			10	psi	
Operating Temperature	-40°C to +125°C				
Storage Temperature	-50°C to +150°C				
Media	Non-corrosive Gases Compatible with Wetted Materials				9
Weight	3 Grams				

Notes

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

- 10 Hz to 1kHz.
- Tube length: L=470 ± 5 mil, S=300 ± 3 mil, N=no tube.
- Lead pins can either be in the same or the opposite direction as the pressure tube. See Dimensions drawing for lead configurations.
- Wetted materials are glass, ceramic, silicon, RTV, nickel, gold, and aluminum.

ORDERING INFORMATION

1220 A - 001 G - 3 S

- Pressure Tubes (L, S, N - see note 7)
- Lead Configuration (1, 3 - see note 8)
- Type (G = Gage, D = Differential)
- Pressure Range
- Grade
- Model

APPLICATION SCHEMATIC

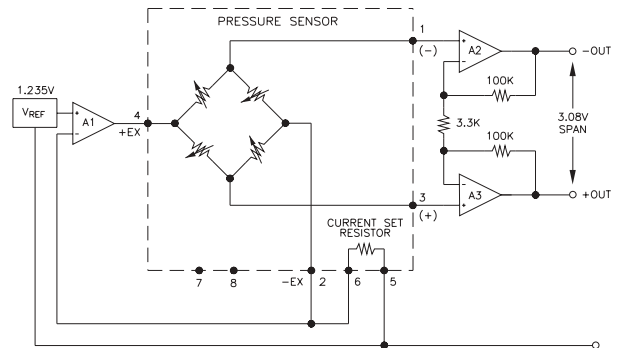


FIGURE 1: CURRENT SET CIRCUIT

July 2003

CONNECTIONS

