

MODEL 1220

PC Board Mountable Pressure Sensor

0-50 mV Output

Gage, Differential and Absolute
Temperature Compensated

- Process Control
- Medical Instrumentation
- HVAC
- Barometric Pressure
- Air Flow Management
- Avionics



FEATURES

- Dual-in-line Package
- $\pm 0.1\%$ Non-linearity
- $\pm 0.5\%$ Temperature Performance
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability
- Low Power

STANDARD RANGES

Range	psia	psid	psig
0 to 2		•	•
0 to 5	•	•	•
0 to 15	•	•	•
0 to 30	•	•	•
0 to 50	•	•	•
0 to 100	•	•	•

DESCRIPTION

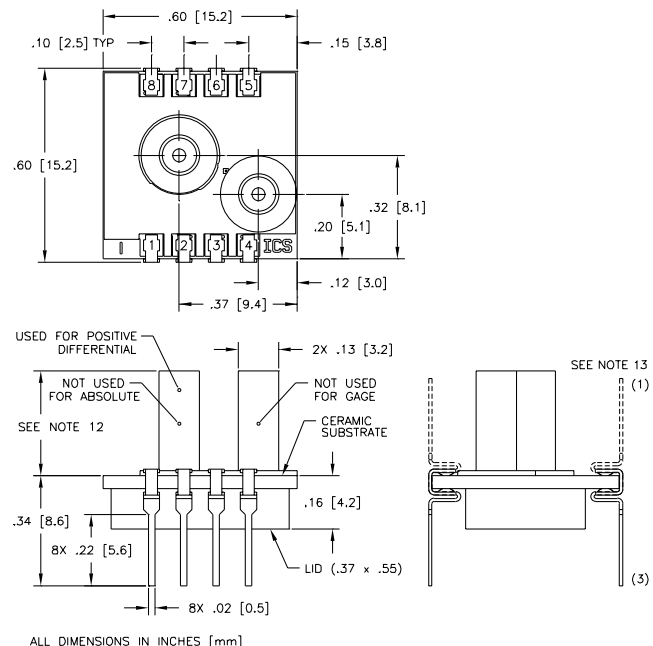
The Model 1220 is a temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration and intended for cost sensitive applications where excellent performance and long-term stability are required.

Integral temperature compensation is provided over a range of 0-50°C using laser-trimmed resistors. An additional laser-trimmed resistor is included to normalize pressure sensitivity variations by setting the current drive to the sensor bridge, resulting in an interchangeability of $\pm 1\%$ prior to amplification.

Gage, absolute, and differential pressure ranges from 0-2 PSI to 0-100 PSI are available. Multiple lead and tube configurations are also available for customizing the package for specific applications.

Please refer to the low pressure section for information on products with operating pressures less than 0-2 PSI. For a compensated sensor using a gain set resistor as opposed to a current set resistor, please refer to the Model 1210.

DIMENSIONS



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PERFORMANCE SPECIFICATIONS

Supply Voltage: See application schematic.

Ambient Temperature: 25°C (Unless otherwise specified)

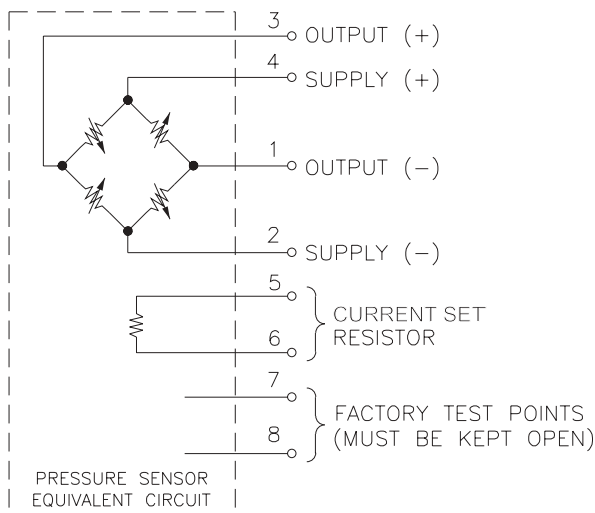
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span	49.5	50.0	50.5	mV	1
Zero Pressure Output			2	±mV	2
Pressure Non-linearity		0.05	0.1	±% Span	3
Pressure Hysteresis		0.01	0.1	±% Span	
Input & Output Resistance	2500	4400	6000	Ω	
Temperature Error - Span		0.3	0.5	±% Span	2, 4
Temperature Error - Zero		0.1	0.5	±% Span	1, 2, 4
Thermal Hysteresis - Zero		0.1		±% Span	
Supply Current			2.0	mA	
Response Time		1.0		msec	5
Output Noise		1.0		µV p-p	6
Output Load Resistance	2			MΩ	7
Insulation Resistance (50 VDC)	50			MΩ	
Pressure Overload			3X	Rated	8
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

1. For 2 psi output on a 5 psi sensor span is $20.0 \text{ mV} \pm 1\%$, amplified span is 1.232 V and TC zero temperature error is $\pm 1.25\%$.
2. Compensation resistors are an integral part of the sensor package; no additional external resistors are required. Pins 7 and 8 must be kept open.
3. Best Fit Straight Line.
4. Temperature range: $0\text{-}50^\circ\text{C}$ in reference to 25°C .
5. For a zero-to-full scale pressure step change.
6. 10 Hz to 1 kHz .

7. Prevents increase of TC-Span due to output loading.
8. 3X or 200 psi maximum, whichever is less. 20 psi for 2 psi and 5 psi versions.
9. Wetted materials are glass, ceramic, silicon, RTV, nickel, gold, and aluminum.
10. Soldering of lead pins: 250°C for 5 seconds maximum.
11. Tube length: $L=470 \pm 5$ mil, $S=300 \pm 3$ mil, $N=no$ tube.
12. Lead pins can either be in the same or the opposite direction as the pressure tube. See Dimensions drawing for lead configurations.

CONNECTIONS



ORDERING INFORMATION

1220 A - 015 G - 3 S

- Pressure Tubes (L, S, N - see note 12)
- Lead Configuration (1, 3 - see note 13)
- Type (G = Gage, A = Absolute, D = Differential)
- Pressure Range
- Grade
- Model

APPLICATION SCHEMATIC

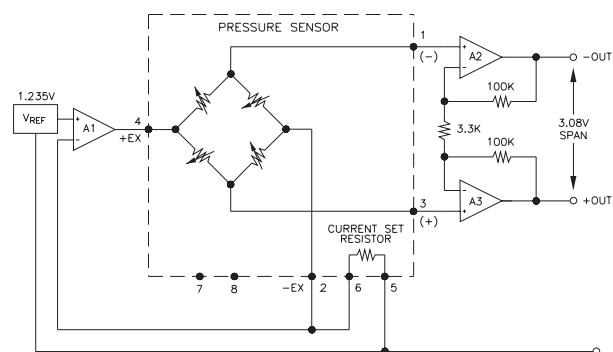


FIGURE 1: CURRENT SET CIRCUIT