# MODEL 1220 Low Pressure

**PC Board Mountable Pressure Sensor**

**0-1 PSI**

**0-50 mV Output**

**Low Cost**

**Temperature Compensated**

## 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 ±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.

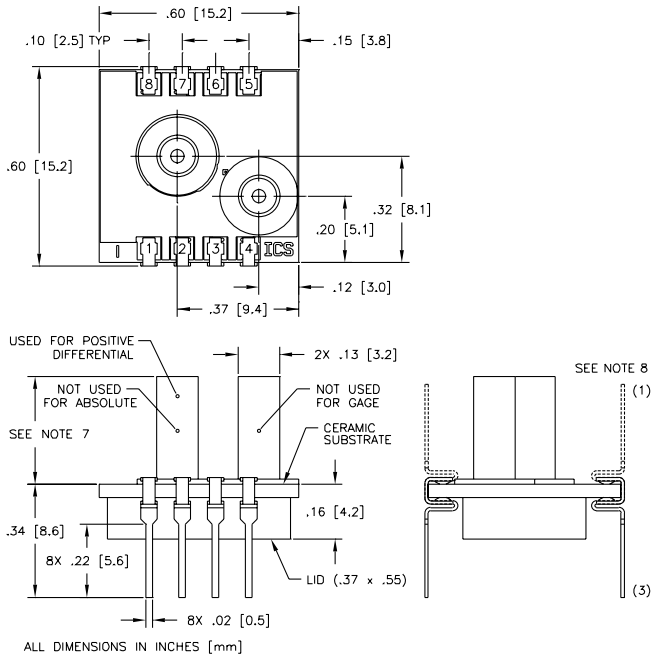
## FEATURES

- Dual-in-line Package
- ±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

## APPLICATIONS

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

## dimensions




## Standard Ranges

| Range | psi |
|---|---|
| 0 to 1 | • |

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## performance specifications

Supply Current: See application schematic

Ambient Temperature: 25°C (Unless otherwise specified)

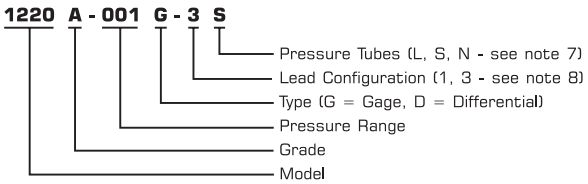
**PRESSURE RANGE 0 -1 psi**

| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|---|---|---|---|---|---|
| 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 | □ | |
| 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 | | | M□ | |
| Insulation Resistance (50 VDC) | 50 | | | M□ | |
| 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**

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.
6. 10 Hz to 1kHz.
7. Tube length: L=470 ± 5 mil, S=300 ± 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, gold, and aluminum.

## ordering information




## application schematic

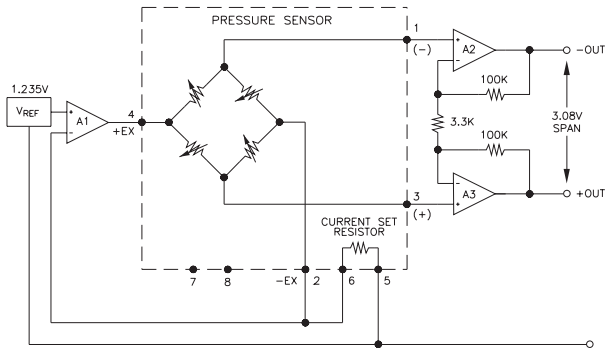



FIGURE 1: CURRENT SET CIRCUIT

## connections