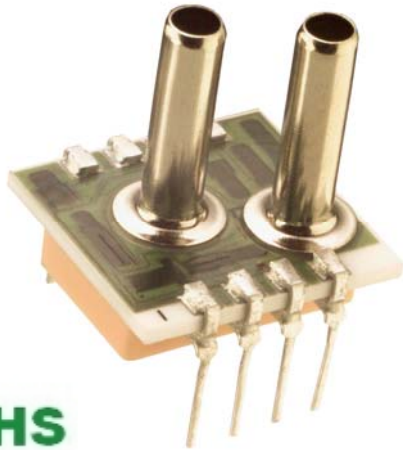


## 1230 UltraStable™



- PC Board Mountable Pressure Sensor
- 0-100 mV Output
- Current Excitation
- Gage, Differential, and Absolute
- Temperature Compensated

### DESCRIPTION

The 1230 is a high performance temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration. It uses Measurement Specialties' proprietary UltraStable™ die to provide excellent performance and long-term stability over wide temperatures.

Integral temperature compensation is provided over a range of -20°C to +85°C using laser-trimmed resistors. An additional laser-trimmed resistor is included to normalize pressure sensitivity variations by programming the gain of an external differential amplifier. This provides sensitivity interchangeability of  $\pm 1\%$ . Absolute, differential and gage pressure ranges from 0-15 to 0-100 psi are available. Multiple lead and tube configurations are available for different applications.

Please refer to the 1210 and 1220 for information on products with operating pressures less than 0-15 psi. For voltage excitation, please refer to the Model 1240.

### FEATURES

- Dual-in-Line Package
- -20°C to +85°C Compensated Temperature Range
- $\pm 0.1\%$  Non Linearity
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability

### APPLICATIONS

- Medical Instruments
- Altitude Measurement
- Process Control
- Factory Automation
- Handheld Calibrators
- Environmental Control

### STANDARD RANGES

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

## PERFORMANCE SPECIFICATIONS

Supply Current: 1.5 mA

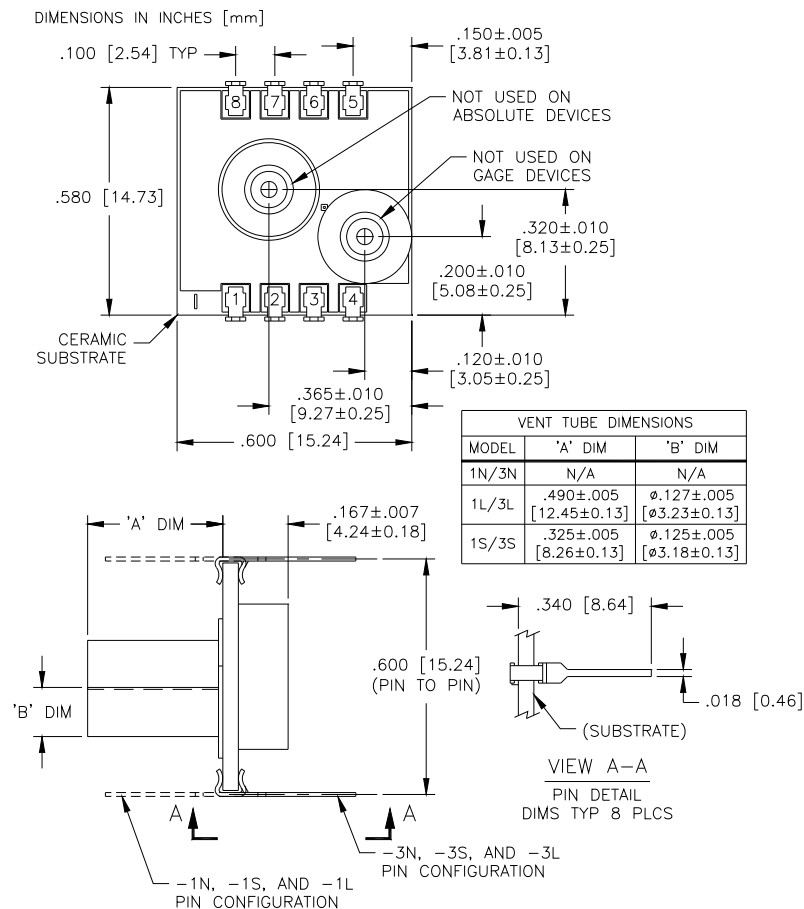
Ambient Temperature: 25°C (unless otherwise specified)

| PARAMETERS                           | MIN                                                                                              | TYP   | MAX  | UNITS  | NOTES |
|--------------------------------------|--------------------------------------------------------------------------------------------------|-------|------|--------|-------|
| Span                                 | 75                                                                                               | 100   | 150  | mV     | 1     |
| Zero Pressure Output                 | -2                                                                                               |       | 2    | mV     |       |
| Pressure Non Linearity               | -0.1                                                                                             | ±0.05 | 0.1  | %Span  | 2     |
| Pressure Hysteresis                  | -0.1                                                                                             | ±0.01 | 0.1  | %Span  |       |
| Input Resistance                     | 2200                                                                                             | 4000  | 5800 | Ω      |       |
| Output Resistance                    |                                                                                                  | 4200  |      | Ω      |       |
| Temperature Error – Span             | -0.5                                                                                             | ±0.3  | 0.5  | %Span  | 3     |
| Temperature Error – Zero             | -0.5                                                                                             | ±0.1  | 0.5  | %Span  | 3     |
| Temperature Coefficient – Resistance |                                                                                                  | 0.15  |      | %/°C   | 3     |
| Thermal Hysteresis – Zero            |                                                                                                  | ±0.05 |      | %Span  | 3     |
| Short Term Stability (Offset & Span) |                                                                                                  | ±0.05 |      | %Span  | 4     |
| Long Term Stability (Offset & Span)  |                                                                                                  | ±0.1  |      | %Span  | 5     |
| Supply Current                       | 0.5                                                                                              | 1.5   | 2.0  | mA     |       |
| Response Time (10% to 90%)           |                                                                                                  | 1.0   |      | mS     | 6     |
| Output Noise (10Hz to 1kHz)          |                                                                                                  | 1.0   |      | μV p-p |       |
| Pressure Overload                    |                                                                                                  |       | 3X   | Rated  | 7     |
| Compensated Temperature              | -20                                                                                              |       | +85  | °C     |       |
| Operating Temperature                | -40                                                                                              |       | +125 | °C     |       |
| Storage Temperature                  | -50                                                                                              |       | +150 | °C     |       |
| Weight                               |                                                                                                  |       | 3    | grams  |       |
| Solder Temperature                   | 250°C Max 5 Sec.                                                                                 |       |      |        |       |
| Media                                | Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Ceramic, Nickel, and Aluminum |       |      |        |       |

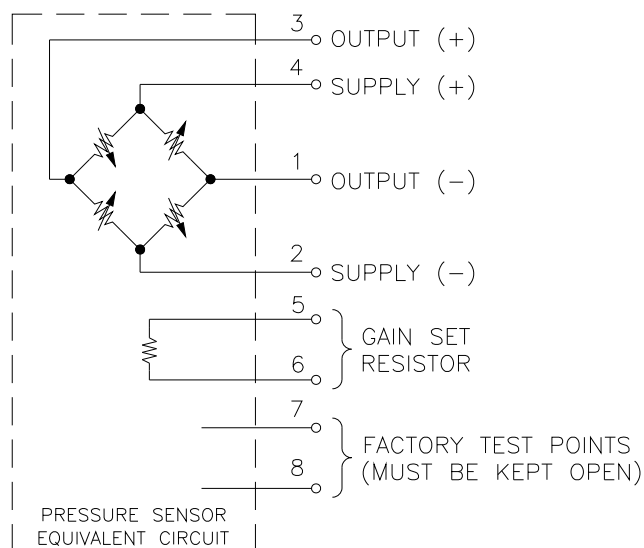
### Notes

1. Ratiometric to supply current. Span for 2PSI is 30 to 60mV.
2. Best fit straight line. Non Linearity for 2 PSI is ±0.2% and 5 PSI is ± 0.5%.
3. Maximum temperature error between -20°C and +85°C with respect to 25°C.
4. Short term stability over 7 days with constant current and temperature.
5. Long term stability over a one year period with constant current and temperature.
6. For a zero-to-full scale pressure step change.
7. 2X maximum for 100 psi device.

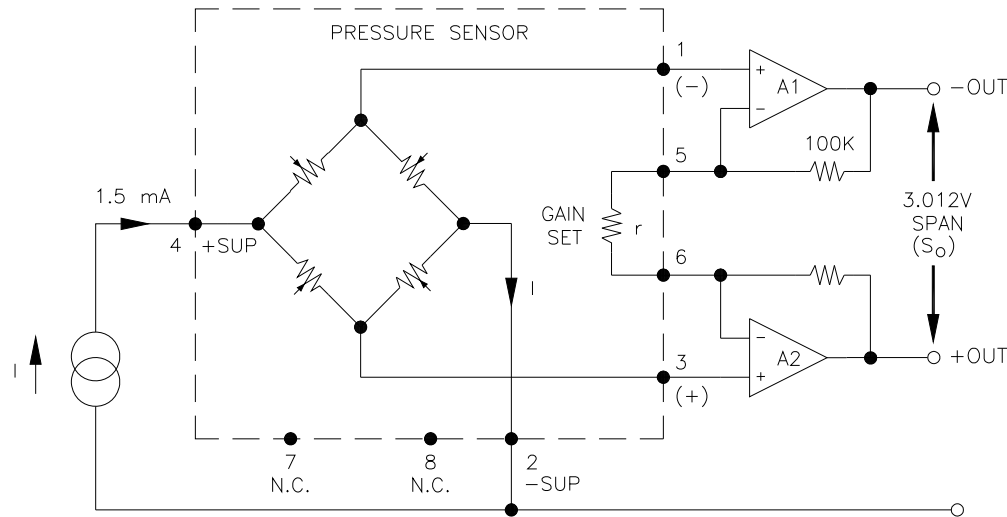
## DIMENSIONS



## CONNECTIONS



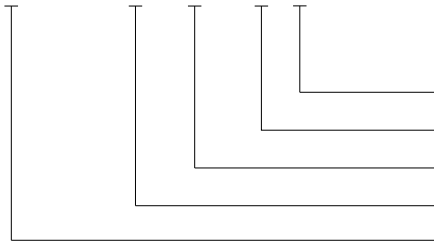
## APPLICATION SCHEMATIC



### APPLICATION SCHEMATIC

## ORDERING INFORMATION

1230 - 015 G - 3 S



Pressure Tubes (L = Long, S = Short, N = None)  
Lead Configuration (1,3 - See Dimensions Diagram)  
Type (G= Gage, A = Absolute, D = Differential)  
Pressure Range  
Model

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