



13



43



13 AND 43

Standard

SPECIFICATIONS

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

The 13 and 43 are temperature compensated, piezoresistive silicon pressure sensors packaged in a TO-8 configuration. It provides excellent performance and long-term stability.

Gage and absolute pressure ranges from 0-2 to 0-250 psi are available. 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 programming the gain of an external differential amplifier. This provides sensitivity interchangeability of $\pm 1\%$.

Please refer to the 13 and 43 1 psi datasheets for low pressure applications.

FEATURES

- ◆ TO-8 Package
- ◆ 0°C to 50°C Compensated
- ◆ Temperature Range
- ◆ $\pm 0.1\%$ Non Linearity
- ◆ 1.0% Interchangeable Span
- ◆ (provided by gain set resistor)
- ◆ Solid State Reliability

APPLICATIONS

- ◆ Medical Instruments
- ◆ Process Control
- ◆ Factory Automation
- ◆ Altitude Measurement
- ◆ Vacuum Measurement
- ◆ Handheld Calibrators

STANDARD RANGES

| Range | psig | psia |
|----------|------|------|
| 0 to 2 | ◆ | |
| 0 to 5 | ◆ | ◆ |
| 0 to 10 | ◆ | ◆ |
| 0 to 15 | ◆ | ◆ |
| 0 to 30 | ◆ | ◆ |
| 0 to 50 | ◆ | ◆ |
| 0 to 100 | ◆ | ◆ |
| 0 to 250 | ◆ | ◆ |

PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)

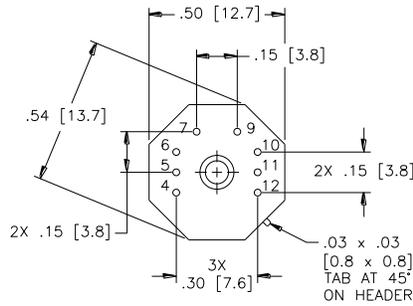
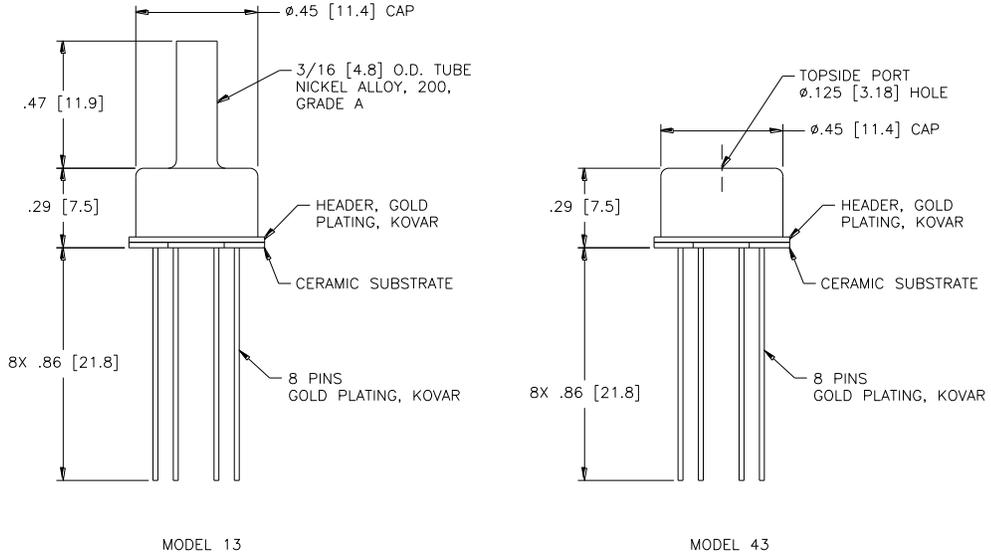
| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|-------------------------------------|---|-------|------|--------|-------|
| Span | 75 | 100 | 150 | mV | 1 |
| Span (2 psi version) | 30 | | 60 | mV | 1 |
| Zero Pressure Output | -2 | | 2 | mV | |
| Pressure Non Linearity | -0.1 | ±0.05 | 0.1 | %Span | 2 |
| Pressure Hysteresis | -0.05 | ±0.01 | 0.05 | %Span | |
| Input & Output Resistance | 2500 | 4400 | 6000 | Ω | |
| Temperature Error – Span | -0.5 | ±0.3 | 0.5 | %Span | 3 |
| Temperature Error – Zero | -0.5 | ±0.1 | 0.5 | %Span | 3 |
| Thermal Hysteresis – Zero | | ±0.1 | | %Span | 3 |
| Supply Current | | 1.5 | 2.0 | mA | |
| Response Time (10% to 90%) | | 1.0 | | mS | 4 |
| Output Noise (10Hz to 1kHz) | | 1.0 | | μV p-p | |
| Insulation Resistance (50 Vdc) | 50 | | | M Ω | 5 |
| Long Term Stability (Offset & Span) | | ±0.1 | | %Span | 6 |
| Pressure Overload | | | 3X | Rated | 7 |
| Compensated Temperature | 0 | | 50 | °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, Nickel, and Aluminum | | | | |

Notes

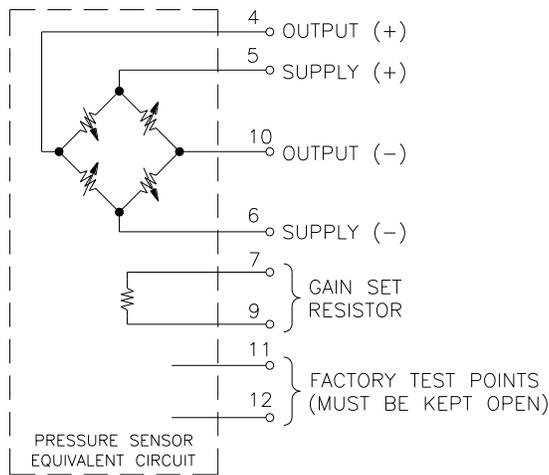
1. Ratiometric to supply current.
2. Best fit straight line.
3. Maximum temperature error between 0°C and 50°C with respect to 25°C. For 2psi devices, Temperature Error – Zero is ±1.25%.
4. For a zero-to-full scale pressure step change.
5. Minimum resistance between case and pins.
6. Long term stability over a one year period with constant current and temperature.
7. 2X maximum for 250 psi device. 20 psi maximum for 2 and 5 psi devices.

DIMENSIONS

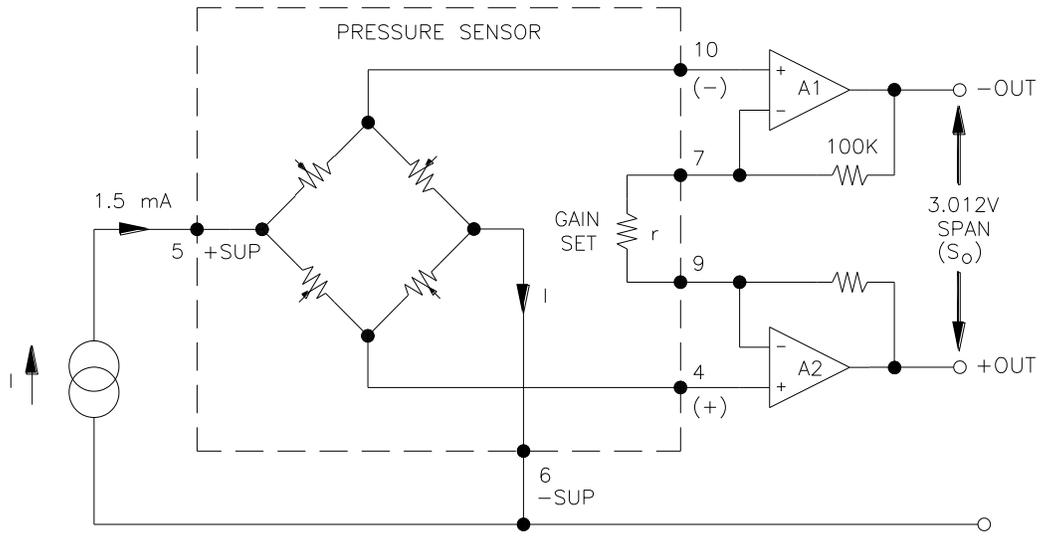
DIMENSIONS ARE IN INCHES [mm]



CONNECTIONS



APPLICATION SCHEMATIC



APPLICATION SCHEMATIC

ORDERING INFORMATION

13A – 030 A

| Pressure Range [psi] |
|----------------------|
| 002 (Gage Only) |
| 005 |
| 010 |
| 015 |
| 030 |
| 050 |
| 100 |
| 250 |

| Pressure Type | |
|---------------|----------|
| G | Gage |
| A | Absolute |

43A – 030 A

| Pressure Range [psi] |
|----------------------|
| 002 (Gage Only) |
| 005 |
| 010 |
| 015 |
| 030 |
| 050 |
| 100 |
| 250 |

| Pressure Type | |
|---------------|----------|
| G | Gage |
| A | Absolute |

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