

PC Board Mountable Pressure Sensor
0-100 mV Output
Gage Pressure
Wide Temperature Range

- ▶ **Medical Instrumentation**
- ▶ **Calibration**
- ▶ **Process Control**
- ▶ **Factory Automation**
- ▶ **Air Flow Management**
- ▶ **Leak Detection**



DESCRIPTION

The Models 36 and 37 are high performance, temperature compensated, piezoresistive silicon pressure sensors packaged in a differential TO-8 configuration. They provide excellent performance and long-term stability.

Differential pressure ranges from 0-15 PSI to 0-250 PSI are available. 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 in the Model 37 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 low pressure section for information on products with operating pressures less than 0-2 PSI. For an uncompensated sensor (Model 35) please contact the factory for additional information.

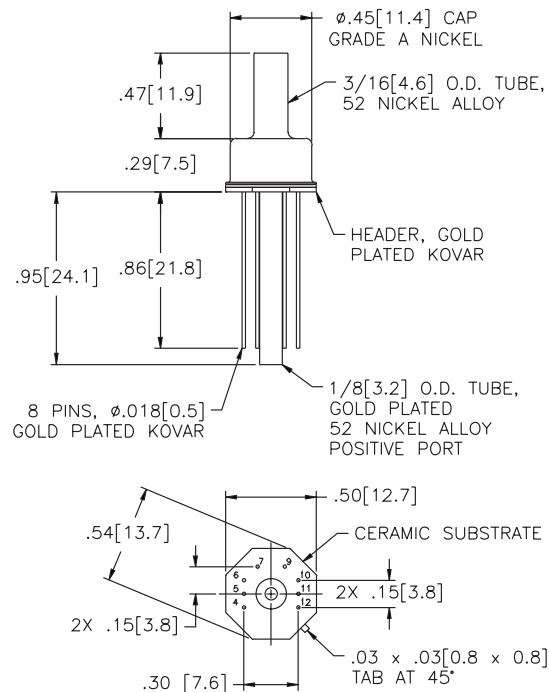
FEATURES

- ▶ TO-8 Package
- ▶ -20°C to +85°C Compensated Temperature Range
- ▶ $\pm 0.1\%$ Non-linearity
- ▶ $\pm 0.5\%$ Temperature Performance
- ▶ 1.0% Interchangeable Span (provided by gain set resistor)
- ▶ Solid State Reliability
- ▶ Low Power

STANDARD RANGES

| Range | psid |
|----------|------|
| 0 to 15 | ● |
| 0 to 30 | ● |
| 0 to 50 | ● |
| 0 to 100 | ● |
| 0 to 250 | ● |

DIMENSIONS



DIMENSIONS ARE IN INCHES [mm]

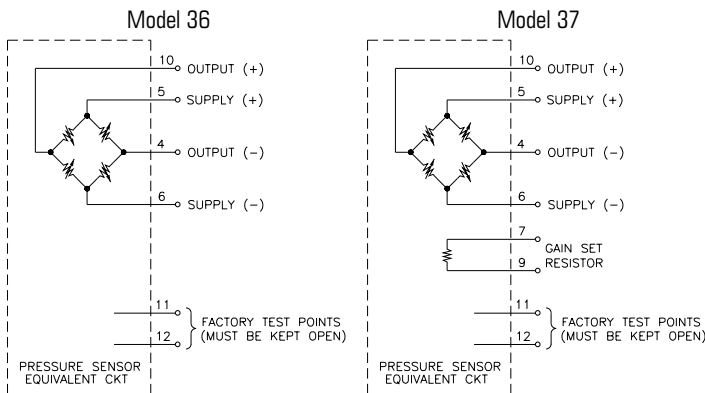
PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA
 Ambient Temperature: 25°C (Unless otherwise specified)

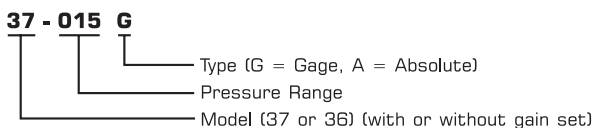
| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|---|--|-------|------|---------|-------|
| Full Scale Output Span, (without gain set resistor) | 75 | 100 | 150 | mV | 1 |
| Zero Pressure Output | | | 2 | ±mV | 3 |
| Pressure Non-linearity | | 0.05 | 0.1 | ±% Span | 2 |
| Pressure Hysteresis | | 0.01 | 0.1 | ±% Span | |
| Input Resistance | 2500 | 3500 | 4500 | Ω | |
| Temperature Error – Span | | 0.3 | 0.5 | ±% Span | 3, 4 |
| Temperature Error – Zero | | 0.1 | 0.5 | ±% Span | 3, 4 |
| Temperature Coefficient - Resistance | | 0.145 | | %/°C | 4 |
| Thermal Hysteresis – Zero | | 0.05 | | ±% Span | 4 |
| Short Term Stability of Offset | | 0.05 | | ±% Span | 11 |
| Short Term Stability of Span | | 0.05 | | ±% Span | 11 |
| Long Term Stability of Offset | | 0.1 | | ±% Span | 12 |
| Long Term Stability of span | | 0.1 | | ±% Span | 12 |
| Supply Current | 0.5 | 1.5 | 2.0 | mA | 5 |
| Response Time (10% to 90%) | | 1.0 | | msec | 6 |
| Output Noise | | 1.0 | | μV p-p | 7 |
| Output Load Resistance | 5 | | | MΩ | 8 |
| Insulation Resistance (50 VDC) | 50 | | | MΩ | 13 |
| Pressure Overload | | | 3X | Rated | 9 |
| Operating Temperature | -40°C to +125°C | | | | |
| Storage Temperature | -50°C to +150°C | | | | |
| Media | Non-corrosive Gases Compatible with Wetted Materials | | | | 10 |
| Weight | 3 Grams | | | | |

- Notes**
- Output span of unamplified sensor.
 - Best Fit Straight Line.
 - For Models 36, 37, compensation resistors are an integral part of the sensor package; no additional external resistors are required. Pins 11 and 12 must be kept open. Model 37 is interchangeable only when used with a gain stage as shown in the Gain Set Circuit.
 - Temperature range: -20°C to +85°C in reference to 25°C.
 - Guarantees input/output ratiometricity.
 - For a zero-to-full scale pressure step change.
 - 10 Hz to 1 kHz.
 - Prevents increase of TC-Span due to output loading.
 - 3X or 500 psi maximum, whichever is less. 20 psi for 2 psi and 5 psi versions.
 - Wetted materials are glass, ceramic, silicon, RTV, nickel, and aluminum.
 - Normalized offset bridge voltage: 7 days.
 - 1 year.
 - Between case and sensing element.

CONNECTIONS



ORDERING INFORMATION



APPLICATION SCHEMATIC

