

Models 22, 23 Low Pressure



PC Board Mountable Pressure Sensor

0-10" H₂O to 0-1 PSI

0-100 mV Output

Low Cost

Temperature Compensated

- ▶ Medical Instrumentation
- ▶ HVAC
- ▶ Factory Automation
- ▶ Process Control
- ▶ Avionics
- ▶ Air Flow Management



FEATURES

- ▶ Solid State Reliability
- ▶ 100mV Output Span
- ▶ Interchangeable
- ▶ Temperature Compensated
- ▶ Low Power

STANDARD RANGES

| Range | psi | in H ₂ O |
|---------|-----|---------------------|
| 0 to 1 | ● | |
| 0 to 10 | | ● |

DESCRIPTION

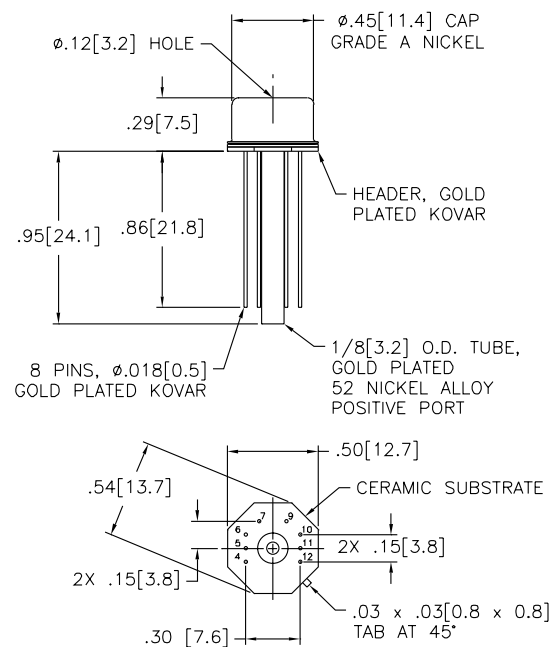
The Models 22 and 23 are temperature compensated, piezoresistive silicon pressure sensors packaged in TO-8 configurations. They provide excellent performance and long-term stability.

Integral temperature compensation is provided over a range of 0-50°C using a laser-trimmed ceramic compensation board. An additional laser-trimmed resistor is included in the Model 23 which can be used to adjust the gain of an external differential amplifier and provide sensitivity interchangeability of $\pm 1\%$.

The sensing element used in low pressure Models 22 and 23 has a double bossed design that produces a high sensor output of 100 mV (typical) at 1 PSI.

The Models 12 and 13 are also available in ranges up to 0-250 PSI. For sensors in a dual-in-line package please refer to the Models 1210 and 1220. For additional information regarding uncompensated sensors, please contact the factory.

DIMENSIONS



DIMENSIONS ARE IN INCHES [mm]

PERFORMANCE SPECIFICATIONS

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

| PARAMETERS | PRESSURE RANGE | | | | | | UNITS | NOTES |
|--------------------------------|--|------|------|----------------------------|------|------|------------|-------|
| | 0 - 1 psi | | | 0 - 10 in H ₂ O | | | | |
| | MIN | TYP | MAX | MIN | TYP | MAX | | |
| Full Scale Output Span | 75 | 100 | 150 | 25 | 35 | 50 | mV | 1 |
| Zero Pressure Output | | | 2 | | | 2 | ±mV | 2 |
| Pressure Non-linearity | | 0.1 | 0.25 | | 0.05 | 0.1 | ±% Span | 3 |
| Pressure Hysteresis | | 0.01 | 0.05 | | 0.01 | 0.1 | ±% Span | |
| Input & Output Resistance | 2500 | 4400 | 6000 | 2500 | 4400 | 6000 | Ω | |
| Temperature Error – Span | | 0.5 | 1.0 | | 0.5 | 1.0 | ±% Span | 4, 5 |
| Temperature Error – Zero | | 0.5 | 1.0 | | 1.0 | 3.0 | ±% Span | 4, 5 |
| Thermal Hysteresis – Zero | | 0.1 | | | 0.2 | | ±% Span | 4 |
| Supply Current | | 1.5 | 2.0 | | 1.5 | 2.0 | mA | |
| Response Time (10% TO 90%) | | 1.0 | | | 1.0 | | mS | 5 |
| Output Noise | | 1.0 | | | 1.0 | | μV p-p | 6 |
| Output Load Resistance | 2 | | | 2 | | | MΩ | |
| Insulation Resistance (50 VDC) | 50 | | | 50 | | | MΩ | 8 |
| Long Term Stability | | 0.2 | | | 0.5 | | ±% Span/yr | |
| Pressure Overload | | | 20 | | | 20 | 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. For most models, compensation resistors are in an integral part of the sensor package; no additional external resistors are required. Test pins must be kept open.

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.

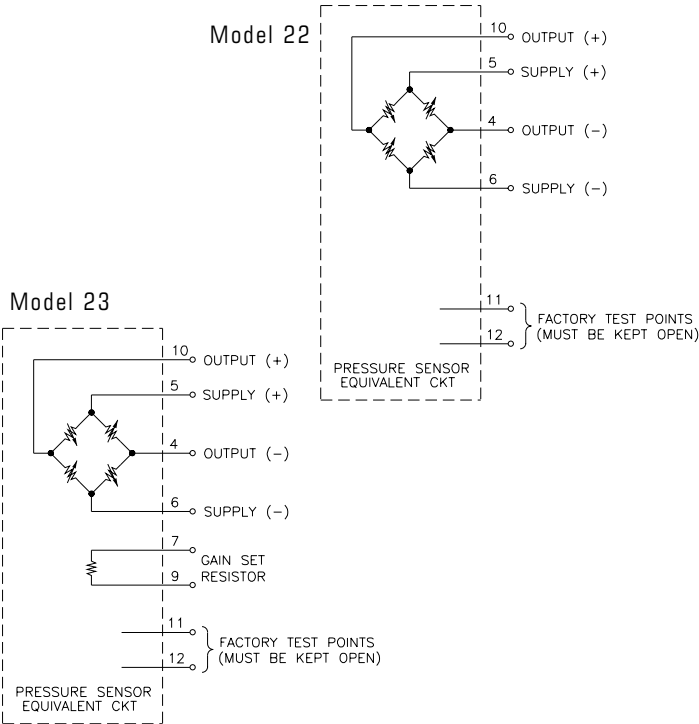
6. 10 Hz to 1 kHz.

7. 0-10" Water column performance is based on testing at 1 psi full scale pressure.

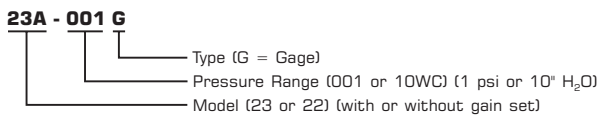
8. Between case and sensing element.

9. Wetted materials are glass, ceramic, silicon, RTV, nickel, and aluminum.

CONNECTIONS



ORDERING INFORMATION



APPLICATION SCHEMATIC

