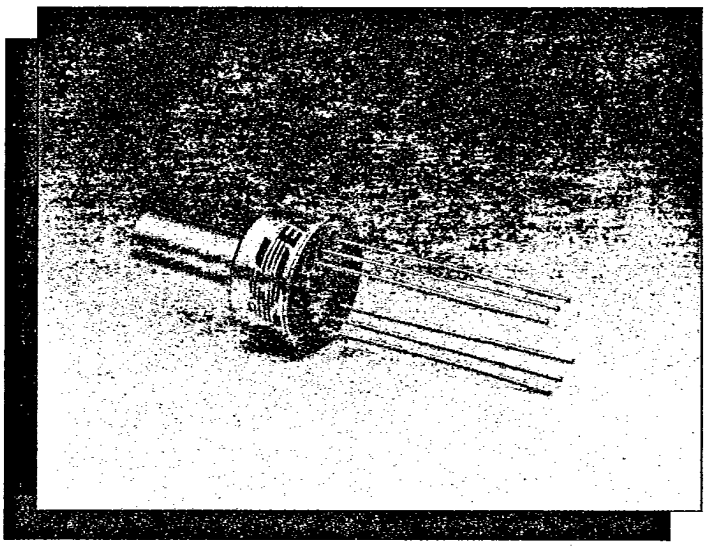
# OEM Pressure Sensor Gage and Absolute PC Board Mountable Serialized



## Features

- Solid State Reliability
- 100 mV Output Span
- Ratiometric
- Infinite Resolution
- Low Noise
- ±0.1% Accuracy
- Low Power
- Humidity Resistant
- Low Cost
- Performance Graded

## Typical Applications

- Medical
- Computer Peripherals
- Robotics
- Vacuum Measurement
- Avionics
- Automotive
- Industrial Controls
- Barometric Sensing
- Leak Detection
- Environmental Control

## Standard Ranges

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

## Description

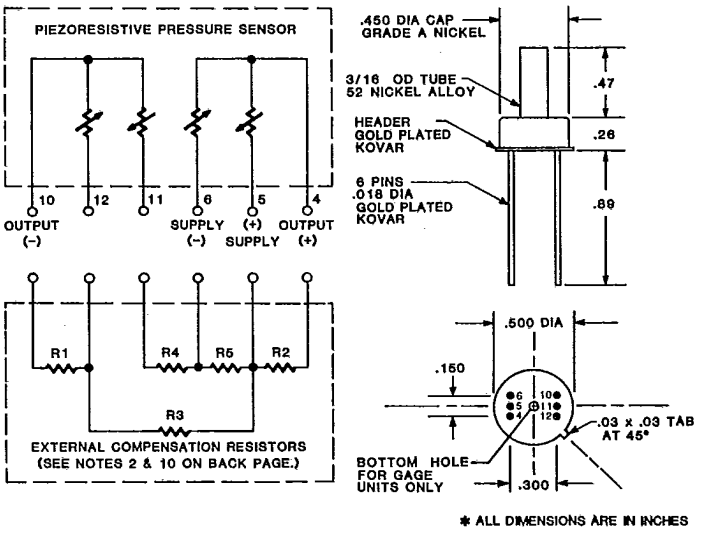
The Model 10 is a general purpose, solid state, piezoresistive pressure sensor that is packaged in a TO-8 configuration and is intended for use with non-corrosive gaseous media where excellent long-term stability is required. Each sensor is individually serialized.

Temperature compensation and calibration over 0-50°C is accomplished with the addition of only 3 external resistors, the values of which are included with each sensor.

Three performance grades are available in both gage and absolute pressure from 0-5 psi to 0-250 psi.

For limited temperature range and auto-zero applications where external resistor compensation data is not required, a fourth grade, the Model 11, is also available and is similar to the Model 10C at 25°C.

## Connections/Dimensions




* ALL DIMENSIONS ARE IN INCHES

# Model 10



T-65-13

## Performance Specifications

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

| PARAMETER | GRADE A MIN | A TYP | A MAX | B MIN | B TYP | B MAX | C MIN | C TYP | C MAX | UNITS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Full-Scale Output Span | 75 | 100 | 150 | 75 | 100 | 150 | 50 | | | mV | 2 |
| Zero Pressure Output | | | 5 | | | 5 | | | 5 | ±mV | 2, 10 |
| Linearity | | 0.05 | 0.10 | | | 0.25 | | | 0.50 | ±% Span | 3 |
| Pressure Hysteresis | | 0.01 | 0.05 | | | 0.10 | | | 0.15 | ±% Span | |
| Input & Output Resistance | 4000 | 5000 | 6000 | | 5000 | 6000 | | 5000 | | Ω | |
| Temperature Coefficient-Span | | 0.3 | 0.5 | | | 1.0 | | | 2.0 | ±% Span | 1, 2, 10 |
| Temperature Coefficient-Zero | | 0.1 | 0.5 | | | 1.0 | | | 2.0 | ±% Span | 1, 2 |
| Temperature Coefficient-Resistance | | .22 | | | .22 | | | .22 | | %/°C | 1, 2 |
| Thermal Hysteresis-Span | | 0.1 | | | 0.2 | | | 0.3 | | ±% Span | 1 |
| Thermal Hysteresis-Zero | | 0.1 | | | 0.2 | | | 0.3 | | ±% Span | 1 |
| Supply Current | | 1.5 | 2.0 | | 1.5 | 2.0 | | 1.5 | 2.0 | mA | 4 |
| Response Time (10% to 90%) | | 1.0 | | | 1.0 | | | 1.0 | | mS | 5 |
| Output Noise | | 1.0 | | | 2.0 | | | 5.0 | | μV p-p | 6 |
| Output Load Resistance | 2 | | | 2 | | | 2 | | | MΩ | 7 |
| Insulation Resistance (50VDC) | 50 | | | 50 | | | 50 | | | MΩ | |
| Long Term Stability | | 0.2 | | | 0.5 | | | 1.0 | | ±% Span/year | |
| Pressure Overload | | | 3X | | | 3X | | | 3X | Rated | 8 |
| Operating Temperature | −40°C to +125°C | | | | | | | | | | |
| Storage Temperature | −55°C to +150°C | | | | | | | | | | |
| Acceleration | 50g Max | | | | | | | | | | |
| Shock | 1000g Peak for 0.5 mS | | | | | | | | | | |
| Vibration | 20g Peak at 10 to 2000 Hz | | | | | | | | | | |
| Media | Non-corrosive Gases | | | | | | | | | | 9 |
| Weight | 3 grams | | | | | | | | | | |

## Notes

1. Temperature range: 0-50°C in reference to 25°C.
2. With external resistors ($R_1$ or $R_2$), ($R_3$ or $R_4$) and $R_5$ included in circuit on Front Page. If $R_1$ is required then $R_2$ is left open ($R_2 = \infty$) and vice versa. If $R_3$ is required then $R_4$ is a short ($R_4 = 0$) and vice versa. See Application Note TN-002.
3. Best fit straight line.
4. Guarantees output/input ratiometricity.
5. For a zero-to-full scale pressure step change.
6. 10Hz to 1kHz.
7. Prevents increase of TC-Span due to output loading.
8. 3X or 500 psi maximum, whichever is less.
9. Wetted materials are nickel and silicone gel. See Model 20 Series for corrosive and conductive media applications.
10. External Compensation Resistors
    a. Model 10: A computer printout is supplied with each sensor detailing the values of the 3 required external resistors along with open and short information for the other two locations.
    b. Model 11: Basic sensor. Specifications at 25°C are equivalent to Model 10C. No temperature testing is performed. Customer determines necessary external resistor values.
    c. Models 12 & 13 (See Data Sheets): Compensation resistors are an integral part of the sensor package. No additional external resistors are required. Also, Model 13 is interchangeable; see Application Note TN-003.
11. See Model 40 if a top pressure port is not required.

## Ordering Information

10 B—005 G
- G — Type (G=Gage, A=Absolute)
- 005 — psi Range
- B — Grade
- 10 — Model

## Represented By



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