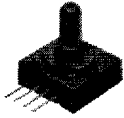


Pressure Sensors Gage/Unamplified

130PC Series

Temperature Compensated Sensors



FEATURES

- Miniature package
- Can be used to measure with vacuum or positive pressure
- Absolute and gage sensors available
- Calibrated Null and Span
- Temperature compensated for Span over 0 to 50°C
- Provides interchangeability
- Lowest cost 1, 100 and 150 psi calibrated and temperature compensated sensor

136PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ±0.01 VDC Excitation, 25°C

| | Min. | Typ. | Max. | Units |
|---|------|-------|------|-------|
| Excitation | --- | 10 | 16 | VDC |
| Null Offset | -1 | 0 | +1 | mV |
| Null Shift, 25° to 0°, 25° to 50°C | --- | ±2.0 | ±4.0 | mV |
| Sensitivity Shift, 25° to 0°, 25° to 50°C | --- | ±1.5 | ±3.0 | %Span |
| Repeatability & Hysteresis | --- | ±0.15 | --- | %Span |
| Response Time | --- | --- | 1.0 | msec |
| Input Resistance | --- | 6.8 K | --- | ohms |
| Output Resistance | --- | 4.0 K | --- | ohms |
| Stability over One Year | --- | ±0.5 | --- | %Span |
| Weight | --- | 5 | --- | grams |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-------------------------|--|
| Operating Temperature | -40° to +85°C (-40° to +185°F) |
| Storage Temperature | -55° to +125°C (-67° to +257°F) |
| Compensated Temperature | 0° to +50°C (32° to +122°F) |
| Shock | MIL-STD-202, Method 213 (150 g, half sine, 11 msec) |
| Vibration | MIL-STD-202, Method 204 (10 to 2000 Hz at 20 g) |
| Media | P2 port Wetted materials: polyester housing, epoxy adhesive, silicon, borosilicate glass, and silicon-to-glass bond* P1 port Dry gases only |

* Liquid media containing some highly ionic solutions could potentially neutralize the chip-to-glass tube bond.

136PC SERIES ORDER GUIDE

| Catalog Listing | Pressure Range psi | Span mV | | | Sensitivity mV/psi Typ. | Overpressure psi Max. | Linearity, %Span | |
|-----------------|--------------------|---------|------|-------|-------------------------|-----------------------|------------------|--------------|
| | | Min. | Typ. | Max. | | | P2 > P1 Typ. | P1 > P2 Typ. |
| 136PC01G2 | 0-1 | 18.5 | 20 | 21.5 | 20 | 20 | ±1.0 | ±0.50 |
| 136PC05G2 | 0-5 | 48.5 | 50 | 51.5 | 10 | 20 | ±1.00 | ±0.50 |
| 136PC15G2 | 0-15 | 98.5 | 100 | 101.5 | 6.67 | 45 | ±1.00 | ±0.50 |
| 136PC15G2L | 0-15 (L) | 38.5 | 40 | 41.5 | 2.67 | 60 | ±0.50 | ±0.25 |
| 136PC15G2L | 0-30 (0-15L) | 75 | 79 | 83 | 2.63 | 60 | ±0.75 | ±0.50 |
| 136PC65G2 | 0-65 | 25.5 | 27.0 | 28.5 | 0.50 | 150 | ±1.00 | --- |
| 136PC100G2 | 0-100 | 96 | 100 | 104 | 1.00 | 150 | ±0.40 | --- |
| 136PC150G2 | 0-150 | 56 | 60 | 64 | 0.40 | 225 | ±0.40 | --- |

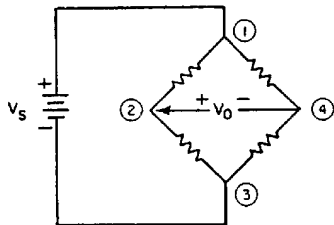
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Pressure Sensors Gage/Unamplified

130PC Series

ELECTRICAL CONNECTIONS

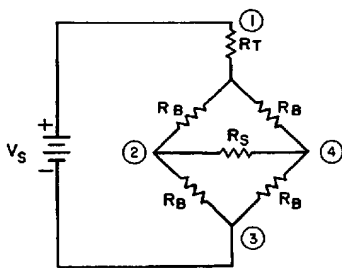
Voltage Excitation



NOTES

1. Circled numbers refer to sensor termination.
2. V_0 changes with pressure difference.
3. $V_0 = V_2 - V_4$ (referenced to pin 3).
4. Current excitation provides reduced sensitivity variation with temperature.

INTERNAL CIRCUITRY



NOTES

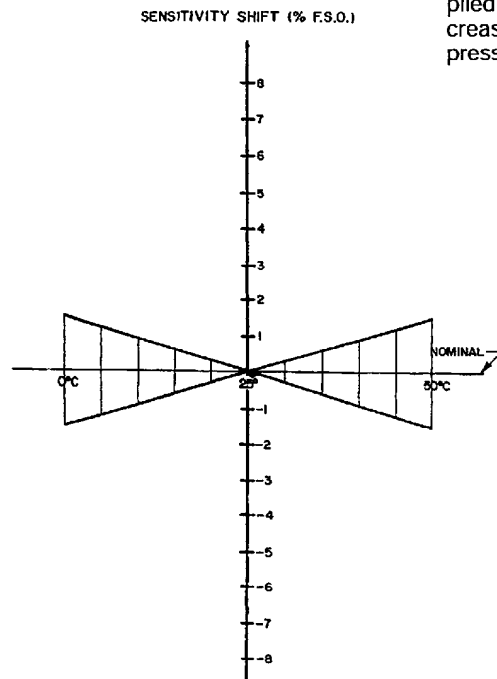
1. Circled numbers refer to sensor termination.
2. $V_0 = V_2 - V_4$ (referenced to pin 3).
3. R_B = Strain gage resistors (~5.0 k Ω).
4. R_T = Sensitivity temperature compensation resistor.
5. R_S = Sensitivity calibration resistor.

When a positive pressure is applied to port P2, the differential voltage $V_2 - V_4$ (voltage at pin 2, with respect to ground, increases and voltage at pin 4 decreases) increases linearly with respect to the input pressure. When a vacuum pressure is pulled at port P2 (or positive pressure applied to port P1) the voltage $V_2 - V_4$ decreases linearly with respect to the input pressure.

Unamplified

SENSITIVITY SHIFT

The diagram at right illustrates how sensitivity shift relates to temperature. Note that the maximum shift occurs at temperature extremes. Therefore, if a sensor is not exposed to the entire temperature range, the maximum sensitivity shift will actually be less than the value specified.

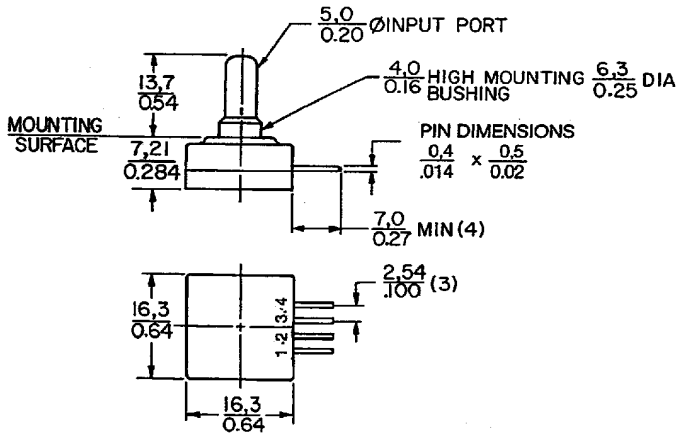
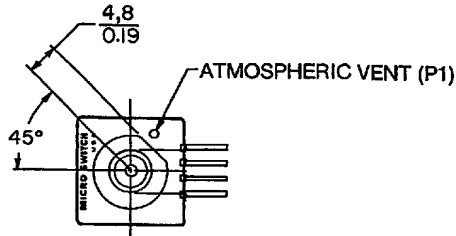


Pressure Sensors Gage/Unamplified

130PC Series

MOUNTING DIMENSIONS (For reference only)

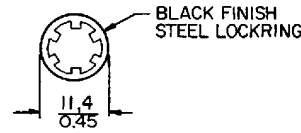
Gage Types



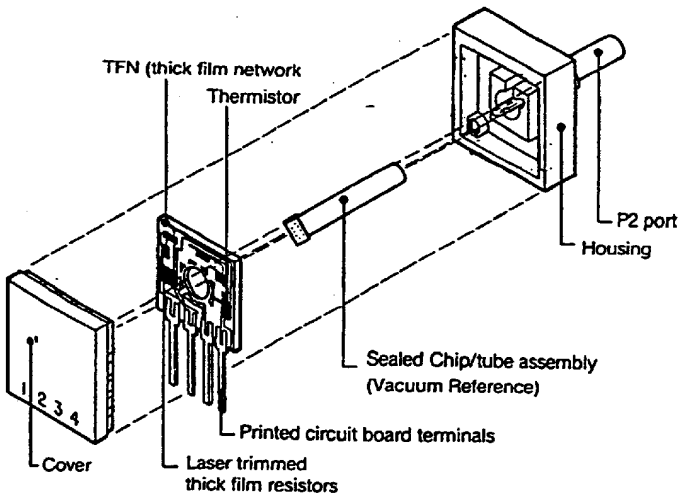
Terminals

- 1 - Vs (+)
- 2 - Output A
- 3 - Ground (-)
- 4 - Output B

Mounting Hardware



130PC CONSTRUCTION



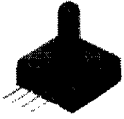
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Pressure Sensors

Absolute/Unamplified

130PC Series

Temperature Compensated Sensors



FEATURES

- Miniature package
- Calibrated Null and Span
- Temperature compensated for Span over 0 to 50°C
- Provides interchangeability

136PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ±0.01 VDC Excitation, 25°C

| | Min. | Typ. | Max. | Units |
|--|------|-------|------|--------|
| Excitation | --- | 10 | 16 | VDC |
| Null Offset @ 0 psia | --- | 0 | --- | mV |
| Null Shift, 25° to 0°, 25° to 50°C | --- | ±2.0 | ±4.0 | mV |
| Sensitivity Shift, 25° to 0°, 25° to 50° | --- | ±1.5 | ±3.0 | % Span |
| Repeatability & Hysteresis | --- | ±0.15 | --- | % Span |
| Response Time | --- | --- | 1.0 | msec |
| Input Resistance | --- | 6.8 K | --- | ohms |
| Output Resistance | --- | 4.0 K | --- | ohms |
| Stability over One Year | --- | ±0.5 | --- | % Span |
| Weight | --- | 5 | --- | grams |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-------------------------|---|
| Operating Temperature | -40° to +85°C (-40° to +185°F) |
| Storage Temperature | -55° to +125°C (-67° to +257°F) |
| Compensated Temperature | 0° to +50°C (32° to +122°F) |
| Shock | MIL-STD-202, Method 213 (150 g, half sine, 11 msec) |
| Vibration | MIL-STD-202, Method 204 (10 to 2000 Hz at 20 g) |
| Media | P2 port Hermetically sealed vacuum reference. P1 port Dry gases only |

Unamplified

136PC SERIES ORDER GUIDE

| Catalog Listing | Pressure Range psia | 2 psia Reference | | | Span mV | | | Sensitivity mV/psi Typ. | Overpressure psi Max. | Linearity, % Span Max. |
|-----------------|---------------------|------------------|--------|--------|---------|------|--------|-------------------------|-----------------------|------------------------|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | | | |
| 136PC15A2 | 0-15 | -14.43 | -13.33 | -12.23 | -97.5 | -100 | -102.5 | -6.67 | 45 | ±0.50 |
| 136PC15A2L | 0-15 (L) | -6.43 | -5.33 | -4.23 | -37.5 | -40 | -42.5 | -2.67 | 60 | ±0.25 |
| 136PC15A2L | 0-30 (0-15L) | -6.37 | -5.27 | -4.17 | -74 | -79 | -84 | -2.63 | 60 | ±0.50 |

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For application help: call 1-800-537-6945.

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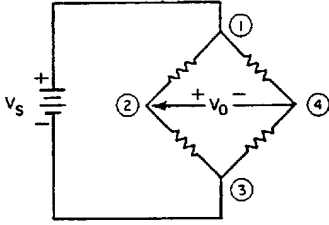
4

Pressure Sensors Absolute/Unamplified

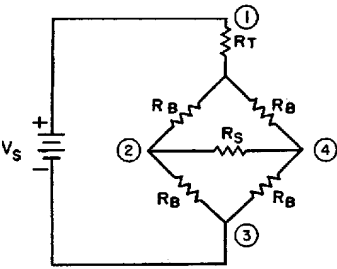
130PC Series

ELECTRICAL CONNECTIONS

Voltage Excitation



INTERNAL CIRCUITRY



NOTES

1. Circled numbers refer to sensor termination.
2. V_O changes with pressure difference.
3. $V_O = V_2 - V_4$ (referenced to pin 3).
4. Current excitation provides reduced sensitivity variation with temperature.

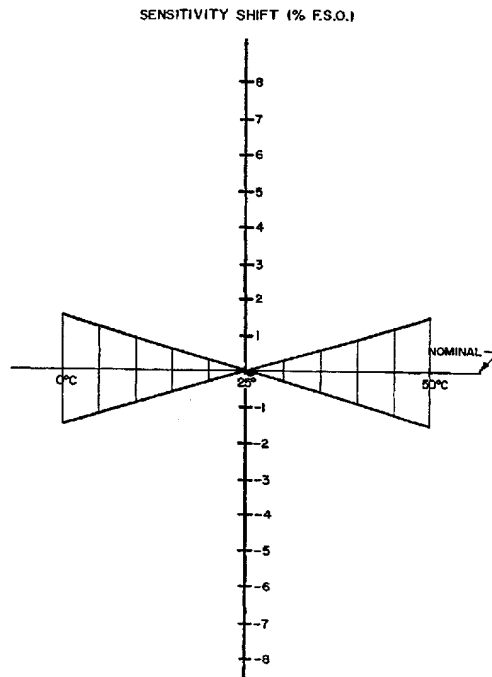
NOTES

1. Circled numbers refer to sensor termination.
2. $V_O = V_2 - V_4$ (referenced to pin 3).
3. R_B = Strain gage resistors ($\sim 5.0 \text{ k}\Omega$).
4. R_T = Sensitivity temperature compensation resistor.
5. R_S = Sensitivity calibration resistor.

When input pressure increases above 0 psia, voltage at pin 2 will decrease and voltage at pin 4 will increase with respect to ground (pin 3). This causes the output voltage, defined as the differential voltage $V_2 - V_4$, to decrease linearly (become more negative).

SENSITIVITY SHIFT

The diagram at right illustrates how sensitivity shift relates to temperature. Note that the maximum shift occurs at temperature extremes. Therefore, if a sensor is not exposed to the entire temperature range, the maximum sensitivity shift will actually be less than the value specified.



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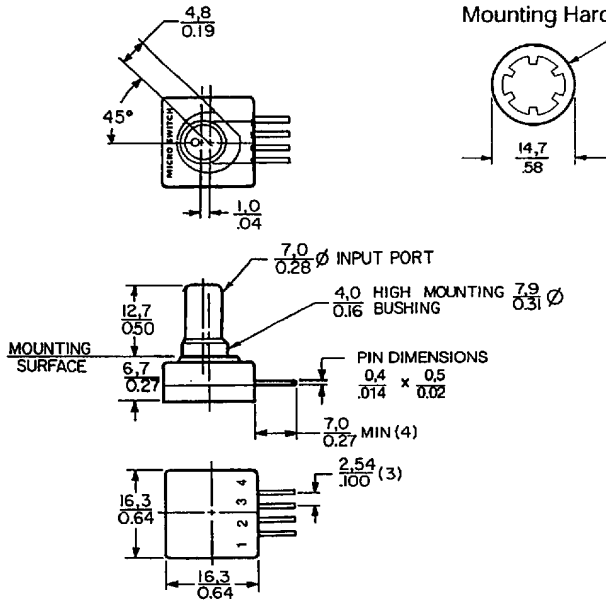
Pressure Sensors Absolute/Unamplified

130PC Series

MOUNTING DIMENSIONS (For reference only)

Absolute Types

- Terminals
 1 - Vs (+)
 2 - Output A
 3 - Ground (-)
 4 - Output B



Unamplified

130PC CONSTRUCTION

