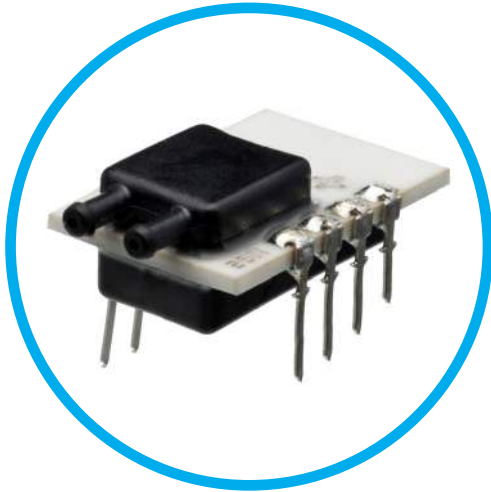


# P1K

Pressure Sensor

## Description

The P1K series of pressure sensors incorporates a piezo-resistive sensing element in a compact package. Using a 5 VDC supply voltage, the P1K provides a 0.25 VDC to 4.0 VDC output proportional to pressure. Internal temperature compensation provides an accurate, easy to use sensor. The industry standard terminal pins provides ease of use for your printed circuit board designs.



## Features

- Compact Package
- Amplified Temperature Compensated Linear Output
- No Position Sensitivity Above 0-2" H2O
- EMI/RFI and ESD Protected
- Superior Output Signal Stability
- Printed Circuit Board through Hole Mounting

## Applications

- Variable Air Volume Systems
- Filter Pressure Monitoring
- Duct Air Flow
- Modulated Furnace Controls
- Combustion Airflow
- Gaseous Leak Detection
- **Medical Applications:**  
Oxygen Concentrators, Ventilators, Anesthesia Equipment, CPAP, Wound Therapy.

## MAIN FEATURES

|                              |  |
|------------------------------|--|
| <b>Pressure Ranges</b>       | 2, 5, 10, +/-1, +/-2, +/- 5 inches of water;<br>2.5, 5, 12.5, 25, +/-2.5, +/- 5, +/- 12.5 mbar |
| <b>Electrical Connection</b> | PCB thru hole terminal pins, 2.54 mm [.100 inch] pitch   |
| <b>Pressure Connection</b>   | Barbed port, 1.9[.08] diameter   |
| <b>Housing Material</b>      | PPS, 40% glass filled, black   |
| <b>Terminal Pin Material</b> | Phosphor bronze, tin plated  |
| <b>Supply Voltage</b>        | 5.00 Vdc ± 0.25 Vdc  |
| <b>Output Signal</b>         | Ratiometric analog; 5% to 80% of supply voltage  |



## Pressure Ranges

|                              |                       |                       |                       |                       |                       |                       |
|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <b>from 0 to...</b>          | 2" H2O                | 5" H2O                | 10" H2O               | +/- 1" H2O            | +/- 2" H2O            | +/- 5" H2O            |
| <b>from 0 to...</b>          | 5mbar                 | 12.5mbar              | 20mbar                | +/- 2.5 mbar          | +/- 5mbar             | +/- 12.5 mbar         |
| <b>Proof Pressure (min)</b>  | 1.0 PSI/<br>(70mbar)  | 1.0 PSI/<br>(70mbar)  | 1.0 PSI/<br>(70mbar)  | 1.0 PSI/<br>(70mbar)  | 1.0 PSI/<br>(70mbar)  | 1.0 PSI/<br>(70mbar)  |
| <b>Burst Pressure Factor</b> | 1.8 PSI/<br>(125mbar) | 1.8 PSI/<br>(125mbar) | 1.8 PSI/<br>(125mbar) | 1.8 PSI/<br>(125mbar) | 1.8 PSI/<br>(125mbar) | 1.8 PSI/<br>(125mbar) |

## Physical

|                                |  |
|--------------------------------|--|
| <b>Expected Operating Life</b> | 10 million full pressure life cycles                     |
| <b>Shelf Life</b>              | 10 years minimum   |
| <b>Stability</b>               | +/- 0.5% of full scale span for 1 year                   |
| <b>Vibration</b>               | 10 G's peak to peak sinusoidal (20 to 1600Hz)            |
| <b>Shock Resistance</b>        | 50 G's ½ Sinewave, 11 mSec pulse, 18 pulses (6 per axis) |
| <b>Weight</b>                  | 3.5g max.  |
| <b>Operating Temperature</b>   | -20°C to 85°C  |
| <b>Storage Temperature</b>     | -40°C to 125°C   |
| <b>Humidity</b>                | Up to 92% RH in a non-condensing environment             |
| <b>Media</b>                   | Dry air  |

## Performance

|  |   |
|--|---|
| <b>Accuracy</b>  | 0.25% Max (% of full scale span) (RSS of linearity, hysteresis and repeatability) |
| <b>Temp. Error (0 to 60°C)</b>                           | 0.05%/ C [% of full scale span]   |
| <b>Temp. Error (-20 to 0°C and 60 to 85°C 0 to 60°C)</b> | 5% full scale span  |

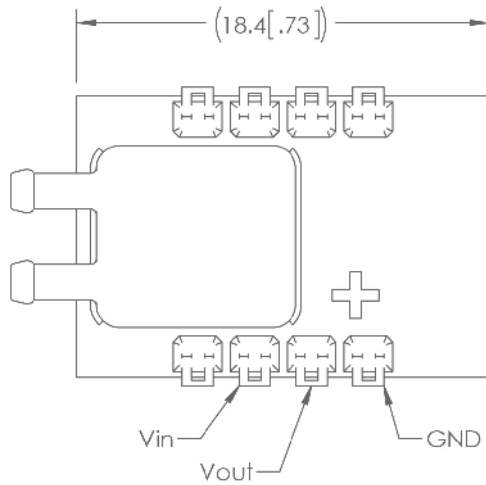
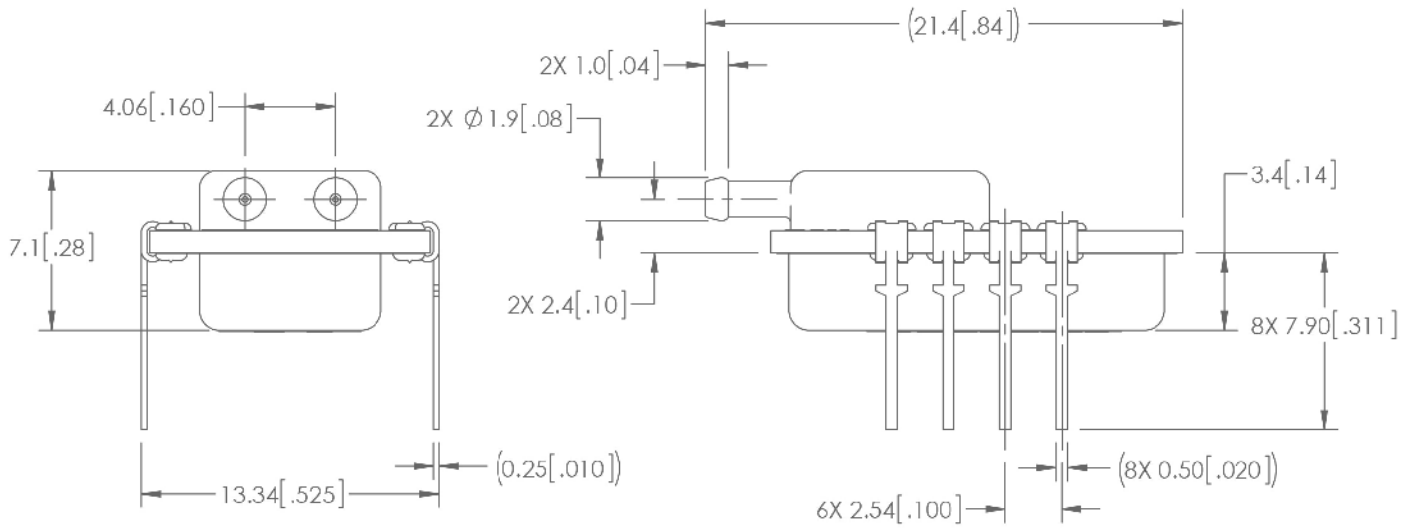
## Electrical

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Output Impedance</b>   | 100 Ohms max.                      |
| <b>Excitation Current</b> | 4mA max                            |
| <b>Minimum Load</b>       | 25k Ohms between output and ground |
| <b>Response Time</b>      | 5 mSec max (63% full scale)        |



# DIMENSIONS

Dimensions in mm [Inch]





## ORDERING OPTIONS

Example: P1K-1-2X16PA

P1K Pressure sensor 0 -1" H2O, .25 to 4.0 VDC output, no internal material seal, barbed tube fitting port with PCB Terminal Pin connection, no external material seal

|   |            |
|---|------------|
| <b>Family</b>   | <b>P1K</b> |
| <b>Pressure Ranges</b>  | <b>1</b>   |
| <b>1B:</b> +/- 1" H2O<br><b>2:</b> 0-2" H2O<br><b>2B:</b> +/- 2" H2O<br><b>5:</b> 0-5" H2O<br><b>5B:</b> +/- 5" H2O<br><b>10:</b> 0-10" H2O<br><b>2.5MBB:</b> 0-2.5 mbar<br><b>5MB:</b> 0-5 mbar<br><b>5MBB:</b> +/- 5 mbar<br><b>12.5MB:</b> 0-12.5 mbar<br><b>12.5MBB:</b> +/-12.5 mbar<br><b>25MB:</b> 0-25 mbar | <b>2</b>   |
| <b>Output Type</b>  | <b>X</b>   |
| <b>2:</b> 0.25 – 4.0 VDC  | <b>16</b>  |
| <b>Seal Material</b>  | <b>P</b>   |
| <b>X:</b> None  | <b>A</b>   |
| <b>Pressure Connection</b>  |            |
| <b>16:</b> Barb or Tube Fitting   |            |
| <b>Built-in Connector</b>   |            |
| <b>P:</b> PCB Terminal Pins   |            |
| <b>Seal Material</b>  |            |
| <b>A:</b> None  |            |



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