



Miniature Low Pressure  
Flow-Through Sensors  
**26PC Series, Compensated/Unamplified**  
**1 psi to 100 psi**



# Miniature Low Pressure Flow-Through Sensors

The 26PC Series Miniature Low Pressure Flow-Through Sensors feature proven sensing technology that uses a specialized piezoresistive micromachined sensing element to offer high performance, reliability, and accuracy.

Each sensor contains four active piezoresistive elements in a Wheatstone bridge configuration. When pressure is applied, the resistance changes and provides an output signal in mV proportional to the input pressure.

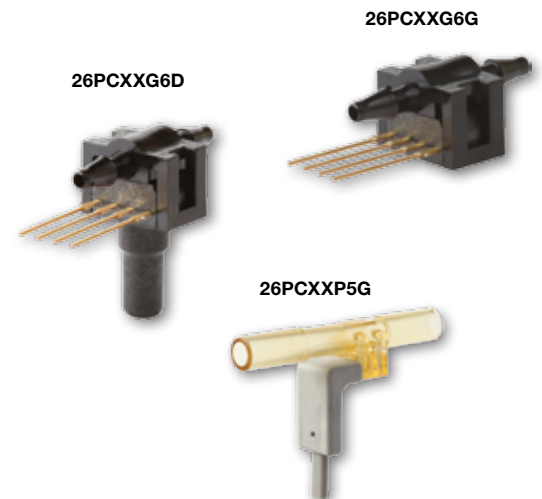
The low power, compensated, unamplified Wheatstone bridge circuit design offers 1 psi through 100 psi sensing ranges in a variety of pressure port types and termination configurations. The mV output is available in both negative and positive voltage.

Visit [www.honeywell.com/sensing](http://www.honeywell.com/sensing) to download 3D CAD drawings in IGES and STEP format, and 2D drawings in PDF format.

These sensors are intended for use with media compatible with plastics and media seals specified in the Nomenclature and Order Guide (see Figure 2). (2D drawings also provide plastic housing and port material information.) They are designed and manufactured according to ISO 9001 standards.

## *What makes our sensors better?*

- Selectable seals available to match media used
- Higher pressure ranges for use in high pressure applications
- Minimal dead space inhibits bacterial growth
- Available in both SIP and DIP packages
- Available with cable harness to allow off-board sensing



For all available configurations, see Figure 3.

MINIMAL DEAD SPACE • CABLE HARNESS AVAILABLE • SELECTABLE SEALS

## Features and Benefits

***In-line use minimizes the number of pneumatic connections and helps reduce system dead space.***

### **FLOW THROUGH DESIGN IN MINIATURE, PLASTIC PACKAGE**

Provides a reduced-cost alternative (versus stainless steel package)

### **INTEGRATED FLOW THROUGH DESIGN**

Eliminates the need for many additional connections and parts

***By matching pressure ranges to the application, we optimize resolution and improve system accuracy.***

### **VARIETY OF PRESSURE RANGES FROM 1 PSI TO 100 PSI**

Allows use in a wide variety of applications

### **ABSOLUTE, DIFFERENTIAL, WET-WET DIFFERENTIAL, GAGE AND VACUUM GAGE MEASUREMENT TYPES**

Allow customers to choose the sensor that fits their applications

### **ROBUST MEDIA COMPATIBILITY**

Requires no gel coating

### **DURABLE**

Operable after exposure to frozen conditions

### **ALSO AVAILABLE IN DIP, SIP, AND SMT PACKAGES**

Provides added design flexibility

# Potential Applications



## MEDICAL

### HEMODIALYSIS

May be used to monitor the correct pressure to help ensure optimal blood filtration

**Table 1. Absolute Maximum Ratings<sup>1</sup>**

| Characteristic    | Min. | Typ. | Max. | Unit | Note |
|-------------------|------|------|------|------|------|
| Supply voltage    | 2.5  | 10   | 16   | Vdc  | –    |
| Input resistance  | 5.5  | 7.5  | 11.5 | kOhm | –    |
| Output resistance | 1.5  | 2.5  | 3    | kOhm | –    |
| Time response     | –    | –    | 1    | ms   | 2    |

<sup>1</sup>Absolute maximum ratings are the extreme limits the device will withstand without damage.

<sup>2</sup>Time required for the output to increase from 10% to 90% of span in response to a step change in input pressure from the specified min. to max. operating pressure.

**Table 2. Technical Specifications**

| Characteristic  | Parameter   |
|---|---|
| Operating temperature range:<br>without EPDM seals<br>with EPDM seals | -40 °C to 85 °C [-40 °F to 185 °F]<br>-20 °C to 85 °C [-4 °F to 185 °F] |
| Compensated temperature range   | 0 °C to 50 °C [32 °F to 122 °F]   |
| Storage temperature range   | 55 °C to 100 °C [-67 °F to 212 °F]                                      |
| Soldering terminal temperature/time                                   | 315 °C [599 °F] max./10 s max.  |
| Vibration   | 10 G at 20 Hz to 2000 Hz  |
| Shock   | 100 G for 11 ms   |
| Life  | 1 million cycles min.   |

# 26PC Series, Compensated/Unamplified

**Table 3. Performance Characteristics (Vcc = 10.00 ± 0.01 Vdc; Ta = 25 °C [77 °F])**

| Characteristic                                   | Operating Pressure Range |         |                |        |                 |        |                 |        |                  |        |            |         | Unit  | Note |
|--|--------------------------|---------|----------------|--------|-----------------|--------|-----------------|--------|------------------|--------|------------|---------|-------|------|
|  | 0 psi to 1 psi           |         | 0 psi to 5 psi |        | 0 psi to 15 psi |        | 0 psi to 30 psi |        | 0 psi to 100 psi |        | 38 psi-low |         |       |      |
|  | Typ.                     | Max.    | Typ.           | Max.   | Typ.            | Max.   | Typ.            | Max.   | Typ.             | Max.   | Typ.       | Max.    |       |      |
| Span   | –                        | 16.7 ±2 | –              | 50 ±3  | –               | 100 ±3 | –               | 100 ±3 | –                | 100 ±5 | –          | 39.5 ±2 | mV    | 1    |
| Null offset                                      | –                        | 0 ±1.5  | –              | 0 ±1.5 | –               | 0 ±1.5 | –               | 0 ±1.5 | –                | 0 ±2.0 | –          | 0 ±1.5  | mV    | 2    |
| Linearity<br>(Best Fit Straight Line, P2>P1)     | 0.25                     | 0.5     | 0.4            | 0.5    | 0.25            | 0.5    | 0.1             | 0.2    | 0.4              | 0.6    | 0.1        | 0.5     | %span | 3    |
| Null shift<br>(0 °C to 25 °C;<br>25 °C to 50 °C) | ±0.5                     | ±1.0    | ±0.5           | ±1.0   | ±0.5            | ±1.0   | ±0.75           | ±1.5   | ±1.0             | ±0.5   | ±0.7       | ±1.5    | mV    | 4    |
| Span shift<br>(0 °C to 25 °C;<br>25 °C to 50 °C) | ±1.0                     | ±2.0    | ±1.0           | ±1.5   | ±0.75           | ±1.5   | ±0.75           | ±1.5   | ±0.5             | ±1.5   | ±1.0       | ±1.5    | %span | 5    |
| Repeatability and hysteresis                     | ±0.5                     | –       | ±0.2           | –      | ±0.2            | –      | ±0.2            | –      | ±0.2             | –      | ±0.2       | –       | mV    | 6    |
| Overpressure                                     | –                        | 20      | –              | 20     | –               | 45     | –               | 60     | –                | 200    | –          | 60      | psi   | 7    |

<sup>1</sup>Span is the algebraic difference between the output signal measured at the upper and lower limits of the operating pressure range, where Port 2 (P2) > Port 1 (P1).

<sup>2</sup>The output signal obtained when zero pressure is applied to all available ports.

<sup>3</sup>The maximum deviation of product output from a straight line fitted to the output measured over the specified operating pressure range, calculated according to BFSL. The straight line is fitted along a set of points that minimizes the sum of the square of the deviations of each of the points (“least-squares” method),

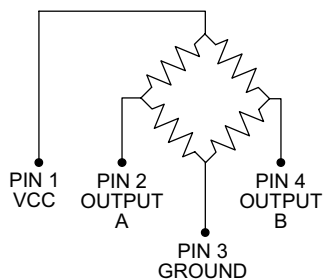
<sup>4</sup>The maximum deviation in offset due to changes in temperature over the compensated temperature range, relative to offset measured at a reference temperature of 25 °C.

<sup>5</sup>The maximum deviation in span due to changes in temperature over the compensated temperature range, relative to full-scale span measured at a reference temperature of 25 °C.

<sup>6</sup>Repeatability is the maximum difference between the output readings when the same pressure is applied consecutively, under the same operating conditions, with pressure approaching from the same direction within the specified operating pressure range. Hysteresis is the maximum difference between output readings when the same pressure is applied consecutively, under the same operating conditions, with pressure approaching from opposite directions within the specified operating pressure range.

<sup>7</sup>Overpressure is the maximum pressure that may safely be applied to the product for it to remain in specification once pressure is returned to the operating pressure range. Exposure to higher pressures may cause permanent damage to the product. Unless otherwise specified, this applies to all available pressure ports at any temperature within the operating temperature range.

**Figure 1. Circuit Diagram**



Output “A” increases as P2 pressure increases.

Output “B” decreases as P2 pressure increases.

| Symbol   | Description            |
|----------|------------------------|
| Vcc      | supply                 |
| OUTPUT A | bridge positive output |
| GROUND   | ground                 |
| OUTPUT B | bridge negative output |

# Miniature Low Pressure Flow-Through Sensors

Figure 2. Nomenclature and Order Guide<sup>1</sup>

For example, a **26PCBEG6G** catalog listing defines a 26PC Series Miniature Low Pressure Flow-Through Sensor, Compensated/Unamplified 5 psi pressure range, EPDM seal material, small flow-through pressure port type, 1x 4 SIP/15,2 mm [0.60 in] long termination configuration, normal polarity output, and gage pressure measurement type.

| 26PC   | B                   | E                              | G                                 | 6G  |
|--|---------------------|--------------------------------|-----------------------------------|---|
| Product Series   | Pressure Range      | Seal Material                  | Pressure Port Type                | Termination Configuration, Output, Pressure Measurement Type              |
| 26PC Series<br>Miniature Low<br>Pressure Flow-Through<br>Sensors,<br>Compensated/<br>Unamplified | <b>A</b> 1 psi      | <b>F</b> fluorosilicone        | <b>G</b> Small flow-through       | <b>2G</b> 2 x 2 DIP, normal polarity, gage                                |
|  | <b>B</b> 5 psi      | <b>E</b> EPDM                  | <b>P</b> Flow-through, long ends, | <b>5G</b> 1 x 4 SIP for wire harness <sup>3</sup> , normal polarity, gage |
|  | <b>C</b> 15 psi     | <b>N</b> neoprene <sup>2</sup> | <b>U</b> Flow-through, short ends | <b>6G</b> 1 x 4 SIP, 15,2 mm [0.60 in] long, normal polarity, gage        |
|  | <b>D</b> 30 psi     |                                |                                   |   |
|  | <b>F</b> 100 psi    |                                |                                   |   |
|  | <b>J</b> 38 psi-low |                                |                                   |   |

<sup>1</sup>Every combination may not be possible. Contact customer service.

<sup>2</sup>Available in 1 psi, 5 psi and 15 psi pressure ranges only.

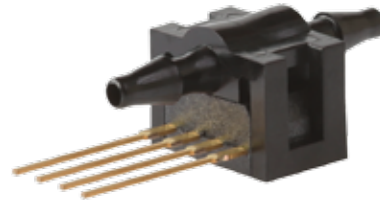
<sup>3</sup>Various wire harnesses with end connector options are available. Contact customer service.

Figure 3. All Available Configurations

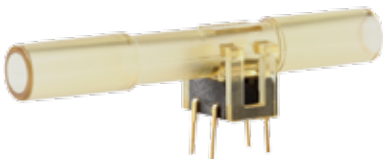
26PCXXG5G



26PCXXG6G



26PCXXP2G



26PCXXP5G



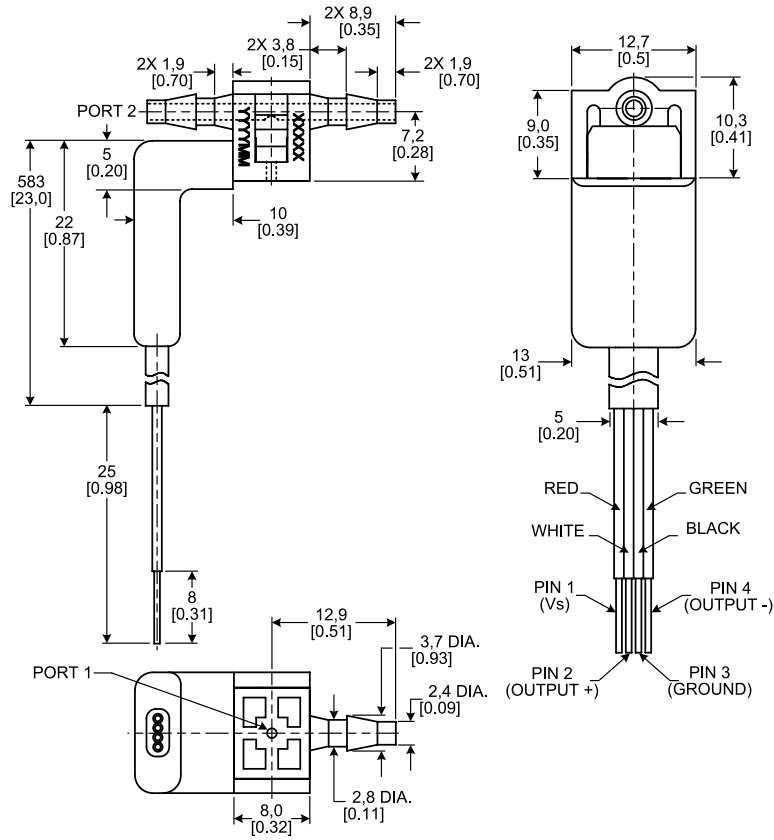
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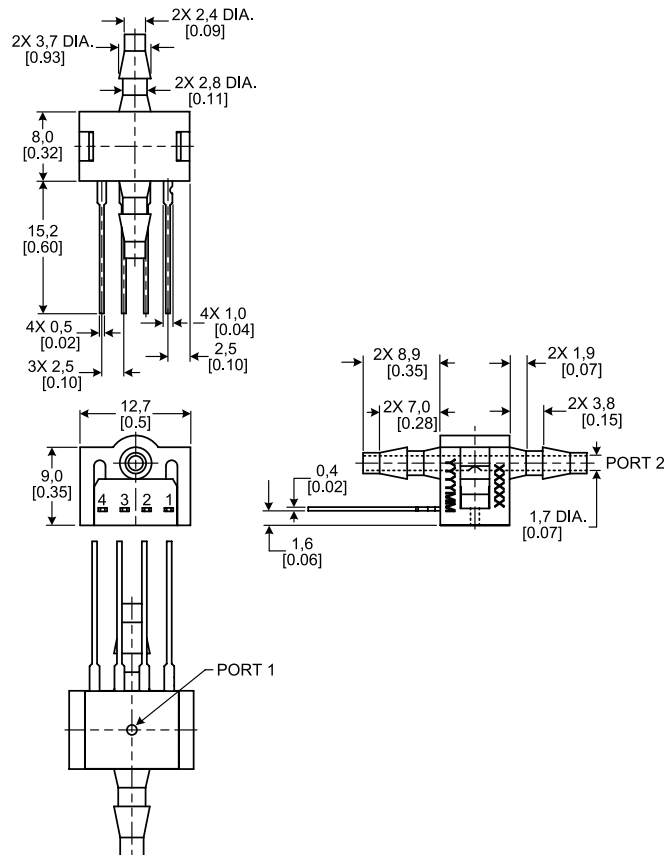
# 26PC Series, Compensated/Unamplified

Figure 4. Pressure Port Types and Termination Configuration Dimensions (For reference only: mm)

## 26PCXXG5G



## 26PCXXG6G







# 26PC Series, Compensated/Unamplified

Figure 4. Pressure Port Types and Termination Configuration Dimensions (continued)

26PCXXU5G

