Setra Systems Model 230 is a high output, low differential pressure transducer designed for wet to wet differential pressure measurements of liquids or gases. A fast-response capacitance sensor and signal conditioned electronic circuitry provide a highly accurate, linear analog output proportional to pressure. Both unidirectional and bidirectional pressure ranges are available for applications with line pressure up to 250 psig.

A unique isolation system transmits the motion of the differential pressure sensing diaphragm from the high line pressure environment (e.g. corrosive liquids) to the dry (air) enclosure where it moves one of a pair of capacitance plates proportionally to the diaphragm movement. All parts exposed to the pressure media are stainless steel and elastomer seals. The 230 has a NEMA 4/IP65 rated package to withstand environmental effects. This system responds to pressure changes approximately 20 times faster than conventional fluid-filled transducers. The electronic circuit linearizes output vs. pressure and compensates for thermal effects of the sensor.

**New!** **3-VALVE MANIFOLD**

The Model 230 can be supplied with an optional 3-valve manifold assembly for ease of installation and maintenance. The 3-valve manifold is a machined brass body requiring no internal pipe connections, thereby eliminating the risk of leaks. The manifold’s rugged, yet compact, construction requires minimum space for installation and use. The 230 bleed ports allow for total elimination of air in the line and pressure cavities. If the Model 230 is ordered with the 3-valve manifold, the system is shipped completely assembled and ready for wall or pipe mounting. (Order as Pressure Fitting Code 3V.)

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**Pressure Ranges**

<table>
<thead>
<tr>
<th>Pressure Range PSID</th>
<th>UNIDIRECTIONAL</th>
<th>BIDIRECTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proof Pressure Low Side</td>
<td>Proof Pressure Low Side</td>
</tr>
<tr>
<td>0 to 1</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>0 to 2</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>0 to 5</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>0 to 10</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>0 to 25</td>
<td>250</td>
<td>62.5</td>
</tr>
<tr>
<td>0 to 50</td>
<td>250</td>
<td>125</td>
</tr>
<tr>
<td>0 to 100</td>
<td>250</td>
<td>250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure Range PSI</th>
<th>Proof Pressure Low Side</th>
<th>Proof Pressure Low Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to ±0.5</td>
<td>20</td>
<td>1.25</td>
</tr>
<tr>
<td>0 to ±1</td>
<td>40</td>
<td>2.5</td>
</tr>
<tr>
<td>0 to ±2.5</td>
<td>100</td>
<td>6.25</td>
</tr>
<tr>
<td>0 to ±5</td>
<td>100</td>
<td>12.5</td>
</tr>
<tr>
<td>0 to ±10</td>
<td>200</td>
<td>25</td>
</tr>
<tr>
<td>0 to ±25</td>
<td>250</td>
<td>62.5</td>
</tr>
<tr>
<td>0 to ±50</td>
<td>250</td>
<td>125</td>
</tr>
</tbody>
</table>

*The zero will shift slightly when high differential overpressure is applied. The shift may be as much as ±10% FS with overpressure applied to the low pressure port. Other parameters (sensitivity, linearity, etc.) will not shift. The zero shift is normally only in one direction, the user may apply this zero shift to preset the sensor. Subsequent overload of less magnitude will not cause additional shift. The unit is pre-zeroed at the factory after application of maximum overload pressure to the high pressure port.*

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**Applications**
- Energy Management Systems
- Process Control Systems
- Flow Measurement of Various Gases or Liquids
- Liquid Level Measurement of Pressurized Vessels
- Pressure Drop Across Filters

**Features**
- NEMA 4/IP65 Rating
- No Liquid Fill Diaphragm
- Available with 3-Valve Manifold Assembly Option
- Low Line Pressure Effect
- Low Cost
- Fast Response
- Gas and Liquid Compatible
- Low Differential Ranges

When it comes to a product to rely on - choose the Model 230. When it comes to a company to trust - choose Setra.

Visit Setra Online: [http://www.setra.com](http://www.setra.com)
Performance Data

Accuracy RSS (at constant temp) ±0.25% FS
Non-Linearity .01% FS
Non-Repeatability 0.05% FS
Thermal Effects**
Compensated Range: °F (%FS)
±30 to +150 (-1 to +65)
Zero Shift %FS/100 (±)
Non-Linearity, BFSL ±0.05% FS
Span Shift %FS/100 (±)
Line Pressure Effect ±0.004% FS/psig line pressure.
Resolution Infinite, limited only by span output.
Span Output ±0.08mA (for 10 VDC output).
Zero Shift ±0.08mA (for 5 VDC output).
*Calibrated at nominal 70 °F, RSS of Non-Linearity, Non-Repeatability and Hysteresis.
**Units calibrated at nominal 70 °F. Maximum thermal error computed from this datum.

Environmental Data

Temperature Operating °F (-18 to +80)
Storage °F (-65 to +121)
Vibration 5g from 5Hz to 500Hz
Acceleration 10g
Shock 50g
*Operating temperature limits of the electronics only. Pressure media temperatures may be considerably higher or lower.

Physical Description

Case Stainless Steel/Aluminum
Electrical Connection Barrier strip terminal block with conduit enclosure & 0.875 Dia conduit opening
Pressure Fittings 1/4”-18 NPT internal or external fittings.
Weight 14.4oz

Electrical Data (Voltage) Cont’d.

Output* 0-5 VDC or 0-10 VDC
Output Impedance 100 ohms
*Calibrated into a 250 ohm load, operable into a 5000 ohm load or greater.
**Span (Full Scale) output factory set to within ±50 mV for 5 VDC output or ±100 mV for 10 VDC output.

Electrical Data (Current)

Circuit 2-Wires
Output* 4 to 20mA**
External Load 0 to 1000 ohms
Minimum loop supply voltage (VDC) = 9 + 0.02 x (Resistance of receiver plus line).
Maximum loop supply voltage (VDC) = 30 + 0.004 x (Resistance of receiver plus line).
*Calibrated at factory with a 24 VDC loop supply voltage and a 250 ohm load.
**Span output factory set to within ±0.08mA.

Pressure Media

Model 230: Gases or liquids compatible with 17-4 PH Stainless Steel, 300 Series Stainless Steel, Viton and Silicone O-Rings.
3-Valve Manifold: Gases or liquids compatible with 360 brass, Copper 122, Acetal plug valves and Nitrile O-rings.
Note: Hydrogen not recommended for use with 17-4 PH stainless steel.

ORDERING INFORMATION

Code all blocks in table.

Examples: Part No. 2301005PD2F118 for a 230 Transducer, 0 to 5 PSID Unidirectional Range, 1/4” Female NPT Fitting. 4 to 20mA Output, and Viton/Silicone Seals.
Part No. 2301005PD3V118 for a 230 Transducer, 0 to 5 PSID Unidirectional Range, 4 to 20mA Output, and Viton/Silicone Seals, assembled with the 3-Valve Manifold.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unidirectional</th>
<th>Bidirectional</th>
<th>Pressure Fitting</th>
<th>Output</th>
<th>Bleed Screw Seals</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>2301</td>
<td>2001PD = 0-1.0 PSID</td>
<td>0R5PB = ±0.5 PSID</td>
<td>2F = 1/4” NPT (F)</td>
<td>11 = 4 to 20mA</td>
<td>Standard</td>
<td>C = Calibration Certificate</td>
</tr>
<tr>
<td></td>
<td>002PD = 0-2.0 PSID</td>
<td>001PB = ±1.0 PSID</td>
<td>3V = 3-Valve</td>
<td>2D = 0 to 5 VDC</td>
<td>B = Viton/Silicone</td>
<td>A = Buna-N</td>
</tr>
<tr>
<td></td>
<td>005PD = 0-5.0 PSID</td>
<td>0R5PB = ±2.5 PSID</td>
<td></td>
<td>2E = 0 to 10 VDC</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>010PD = 0-10.0 PSID</td>
<td>0R5PB = ±5.0 PSID</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>025PD = 0-25.0 PSID</td>
<td>010PB = ±10.0 PSID</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>050PD = 0-50.0 PSID</td>
<td>025PB = ±25.0 PSID</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100PD = 0-100.0 PSID</td>
<td>050PB = ±50.0 PSID</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If 3-Valve Manifold Assembly is ordered separately without 230 transducer, order as Option 891. Please contact factory for versions not shown.

Specifications subject to change without notice.