Model 290
Sanitary Pressure Transducer

The Model 290 is Setra’s highest accuracy solution for measuring gauge and compound pressure ranges in sanitary processing applications. Unlike competitive transducers which use an oil filled design, the 316L stainless steel sensor is designed to operate without the need for an intermediary liquid within the sensor. The design of the 290 negates clamp effect making installation and service faster and easier than the competition. Its small footprint and accuracy (±0.2% FS) covers a wide range of pressure ranges that meet both 3A certification and withstand CIP/SIP environmental conditions, making it ideal for a variety of applications.

Robust Non-Liquid Filled Sensor
The Model 290 sanitary pressure transducer uses an air variable capacitance sensor. This sensor design eliminates chance of “product” contamination, position effect and thermal transients when compared to liquid filled sensors. The diaphragm is able to withstand pressure down to full vacuum for worry free operation during tank and piping evacuation cycles.

Negligible Clamping Effect
The process interface of the 290 negates the effect of clamping pressure on the output signal of the sensor. This design allows the sensor to be delivered in a small footprint with the diaphragm closely mounted to the process media which ensures the most accurate measurements.

Flexibility in Application
The Model 290 is the most versatile sanitary pressure transducer on the market. Its design allows full scale tank level measurements as low as 27.7" WC with an accuracy of 0.027" and up to 1000 PSI for process lines. The 316L wetted components meet 3A requirements for food and beverage industry applications; its optional 20Ra finish make it the ideal solution for use in Biotech applications.

Eliminates Process Contamination Risk
316L SS For Harsh Environments
Meets 3A Sanitary Standards

Model 290 Features:
- High Accuracy: ±0.2% FS
- Robust Non-Liquid Filled Capacitive Sensor
- Negligible Clamping Effect for Easy Installation
- Designed for Clean-In-Place (CIP) and Sterilize-In-Place (SIP) Installations
- 1.5” and 2”Tri-Clover Fittings
- High Overpressure Protection
- Not Sensitive to Thermal Shock

Applications:
- Food Processing
- Dairy and Beverage Processing
- Pharmaceutical Processing
- Liquid Level Control
- Sanitary Pipelines
Model 290
Sanitary Pressure Transducer

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Units</th>
<th>Pressure Type</th>
<th>Fitting</th>
<th>Output</th>
<th>Termination</th>
<th>Accuracy Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>2901</td>
<td>0-100 PSI</td>
<td>G</td>
<td>Gauge</td>
<td>1 1/2&quot; Tri-Clover</td>
<td>11</td>
<td>15 Cable</td>
<td>± 0.2% FS N None</td>
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<tr>
<td>001</td>
<td>0-200 mBar</td>
<td>C</td>
<td>Compound</td>
<td>1 1/2&quot; Tri-Clover</td>
<td>11</td>
<td>15 Cable</td>
<td>± 0.2% FS N None</td>
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DIMENSIONS

<table>
<thead>
<tr>
<th>Pressure Ranges 2&quot; Tri-Clover</th>
<th>PSIG Range</th>
<th>to. H20 Proof</th>
<th>PSIG Burst</th>
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<tbody>
<tr>
<td>1</td>
<td>100</td>
<td>27.7</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>160</td>
<td>55.4</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td>300</td>
<td>138.4</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>400</td>
<td>178.2</td>
<td>200</td>
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<tr>
<td>5</td>
<td>500</td>
<td>276.8</td>
<td>200</td>
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<tr>
<td>10</td>
<td>600</td>
<td>276.8</td>
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<tr>
<td>15</td>
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<td>415.2</td>
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<tr>
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<td>100</td>
</tr>
<tr>
<td>1-14.7</td>
<td>300</td>
<td>830.4</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>1600.0</td>
<td>180.4</td>
<td>400</td>
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<tr>
<td>3</td>
<td>1452</td>
<td>225</td>
<td>400</td>
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<tr>
<td>4</td>
<td>4000</td>
<td>1200</td>
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</tr>
<tr>
<td>5</td>
<td>5000</td>
<td>1500</td>
<td>1500</td>
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<tr>
<td>10</td>
<td>6000</td>
<td>2000</td>
<td>2500</td>
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</table>

PROOF PRESSURE

Example: Part No. 2901001PGT811153N = Model 290, 2" Tri-Clover 0-1 PSI, Gauge Pressure, 2" Tri-Clover Fitting, 4 to 20 mA Output, 15' Cable Termination, ± 0.2% FS Accuracy.

Performance Data

<table>
<thead>
<tr>
<th>2&quot; Tri-Clover Sanitary Fitting</th>
<th>1.5&quot; Tri-Clover Sanitary Fitting</th>
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</thead>
<tbody>
<tr>
<td>Accuracy RSS1 (at constant temp)</td>
<td>±0.20% FS ±0.20% FS</td>
</tr>
<tr>
<td>Non-Linearity (BFSL)</td>
<td>±0.17% FS ±0.15% FS</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>0.10% FS 0.12% FS</td>
</tr>
<tr>
<td>Non-Repeatability</td>
<td>0.025% FS 0.10% FS</td>
</tr>
<tr>
<td>Thermal Effect²</td>
<td>Max. Supply Voltage (VDC) 30 + 0.004 x resistance of receiver plus line</td>
</tr>
<tr>
<td>Compensated Range P°C</td>
<td>±20 to +180 (-7 to +82) ±20 to +180 (-7 to +82)</td>
</tr>
<tr>
<td>Zero/Span Shift %FS/100°F</td>
<td>±0.20% FS ±0.20% FS</td>
</tr>
<tr>
<td>Response Time</td>
<td>10 milliseconds 10 milliseconds</td>
</tr>
<tr>
<td>EM/RFI Effect</td>
<td>&lt; 1.0% output shift; 0 to 800 ohms</td>
</tr>
<tr>
<td>Clamping Effect, Zero/Span Shift</td>
<td>±0.25% FS ±0.25% FS</td>
</tr>
<tr>
<td>Maximum Vacuum (without affecting specifications)</td>
<td>Full on ranges ±50 PSI</td>
</tr>
<tr>
<td>Environmental Data</td>
<td></td>
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<tr>
<td>Operating Temperature°F</td>
<td>±40 to +260 (-40 to +125)</td>
</tr>
<tr>
<td>Storage Temperature°F</td>
<td>±45 to +260 (-55 to +125)</td>
</tr>
<tr>
<td>Vibration</td>
<td>10g, 50-1000Hz</td>
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<tr>
<td>Shock</td>
<td>50g operating</td>
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Physical Description

| Top Access Through Seat Screws |
| Stainless Steel |

Electrical Data

<table>
<thead>
<tr>
<th>Circuit</th>
<th>2-Wire</th>
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<tbody>
<tr>
<td>Output¹</td>
<td>4 to 20 mA</td>
</tr>
<tr>
<td>Zero/Span Adjustment</td>
<td>± 0.5 mV</td>
</tr>
<tr>
<td>External Load</td>
<td>0 to 800 ohms</td>
</tr>
<tr>
<td>Min. Supply Voltage (VDC)</td>
<td>12.0 ± 0.02 x resistance of receiver plus line</td>
</tr>
<tr>
<td>Max. Supply Voltage (VDC)</td>
<td>30 ± 0.004 x resistance of receiver plus line</td>
</tr>
</tbody>
</table>

Note: Setra quality standards are based on ANSI-Z540-1. The calibration of this product is NIST traceable.

Power Supply Voltage:
Variations in the power supply voltage cause less than 0.005 mA change in the transmitter's current output, per volt change in the power supply. Reverse excitation will not damage circuit.

Approval:
CE

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