Model 270

SETRACERAM™ for Barometric, Gauge or Absolute Pressure

Barometric Pressure: 600-1100 hPa/mb, 800-1100 hPa/mb
Absolute: 0 to 10, 20, 50, 100 psia / Gauge Pressure: 0 to 5, 10, 20, 50, 100 psig
Non-condensing Air or Gas

For many years, high accuracy environmental and test & measurement applications around the world have relied on the consistent performance of the Setra Model 270 pressure transducer. Applications range from remote weather monitoring and avionics systems, endorsed by government agencies, to crucial compensation for barometric pressure variations in laser interferometers.

Long-term reliability and stability in such demanding application environments are achieved in the 270 with the combination of the SETRACERAM™ capacitive sensor and Setra’s proprietary custom IC analog circuit.

The fundamentally simple design and thermally stable glass fused ceramic sensing capsule is coupled with the sophisticated capacitance charge-balance IC circuit where accurate signal conditioning and environmental compensation is performed. Standard accuracy is 0.05% Full Scale, end point method. Higher accuracy and thermal specifications are also available.

<table>
<thead>
<tr>
<th>Type of Pressure</th>
<th>Pressure Range</th>
<th>Maximum Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barometric</td>
<td>800 to 1100 hPa/mb, 600 to 1100 hPa/mb</td>
<td>20 psia</td>
</tr>
<tr>
<td>Absolute</td>
<td>0 to 10, 20, 50, 100 psia</td>
<td>1.5 x rated</td>
</tr>
<tr>
<td>Gauge</td>
<td>0 to 5, 10, 20, 50, 100 psig</td>
<td>1.5 x rated</td>
</tr>
</tbody>
</table>

When it comes to a product to rely on - choose the Model 270. When it comes to a company to trust - choose Setra.
**Performance Data**

- **Accuracy*: < ±0.05% FS
- **Non-Linearity**: ± 0.05% FS
- **End Point**: ± 0.03% FS
- **Hysteresis**: 0.01% FS
- **Non-Repeatability**: 0.01% FS
- **Resolution**: Infinite, limited only by output noise level (± 0.005% FS)

- **Thermal Effects**:
  - **Compensated Range**: °F (°C) +30 to +120 (-1 to +49)
  - **Thermal Zero Shift**: < ±0.2% FS/100°F (±0.18% FS/50°C)
  - **Other Ranges**: < ±0.1% FS/100°F (±0.09% FS/50°C)
  - **Thermal Coefficient Sensitivity**: < ± 0.1% FS/100°F (±0.09% FS/50°C)
- **Long Term Stability**: < ± 0.1% FS over 6 months at 70°F
- **Static Acceleration Effect**: < ±0.01% FS/G
- **Warm-up**: < ± 0.04% FS shift after 20 minutes at constant temperature and pressure
- **Time Constant**: < 10 milliseconds to reach 90% final output with step function pressure input

* RSS of Non-Linearity, Hysteresis, and Non-Repetability.

**Environmental Data**

- **Temperature**:
  - **Operating °F (°C)**: 0 to +175 (-18 to +80)
  - **Storage °F (°C)**: +65 to +250 (-54 to +120)
- **Vibration**: 2g from 5Hz to 500Hz
- **Acceleration**: 10g
- **Shock**: 50g Operating, 1/2 sine 10 ms
- **Pressure fitting**: 1/8" -27 NPT Internal
- **Electrical connection**: 2-foot Multi-conductor Cable
- **Weight (approx.)**: 9 ounces (0.25 Kgm)

**Electrical Data**

- **Excitation**: 22 to 32 VDC
- **Output**: 0 to 5 VDC
- **Isolation**: The insulation resistance between all signal leads tied together and case ground is 100 megohms minimum at 25 VDC.
- **Output Impedance**: <5 ohms
- **Output Noise**: <200 microvolts RMS (0 Hz to 100 Hz).
- **Current Consumption**: 8 mA (0.2 Watts)

* For best performance, either negative excitation or negative output should be connected to case (ground). Both leads cannot be connected to case (ground). Units calibrated at the factory with negative excitation connected to case.

**Options**

- **Electrical Options**: 623 12 VDC excitation (11 to 15 VDC)
- **Performance Options**: 703 Compensated temperature, -13°F to +150°F (±0.13% FS/100°F zero and span effect).
- **Mechanical Options**: 803-825 Up to 25 ft. of cable can be supplied. Please specify cable length when ordering (i.e. 805 for 5 ft. cable).
- **Pressure Media**: Non-condensing air or gas compatible with hard anodized aluminum, alumina ceramics, gold, fluorocarbon elastomer sealant & Buna-N O-Ring.

**Outline Drawings**

While we provide application assistance on all Setra products, both personally and through our literature, it is the customer’s responsibility to determine the suitability of the product in the application.