Setra's Model 224 ultra-high purity pressure transducer is designed for the most demanding specialty gas monitoring and control applications, where construction integrity, purity and performance cannot be sacrificed.

The 224 has a small, streamlined sensor chamber for easy purgeability. The sensor is designed to provide superior mechanical and thermal stability, especially in transient temperature conditions resulting from flowing gases. Isolation of the sensing element from the pressure fitting virtually eliminates any torque effect.

Variable capacitance
This superior mechanical and thermal stability is achieved through Setra's patented variable capacitance sensor. Its fundamentally simple design features VAR 316L SS wetted parts, passivated to 5 Ra (7 Ra max) finish for system continuity, and an insulated electrode plate fastened to the center of the sensor diaphragm, which forms a variable capacitor. As pressure increases or decreases, the capacitance changes. This change in capacitance is detected and converted to a linear analog signal by Setra's unique electronic circuit.

Various tube diameters are available with optional face seal fittings. Sturdy construction allows for trouble-free installation and high tolerance of system torsion and welding effects, providing confident installations. Model 224 transducers are able to endure bake out to 185°F (85°C), without affecting calibration. Every sensor is mass spectrometer helium leak tested to 1 x 10⁻⁹ ATM CC/sec. This ultra-high purity series is based on Setra's proven capacitive sensing technology and highly accurate and stable voltage or current output signals are virtually EMI/RFI immune.

Applications
• High purity gas delivery
• Semiconductor process tools
• Pharmaceutical & biotech process
• Gas cabinets

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Specifications

Performance data

Accuracy
±0.25% FS
±1.0% of reading

Non-linearity, (BFSL)
±0.15% FS

Hysteresis
±0.20% FS

Non-repeatability
±0.02% FS

Thermal effects
Compensated range
+15°F to +150°F (-9°C to +65°C)
Zero shift %FS/100°F (%FS/50°C)
2.0 (1.8)
Span shift %FS/100°F (%FS/50°C)
2.0 (1.8)

Warm-up shift
0.1% FS total

Electrical data (current)
Circuit
2-Wire
Output
$\pm 4$ - 20 mA
External load
0 - 800 Ω
Minimum supply voltage
(VDC)$=10+0.02x$ (resistance of receiver plus line)
Maximum supply voltage
(VDC)$=30+0.004x$ (resistance of receiver plus line)

Electrical data (voltage)
Circuit
3-Wire
Excitation
10 to 30 VDC fo 5V FSO
Output
1) 0-5 VDC or 0.2-5.2 VDC
2) 0-10 VDC or 0.2-20.2 VDC
Current consumption
<8 mA

Physical description

Case
Stainless steel

Electrical connection
6ft. multiconductor cable, bayonet connector or D-sub connectors

Pressure fittings
See ordering information

Zero/Span adjustments
Top access

Weight
6 ounces (170 grams)

Environmental data
Operating temperature
-40 to +185 (-40 to +85)
Storage temperature
-40 to +185 (-40 to +85)

Current unit ordered w/option N1
Operating °F (°C)
-22 to +176 (-30 to +80)
Storage °F (°C)
-22 to +176 (-30 to +80)

Approvals
Non-incentive
Certified for use in potentially hazardous locations

North America
ETL certified as conforming to UL 1604 available for units ordered with 4 to 20 mA current output (Select N1 option)

Europe
Optional ATEX 94/9/EC approval available for units ordered with 4 to 20 mA current output (Select N1 option)

Pressure media
Gases or liquids compatible with 316L stainless steel.

Pressure ranges

<table>
<thead>
<tr>
<th>0 psia or -14.7 psig to</th>
<th>0 bar or -1 bar to</th>
<th>Proof pressure (psig)</th>
<th>Burst pressure (psig)</th>
<th>Design Pressure (psig)</th>
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<td>25</td>
<td>1.7</td>
<td>50</td>
<td>1500</td>
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<td>50</td>
<td>3.4</td>
<td>75</td>
<td>3000</td>
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<td>100</td>
<td>7.0</td>
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<td>1250</td>
<td>7500</td>
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<td>3000</td>
<td>200</td>
<td>3500</td>
<td>10,000</td>
<td>3000</td>
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<td>-14.7 to 85.3</td>
<td>----</td>
<td>150</td>
<td>3000</td>
<td>365</td>
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<td>-14.7 to 235.3</td>
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<td>-14.7 to 985.3</td>
<td>----</td>
<td>1250</td>
<td>7500</td>
<td>1500</td>
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<td>-14.7 to 2985.3</td>
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<td>3500</td>
<td>10,000</td>
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</table>

NOTE: setra quality standards are based on ANSI z540-. The calibration of this product is NIST traceable.

Proof Pressure: The maximum pressure that may be applied without changing performance beyond specifications (+1% FS zero shift).
Burst Pressure: The maximum pressure that may be applied to the positive pressure port without rupturing the sensing element.
Design Pressure calculated per ASME BPVC.IV-2015 HG-502.3

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### Ordering Information

Example part number: 224G30CPGAA11B1
Model 224, 3000 PSI range, #4M/M fixed face seals, 4 to 20 mA output, 4 pin bayonet connector, and ±0.25% FS accuracy.

<table>
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<tr>
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<tr>
<td>224G</td>
<td>025P 25 PSI</td>
<td>A Absolute</td>
<td>AA #4 M/M fixed face seals (2.24&quot; end to end)</td>
<td>4-20mA</td>
<td>06 6 ft. multiconductor cable</td>
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<td>050P 50 PSI</td>
<td>C Compound</td>
<td>BB #4 F/F swivel face seals (3.05&quot; end to end)</td>
<td>0-5 VDC</td>
<td>B1 4 pin bayonet connector</td>
<td>±1.0% of reading w/cal. cert.</td>
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<td>G Gauge</td>
<td>BC #4 M/F swivel face seals (3.65&quot; end to end)</td>
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<td>2T 1/4&quot; tube stubs (1.85&quot; end to end)</td>
<td>0.2-10.2 VDC</td>
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<td>M1 4-20 mA</td>
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<td>200B 200 BAR</td>
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</table>

1) ETL certified as conforming to UL-1604 for Class I, Groups A, B, C, D, Division 2 Locations and ATEX approved for EN50021 Ex nA IIC T4X-30°C < Ta <+80°C).
2) Note: Unit is not certified for UL 1604 or ATEX 94/9/EC for use in hazardous locations when ordered with Option M1.

Please contact factory for configurations not shown.

### Dimensions