Setra's Model 223 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 223 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.

This superior mechanical and thermal stability is achieved through Setra’s patented variable capacitance sensor. Its fundamentally simple design features a 316L VIM/VAR stainless steel sensor passivated to 5 Ra (7 Ra. max.) finish, which eliminates surface irregularities and provides the proper surface chemistry for corrosion resistance, and an insulated electrode plate fastened to the center of the sensor diaphragm, forming a variable capacitor. As pressure increase 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 223 transducers are able to endure bakeout 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 the highly accurate and stable voltage or current output signals are virtually EMI/RFI immune.

After manufacture and assembly, Setra’s Ultra-High Purity pressure transducers are flushed with deionized water, purged with high-purity heated nitrogen, baked, double bagged, backfilled with nitrogen and sealed, prior to shipping.

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Model 223 Specifications

Performance Data
Accuracy RSS** (at constant temp) **±0.25% FS or ±1.0% of Reading
Non-Linearity (BFSL) ±0.15% FS
Hysteresis 0.20% FS
Non-Repeatability 0.02% FS
Thermal Effects
Compensated Range °F(°C): +15 to +150 (-9 to +65)°F
Zero Shift %FS/10°F (%FS/5°C): 2.0 (1.8)
Span Shift %FS/10°F (%FS/5°C): 2.0 (1.8)
Warm-up Shift 0.1% FS Total
* RSS of Non-Linearity, Non-Repeatability and Hysteresis.

Environmental Data
Temperature
Operating °F (°C): -40 to +185 (-40 to +85)°F
Storage °F (°C): -40 to +185 (-40 to +85)°F
*Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.
**Zero output factory set to within ±0.8mA.
**Span (Full Scale) output factory set to within ±0.8mA.

Electrical Data (Voltage)
Excitation 10 to 30 VDC for 5V FSO
Output 0 to 5VDC or 0.2 to 5.2 VDC
Zero/Span Adjustments ±50mV (for 10 VDC output).
**Span (Full Scale) output factory set to within ±25mV (for 10 VDC output).
**Zero output factory set to within ±25mV (for 5 VDC output) or ±50mV

Electrical Data (Current)
Circuit 2-Wire
Output 4 to 20 mA**
External Load 0 to 800 ohms
Minimum supply voltage (VDC): 10 + 0.02 x (Resistance of receiver plus line).
Maximum supply voltage (VDC): 30 + 0.004 x (Resistance of receiver plus line).
North America: Optional 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
Liquids or gases compatible with 316L Stainless Steel.

Approvals
Non-Incendive: Certified for use in potentially hazardous locations.

North America: Optional 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)

/specification details/