

Model 216/C216

Ultra High Purity Pressure Transducers

Gage Pressure: 0 to 100 up to 0 to 3000 psig

Absolute: 0 to 100 up to 0 to 3000 psia

Compound Pressure: -14.7 to 100 up to -14.7 to 3000 psig



Setra's Model 216 High Purity pressure transducer series is intended for vacuum to high pressure measurement of specialty gases or liquids in applications requiring rugged packaging, high performance and low cavity volume. Its stainless steel capacitance sensing element coupled with an IC-based circuit assures excellent accuracy and long-term stability.

Packaged in a welded stainless steel housing with a rotatable cover for easy access to 12 turn potentiometers for fine zero and span adjustment, the 216's small size, light weight and standard Face Seal fitting allows direct pipe mounting.

The 216's Flush Diaphragm design virtually eliminates (0.003 in³) cavity volume. Its one-piece face seal/diaphragm of high quality VAR

316L SS is electropolished to 7Ra (10 max.) finish, and every sensor is mass spectrometer helium leak tested to 1×10^{-9} ATM.CC/sec.

As a fully self-contained electronic package, the high level output 216 Series is well suited for a variety of applications and is an excellent choice for replacing less accurate strain gage, LVDT and potentiometric pressure transducers.

The 216 Series is offered with a 0.2 to 5.2 VDC or 4-20 mA output. A six foot multiconductor cable is provided for electrical termination.

Employing Setra's patented variable capacitance technology, the sensor features a VAR 316L stainless steel diaphragm and an insulated electrode plate. A variable capacitor is formed between the sensor body and the electrode plate. An increase in pressure causes a slight rounding of the diaphragm which decreases the capacitance. The capacitance is detected and converted to a highly accurate linear DC electric signal by Setra's unique custom integrated circuit utilizing a patented charge balance principle.

Pressure Ranges

0 psig, 0 psia or -14.7 psig to:	Bar Ranges -1 or 0 to:	Proof Pressure (psig)	Burst Pressure (psig)
100	7	150	3000
250	17	375	5000
500	35	750	7500
1000	70	1250	7500
3000	200	3400	10,000

NOTE: Setra adheres to strict quality standards including ISO 9001 and ANSI-Z540-1. The calibration of this product is NIST traceable.

Applications

- High purity gas delivery systems
- Semiconductor process tools
- Pharmaceutical & Biotech process
- Gas Cabinets
- HPLC

Benefits

- Superior stability avoids downtime
- EMI/RFI immunity prevents false shut down
- Low dead volume for Ultra High Purity applications
- Meets CE conformance standards



Visit Setra Online:
<http://www.setra.com>

setra
800-257-3872

Model 216/C216 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.25% FS
Non-Linearity, BFSL	±0.15% FS (typ.)
Hysteresis	0.20% FS (typ.)
Non-Repeatability	0.02% FS

Thermal Effect

Compensated Range °F(°C)	30 to 150 (-1 to 65)
Zero shift %FS/100°F(%FS/100°C)	±2.0 (3.6)
Span Shift %FS/100°F(%FS/100°C)	±2.0 (3.6)

* RSS: Non-Linearity, Non-Repeatability and Hysteresis.

Physical Description

Case	Stainless Steel
Pressure Fitting	#4 Male Swivel Face Seal (#4 Female also available. Specify 216FSF).
Vent	Through swivel cover
Electrical Connection	6ft./1.8m multiconductor cable
Weight (approx.)	4 ounces/113 grams

Environmental Data

Temperature	
Operating* °F (°C)	-40 to 185 (-40 to 85)
Storage °F (°C)	-40 to 185 (-40 to 85)

*Operating temperature limits of the electronics only. Pressure media temperatures may be considerably higher or lower.

Electrical Data Model 216 (Voltage)

Circuit	3-wire
Excitation	12VDC regulated ±10%
Output at Zero Pressure	0.2VDC
Output at Full Range Pressure†	5.2VDC
Full Scale Output	5VDC
Power Consumption	<0.28 watts
Output Impedance	<100 Ohms
Warm-up Shift (typical)	<±0.1% FS total

*Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.

Electrical Data

Model C216 (Current)

Circuit	2-wire
Output at Zero Pressure	4 mA
Output at Full Range Pressure†	20 mA
Full Scale Output	16 mA
External Load	0 to 800 ohms
Minimum supply voltage (VDC) = 16 + 0.02 x (Resistance of receiver plus line).	
Maximum supply voltage (VDC) = 30 + 0.004 x (Resistance of receiver plus line).	

†Calibrated at factory using a 250 ohm load at 28 VDC.

Options

655	4-pin Bayonet connector, #4 Female Swivel Face Seal (Specify 216FSF or C216FSF).
-----	-------------------------------------------------------------------------------------

Ordering Information

Order Model 216 pressure transducer for a 0.2 to 5.2VDC output. Order Model C216 pressure transmitter for a 4 to 20 mA output. Specify pressure range, fittings and electrical connector. Consult factory for special ranges, connectors, material sizes or output signals.

Specifications subject to change without notice.

Outline Drawings

