Model GCT-225

Ultra High Purity Pressure Transducers

Gauge, Compound and Absolute PSI and Bar Ranges

Setra's Model GCT-225 Series is ideally suited for high-purity gas delivery systems semiconductor processes, and control applications that require ultra-clean operation, high throughput perfomance, and exceptional long-term stability.

Designed with a low cavity volume of 0.11 in^3, virtually eliminating particle entrapment, the GCT-225 can be easily purged. All wetted parts are 316L VIM/VAR stainless steel passivated to 5 Ra (7 Ra. max.) finish, which eliminates surface irregularities and provides the proper surface chemistry for corrosion resistance, assuring contaminant-free gas distribution. Every sensor is mass spectrometer helium leak tested to 1 x 10^{-9} ATMCC/sec.

The Model GCT-225 Series comes with a rotatable cover for easy access to 12-turn potentiometers for fine zero and span adjustment. Standard swivel male or famale face seal pressure fittings meet the semicondcutor industry requirements. In addition, several other fittings styles are available.

The GCT-225 Series is offered with a 5 VDC, 10 VDC or 4-20 mA output. A six-foot multiconductor cable or Bayonet connector is provided for electrical termination.

Setra's patented variable capacitance sensor features a VIM/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 change is detected and converted to a highly accurate linear DC electric signal. Setra's unique custom integrated circuit, utilizes a patented charge balance principle and is 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.

Pressure Ranges

0 psig or -14.7 psig to:	0 psia to:	0 bar or -1 bar to:	Proof Pressure (psig)	Burst Pressure (psig)
25	25	1.7	50	1500
50	50	3.4	75	3000
100	100	7.0	150	3000
250	250	17	350	5000
500	500	35	650	7500
1000	1000	70	1250	7500
3000	3000	200	3500	10,000
-14.7 to 85.3	----	----	150	3000
-14.7 to 235.3	----	----	350	5000
-14.7 to 985.3	----	----	1250	7500
-14.7 to 2985.3	----	----	3500	10,000

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

U.S. Patent nos. 3859575, 4054833

159 Swanson Rd., Boxborough, MA/Telephone: 978-263-1400/Fax: 978-264-0292

Applications

- Gas Cabinets
- High Purity Gas Delivery Systems
- Semiconductor Process Tools

Benefits

- Puperior Stability Avoids Downtime
- EMI/RFI Immunity Prevents False Shutdown
- Sturdy Design Allows Trouble-Free Installation
- Optional ETL Certified as Conforming to UL-1604 and ATEX 94/9/EC Approval Available for 4 to 20 mA Output Units
- Meets CE Conformance Stadards
- RoHS Compliant

When it comes to a product to rely on - choose the Model 225. When it comes to a company to trust - choose Setra

setra

ISO-9001 Certified

800-257-3872

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

Model 225 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.25% FS
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)
Zero Shift %FS/100°F(50°C)	2.0 (1.8)
Span Shift %FS/100°F(50°C)	2.0 (1.8)

Leak Tested: Mass Spectrometer Helium Leak Tested to 1 x 10^{-9} ATM CC/Sec.

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

**Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

Physical Description

Case	Stainless Steel
Electrical Connection	6ft./1.8m Multiconductor Cable or 4-pin Bayonet Connector
Pressure Fitting	#4 Face Seal Swivel Male or Female 1/4" NPT Male, or Tube Stub
Vent	Through Cover
Internal Cavity Volume	0.11 in.^{3}
Wetted Material	VAR 316L SS Electropolished to 7 RA (10 max.) Finish
Weight (Approximate)	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)
Current Unit Ordered w/Option N1	
Operating °F (°C)	-22 to +176 (-30 to +80)
Storage °F (°C)	-22 to +176 (-30 to +80)

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

Electrical Data (Voltage)

Circuit	3-Wire (Exc, Out, Com)
Excitation	10 to 30 VDC for 5 V FSO 13 to 30 VDC for 10 V FSO
Output*	0 to 5 VDC or 0.2 to 5.2 VDC** 0 to 10 VDC or 0.2 to 10.2 VDC **
Power Consumption	0.08 watts
Output Impedance	100 Ohms
Warm-up Shift	±0.1% FS Total

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

**Zero output factory set to within ±25mV (for 5 VDC output) or ±50mV (for 10 VDC output).

**Span (Full Scale) output factory set to within ±25mV (for 5 VDC output) or ±50mV (for 10 VDC output).

Specifications subject to change without notice.

Electrical Data (Current)

Circuit	2-Wire
Output*	4-20 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).

Power Consumption <0.15 watts

*Calibrated at the factory with a 24 VDC loop supply voltage and a 250 ohm load.

**Zero output factory set to within ±0.08mA.

**Span (Full Scale) output factory set to within ±0.16mA.

Pressure Media

Liquids or gases compatible with 316L Stainless Steel.

Approvals

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

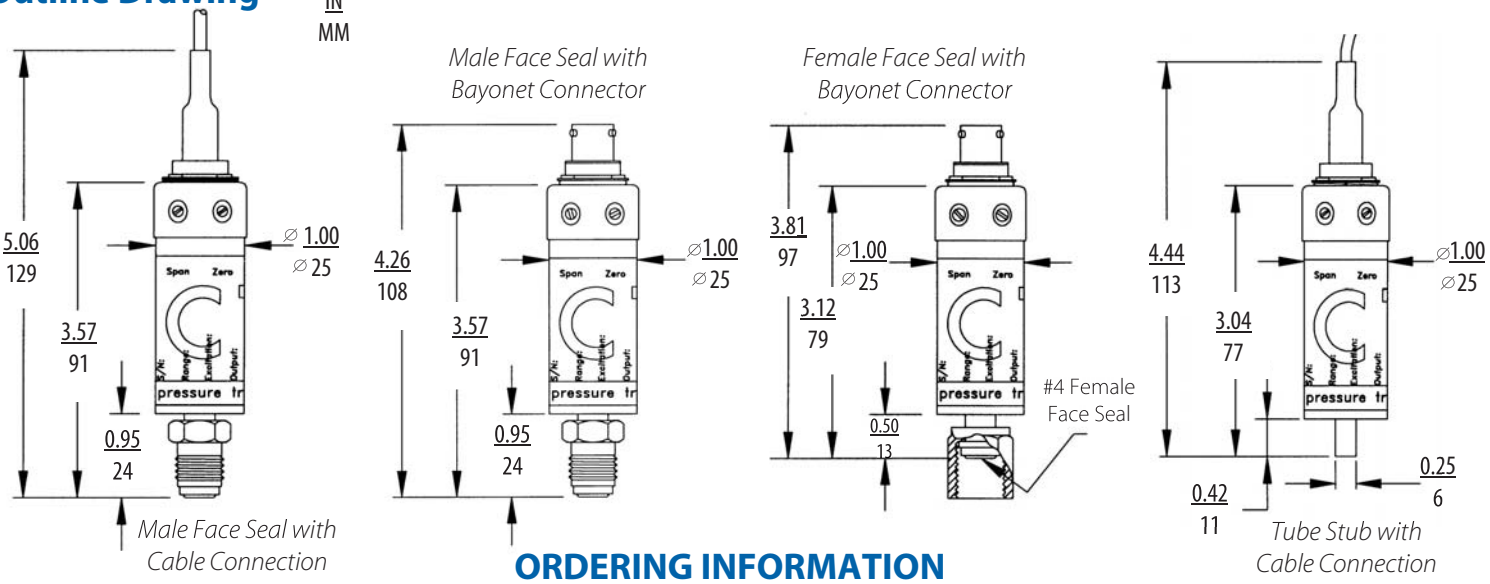
North America: Optional ETL certified as conforming to UL1604 available for units ordered with 4 to 20 mA current output (Select N1 Option)

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

RoHS Compliant

Outline Drawing

IN
MM



ORDERING INFORMATION

Example: Part No. 225G30CPGC411B1 is a Model GCT-225 with a Pressure Range of 3000 PSI, Gauge Pressure, #4 Face Seal Swivel, 4-20 mA Output and a 4-Pin Bayonet Connector.

2 2 5 G — [ ][ ][ ][ ] — [ ] — [ ][ ] — [ ][ ] — [ ][ ]

Model

225G = 225

Range

025P = 25 PSI	1R7B = 1.7 Bar	
050P = 50 PSI	3R4B = 3.4 Bar	
100P = 100 PSI	007B = 7.0 Bar	
250P = 250 PSI	017B = 17 Bar	
500P = 500 PSI	035B = 35 Bar	
10CP = 1000 PSI	070B = 70 Bar	
30CP = 3000 PSI	200B = 200 Bar	
Z01P = -14.7 to 85.3 PSI		
Z02P = -14.7 to 235.3 PSI		
Z03P = -14.7 to 985.3 PSI		
Z05P = -14.7 to 2985.3 PSI		

Pressure

G = Gauge
C = Compound
A = Absolute

Pressure Fitting

C4= #4 Male Face Seal Swivel
D4= #4 Female Face Seal Swivel
2M = 1/4" NPT Male
2T = 1/4" Tube Stub

Output

11 = 4-20mA
2B = 0-5 VDC
2C = 0-10 VDC
33 = 0.2-5.2 VDC
59 = 0.2-10.2 VDC
N1 = 4-20 mA*
(*ETL certified as conforming to UL-1604 for Class 1, Groups A, B, C, D, Division 2 Locations and ATEX approved for EN50021 Ex nA IICT4X-30°C < Ta <+80°C)

Output

06 = 6 ft. Multiconductor Cable
B1 = 4-Pin Bayonet Connector

Please contact factory for versions not shown.

SSP225G Rev. A 01/07/11

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