

Model GCT-225

Ultra High Purity Pressure Transducers

Gauge, Compound and Absolute PSI and Bar Ranges



Setra's Model GCT-225 Series is ideal for pressure measurement applications that require exceptional insensitivity to environmental extremes. The GCT-225 is insensitive to factors such as torque effect on the fitting, temperature transients, and RFI effects generated by other instruments and equipment.

Designed with a low cavity volume of 0.11 in³, the GCT-225 can be easily purged. All wetted parts are high quality VAR 316L SS, electro-polished to 7 Ra (10 max.) finish, and every sensor is mass spectrometer helium leak tested to 1 x 10⁻⁹ ATM.CC/sec.

The Model GCT-225 Series comes with a rotatable cover for easy access to 12-turn potentiometers for fine zero and span adjustments. Standard swivel male or female face seal pressure fittings meet the semiconductor

industry requirements. In addition, several other fitting 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 the electrical termination.

Setra's patented variable capacitance sensor features a 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.

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

Applications

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

Benefits

- Superior Stability Avoids Downtime
- EMI/RFI Immunity Prevents False Shutdown
- Sturdy Design Allows Trouble-Free Installation
- Meets CE Conformance Standards

When it comes to a product to rely on - choose the Model GCT-225. When it comes to a company to trust - choose Setra - an ESOP (Employee Owned) Company.



Model GCT-225 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.25% FS
Non-Linearity, BSL	±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)

* 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).

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.

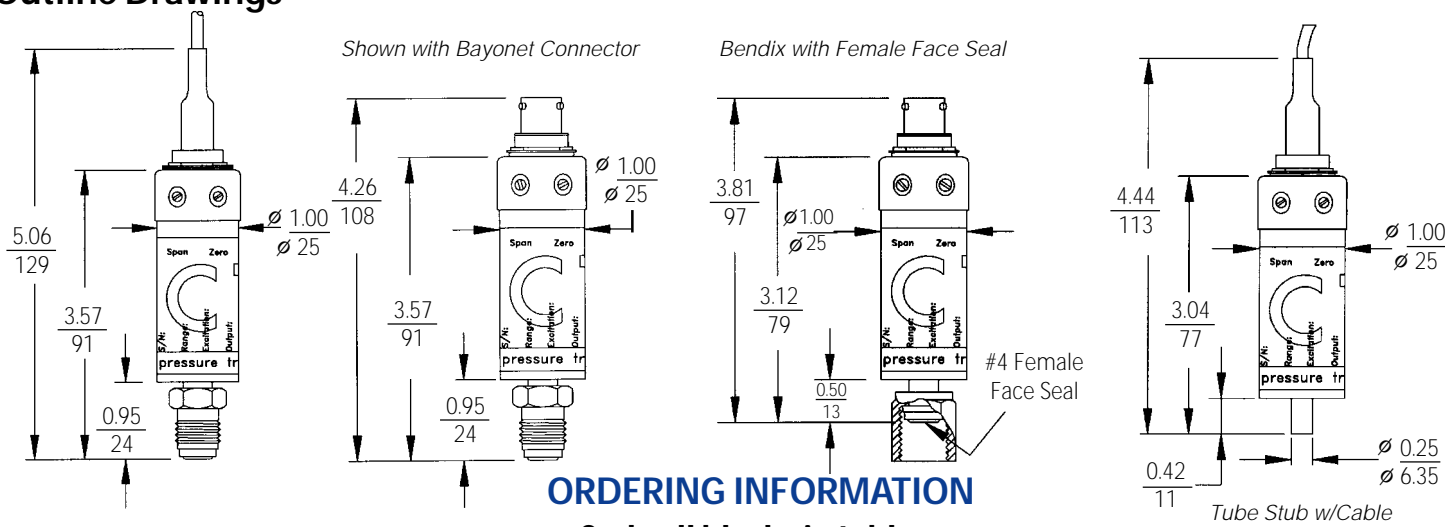
** Span (Full Scale) output factory set to within ±0.16mA.

Pressure Media

Liquids or gases compatible with 316L Stainless Steel.

Specifications subject to change without notice.

Outline Drawings



ORDERING INFORMATION

Code all blocks in table.

Example: Part No. 2251-30CP-G-C4-11-B1 is a Model 225 with a Pressure Range of 3000 PSI,

2	2	5	1	—		Male Face Seal Swivel	4-20 mA Output	4-Pin Bayonet Connector	—		
Model	Range	Pressure	Pressure Fitting	Output	Elec. Termination						
2251 = 225	025P = 25 PSI 050P = 50 PSI 100P = 100 PSI 250P = 250 PSI 500P = 500 PSI 10CP = 1000 PSI 30CP = 3000 PSI 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	1R7B = 1.7 Bar 3R4B = 3.4 Bar 007B = 7.0 Bar 017B = 17 Bar 035B = 35 Bar 070B = 70 Bar 200B = 200 Bar	G = Gauge C = Compound A = Absolute	C4 = #4 Male Face Seal Swivel D4 = #4 Female Face Seal Swivel 2M = 1/4" NPT Male 2T = 1/4" Tube Stub	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 (Class 1, Groups A, B, C, D, Division 2 Locations)	06 = 6 ft. Multiconductor Cable B1 = 4-Pin Bayonet Connector					

Please contact factory for versions not shown.

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.

