Model 225

Ultra-High Purity Pressure Transducers

DESCRIPTION

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

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 female face seal pressure fittings meet the semiconductor 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.

BENEFITS

- Superior Stability Avoids Downtime
- EMI/RFI Immunity Prevents False Shutdown
- Sturdy Design Allows Trouble-Free Installations
- Optional Non-Incendive Approval for Use in Potentially Hazardous Locations Available for 4-20mA Output Units
- CE & RoHS Compliant

APPLICATIONS

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

SPECIFICATIONS

Performance Data		Physical Description		Electrical Data (Voltage)	
Accuracy RSS[1] (at constant temp)	±0.25%	Case	Stainless Steel	Circuit	3-Wire (Exc, Out, Com)
Non-Linearity, (BFSL)	±0.15% FS	Electrical Connection	6ft./1.8m Multiconductor Cable,or 4-pin Bayonet Connector	Excitation	10 to 30 VDC for 5 V FSO 13 to 30 VDC for 10 V FSO
Hysteresis	0.20% FS	Pressure Fittings	#4 Face Seal Swivel Male/Female 1/4" NPT Male, or Tube Stud Through Cover	Output[4]	0 to 5 VDC or 0.2 to 5.2 VDC[5] 0 to 10 VDC or 0.2 to 10.2 VDC[5]
Thermal Effects[2]		Vent	Through Cover	Power Consumption	0.03 watts
Compensated Range °F(°C)	+15 to +150 (-9 to +65)	Internal Cavity Volume	0.11 in.[3]	Output Resistance	10 ohms
Zero Shift %FS/100°F (%FS/50°C)	2.0 (1.8)	Wetted Material	VAR 316L SS Electropolished to 7 RA (10 max.) Finish	Warm-Up Shift	±0.1% FS Total
Span Shift %FS/100°F (%FS/50°C)	2.0 (1.8)	Weight (approx.)	4 ounces (113 grams)	**Electrical Data (Current)**	
Leak Tested: Mass Spectrometer Telium Leak Tested 1 x 10^{9} ATM CC/Sec.		**Environmental Data**		Circuit	2-Wire
Pressure Media		Operating Temperature[3] °F(°C)	-40 to +185 (-40 to +85)	Output[6]	4-20 mA[7]
Liquids or gases compatible with 316L Stainless Steel		Storage Temperature °F(°C)	-40 to +185 (-40 to +85)	External Load	0 to 800 ohms
Approvals		Current Unit Ordered with N1 Option		Min. Supply Voltage (VDC)	10 + 0.02 x (resistance of receiver plus line)
Non-Incendive: Certified for use in potentially hazardous locations:		Operating Temperature °F(°C)	-22 to +176 (-30 to +80)	Max. Supply Voltage (VDC)	30 + 0.004 x (resistance of receiver plus line)
North America: Option ETL certified as conforming to ANSI/ISA 12.12.01-2011 available for units ordered with 4 to 20 mA current output (Select N1 Option)		Storage Temperature °F(°C)	-22 to +176 (-30 to +80)	Power Consumption	<0.9 watts
Europe: Optional ATEX 94/9/EC approval for units ordered with 4 to 20 mA current output. (Select N1 Option)					

[1] RSS of Non-Linearity, Non-Repeatability and Hysteresis.
[2] Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.
[3] Operating temperature limits of the electronics only. Pressure media temperatures may be considerably higher or lower.
[4] Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.
[5] Zero output factory set to within ±25mV (for 5 VDC output) or ±50mV (for 10VDC output).
[5] Span (Full Scale) output factory set to within ±25mV (for 5 VDC output) or ±50mV (for 10 VDC output).
[6] Calibrated at the factory with a 24 VDC loop supply voltage and a 250 ohm load.
[7] Zero output factory set to within ±0.08mA. Span (Full Scale) output factory set to within ±0.16mA.

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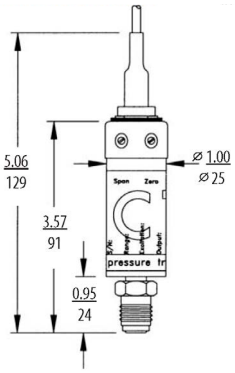
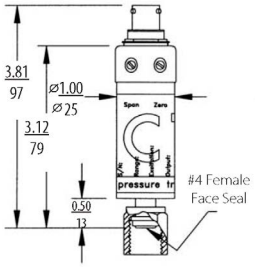
DRAWINGS & DIMENSIONS

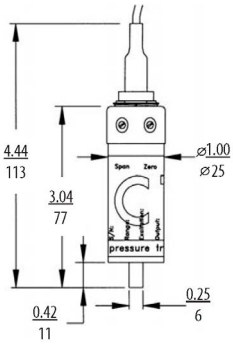
MALE FACE SEAL W/ CABLE CONNECTION



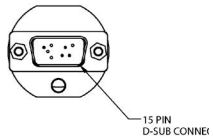
FEMALE FACE SEAL W/ BAYONET CONNECTOR



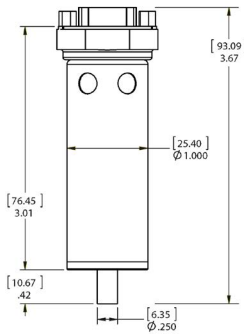
TUBE STUB W/ CABLE CONNECTION

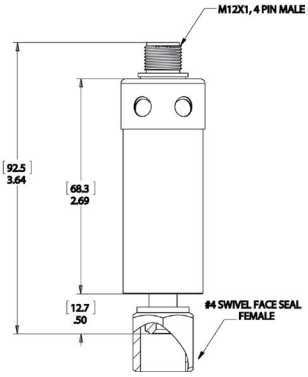


TUBE STUB W/ 15 PIN D-SUB CONNECTION



FEMALE FACE SEAL W/ M12X1 CONNECTION





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	40	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	3,000
-14.7 to 235.3	---	---	350	5,000
-14.7 to 985.3	---	---	1250	7,500
-14.7 to 2985.3	---	---	3500	10,000

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.

NOTE: Setra quality standards are based on ANSI-Z540-1.
The calibration of the product is NIST traceable.
U.S Patent nos. 3859575, 4054833

ORDERING INFORMATION

2 2 5 G – [ ][ ][ ][ ] – [ ] – [ ][ ] – [ ][ ] – [ ][ ]

Model		Pressure Range				Pressure Type		Fitting		Output		Output	
225G	225	025P	0 to 25 PSI	1R7B	0 to 1.7 Bar	G	Gauge	C4	#4 Male Face Seal Swivel	11	4 to 20 mA	06	6 ft. Multiconductor Cable
		050P	0 to 50 PSI	3R4B	0 to 3.4 Bar	C	Compound			2B	0 to 5 VDC	B1	4-Pin Bayonet Connector
		100P	0 to 100 PSI	007B	0 to 7.0 Bar	A	Absolute	D4	#4 Female Face Seal Swivel	2C	0 to 10 VDC		
		250P	0 to 250 PSI	017B	0 to 17 Bar					33	0.2 to 5.2 VDC	D1	15-Pin D-Sub
		500P	0 to 500 PSI	035B	0 to 35 Bar			2M	1/4" NPT Male	59	0.2 to 10.2 VDC	M4	4 PIN M12x1
		10CP	0 to 1,000 PSI	070B	0 to 70 Bar					N1	4 to 20 mA*		
		30CP	0 to 3,000 PSI	200B	0 to 200 Bar			2T	1/4" NPT Tube Stub				
		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 2,985.3 PSI										

*ETL certified as conforming to ANSI/ISA 12.12.01-2011 for Class 1, Groups A, B, C, D, Division 2 Locations
ATEX approved for EN60079-0:2006 & EN60079-15:2005
Ex nA IICT4X-30ºC <Ta<+80ºC)

Ordering Example: 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.

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