Model 760 Vactron™ Series

Capacitance Manometer - Absolute Pressure Transducer

Gases Compatible with Inconel® or Inconel/Stainless Steel

Absolute Pressures: 0 - 10 to 0 - 1000 Torr, 0 - 10 to 0 - 1000 mbar/hPa
0 - 2 to 0 - 20 psia, 0 - 2 to 0 - 100 kPa

Setra's Vactron Model 760 capacitance manometer is an absolute pressure transducer designed for accurate and repeatable vacuum measurements. Various full scale ranges are available from 10 Torr up to 1000 Torr. The units of measurement may be specified in Torr, mBar/hPa, kPa or psia.

The Model 760 operates from a ±15 VDC power supply and provides a 0-10 VDC or 0-5 VDC signal output that is linear with pressure and independent of gas composition. The electrical connection can be either the industry standard 15 pin D-sub or 6 position terminal strip connector.

Superior EMI/RFI performance is achieved by the use of a metal case, in conjunction with surge and ESD suppression components and RFI filtering on the inputs and outputs. The Model 760 has an integrated sliding cover that provides easy access to multi-turn potentiometers for fine zero and span adjustments. Inconel® is used for all wetted materials allowing the Model 760 to be used with corrosive gases. A wide range of pressure and vacuum fittings are available.

The high accuracy pressure sensing element used in the Model 760 is the Vactron™ sensor, which has been developed from Setra's patented variable capacitance sensor. A centrally located feed-through assembly supports a circular electrode in close proximity to the back surface of the diaphragm. Together the electrode and diaphragm form a variable capacitor within a small reference vacuum chamber maintained at very low pressure. As the pressure increases, the diaphragm deflects and the gap between the electrode and diaphragm decreases, causing an increase in the capacitance. This change in capacitance is detected and converted to a highly accurate linear DC electronic signal by Setra's unique custom integrated circuit, which utilizes a patented charge balance principle.

Excellent zero stability and barometric insensitivity are achieved through an innovative sensor design. The Model 760 sensor contains no fragile or complex parts found in similar ceramic based capacitance manometers.

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

U.S. Patent nos. 4093915

Applications

- Semiconductor Process Tools and Equipment
- Laboratory and R&D
- Test and Measurement
- Metrology
- Analytical Chemistry Systems

Benefits

- Excellent Thermal Stability
- Superior EMI/RFI Performance
- Low Cost
- Small/Compact Size
- Inconel® Wetted Parts for Corrosion Resistance
- Various Fittings and Electrical Connections
- Meets CE Conformance Standards

When it comes to a product to rely on - choose the Model 760. When it comes to a company to trust - choose Setra - an ESOP (Employee Owned) Company.

ISO 9001 Certified

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

setra

800-257-3872

159 Swanson Road, Boxborough, MA 01719/Telephone: 978-263-1400/Fax: 978-264-0292

Model 760 Specifications

Performance Data

Accuracy	
Code A	±0.25% of reading
Code B	±0.15% of reading
Thermal Effects	
Compensated Range ℃(℉)	0 to +50 (+32 to +122)
Zero shift	±0.005% FS/℃
Span shift	±0.027% Rdg/℃
Resolution	Infinite, limited only by output noise level (0.01% FS)
Proof Pressure	45 psia
Time Constant	<20 ms

Environmental Data

Temperature	
Operating* ℃ (℉)	0 to +50 (+32 to +122)
Storage ℃ (℉)	-50 to +125 (-58 to +257)

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

Physical Description

Case	Aluminum Alloy
Electrical Connection	15 pin D-sub Connector or 6 Position Screw Terminal
Pressure Fittings	See Ordering Information
Cavity Volume[1]	<6 cm^3
Zero/Span Adjustments	Multi-Turn Potentiometers (Located under sliding cover.)
Weight	260 grams (9 oz.)

1. Maximum cavity volume includes the 0.5"OD tube volume of 4.28 cm.

Electrical Data

Circuit	4-Wire
Excitation	±15 VDC regulated ±5%
Output*	0-10 VDC or 0-5 VDC
Power Consumption	<0.5 Watts (<15 mA)

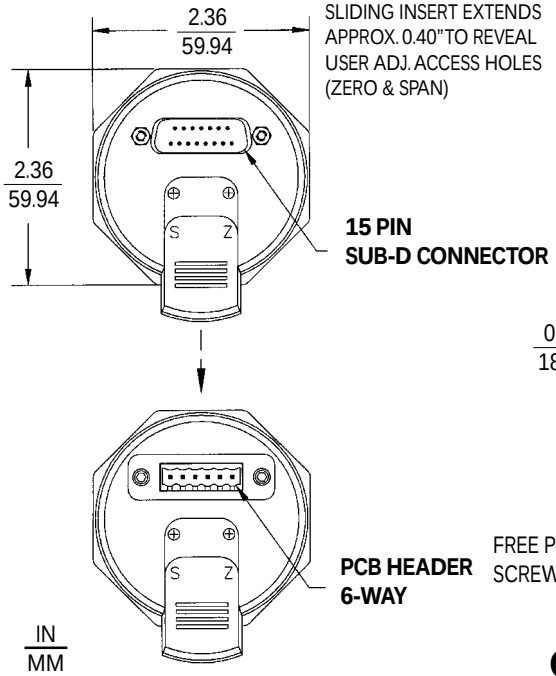
*Calibrated into a 50K ohm load, operable into a 10000 ohm load or greater.

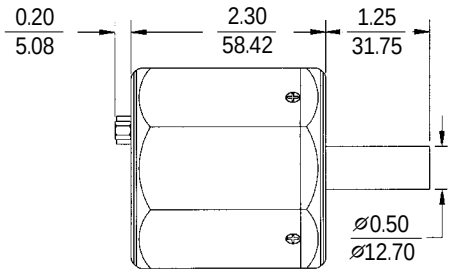
Pressure Media

Gases compatible with Inconel® or Inconel®/Stainless Steel. Inconel® wetted material is for 0.5" tube option only. Other fitting options will add Stainless Steel.

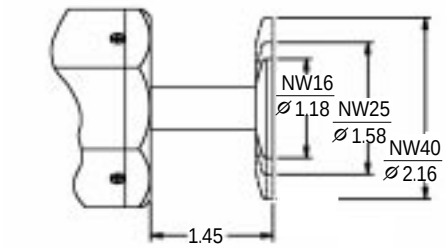
Specifications subject to change without notice. Application of some available options may impact standard specifications.

Outline Drawings

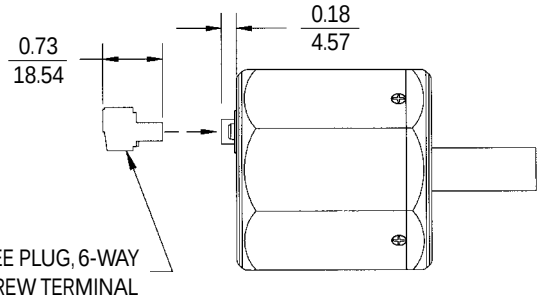




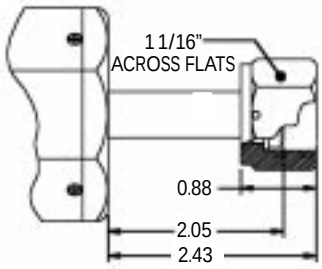
Tube Stub Version



ISO NW Vacuum Fitting



Tube Stub Version



1/2" FEMALE FACE GLAND VCR® Stlye Face Seal Fitting

ORDERING INFORMATION
Code all blocks in table.

Example: Part No. 7601010TAN17CD2A for a 760 Transducer, 10 Torr Range, ISO NW16 Fitting, 0 to 10 VDC Output, 15 pin D-sub Connector with ±0.25% Reading Accuracy.

7 6 0 1 – [ ][ ][ ][ ] – A – [ ][ ] – [ ][ ] – [ ][ ] – [ ]

Model
7601 = 760

Pressure Range
010T = 10 Torr
020T = 20 Torr
100T= 100 Torr
10CT= 1000 Torr
010M = 10 Millibar/hPa
100M = 100 Millibar/hPa
10CM = 1000 Millibar/hPa
002P = 2 PSI
020P = 20 PSI
002K = 2 KPa
010K= 10 KPa
100K = 100 KPa

Absolute

Type of Fitting
Standard
4T = 0.5" OD Tube
N1 = ISO NW16
N2 = ISO NW25
N4 = ISO NW40
D8 = 8 VCR®, Female swivel
Optional
17 = Mini Conflat®
18 = 2.75" Conflat®
4S = 0.50 Swagelok®
T6 = Tri-clover 1.50"

Output
7C = 0-10 VDC
7B = 0-5 VDC

Electrical Connection
D2 = 15 pin D-sub
T2 = 6 Position Screw Terminal

Accuracy
Standard
A = <±0.25% of reading
Optional
B = <±0.15% of reading

Note: VCR and Swagelok are registered trademarks of Swagelok Marketing Co., Solon, OH. Conflat is a registered trademark of Varian Associates, Lexington, MA.

Please contact factory for versions not shown.

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