

622D and 626D

Unheated Absolute Baratron® Capacitance Manometer



The 622D and 626D unheated absolute Baratron® capacitance manometers are the latest analog, capacitance-based, high-performance vacuum and pressure transducers. They require $\pm 15\text{VDC}$ input voltage and provide a high-level 0-10VDC analog output signal that is linear with pressure. This analog output can be interfaced with an MKS pressure controller, an MKS power supply/display instrument, or any instrument that meets these requirements. Changes in pressure/vacuum are determined by measuring the change in capacitance between the sensor's diaphragm and an adjacent electrode disk. This capacitance change is converted to a useable output by patented signal-conditioning electronic circuits. The radially-tensioned Inconel® diaphragm in the sensor provides very fast response (<20 msec in many cases), low hysteresis, excellent repeatability, very high resolution (to 0.001% of Full Scale),

exceptionally high corrosion resistance, and double-walled welded construction for operator safety. The sensor itself can withstand repeated exposures to 45 psia (3.1 bar) without permanent degradation or shifting, allowing it to operate in virtually any process system.

The 622D and 626D Baratron capacitance manometers operate at ambient conditions. They are available in Full Scale pressure/vacuum ranges from 0.1 to 1000 Torr (and metric equivalents) and are suited for many industrial, electronic, and research applications. The 622D has a terminal block electrical connector and the 626D has a 15-pin D-subminiature electrical connector.

Product Features

- Full Scale pressure/vacuum ranges as low as 0.10 Torr (mm Hg) allow for accurate measurement of vacuum as low as 1×10^{-3} Torr (1.3×10^{-3} mbar)
- All products are specified in percent of reading for best accuracy and improved process yield
- Direct measurement of chamber total pressure independent of gas type or composition, eliminating need for lookup tables and conversion factors
- Best-available long-term output stability ensures state-of-the-art process repeatability in nearly any application
- Inconel® and Incoloy® nickel alloy construction of basic sensor operates without damage in virtually any chemical environment, including halogens, deionized water and steam, and ozone
- High overpressure limit ensures reliability from occasional system mishaps



Key Benefits

- Provides fast response, low hysteresis, and repeatability
- Operates at ambient conditions
- Suited for industrial, electronic, and research applications

Specifications

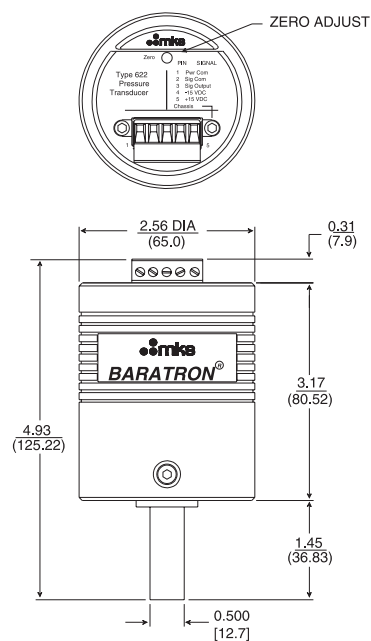
Full Scale Ranges	0.1 (626D only), 0.25 (626D only), 1, 2, 10, 20, 100, 500, 1000 Torr and metric equivalents
Accuracy- % of Reading*	0.25% for 1 to 1000 Torr, 0.50% for < 1 Torr (626D only)
Temperature Coefficients	
Zero	• 0.005% Full Scale/°C for 10 to 1000 Torr ranges • 0.010% Full Scale/°C for 2 Torr range • 0.015% Full Scale/°C for 1 Torr range • 0.020% Full Scale/°C for ranges < 1 Torr only (626 only)
Span	• 0.04% of Reading/°C
Resolution	0.001% of Full Scale
Ambient Operating Temperature	0 to 50°C
Overpressure Limit	45 psia (310 kPa)
Materials Exposed to Process	Inconel® and Incoloy® nickel alloys
Volume (Measurement Side)	6.3 cm ³
Input Power Required	±15VDC (±5%) @ 35 mA (45mA for 1T and 2T products in an over-range condition)
Output Signal	0 – 10 VDC into > 10 kΩ load
Electrical Connector	Terminal block for 622D, 15-pin D-subminiature for 626D
Connection Fittings	
Standard	• ½" (12.7 mm) OD tube standard
Optional	• 8 female VCR®, 8 female VCO®, NW16-KF, NW25-KF, 1.33" (33.8mm) OD Conflat®, 2.75" (70 mm) OD Conflat
Compliance**	CE

*Includes hysteresis, non-linearity, and non-repeatability.

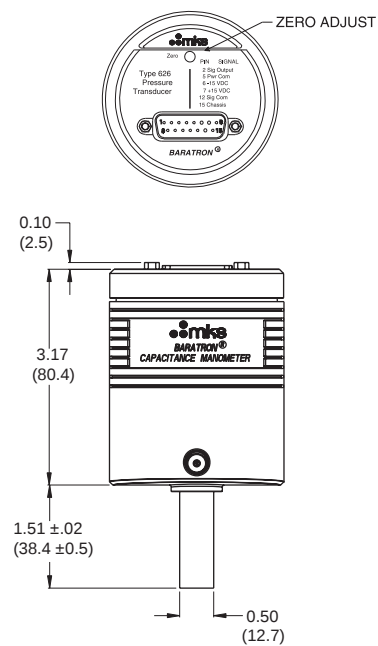
**For CE compliance, the mating connector must be properly grounded.

Dimensional Drawings

622D



626D



Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Ordering Code Example: GGGGXXXYZ	Code	Configuration
Model (GGGG)		
Unheated manometer, terminal block electrical connector	622D	622D
Unheated manometer, 15-pin D-subminiature electrical connector	626D	
Full Scale Range (XXX)		
0.1 Torr (626D only)	.1T	11T
0.25 Torr (626D only)	RET	
1 Torr	01T	
2 Torr	02T	
10 Torr	11T	
20 Torr	21T	
100 Torr	12T	
500 Torr	52T	
1000 Torr	13T	
Fittings (Y)		
1/2" (12.7 mm) OD tube	A	B
8 female VCR	B	
1.33" OD (33.8 mm) Conflat, rotatable	C	
NW16-KF	D	
8 female VCO	E	
NW25-KF	Q	
Accuracy (Z)		
0.25% Reading (1 to 1000 Torr) - standard	E	E
0.15% Reading (10 to 1000 Torr) - optional	D	
0.50% of Reading (< 1 Torr) - standard	F	