



# Pressure

# Measurement & Control

WWW.MKSINST.COM

## Type 627D

### BARATRON® TEMPERATURE REGULATED CAPACITANCE MANOMETER

The Type 627D Baratron® is the RoHS-compliant version of the industry standard for stability and accuracy. The Type 627D Baratron is temperature controlled to 45°C, accurate to 0.12% of Reading and includes updated temperature control electronics to provide superior long-term stability and repeatability. Optional heater and temperature status LED/switches indicate that the heater (which maintains the sensor temperature to 45°C) is in control. This capacitance manometer is available in Full Scale ranges down to 20 mTorr (0.03 mbar) to accommodate today's lower process pressures.

Based on established Baratron capacitance manometer technology, the sensor's wetted surfaces are Inconel® for excellent resistance to corrosive gases. The contemporary stainless steel package provides a cleanroom-compatible product. The product is inter-changeable with earlier Type 127, 627A, and 627B Baratron capacitance manometers and can be used with MKS power supplies, display units and pressure controllers, or the user's compatible power supply/readout devices.

### Features & Benefits

#### Accurate

- Excellent long-term stability
- Percent of Reading accuracy for more precise output signal in lower pressure ranges
- Full Scale ranges low as 20 mTorr (0.03 mbar) for precise measurement of low pressure processes
- Measures total pressure directly, independent of gas composition

#### Robust

- All-Inconel corrosion-resistant wetted surfaces
- Integrated sump (US patent #5,822,685) provides particle protection
- Faster warm-up time

- Visual and electrical status of temperature and heater control circuit
- High overpressure rating for improved reliability

#### Compatible

- Cleanroom-compatible stainless steel package
- Compatible with earlier Baratron capacitance manometers, MKS power supply/readout modules, and pressure controllers
- CE and RoHS (Restriction of Hazardous Substances) compliant



# Specifications and Ordering Information

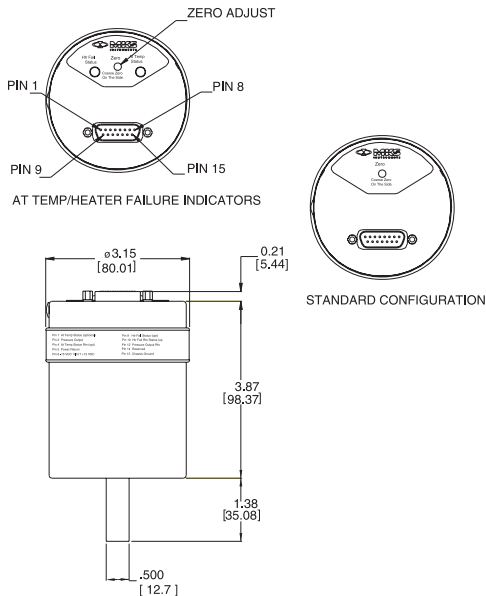
<b>Full Scale Ranges</b>	0.02, 0.05, 0.1, 0.25, 1, 2, 10, 20, 100, 1000, 2000, 5000, 10000, 15 000, 20000, 25000 Torr
<b>Resolution</b>	0.001% of F.S. (0.002% of F.S. for 0.02 and 0.05 Torr)
<b>Accuracy</b> (including non-linearity, hysteresis, and non-repeatability)	0.12% of Reading , 0.15% for 0.25, 0.1, and 0.05 Torr
<b>Temperature Coefficients</b> Zero	0.002% of F.S./°C for 1 - 25000 Torr range; 0.005% F.S./°C for 0.25 and 0.1 Torr, 0.015% F.S./°C for 0.05 Torr, 0.03% F.S./°C for 0.02 Torr
<b>Ambient Operating Temperature</b> Volume	0.02% of Rdg./°C 15°C to 40°C 6.3 cc
<b>Warm-Up Time</b>	2 hours for 25000 Torr F.S., 4 hours for 0.1 Torr F.S. and lower
<b>Overpressure Limit</b>	45 psia (310 kPa) or 120% F.S., whichever is greater
<b>Materials Exposed to Gases</b>	Inconel®
<b>Input Power Required</b>	±15 VDC ±5% @ 0.25 Amps (max.)
<b>Output Signal</b>	Pressure: 0 to +10 VDC into >10K Ω load
<b>Optional Features LED's and Switches</b>	Temperature status: one semiconductor switch will turn "ON" and corresponding green LED will be "ON" when the instrument is at temperature. Heater status: second semiconductor switch will turn "OFF" when heater failure occurs and corresponding bi-color LED will be blinking red, otherwise light will remain green.
<b>Electromagnetic Compatibility</b>	Fully compliant to EMC Directive 2004/108/EC
<b>Restriction of Hazardous Substances</b>	Fully compliant to RoHS Directive 2002-95-EC
<b>Fittings</b>	Standard: 1/2" (12.7 mm) OD tube. Optional: 8 VCR® female, NW16-KF, mini-CF

## Specifications for Semiconductor Switch

<b>Current Charge Capacity</b>	120mA max.
<b>Switch on Resistance</b>	20 Ω max. @ 120mA, 50°C
<b>Open Circuit Voltage</b>	28V max.

## Ordering Code Example: 627D01TBC1B

	Code	Configuration
<b>Type 627D</b>	627D	627D
<b>Pressure Range Full Scale - Torr</b>		
0.02	U2T	01T
0.05	U5T	
0.1	.1T	
0.25	RET	
1	01T	
2	02T	
10	11T	
20	21T	
100	12T	
1000	13T	
2000	23T	
5000	53T	
10000	14T	
15000	RBT	
20000	24T	
25000	RCT	
<b>Fittings</b>		
1/2" (12.7 mm) OD tube	A	B
8 VCR female	B	
Mini-CF, rotatable (pressure limited to bolt strength)	C	
NW 16KF (only for 5000T or lower)	D	
<b>Accuracy (see specifications for applicability)</b>		
0.12% of Reading	C	C
0.15% of Reading	D	
0.25% of Reading	E	
<b>Options</b>		
Standard Configuration	1	1
Optional Temperature/Heater Status	2	
<b>Connector</b>		
15 pin Type "D" with Thread Lock	B	B
15 pin Type "D" with Slide Lock	P	



## Dimensional Drawing —

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



627D\_RoHS - 8/12  
© 2008 MKS Instruments, Inc.  
All rights reserved.

## Global Headquarters

2 Tech Drive, Suite 201  
Andover, MA 01810  
Tel: 978.645.5500  
Tel: 800.227.8766 (in U.S.A.)  
Web: www.mksinst.com

Some Baratron® products may not be exported to many end user countries without both US and local government export licenses under ECCN 2B230.

Specifications are subject to change without notice. Baratron® is a registered trademark of MKS Instruments, Inc., Andover, MA. VCR® is a registered trademark of Swagelok® Co., Solon OH. Inconel® is a registered trademark of Inco Alloys International, Inc., Huntington, WV.