



Pressure &

Vacuum Measurement Solutions

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## D27F

### BARATRON® DUAL-RANGE MANOMETER TEMPERATURE CONTROLLED TO 45°C

The Baratron® D27F Dual-range Manometer, an application-specific absolute capacitance manometer, is the latest addition to the MKS family of general purpose manometers. With two distinct measurement outputs, the D27F provides accurate, reliable, and repeatable pressure measurements for multi-step processes. The D27F is temperature controlled at 45°C and is available in full scale ranges of 1, 10, 100 and 1000 Torr, with a customer specified second output having either a 2, 5, or 10 times lower full scale pressure output to provide a proportionally higher sensitivity. The lower pressure limitation of system A/D resolution is now minimized with higher output signal levels. The D27F requires  $\pm 15$  VDC ( $\pm 5\%$ ) input at 250 mA (max.), and provides two outputs of 0 to 10 VDC linear with pressure.

Based on the well-established Baratron capacitance manometer technology, the sensor's wetted surfaces are made of Inconel® for corrosion resistance and process compatibility. Measurements are independent of gas composition. The modern stainless steel enclosure provides a cleanroom-compatible product.

### Features & Benefits

#### Accurate

- Second output provides greater resolution over the lower range of the instrument—ideal for multi-step processes
- Percent of Reading accuracy for more precise output signal
- Provides improved sensitivity for system I/O architecture with limited A/D resolution
- 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
- High overpressure rating for improved reliability

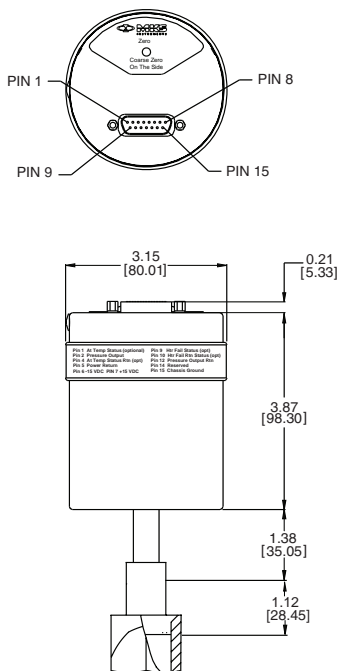
#### Compatible

- Cleanroom-compatible stainless steel package
- Compatible with earlier Baratron capacitance manometers, MKS power supply/readout modules and pressure controllers



# Specifications and Ordering Information

<b>Full Scale Ranges</b>	1, 10, 100, 1000 Torr
<b>Resolution</b>	0.001% of F.S.
<b>Accuracy</b>	0.12% of Reading (including non-linearity, hysteresis, and non-repeatability)
<b>Temperature Coefficients</b>	
Zero	0.002% of F.S./°C
Span	0.02% of Rdg./°C
<b>Ambient Operating Temperature</b>	15°C to 40°C
<b>Volume</b>	6.3 cc
<b>Warm-Up Time</b>	2 hours
<b>Overpressure Limit</b>	45 psia (310 kPa)
<b>Materials Exposed to Gases</b>	Inconel® (Optional fittings: 316 SS)
<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; second output 0 to 10 VDC into > 10K Ω load over lower range
<b>Compliance</b>	CE
<b>Fittings</b>	Standard: 1/2" (12.7 mm) tubulation; Optional: 8 VCR® female, Mini-CF, NW 16 KF



## Dimensional Drawing —

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

## Ordering Code Example: D27F01TBAC1B2

D27F	Code	Configuration
Number	D27F	D27F
<b>Ranges mmHg (Torr)</b>		
1	01T	01T
10	11T	
100	12T	
1000	13T	
<b>Fittings</b>		
1/2" Tube	BA	BA
8 VCR	CE	
Mini-CF	HA	
NW 16 KF	GA	
<b>Accuracy (% of Reading)</b>		
0.12% (standard 1 thru 1000 Torr only)	C	C
<b>Orientation/Calibration</b>		
Specific Orientation for Calibration not required (1 Torr and above, first output)	0	1
Vertical Calibration (required below 1 Torr, first output)	1	
Horizontal Calibration (required below 1 Torr, first output)	5	
<b>Connector</b>		
15 pin Type "D" with Thread Locks	B	B
15 pin Type "D" with Slide Locks	P	
<b>Second Range Gain Ratio</b>		
2 to 1	2	2
5 to 1	5	
10 to 1	0	



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