



Pressure &

Vacuum Measurement Solutions

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D27F

HEATED (45°C) DUAL-RANGE ABSOLUTE BARATRON® CAPACITANCE MANOMETER

The D27F dual-range manometer, an application-specific absolute Baratron® 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 heated to 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 ± 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

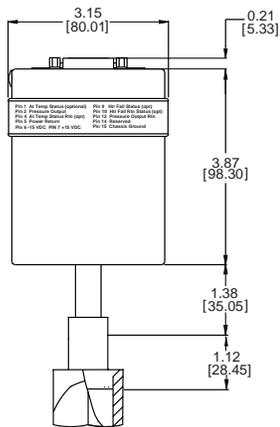
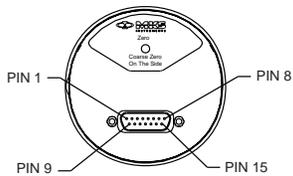
Compatible

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



Specifications and Ordering Information

Full Scale Ranges	1, 10, 100, 1000 Torr
Resolution	0.001% of Full Scale
Accuracy	0.12% of Reading (including non-linearity, hysteresis, and non-repeatability)
Temperature Coefficients	
Zero	0.002% of Full Scale/°C
Span	0.02% of Reading/°C
Ambient Operating Temperature	15°C to 40°C
Volume	6.3 cc
Warm-Up Time	2 hours
Overpressure Limit	45 psia (310 kPa)
Materials Exposed to Gases	Inconel® (Optional fittings: 316 SS)
Input Power Required	±15 VDC ±5% @ 0.25 Amps (max.)
Output Signal	Pressure: 0 to +10 VDC into > 10K Ω load; second output 0 to 10 VDC into > 10K Ω load over lower range
Fittings	Standard: 1/2" (12.7 mm) tubulation; Optional: 8 VCR® female, Mini-CF, NW 16 KF
Compliance	CE



Dimensional Drawing —

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

Ordering Code Example: D27F01TBAC1B2

Model	Code	Configuration
D27F	D27F	D27F
Ranges mmHg (Torr)		
1	01T	01T
10	11T	
100	12T	
1000	13T	
Fittings		
1/2" Tube	BA	BA
8 VCR	CE	
Mini-CF	HA	
NW 16 KF	GA	
Accuracy (% of Reading)		
0.12% (standard 1 thru 1000 Torr only)	C	C
Orientation/Calibration		
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	
Connector		
15 pin Type "D" with Thread Locks	B	B
15 pin Type "D" with Slide Locks	P	
Second Range Gain Ratio		
2 to 1	2	2
5 to 1	5	
10 to 1	0	



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