Pressure & Vacuum Measurement Solutions

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627F

HEATED (45°C) ABSOLUTE BARATRON® CAPACITANCE MANOMETER 24 VDC (20.0 – 31.5 VDC) AND PROFIBUS® OPTIONS

The 627F Baratron® capacitance manometer is heated to 45°C, accurate to 0.12% of Reading and includes updated temperature control electronics to provide superior long-term stability and repeatability. The 24V (20.0 to 31.5 VDC) analogue / Profibus Version capacitance manometer is available in Full Scale ranges down to 0.1 mbar / Torr.

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 interchangeable with earlier 627 Baratron capacitance manometers both analogue and Profibus and can be used with MKS power supplies, display units and pressure controllers, or the user's compatible power supply/readout devices. The 627F 24V analogue version has a 15-pin D-subminiature electrical connector, and the 627F Profibus version has two 9-pin D-subminiature electrical connectors.

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 0.1 mbar / Torr 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
- Fast warm-up time
- 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

Communication

- Analogue with output signal 0 – 10 VDC
- Profibus DPV1 optional

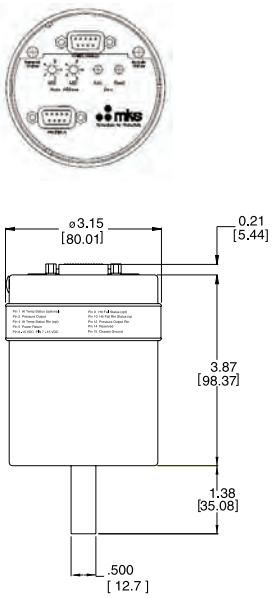
Power Requirements

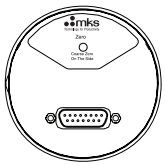
- Operates from 20.0 to 31.5 VDC

Specifications and Ordering Information

Full Scale Ranges	0.1, 1, 2, 10, 20, 100, 1000 mbar / Torr
Resolution	0.001% of F.S.
Accuracy (including non-linearity, hysteresis, and non repeatability)	0.12% of Reading for 1 – 1000 mbar / Torr range, 0.15% of Reading for 0.1 mbar / Torr
Temperature Coefficients	
Zero	0.002% of F.S./°C for 1 – 1000 mbar / Torr range; 0.005% F.S./°C for 0.1 mbar / Torr range
Span	0.02% of Rdg./°C
Ambient Operating Temperature	15°C to 40°C
Volume	< 7 cc
Warm-Up Time	2 hours for 1 – 1000 mbar / Torr F.S., 4 hours for 0.1 mbar / Torr F.S.
Overpressure Limit	45 psia (310 kPa)
Materials Exposed to Gases	Inconel® 600 and 316 SS
Input Power Required for Analogue Version	20.0 – 31.5 VDC @ 400 mA max
Input Power Required for Profibus Version	20.0 – 31.5 VDC @ 700 mA max
Analogue Output Signal	Pressure: 0 to +10 VDC into >10K Ω load
Digital Output Signal (optional)	Profibus DPV1
Fittings	
Standard	½" (12.7 mm) OD tube
Optional	8 VCR® compatible (female), 8 VCO® compatible (female), NW16-KF, NW25-KF, mini-CF (rotatable), DN40-CF (rotatable)
Compliance*	CE

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





STANDARD CONFIGURATION

Dimensional Drawing —

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

Ordering Code Example: 627F01MBC9B

	Code		Configuration
627F	**627F**		627F
Pressure Range Full Scale			
	mbar	Torr	
.1	.1M	.1T	01M
1	01M	01T	
2	02M	02T	
10	11M	11T	
20	21M	21T	
100	12M	12T	
1000	13M	13T	
Fittings			
½" (12.7 mm) OD tube	A		B
8 VCR compatible (female)	B		
Mini-CF, rotatable	C		
NW 16 KF	D		
NW 25 KF	Q		
NW 40 CF, rotatable	L		
8 VCO female compatible (female)	E		
Accuracy (see specifications for applicability)			
0.12% of Reading (1 - 1000 mbar / Torr)	C		C
0.15% of Reading (0.1 mbar / Torr)	D		
Options			
Standard Configuration (only ± 15VDC input)	1		9
Profibus Interface with 20.0 – 31.5 VDC input and analogue 0 – 10VDC output	4		
20.0 – 31.5 VDC input / 0 – 10 VDC output	9		
Connector			
1 x 15 pin Type "D" with Thread Lock for analog version	B		B
2 x 9 pin Type "D" with Thread Lock for Profibus version	B		

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