

727A and 728A

Heated (45°C or 100°C) General Purpose Absolute Baratron® Capacitance Manometers



Many thin film and industrial applications require accurate, reliable measurement of vacuum in processes where condensation of byproducts could affect the performance of the sensor. To meet these challenging requirements and offer a cost-effective solution, MKS developed the 727A and 728A Baratron® heated general purpose absolute capacitance manometers. Its blend of small size, high operating temperatures, rugged corrosion-resistant Inconel® sensor, and performance make it an ideal solution for new process equipment and retrofits into existing process tools.

The 727A Baratron manometer is heated to 45°C, while the 728A Baratron manometer is heated to 100°C. Both models use a robust sensor design that provides high tolerance to overpressure, and its all-Inconel construction gives exceptionally high corrosion resistance to process gases and byproducts found in many applications. The sensor is manufactured using state-of-the-art fabrication and statistical techniques, and typically achieves surface finishes of better than 10 Ra on all wetted surfaces. The electronics are based on sophisticated analog signal processing technology developed by MKS over the last twenty years.

Product Features

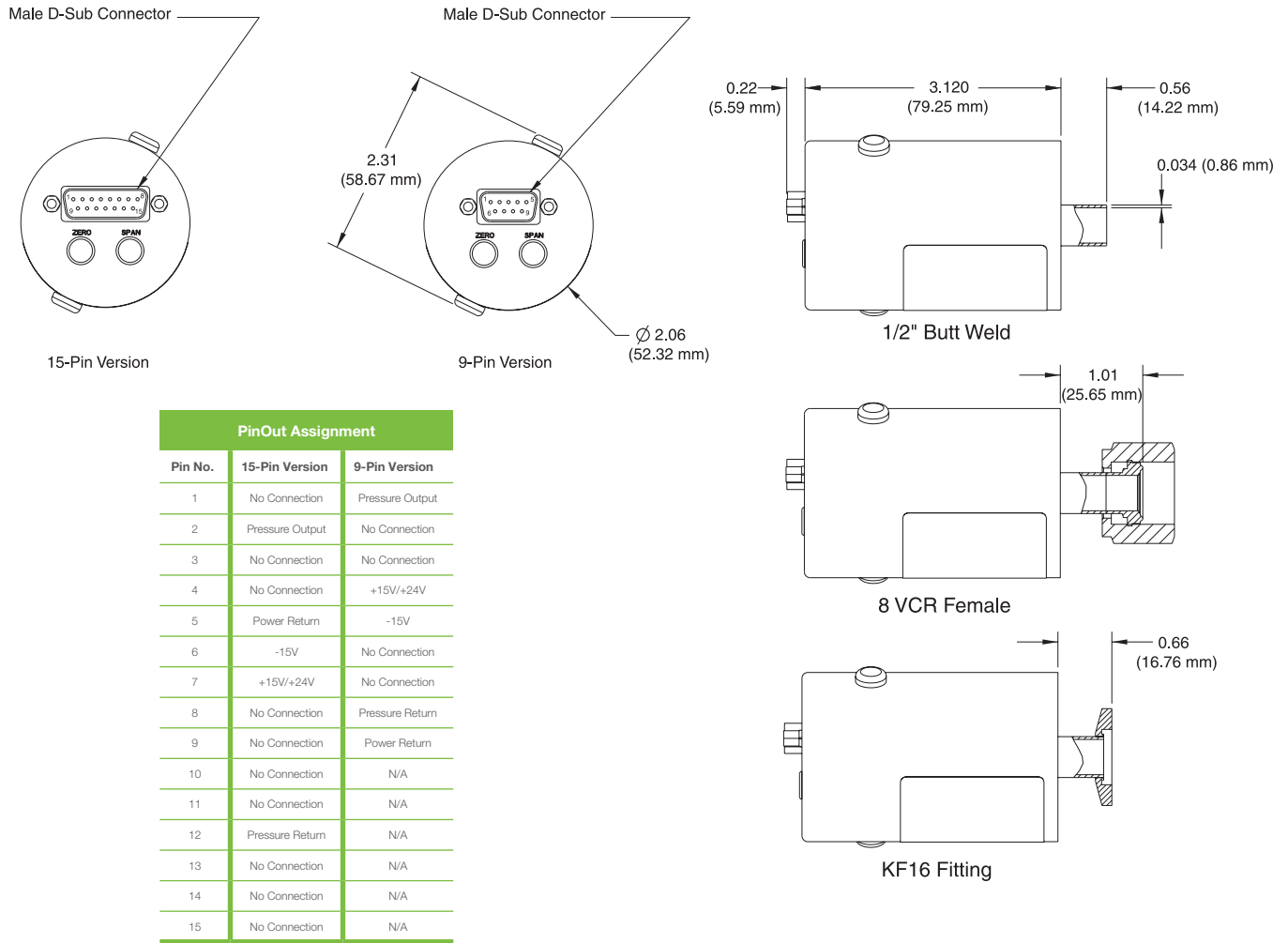
- Smallest heated Baratron manometer available, easily mounts inside process systems and even gas cabinets
- Operating temperatures of 45°C or 100°C prevent deposition of process gases and byproducts that cause drift
- Full Scale pressure ranges from 1000 to 1 Torr
- Typical accuracy of 0.50% of Reading gives most accurate measurements at low end of pressure range
- Measurement is independent of gas composition
- Analog output of 0-10 VDC permits interfacing with most control systems.



Applications

- Semiconductor Precursor Gas Delivery
- Flat Panel Display Manufacturing Equipment
- Optical and Magnetic Data Storage Manufacturing Equipment
- Biopharmaceutical Processing Systems
- Advanced Materials Thermal Processing Systems

Dimensional Drawing



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

Specifications

Configuration		Absolute measurement, single end
Full Scale Ranges		1, 2, 10, 30, 50, 100, 200, 500, and 1000 Torr and metric equivalents
Operating Temperatures	727A 728A	• 45°C • 100°C
Accuracy (including non-linearity, hysteresis, and non-repeatability)	727A 728A	• 0.50% of Reading • 0.50% of Reading (10 to 1000 Torr ranges) • 1.0% of Reading (< 10 Torr ranges)
Response Time		< 75 msec
Temperature Coefficients	Zero Span	• 0.004% of Full Scale/°C for 0.10 Torr; 0.010% of Full Scale/°C for < 10 Torr • 0.030% of Full Scale/°C for 0.10 Torr; 0.040% of Full Scale/°C for < 10 Torr
Ambient Temperature Range	727A 728A	• 15 to 40°C • 15 to 50°C
Overpressure Limit		45 psia or 2x Full Scale range, whichever is greater
Minimum Burst Pressure		10x Full Scale range or 90 psi, whichever is greater
Materials Exposed to Process Gases		Inconel nickel alloy
Electronics		Analog
Input Power Required	727A 728A	• ±15VDC or +24VDC ±5% @ 200 mA max • ±15VDC ±5% @ 400 mA max
Output Signal		0-10 VDC analog into > 10K ohm load
Electrical Connectors		15-pin D-subminiature or 9-pin D-subminiature
Fittings	Standard Optional	• ½" OD Tube • 8 VCR® female, 8 VCO® female, NW16-KF, or 1.33" OD CF

Ordering Information

Ordering Code Example: 728A11TCE2FB	Code	Configuration
Model		
727A - 45°C Operating Temperature 728A - 100°C Operating Temperature	727A 728A	728A
Full Scale Range		
1 Torr 2 Torr 10 Torr 30 Torr 50 Torr 100 Torr 200 Torr 500 Torr 1000 Torr	01T 02T 11T 31T 51T 12T 22T 52T 13T	11T
Fittings		
Straight tube, 1/2" OD 8 VCR female 8 VCO female NW16-KF 1.33" OD CF	BA CE DA GA HA	CE
I/O		
Standard input voltage, 0-10 VDC output	2	2
Accuracy		
Standard 0.50% Reading	F	F
Electrical Connector		
9-pin D-subminiature 15-pin D-subminiature	A B	B