Pressure & Vacuum Measurement Solutions

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727A & 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.

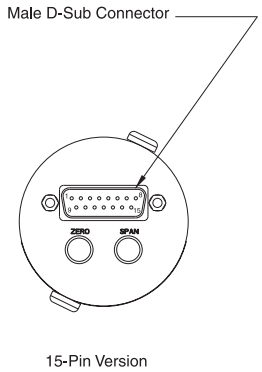
The 727A Baratron manometer is heated to 45°C, while the 728A Baratron is heated to 100°C. Both models use a robust sensor design that provides high tolerance to overpressure, and its all-Inconel construction gives exceptionally high corrosion resistance to process gases and byproducts found in many 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.

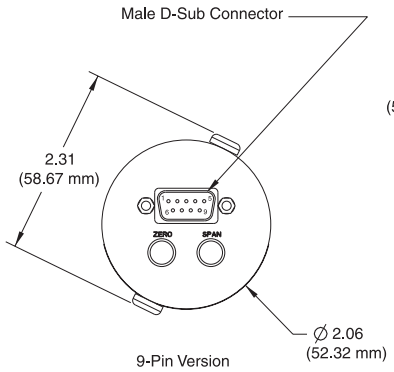
Features & Benefits

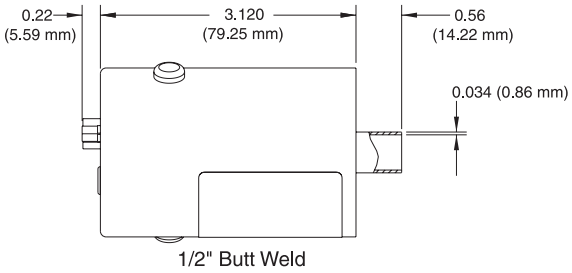
- Smallest heated Baratron manometer available, easily mounts inside process systems and even gas cabinets
- Operating temperatures of 45°C or 100˚C prevent deposition of process gases and byproducts that cause drift
- Full Scale pressure ranges from 1000 to 1 Torr
- Typical accuracy of 0.50% of Reading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

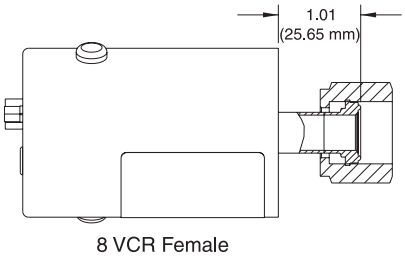
Applications

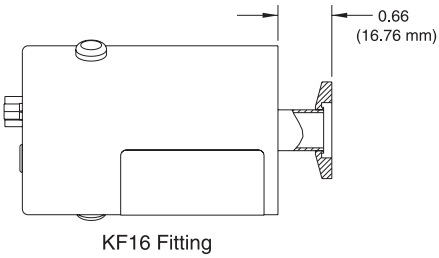
- Semiconductor Precursor Gas Delivery
- Flat Panel Display Manufacturing Equipment
- Optical and Magnetic Data Storage Manufacturing Equipment
- Biopharmaceutical Processing Systems
- Advanced Materials Thermal Processing Systems











PinOut Assignment		
Pin No.	**15-Pin Version**	**9-Pin Version**
1	No Connection	Pressure Output
2	Pressure Output	No Connection
3	No Connection	No Connection
4	No Connection	+15V/+24V
5	Power Return	-15V
6	-15V	No Connection
7	+15V/+24V	No Connection
8	No Connection	Pressure Return
9	No Connection	Power Return
10	No Connection	N/A
11	No Connection	N/A
12	Pressure Return	N/A
13	No Connection	N/A
14	No Connection	N/A
15	No Connection	N/A

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	45°C
728A	100°C
Accuracy (including non-linearity, hysteresis, and non-repeatability)	
727A	0.50% of Reading
728A	0.50% of Reading (10 to 1000 Torr ranges) 1.0% of Reading (< 10 Torr ranges)
Response Time	< 75 msec
Temperature Coefficients	
Zero	0.004% of Full Scale/°C for ≥10 Torr; 0.010% of FS/°C for < 10 Torr
Span	0.030% of Full Scale/°C for ≥10 Torr; 0.040% FS/°C for < 10 Torr
Ambient Temperature Range	
727A	15 to 40°C
728A	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	±15VDC or +24VDC ±5% @ 200 mA max
728A	±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	½" OD Tube
Optional	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	727A	728A
728A - 100°C Operating Temperature	728A	
Range (Full Scale)		
1 Torr	01T	11T
2 Torr	02T	
10 Torr	11T	
30 Torr	31T	
50 Torr	51T	
100 Torr	12T	
200 Torr	22T	
500 Torr	52T	
1000 Torr	13T	
Fittings		
Straight tube, ½" OD	BA	CE
8 VCR® female	CE	
8 VCO® female	DA	
NW16-KF	GA	
1.33" OD CF	HA	
I/O		
Standard input voltage, 0-10VDC output	2	2
Accuracy		
Standard 0.50% Reading	F	F
Electrical Connector		
9-pin D-subminiature	A	B
15-pin D-subminiature	B	

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