

# E28H

## Heated (100°C) Absolute Baratron® Capacitance Manometer with Etch Sensor



The E28H is the recommended solution for use in etch processes. MKS has implemented solutions within the manometer's pressure sensing element to minimize the effects of process byproducts and process gases. For processes that generate large quantities of condensable byproducts, MKS recommends the etch baffle that significantly reduces the ability of byproducts to reach the sensor, minimizing process-induced zero drift. For very low pressure processes where fluorine burn-in is the main issue, MKS recommends the fluorine friendly etch baffle offering the ultimate in short- and long-term stability in fluorine chemistry.

The E28H is heated to 100°C, accurate to 0.25% of Reading and includes updated temperature control electronics to provide superior long-term stability and repeatability. Optional heater and

temperature status LED/switches indicate that the heater (which maintains the sensor temperature to 100°C) is in control. The E28H is available in Full Scale ranges down to 50 mTorr (0.07 mbar) to accommodate today's lower process pressures.

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 128, 628A, 628B, 628D, E28B, E28D, and E28F Baratron capacitance manometers and can be used with MKS power supplies, display units and pressure controllers, or the user's compatible power supply/readout devices.

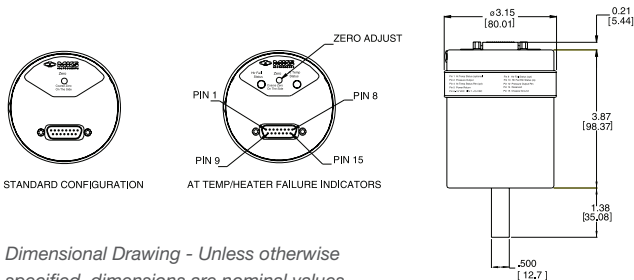
### Product Features

- Percent of Reading accuracy for more precise output signal in lower pressure ranges
- Full Scale ranges as low as 50 mTorr (0.07 mbar) for precise measurement of low pressure processes
- All-Inconel corrosion-resistant wetted surfaces
- Patented fluorine friendly etch baffle available upon request
- Integrated sump (US patent #5,822,685) provides particle protection
- Visual and electrical status of temperature and heater control circuit
- Compatible with earlier Baratron capacitance manometers, MKS power supply/readout modules, and pressure controllers



### Key Benefits

- Excellent long-term stability
- Faster warm-up time
- Measures total pressure directly, independent of gas composition
- High overpressure rating for improved reliability
- Cleanroom-compatible stainless steel package



*Dimensional Drawing - Unless otherwise specified, dimensions are nominal values in inches (mm referenced).*

Specifications		
<b>Full Scale Ranges</b>		0.05, 0.1, 0.25, 1, 2, 10, 20, and 100 Torr
<b>Resolution</b>		0.001% of Full Scale (0.002% of Full Scale for 0.05 Torr)
<b>Accuracy</b>		<ul style="list-style-type: none"> <li>0.25% of Reading (including non-linearity, hysteresis, and non-repeatability)</li> <li>0.5% for &lt;1 Torr and 0.05 Torr</li> </ul>
<b>Temperature Coefficients</b>	<b>Zero Span</b>	<ul style="list-style-type: none"> <li>0.002% of Full Scale/°C for 1-100 Torr ranges; 0.01% of Full Scale/°C for 0.1 Torr and 0.02% of Full Scale/°C for 0.05 Torr</li> <li>0.02% of Reading/°C</li> </ul>
<b>Ambient Operating Temperature</b>		15°C to 50°C
<b>Volume</b>		6.3 cc
<b>Warm-Up Time</b>		2 hours for 1 Torr and higher, 4 hours for <1 Torr
<b>Overpressure Limit</b>		45 psia (310 kPa) or 120% Full Scale, whichever is greater
<b>Materials Exposed to Gases</b>		Inconel®
<b>Input Power Required</b>		±15 VDC ±5% @ 0.6 Amps (max.)
<b>Output Signal</b>		Pressure: 0 to +10 VDC into >10K Ω load
<b>Optional Features LEDs and Switches</b>		Temperature status: one semiconductor switch will turn "ON" and corresponding green LED will be "ON" when the instrument is at temperature. Heater status: second semiconductor switch will turn "OFF" when heater failure occurs and corresponding bi-color LED will be blinking red, otherwise light will remain green.
<b>Fittings</b>	<b>Standard Optional</b>	<ul style="list-style-type: none"> <li>1/2" (12.7 mm) OD tube</li> <li>8 VCR® and 8 VCO® female, NW16 KF and NW25 KF, 1.33" OD CF and 2.75" OD CF</li> </ul>
<b>Semiconductor Switch</b>	<b>Current Charge Capacity Switch on Resistance Open Circuit Voltage</b>	<ul style="list-style-type: none"> <li>120mA max.</li> <li>20 Ω max. @ 120mA, 50°C</li> <li>28V max.</li> </ul>
<b>Compliance</b>		CE

Ordering Information: E28H01TBC1B	Code	Configuration
<b>Model</b>		
E28H	E28H	E28H
<b>Pressure Range Full Scale - Torr</b>		
0.05 0.1 0.25 1 2 10 20 100	U5T .1T RET 01T 02T 11T 21T 12T	01T
<b>Fittings</b>		
1/2" (12.7 mm) OD tube 8 VCR female 1.33" OD CF NW16 KF (range < 5000 Torr) 8 VCO female 2.75" OD CF NW25 KF (range < 5000 Torr)	A B C D E L Q	B
<b>Accuracy (see specifications for applicability)</b>		
0.25% of Reading 0.50% of Reading	E F	C
<b>Options</b>		
Standard Configuration, vertical calibration Optional Temperature/Heater Status, vertical calibration Standard Configuration, horizontal calibration (ranges < 1 Torr only) Optional Temperature/Heater Status, horizontal calibration (ranges < 1 Torr only)	1 2 5 6	1
<b>Connectors</b>		
15 pin Type "D" with Thread Lock 15 pin Type "D" with Slide Lock	B P	B