

# BARATRON® CAPACITANCE MANOMETERS

DIRECT, GAS INDEPENDENT, HIGH ACCURACY  
PRESSURE MEASUREMENT



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## VACUUM PRESSURE MEASUREMENT SOLUTIONS

MKS offers a wide variety of high accuracy, high performance capacitance manometers for a myriad of applications and market needs where reliability and reproducibility are essential to success. The sensor is manufactured using Inconel® or Incoloy® alloys which is resistant to both oxidation and corrosion. It also offers superior structural integrity at high temperatures, making it well suited for service in extreme environments where it would be subjected to pressure and heat. All manometer sensors are fully welded and 100% leak-checked prior to assembly.

Pressure measurement using MKS' capacitance manometers is completely independent of the process gases used and will provide consistent, reliable and reproducible pressure readings for many years to come.

- Superior performance
- Broad selection
- Tailored solutions
- High accuracy
- Easy integration
- Trusted partner



### GENERAL PERFORMANCE ABSOLUTE TRANSDUCERS

- 0.1 - 25000 Torr pressure range
- Accuracy range from 0.12% to 0.5%
- 0-10 VDC analog output signal
- Inconel & Incoloy sensor construction
- Absolute pressure measurement
- Heated or non-heated options
- Models include: AA01A, AA02A, 626D, 627H, 628H, 722C

### GENERAL PERFORMANCE DIFFERENTIAL TRANSDUCERS

- 0.2 - 1000 Torr pressure range and equivalents in kPa, mbar, inches of H<sub>2</sub>O and cm H<sub>2</sub>O
- Unidirectional or bidirectional calibration
- Optional setpoints
- 0.01% of Full Scale resolution
- 0-1 VDC, 0-5 VDC or 0-10 VDC analog output signal
- Models include: 226B, 228B

### HIGH PERFORMANCE PROCESS TRANSDUCERS

- 0.1 - 1000 Torr pressure range
- Up to 3 decade calibration
- EtherCAT®, DeviceNet™ and/or 0-10 VDC analog output signal
- All Inconel and Incoloy sensor construction
- Ambient to 200°C operating temperature range
- Models include DA01B, DA02B, DA06A, 631D

### HIGH TEMPERATURE PROCESS MANOMETER

- 1 - 1000 Torr pressure range
- 150°C - 200°C operating temperature range
- Accuracy of 0.25% of Reading
- Two solid state relays independently adjustable by customer
- At temperature and heater failure LED's
- EtherCAT and 0-10 VDC analog output
- Model DA03B

## Leading The Industry Over 60 Years

MKS Instruments had its start in the field of pressure measurement by acquiring the original technology patent to make precise measurements of barometric (atmospheric) pressure using a capacitive “manometer”. The first pressure sensors, built in the early 1960’s, were clamped together, then later welded together to make them leak tight. This enabled a vacuum to be stored on the reference side, allowing self-contained barometric measurements—thus the Baratron capacitance manometer was born.

Early models were primarily used as research instruments until MKS engineered key solutions that lead to opportunities in both



industrial and semiconductor applications:

- moved sensitive electrodes into a stable, clean environment for a more robust and longer life
- attached smaller electronics to the sensor to provide a high resolution, stable electrical output
- Full Scale ranges were reduced from 1,000 mmHg to 100 mmHg, and then 10 mmHg allowing for precise measurement of low vacuum pressures

Today, MKS continues to lead the industry with Baratron capacitance manometers that control complex measurements in almost all semiconductor processes as well as advanced electronics and specialty industrial markets. In fact, almost any integrated circuit used in electronics, smart phones, televisions, PCs and automobiles are manufactured by a process using the MKS Baratron capacitance manometer.



### INDUSTRIAL PRESSURE TRANSDUCERS

- 1-1000 Torr
- 0-10 VDC analog output
- Absolute pressure measurement
- Exposed materials of Inconel and 316 SS
- 14-pin micro-electrical connector
- CE compliance
- Models include: AA09A, R750D, 750D, 430E, 220DA

### COMPACT PRESSURE TRANSDUCERS

- 13-32 VDC
- 0°C-50°C operating temperature range
- Accuracy of 1.0% of Reading
- Single-ended configuration
- Inconel and Incoloy nickel alloys
- Absolute pressure measurement
- CE compliance
- Models include: AA07B, AA08B

### PRESSURE SWITCHES

- 10 Torr through 500 psi
- Accuracy of  $\pm 0.5\%$  of Full Scale ( $\pm$  temperature coefficient)
- All-metal, all-welded construction exposing only stainless steel and Inconel for corrosion resistance
- Trip point dead band of  $\pm 3\%$  of full scale
- Response time of <20 msec
- Models include: 41C, 42C, 51C, 52C

### POWER SUPPLIES

- 0.75 amp power supply supports up to two heated manometers
- Two process relay set points
- Linear analog output and RS-232 interface
- Two configurable process trip points
- Input displays in Torr or mbar units
- Models include: 946, PR4000B, PDR2000A, 274B, 670C, 660C, LDM-A, LDM-D, 4-20mA

## WHY MKS?

### CRITICAL TECHNOLOGIES

World-class technology and development capabilities for leading-edge processes



### PROVEN PARTNER

Recognized leader delivering innovative, reliable solutions for our customers' most complex problems



### OPERATIONAL EXCELLENCE

Consistent execution across all aspects of our business



### COMPREHENSIVE PORTFOLIO

Extensive offering of products and services for the markets we serve



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**MKS INSTRUMENTS** enables technologies that transform our world. We deliver foundational technology solutions to leading edge semiconductor manufacturing, electronics and packaging, and specialty industrial applications.

We apply our broad science and engineering capabilities to create instruments, subsystems, systems, process control solutions and specialty chemicals technology that improve process performance, optimize productivity and enable unique innovations for many of the world's leading technology and industrial companies.

Our solutions are critical to addressing the challenges of miniaturization and complexity in advanced device manufacturing by enabling increased power, speed and feature enhancement for optimized connectivity. Our solutions are also critical to addressing ever-increasing performance requirements across a wide array of specialty industrial applications.

Additional information can be found at [www.MKS.com](http://www.MKS.com).

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