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Pressure Measurement & Control

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600 Series Selection Guide

BARATRON® ABSOLUTE CAPACITANCE MANOMETERS

600 Series Absolute Capacitance Manometers

The MKS 600 Series Baratron® Absolute Capacitance Manometers are designed for accurate, repeatable pressure measurements in demanding research or process environments. Sensor, electronics, and packaging enhancements combine to make the 600 Series manometers the most stable low pressure measuring instruments available. Reliability is designed in and verified with extensive MTBF analysis and STRIFE (stressed life) testing.

Capacitance Manometers

MKS Type 600 Series are stand-alone capacitance manometers that require a ±15 VDC power supply and provide a high level 0-10 VDC output. This signal can be interfaced directly with an MKS pressure controller, an MKS power supply/readout module, or other process controller. Pressure is determined by measuring the change in capacitance between the diaphragm and an adjacent dual electrode. The radially-tensioned diaphragm provides very low hysteresis, excellent repeatability, remarkably high resolution (0.001% F. S.), and the ability to measure extremely low pressures. The differential capacitance signal is converted into a useable output by signal conditioning circuitry which uses the latest in surface mount electronics for improved environmental performance. The 600 Series transducers include a sensor that provides an increased overpressure rating of 45 psia, resulting in excellent reliability, even with frequent atmospheric pressure exposure. The sensors are of Inconel® all-welded construction for compatibility with most corrosive process environments.

- Full Scale ranges as low as 0.02 mmHg (20 mTorr)
  – Allows for accurate measurement of process pressures as low as 0.2 mTorr
- Percent of Reading accuracy for more reliable output signal in lower scale of pressure range
  – Results in improved process yield
- Complete line of manometers which includes temperature regulated units up to 200°C and manometers with relays to meet safety requirements
  – Single-source for capacitance manometers
  – Wide variety of application expertise
- Measures total pressure directly, independent of gas composition
  – Eliminates the need for lookup tables
- Excellent long-term stability
  – Ensures repeatability in your pressure measurement and therefore in your process pressure control
- All-Inconel® corrosion-resistant construction
  – Manometer stands up to the harshest process gas
- High overpressure rating (45 psia) improves reliability
- CE Mark compliant – meets requirements for European Union

Capacitance Manometers

Types 622 & 626 (Ambient Temperature)

The Types 622 and 626 are the most economical of the 600 Series Baratron Capacitance Manometers. These manometers use dual-voltage power supplies, and are available in Full Scale ranges from 1 to 1000 mmHg (Torr). The 622 has a terminal block connector; the 626 uses a 15-pin Type “D” connector.

Types 627, 628, & 629 (Temperature-Controlled)

The Types 627, 628, and 629 are temperature-controlled manometers designed to reduce the effects of ambient temperature fluctuations on the sensor and electronics. The 627 is internally temperature regulated to 45°C; the 628 to 100°C. Because it is controlled at a high temperature, the 628 is commonly used to minimize contaminant buildup on the sensor in critical, harsh processes. The 627 and 628 include optional heater and at-temperature statuses. LED's and corresponding semiconductor switches indicate when temperature of the sensor is within the specified window. The Type 629 is offered in both 45°C and 100°C versions. The 629 is available with an optional external zero input capability, which accepts a voltage equal and opposite to the zero offset, providing zero output at zero pressure input. The 627 and 629 are available in ranges from 0.02 to 1000 mmHg; the 628 is available in ranges from 0.05 to 1000 mmHg Full Scale.

Type 631 (Temperature-Controlled up to 200°C)

The Baratron Type 631 pressure transducer, MKS' high temperature design innovation, offers a 125°C, 150°C or 200°C sensor and self-contained electronics for high temperature process applications. The 631 includes optional heater status and at temperature lights and semiconductor switches to indicate to the user that the temperature of the sensor is within the specified window. In semiconductor processes such as LPCVD, a high temperature capacitance manometer prevents contamination buildup.

Types 623, 624, & 625 (Ambient & Temperature-Controlled, Trip Point Relays)

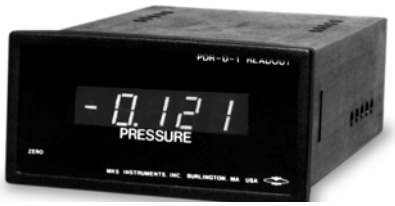
The Types 623, 624, and 625 each have two trip point control relays for control system interfacing. The Type 623 operates at ambient temperature, while the Types 624 and 625 are regulated at 45°C and 100°C, respectively. All three manometers are offered in Full Scale ranges from 10 to 1000 mmHg; the 624 and 625 are also available in 1 mmHg Full Scale.

Power Supply/Readout Modules

MKS has a wide offering of power supply/readout modules recommended for use with the 600 Series capacitance manometers.

Type PR4000 Single and Dual-channel

The PR4000 is a versatile 4½-place digital LCD display/ power supply unit available in both one and two-channel versions. Both units have two fully configurable relays for set point monitoring, RS-232 digital interfaces with optional RS-485 and IEEE-488 interfaces, 16-bit analog output, and auto zero capability. The PR4000 can be used with Type 622, 623, 624, 625, 626, 627, and 628 capacitance manometers.



Type PDR-D-1 Single-channel, 115 Volt
Type PDR-D-2 Single-channel, 230 Volt

The PDR-D-1 and PDR-D-2 are single-channel power supplies with 4½-place digital displays, and are packaged in compact 1/8 DIN housings. The PDR-D-1 requires an input power of 115 Volts; the PDR-D-2 requires 230 Volts for international voltage requirements. Both modules can be used with Type 622, 623, and 626 capacitance manometers.

Type PDR2000

The PDR2000 is a low-cost, two-channel power supply/ display capable of supporting most 600, 700, and 800 Series transducers. It offers compact size (1/8" DIN), relay trip points on user defined pressure values, and selectable engineering units. A scaling feature allows adjustment of the display reading if non-standard ranges are used. It also has a simple RS-232 interface for reading pressure values.

Type 660 Single-channel, Microprocessor-based

The single-channel, microprocessor-based Type 660 provides power supply and digital display for Type 622, 623, 624, 626, and 627 capacitance manometers. It also provides 4½-place digital display (not power) for Type 625 and 628 capacitance manometers. It features four open collector alarm trip points and a single-level menu structure for all setup functions. The 660 can be ordered with 120, 240, 100, or 220 Volt power input, and with an optional RS-232 interface. The 660 mounts in a compact 1/8 DIN package.

Isolation Systems

CV7627

MKS Isolation Systems are designed to automatically maintain a process manometer at vacuum throughout a process cycle. The CV7627 consists of a Type 627 Process Manometer, an HPS® Vacuum Products Group Cv Pneumatic Isolation Valve, and an R750 Mini-Baratron Relay Module. The system utilizes the R750 Pressure Relay Module to monitor the process pressure and provide a contact closure which is used to open a customer supplied solenoid valve. The solenoid valve closes the Cv valve any time the process pressure exceeds the Full Scale pressure of the manometer. This action maintains the process manometer at vacuum.

Baratron® Capacitance Manometers	Type 622A	Type 626A	Type 627B	Type 628B
	Ambient, Terminal Block Connector	Ambient, 15-pin D Connector	Temperature-Controlled at 45°C, 15-pin D Connector	Temperature-Controlled at 100°C, 15-pin D Connector
Full Scale Ranges (mmHg) (Note 1)	1, 2, 10, 20, 100, 500, and 1000 mmHg	0.1, 0.25, 1, 2, 10, 20, 100, 500 and 1000 mmHg	0.02, 0.05, 0.1, 0.25, 1, 2, 10, 20, 100, 200, 500, 1000, 2000, 5000, 10.000, 15,000, 20,000, 25,000 mmHg	0.05, 0.1, 0.25, 1, 2, 10, 20 100, 200, 500, 1000, 2000, 5000, 10,000, 15,000, 20,000, 25,000 mmHg
Accuracy (including non-linearity, hysteresis, & non-repeatability)	Standard: 0.25% of Reading Optional: 0.15% of Reading (only available on 10 through 1000 mmHg ranges)	Standard: 0.25% of Reading Optional: 0.15% of Reading (only available on 10 through 1000 mmHg ranges)	0.12% of Reading for 1 through 25,000 mmHg ranges; 0.15% of Reading for 0.05 and 0.1 mmHg ranges; 0.25% of Reading for 0.02 mmHg range	0.25% of Reading for 1 through 25,000 mmHg ranges; 0.5% of Reading for 0.05 and 0.1 mmHg ranges
Temp. Coefficients Zero	0.005% F.S./°C for 10 through 1000 mmHg ranges; 0.015% F.S./°C for 1 mmHg range; 0.010% F.S./°C for 2 mmHg range	0.005% F.S./°C for 10 through 1000 mmHg range; 0.015% F.S./°C for 1 mmHg range; 0.010% F.S./°C for 2 mmHg range	0.002% F.S./°C for 1 through 25,000 mmHg ranges; 0.005% F.S./°C for 0.1 mmHg range; 0.015% F.S./°C for 0.05 mmHg range; 0.03% F.S./°C for 0.02 mmHg range	0.002% F.S./°C for 1 through 25,000 mmHg ranges; 0.010% F.S./°C for 0.1 mmHg range; 0.015% F.S./°C for 0.05 mmHg
Span	0.04% of Reading/°C	0.04% of Reading/°C	0.02% of Reading/°C	0.02% of Reading/°C
Measurement Resolution	0.001% of F.S.	0.001% of F.S.	0.001% of F.S., 0.002% of F.S. for <0.05 mmHg F.S. ranges	0.001% of F.S., 0.002% of F.S. for <0.05 mmHg F.S. ranges
Ambient Operating Temperature (Note 2)	0° to 50°C	0° to 50°C	15° to 40°C	15° to 50°C
Overpressure Limit	45 psia (310 kPa)	45 psia (310 kPa)	45 psia (310 kPa)	45 psia (310 kPa)
Materials Exposed to Gases (not including optional fittings)	Inconel®	Inconel®	Inconel®	Inconel®
Volume (Px side)	6.3 cc	6.3 cc	6.3 cc	6.3 cc
Input Power Required	±15 VDC ±5% @ 35 mA	±15 VDC ±5% @ 35 mA	±15 VDC ±5% @ 0.25 Amps max.	±15 VDC ±5% @ 0.5 Amps max.
Output (Note 3)	0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm
Electromagnetic Compatibility	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends
Electrical Connectors	Terminal strip	15-pin Type "D" w/ thread lock	15-pin Type "D" w/ thread lock 15-pin Type "D" w/ slide lock	15-pin Type "D" w/ thread lock 15-pin Type "D" w/ slide lock
Fittings Standard	½" (12.7 mm) dia. tubulation	½" (12.7 mm) dia. tubulation	½" (12.7 mm) dia. tubulation	½" (12.7 mm) dia. tubulation
Optional	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)
Additional Information	General purpose, unheated	General purpose, unheated	Heated sensor for improved accuracy; optional temperature and heater status LED's and switches; switches consist of power MOSFET outputs rated at 10mA max.	High temperature sensor reduces process deposition; optional temperature and heater status LED's and switches; switches consist of power MOSFET outputs rated at 10mA max.

1 For higher ranges, consult Applications Engineering at (800) 227-8766.
2 Some specifications may vary outside this temperature range. Contact Applications Engineering at (800) 227-8766 for further information.
3 For digital versions, contact Applications Engineering at (800) 227-8766.
4 CF Fittings are available with high pressure ranges > 1000T , but is limited by the bolt strength.
5 NW KF Fittings are only available on ranges up to 5000 Torr and require an HPS overpressure ring for the 2000 and 5000 Torr ranges.

Specifications

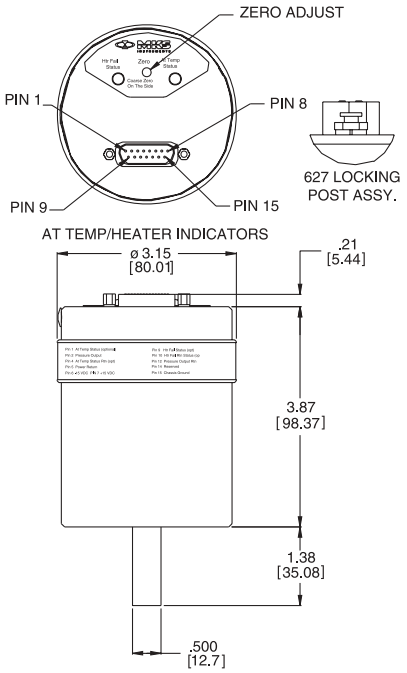
Type 629B	Type 631A	Type 623A	Type 624B	Type 625B
Temperature-Controlled at 45°C or 100°C 9-pin D Connector	**Temperature-Controlled at 125°, 150°, & 200°C**	**Ambient with Trip Point Relays**	**Temperature-Controlled at 45°C with Trip Point Relays**	**Temperature-Controlled at 100°C with Trip Point Relays**
0.02 (45°C only) 0.05, 0.1, 1, 2, 10, 20, 100, 200, 500 1000, 2000, 5000, 10,000, 15,000, 20,000, 25,000 mmHg	1, 2, 10, 100, and 1000 mmHg	10, 20, 100, 500, and 1000 mmHg	1, 2, 10, 20, 100, 500, 1000, 2000, 5000, 10,000, 15,000, 20,000, 25,000 mmHg	1, 2, 10, 20, 100,500, 1000, 2000, 5000, 10,000, 15,000, 20,000, 25,000 mmHg
45°C Version: 0.12% of Reading for 1 through 25,000 mmHg ranges; 0.15% of Reading for 0.05 and 0.1 mmHg ranges; 0.25% for 0.020 mmHg 100°C Version: 0.25% of reading for 1 through 25,000 mmHg; 0.50% for 0.1 and 0.05 mmHg	0.25% of Reading for 125°/150°C 0.5% of Reading for 200°C	Standard: 0.25% of Reading Optional: 0.15% of Reading	0.12% of Reading	0.25% of Reading
45°C Version: 0.002% F.S./°C for 1 through 1000 mmHg ranges; 0.005% F.S./°C for 0.1 mmHg range; 0.015% F.S./°C for 0.05 mmHg range, 0.02% F.S./°C for 0.03 mmHg 100°C Version: 0.002% F.S./°C for 1 through 1000 mmHg ranges; 0.01% of F.S./°C for 0.1 mmHg range; 0.02% of F.S./°C for 0.05 mmHg range	0.004% F.S./°C for 10 through 1000 mmHg ranges; 0.008% F.S./°C for 1 mmHg range for 125°/150°C 0.008% F.S./°C for 10 through 1000 mmHg ranges; 0.16% of F.S./°C for 1 mmHg for 200°C 0.02% of Reading/°C	0.005% F.S./°C	0.002% F.S./°C	0.002% F.S./°C
0.02% of Reading/°C	0.02% of Reading/°C	0.04% of Reading/°C	0.02% of Reading/°C	0.02% of Reading/°C
0.001% of F.S., 0.002% of F.S. for 0.02 and 0.05 mmHg F.S. ranges	0.001% of F.S.	0.001% of F.S.	0.001% of F.S.	0.001% of F.S.
15° to 40°C for 45°C Version 15° to 50°C for 100°C Version	10° to 40°C for 125°C and 150°C units 10° to 30°C for 200°C units	0° to 50°	15° to 40°	20° to 70°
45 psia (310 kPa)	45 psia (310 kPa)	45 psia (310 kPa)	45 psia (310 kPa)	45 psia (310 kPa)
Inconel®	Inconel® and Stainless Steel (fittings)	Inconel®	Inconel®	Inconel®
6.3 cc	6.3 cc	6.3 cc	6.3 cc	6.3 cc
±15 VDC@0.25Amps for 45°C, 0.5 Amps for 100°C	±15 VDC ±5% @ 1.5 Amps max. (125°/150°C) ±15 VDC ±5% @ 2.0 Amps max. (200°C)	±15 VDC ±5% @ 75 mA	±15 VDC ±5% @ 0.4 Amps max.	±15 VDC ±5% @ 0.6 Amps max.
0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm	0 to +10 VDC into > 10K Ohm
Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends	Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends
9-pin Type "D" w/ screw lock 9-pin Type "D" w/ slide lock	15-pin Type "D" w/ thread lock	2-piece terminal block	15-pin Type "D" w/screw locks Optional: terminal block adapter	15-pin Type "D" w/screw locks Optional: terminal block adapter
½" (12.7 mm) dia. tubulation	8 VCR female	½" (12.7 mm) dia. tubulation	½" (12.7 mm) dia. tubulation	½" (12.7 mm) dia. tubulation
NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)	NW 16 KF, 1½ Tri Clover, 2" Tri Clover	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)	NW 16 KF, NW 25 KF, 2¾" CF, mini-CF, Swagelok® 8 VCR® or 8 VCO® (female)
Optional heater status, LEDs and switches; external zero	Heated sensor for improved accuracy; optional temperature and heater status LED's and switches	Two trip point control relays, each separately adjustable from 0.1 to 100% of F.S., SPDT contacts rated at 1 Amp @ 30 VDC or 0.5 Amp @ 30 VAC resistive. 0 to 10 VDC output proportional to each trip point. 12.5K Ohm max. source impedance.	Two trip point control relays, each separately adjustable from 0.1 to 100% of F.S., SPDT contacts rated at 1 Amp @ 30 VDC or 0.5 Amp @ 30 VAC resistive. 0 to 10 VDC output proportional to each trip point. 12.5K Ohm max. source impedance.	Two trip point control relays, each separately adjustable from 0.1 to 100% of F.S., SPDT contacts rated at 1 Amp @ 30 VDC or 0.5 Amp @ 30 VAC resistive. 0 to 10 VDC output proportional to each trip point. 12.5K Ohm max. source impedance.

Power Supplies/ Digital Readouts	Type PR4000	Type PDR-D-1	Type PDR-D-2	Type PDR2000	Type 660B
	Economical single/dual channel digital readout	Economical single-channel digital readout	Economical single-channel digital readout	Standard series two-channel digital readout	Single-channel digital readout with multiple set points
Display Type	Digital, 4½-place LCD	Digital, 4½-place LED	Digital, 4½-place LED	Digital, 4-place Red LED	Digital, 4½-place LED
Number of Channels	1 Type 4000AS, 4000AE 2 Type 4000AP	1	1	2	1
Input Power Required	115/230 VAC, 50/60 Hz	115 VAC, 50/60 Hz	230 VAC, 50/60 Hz	Universal input; 110-240 VAC; 47-63 Hz, 40 VA, IEC 320 instrument power input receptacle	Standard: 120 VAC ±10, 50/60 Hz Optional: 240, 100, or 220 VAC
Input Signal	0 to ±10 VDC 0 to ±5 VDC Other, scalable	0 to ±10 VDC	0 to ±10 VDC	0 to +10 VDC	0 to ±10 VDC
Power Supply Output	±15 VDC @ 0.8 Amps ±15 VDC @ 1.5 Amps 24 VDC @ 1 Amp	±15 VDC @ 35 mA	±15 VDC @ 35 mA	±15 VDC @ 750 mA	±15 VDC ±5% @ 0.25 Amps max.
Signal Output (analog)	1 analog output per channel with 16 bit resolution	0 to ±10 VDC into > 10K Ohm	0 to ±10 VDC into > 10K Ohm	Linear, 4 VDC for F.S. output, (0.5 VDC per decade), 0-10 VDC each transducer	0 to ±10 VDC capacitance manometer passed through, not zeroed
Signal Output (digital)	Optional RS-232, RS-485, IEEE-488	n/a	n/a	Linear, 4 VDC for F.S. output, (0.5 VDC per decade), 0-10 VDC each transducer	Optional: RS-232 interface outputs pressure and alarm status, and provides setup input of alarm trip points, hysteresis, and display zero
Trip Points	2, fully programmable	n/a	n/a	Two relays, contacts rated at 2 Amps @ 30 VDC	4 open collector transistors (2 high, 2 low) with adjustable hysteresis and status LEDs; adjustable from 1 to 100% F.S.
Trip Point Relay Ratings	2 5PDT, 2 Amps @ 30 VDC, 1 Amp @ 230 VAC	n/a	n/a	Two relays, contacts rated at 2 Amps @ 30 VDC	Open collector transistors rated for 50 Volts/100 mA max.
Operating Temperature Range	15° - 40°C	0° - 50°C	0° - 50°C	2° - 50°C	0° - 55°C
Compatible Instruments	Type 622, 623, 624, 625, 626, 627, 628*; Other MKS products: Type 120*, 220, 223, 230*, 430, 619*, 621*, 631*, 722, 740, 750, 850, 852, 870, 872 capacitance manometers; Type 640 pressure controller; Type 358, 558, 179 mass flow meters	Type 622, 623, 626; Other MKS products: Type 223, 722, 740, 750, 850, 852, 870, 872 capacitance manometers; Display only for Type 120, 220, 619, 621, 631 capacitance manometers	Type 622, 623, 626; Other MKS products: Type 223, 722, 740, 750, 850, 852, 870, 872 capacitance manometers; Display only for Type 120, 220, 619, 621, 631 capacitance manometers	628 (one only); Other MKS products: Type 622, 623, 624, 627, 722 750, 850, 852, 870, 872, 223 (unidirectional only),	Type 622, 623, 624, 626, 627; Other MKS products: Type 223, 722, 740, 750, 850, 852, 870, 872 capacitance manometers; Display only for Type 120, 220, 619, 621, 631 capacitance manometers; Type 358, 558, 179 mass flow meters
Mounting	Half 19-inch rack mount	96 x 48 x 200mm DIN case, mounts in 92 x 45mm panel cutout	96 x 48 x 200mm DIN case, mounts in 92 x 45mm panel cutout	1/8" DIN enclosure; 94 mm x 47 mm x 165 mm	1/8 DIN case; 96 mm x 48 mm x 140 mm, case mounts in 92 mm x 45 mm panel cutout.
Channel Selection	Dual display	n/a	n/a	User selected by front panel push button	n/a
Additional Information	Wide array of standard features. Options for digital communicators and high power output for temperature-controlled manometers Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends.	Low cost, compact enclosure	Low cost, compact enclosure	RS-232 (9600 baud, 8 data bits, no parity, 1 stop bit) Low cost, compact enclosure for two manometers Fully CE Compliant to EMC Directive 89/336/EEC	For use with both capacitance manometers and mass flow meters; input scaler provides direct reading for any sensor range; display can be remotely zeroed. Fully CE Compliant to EMC Directive 89/336/EEC when used with an overall metal braided shielded cable, properly grounded at both ends.

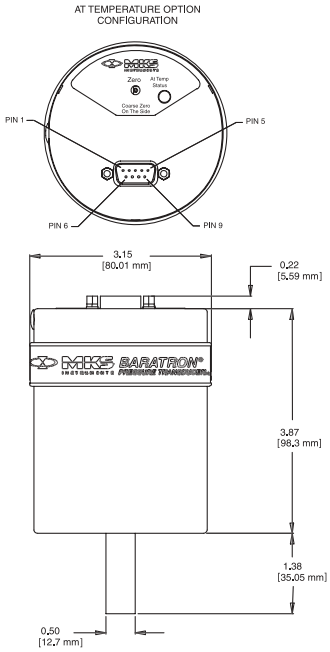
**Subject to total power consumption of connected instrument(s) and PR4000 options*

Dimensional Drawings

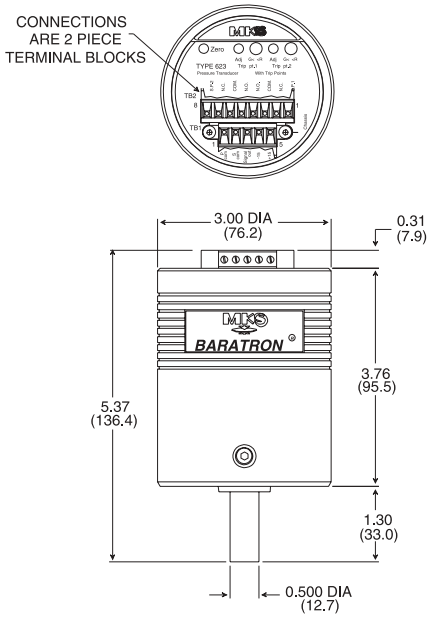
Type 627B and 628B



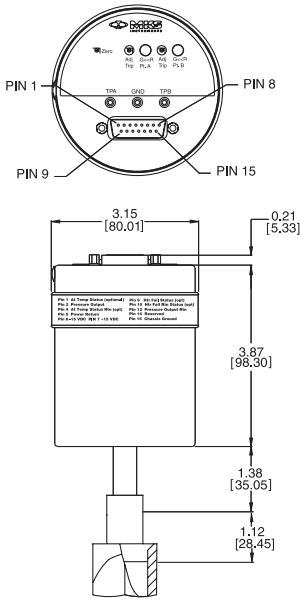
Type 629B



Types 623A



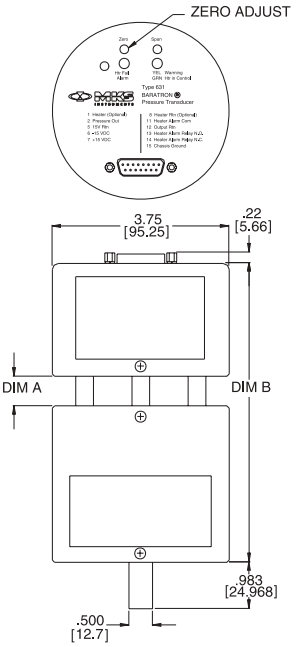
Type 624B and 625B



Dimensional Drawing —

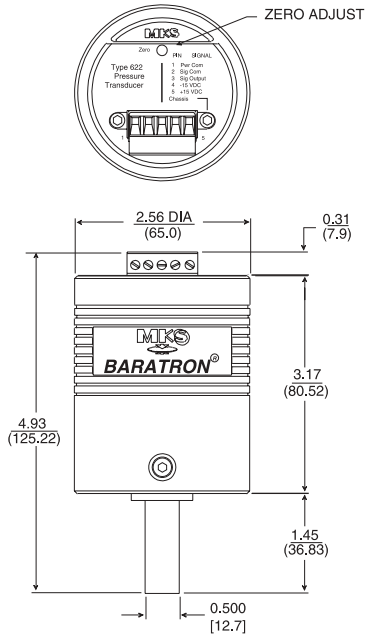
Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Type 631A

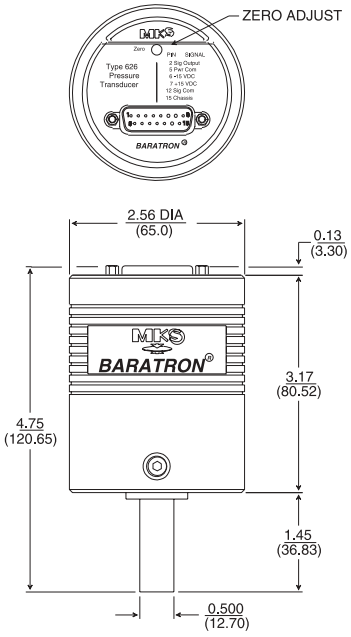


631A DIM A	
125°C	.275 ± .030 [6.985 ± 0.762]
150°C	.275 ± .030 [6.985 ± 0.762]
200°C	.625 ± .030 [1:15.875 ± 0.762]
631A DIM B	
125°C	5.98 ± .06 [151.89 ± 1.52]
150°C	5.98 ± .06 [151.89 ± 1.52]
200°C	6.33 ± .06 [160.78 ± 1.52]

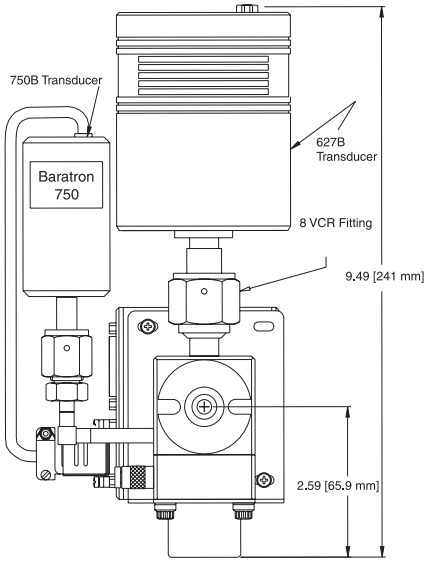
Type 622A



Types 626A



Type CV7627

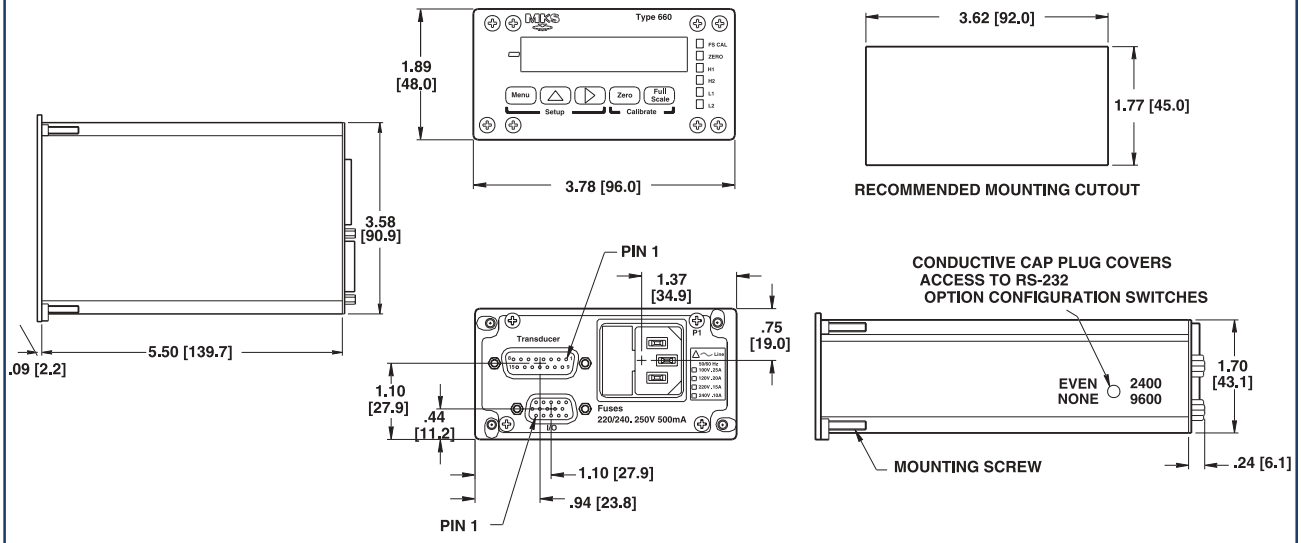


Dimensional Drawing —

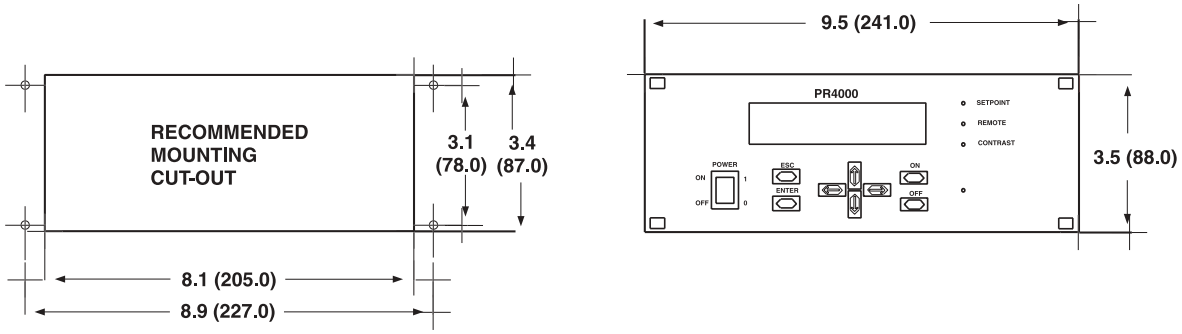
Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Dimensional Drawings - Readouts

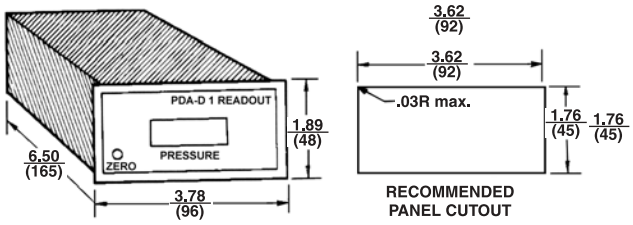
Type 660B



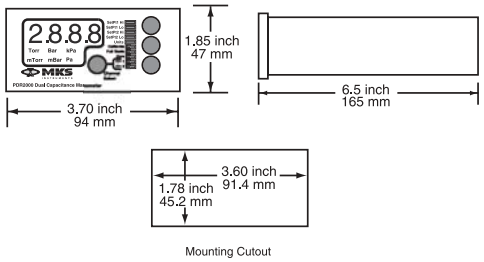
Type PR4000



Type PDR-D-1 & PDR-D-2



Type PDR2000



Dimensional Drawing —

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

Ordering Information

Ordering Code Example: 631A11TBEM2P	Code	Configuration
Absolute Capacitance Manometers		
Ambient, terminal strip connector	622A	631A
Ambient 15-pin “D” connector	626A	
Heated at 45°C, 15-pin Type “D” connector	627B	
Heated at 100°C, 15-pin Type “D” connector	628B	
Heated at 45°C or 100°C, 9-pin Type “D” connector	629B	
Heated at 125°C, 150°C, or 200°C	631A	
Capacitance Manometers with Trip Point Relays:		
Ambient, terminal strip connector	623A	
Heated at 45°C, 15-pin ‘D’ connector	624B	
Heated at 100°C, 15-pin ‘D’ connector	625B	
Pressure Ranges Full Scale (mmHg)		
0.02 (available only on 627B & 629B-45°C)*	U2T	11T
0.05 (available only on 627B, 628B & 629B)*	U5T	
0.1 (available only on 626A, 627B, 628B, & 629B)*	0.1T	
0.25 (available only on 626A, 627B, 628B, & 629B)	RET	
1 (not available on 623A)	01T	
2 (not available on 623A)	02T	
10	11T	
20 (not available on 631A)	21T	
100	12T	
200 (available only on 623A, 627B, 628B & 629B)	22T	
500 (not available on 631A)	52T	
1000	13T	
2000 (available only on 624B, 625B, 627B, 628B & 629B)	23T	
5000 (available only on 624B, 625B, 627B, 628B & 629B)	53T	
10,000 (available only on 624B, 625B, 627B, 628B & 629B)	14T	
15,000 (available only on 624B, 625B, 627B, 628B & 629B)	RBT	
20,000 (available only on 624B, 625B, 627B, 628B & 629B)	24T	
25,000 (available only on 624B, 625B, 627B, 628B & 629B)	RCT	
Fittings		
1/2” diameter tubulation (not available on 631A)	A	B
Swagelok 8 VCR, female	B	
Mini-CF, rotatable (not available on 631A) *see Note 4 under specifications*	C	
NW 16 KF *see Note 5 under specifications*	D	
NW 25 KF (not available on 631A)	Q	
Swagelok 8 VCO, female (not available on 631A)	E	
2¾” CF, rotatable (not available on 631A) *see Note 4 under specifications*	L	
1½” Tri Clover (available on 631A) *not available on ranges >1000T*	M	
2” Tri Clover (available only on 631A) *not available on ranges >1000T*	N	
Accuracy (% of Reading)		
0.12 (standard on 624B, 627B, 629B (45°C) - 1 mmHg and higher)	C	E
0.15 (standard on 627B, 629B - 0.1, 0.05 and 0.25 mmHg; option on 622A, 623A, & 626A) *(Note: Not available on 622A & 626A 1 and 2 mmHg units.)*	D	
0.25 (standard on 622A, 623A, 625B, 626A, 628B, 629B, & 631A; 0.02 mmHg on 627B	E	
0.50 (standard on 628B - 0.02, 0.05, 0.25 mmHg)		
Temperature (applicable only to Type 631A)		
125°C	M	M
150°C	H	
200°C	P	
Options		
Standard configuration	1	2
Optional temperature/heaters status switches (standard relay module trip 631A)	2	
Relay Module (with reverse actuation)	3	
Connector		
15-pin ‘D’ connector with thread lock	B	P
15-pin ‘D’ connector with slide lock	P	

**The zero calibration of 0.1 mmHg and lower Full Scale capacitance manometers is position-dependent. In order to preserve the maximum level of zero adjustment, specify mounting position when ordering if other than vertical/port down. Contact MKS Customer Service for ordering information on displays, readouts, and accessories.*

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