

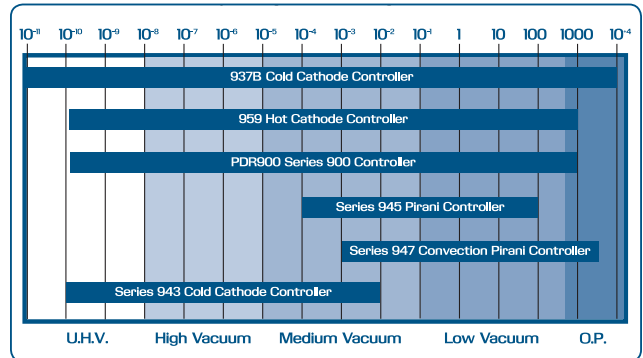
Gauge Controller Selection Guide



Introduction

MKS Instruments offers a wide variety of single channel and multi-channel gauge controllers, which operate a combination of sensor technologies, including hot cathode, cold cathode, microPirani, Pirani, convection-enhanced Pirani, piezo, and capacitance manometer. The gauge controller solutions offer a wide measurement range from 10^{-11} to 10,000 Torr.

The family of MKS controllers and sensors can be used in many applications including research and development, semiconductor manufacturing, vacuum coating systems, high energy physics, and analytical systems.



Operating Pressure Ranges (Torr)

Multi-Channel Gauge Controllers

Series 937B Combination Gauge Controller



The Series 937B combination vacuum gauge system is part of the HPS® family of vacuum gauges. It is the third generation of the very successful 937 Series. The 937B will operate and display as many as six sensors simultaneously, and each controller can be configured to the user's gauging requirements. This highly flexible product enables a wide range of gauging technologies, tailoring the system to each individual application. The Series 937B combines the sensor technologies of the cold cathode, hot cathode, standard Pirani, convection Pirani, MKS Baratron® capacitance manometer and absolute Piezo sensors to measure from ultra-high vacuum to above atmospheric pressure.

Series 959 Hot Cathode Controller



The Series 959 Hot Cathode Controller is a compact, economical controller that is user-friendly and provides fast, reliable pressure measurement. All operating controls are conveniently accessible from the front panel of the controller, including the power on-off switch. The Series 959 is available as a hot cathode controller only, or as a hot cathode/Pirani controller when the Pirani option is added.

Two independently adjustable set points are standard on the Series 959. Along with analog output, the 959 includes serial communication via an RS232 interface. Remote control of set points and the filaments are some of the features available through RS232 control. The leak detector function includes a digital display and variable beeper to assist in locating leaks within a system.

The 959 operates the HPS Mini Ion Gauge (MIG) and the Nude Hot Cathode Ionization Vacuum Sensor. Both sensors will measure from 10^{-2} to 10^{-10} Torr and include dual filaments. The MIG sensor is intended as a replacement for glass BA tubes and is available with the same fitting options. The Nude Hot Cathode Ionization Vacuum Sensor has the sensing portion located within the vacuum system. Subsequently, this sensor provides the best representation of the system pressure.



Vacuum Gauge Controllers

Single Channel Gauge Controllers

Series 945 Pirani Gauge Controller



The Series 945 Pirani is a single-channel controller designed to be economical and user-friendly while providing fast, reliable pressure measurement. The 945 controller provides a pressure measurement range of 10^{-4} to 100 Torr and is ideal for rough to medium vacuum applications. Two independent, adjustable set points are standard. The 945 Pirani controller is used in conjunction with the Series 345 Pirani Sensor.

The Series 345 Pirani sensor is a robust, dependable sensor with fast and stable pressure measurement. A thermal conductivity sensor, the 345 sensor measures absolute pressure by measuring heat loss from a fine heated wire. Temperature compensation circuitry provides for greater sensor stability over the operating range.

Series 947 Convection-Enhanced Pirani Controller



With a measurement range of 10^{-3} to 10^{+3} Torr, the Series 947 Convection-Enhanced Pirani Controller is ideal for applications requiring improved accuracy above 100 Torr. Applications include measurement of roughing and foreline pressures, activation of high vacuum sensors, or start-up of a system process with the standard relay set points.

Processes can be controlled with two independent relay set points that are standard on the single-channel controller. The 947 is used in conjunction with the Series 317 Convection-Enhanced Pirani sensor. The upper measuring limit of a convection enhanced Pirani sensor is increased over that of a traditional Pirani sensor from 100 to 1,000 Torr. This higher limit is useful when monitoring pumpdown of a vacuum system from atmosphere to base pressure.

Series 943 Cold Cathode Gauge Controller



The Series 943 Cold Cathode vacuum gauge system provides fast, reliable pressure measurement from 10^{-10} to 10^{-2} Torr. The Series 943 Cold Cathode vacuum gauge system includes the Series 943 digital controller and an option of two cold cathode sensors: the Series 421 sensor for UHV use, or a lower cost Series 423 I-Mag[®] sensor for OEM or industrial use.

The 943 Cold Cathode vacuum gauge system is well-suited for industrial, process and analytical applications including pressure measurement of high vacuum chambers and control of high vacuum systems. Two independent set point relays are standard.

PDR900 Series 900 Controller



The PDR900 power supply and readout unit is a single channel controller for use exclusively with the Series 900 digital vacuum transducers. The instrument sets new standards for vacuum gauge controllers and can be used as a stand-alone power supply readout unit or as a tool for configuration of system integrated Series 900 transducers in OEM applications.








For more information about the PDR900 Controller and Series 900 transducers, please refer to the Series 900 Selection Guide.



Controller Specifications

	Series 937B	Series 959	Series 943	Series 945	Series 947
Sensors Supported	431 & 423 Cold Cathode; 345 & 317 Convection Pirani; 626, 627 & 722 Baratron; Series 902 Piezo; Mini Ion Gauge (Bayard Alpert Hot Cathode); Nude Hot Cathode Ionization Vacuum Sensor	345 & 317 Convection Pirani; Mini Ion Gauge (Bayard Alpert Hot Cathode); Nude Hot Cathode Ionization Vacuum Sensor	421 & 423 Cold Cathode	345 Pirani	317 Convection Pirani
Number of Channels	6	2	1	1	1
Measurement Range	10 ⁻¹¹ to 10 ⁻⁴ Torr (dependent on sensor selection)	10 ⁻¹⁰ to 1,000 Torr (dependent on sensor selection)	10 ⁻¹⁰ to 10 ⁻² Torr	1.0 x 10 ⁻⁴ to 100 Torr	1.0 x 10 ⁻³ to 1.0 x 10 ⁻³ Torr
Set Point Range	2.0 x 10 ⁻¹⁰ to 9.5 x 10 ⁻³ Torr (dependent on sensor selection)	5.0 x 10 ⁻¹⁰ to 950 Torr (dependent on sensor selection)	2.0 x 10 ⁻⁹ to 9.0 x 10 ⁻³ Torr	2.0 x 10 ⁻³ to 99 Torr	2.0 x 10 ⁻³ to 9.9 x 10 ⁻² Torr
Operating Temperature	5° to 40° C (41° to 104°F)	5° to 40°C (41° to 104°F)	5° to 40°C (41° to 104°F)	5° to 40°C (41° to 104°F)	5° to 40°C (41° to 104°F)
Power Requirements	150 watts maximum; universal power supply	100 to 240 VAC, fluctuations not to exceed ±10%; 70 watts	100 to 120 VAC, 50/60 Hz, 9 W 220 to 240 VAC, 50/60 Hz, 9 W	90 to 130 VAC, 50/60 Hz, 9 W 210 to 250 VAC, 50/60 Hz, 9 W	90 to 130 VAC, 50/60 Hz or 210 to 250 VAC, 50/60 Hz, 9 watts
Relays / Set points	12 pressure dependent set points; SPDT relays, contact rating 2 amps @ 30 VAC, IEC 950 safety rating; 2A@50 VAC	2 independently assigned relays; 2 A @ 30 VAC/DC resistive SPDT; hysteresis 10% of indicated pressure	2 independently set, SPDT contacts, resistive load; 1 A @ 30 VAC or 24 VDC	2 independently set, SPDT contacts, resistive load; 1 A @ 24 VAC/DC	2 relays, SPDT 1 A @ 24 VAC/DC resistive
Output Voltage	Buffered analog outputs for each gauge; Logarithmic outputs for each gauge (0.6V/decade output); and combination output.	0-8 volts, log-linear	Analog: 0 to 9 VDC Logarithmic Analog: 1 to 9 VDC, 1 V per decade	0.20 to 3.25 VDC, buffered analog, 1kW maximum output impedance	0.33 to 5.63 VDC, buffered analog, 1kW maximum output impedance
Output Communications	RS232, RS485, Profibus	RS232	N/A	N/A	N/A
Front Panel Controls	Power on/off switch, setup and operational commands can be accessed via the keypad.	Momentary push buttons	Power on/off; set point and protect view buttons, LED set point indicators, set point and protect adjust potentiometers, high voltage on/off/remote toggle switch	Two set points with LEDs, pushbuttons, and potentiometers; power switch; zero adjustment; atmospheric adjustment	Two set points with LEDs, pushbuttons, and potentiometers; power switch; zero adjustment; atmospheric adjustment
Display Type	320 x 240 color QVGA TFT LCD with back lighting; Up to 6 pressure displays; Display indicators for unit of measure, calibration functions, user calibration, set points, gauge position indicators	Liquid crystal; 2 pressure display with 2 digit mantissas and 1½ digit exponents; display indicators for unit of measure and set points	Red LED display; 0.6" high readout of 2 digits and 1 exponent; units shown in either Torr, mbar, Pascal or microns	Red LED display; 0.6" high readout of 2 digits and 1 exponent; units shown in either Torr, mbar, Pascal or microns	Red LED display; 0.6" high readout of 2 digits and 1 exponent; units shown in either Torr, mbar, Pascal or microns
Weight	8 lbs (3.6 kg)	3.2 lb (1.45 kg)	2.5 lbs. (1.1 kg)	2.2 lb (1.0 kg)	2.2 lb (1.0 kg)
CE Certification	2004/108/EC EMC Directive 2006/95/EC Low Voltage Directive	2004/108/EC EMC Directive 2006/95/EC Low Voltage Directive	2004/108/EC EMC Directive 2006/95/EC Low Voltage Directive	2004/108/EC EMC Directive 2006/95/EC Low Voltage Directive	2004/108/EC EMC Directive 2006/95/EC Low Voltage Directive

Sensor Specifications

	Cold Cathode	Hot Cathode		Standard Pirani	Convection Enhanced Pirani	Absolute Piezo	MKS Baratron®
Models	Series 431 & I-Mag®	Mini Ion Gauge (MIG)	Nude Hot Cathode Ionization Vacuum Sensor	Series 345	Series 317	Series 902	722B, 626B and 627D
							
Sensor Construction (materials exposed to vacuum)	Series 431: Stainless steel, silver-copper brazing alloy, alumina ceramics, aluminum AL 6061, Elgiloy®, OFHC® copper I-Mag: Stainless steel, 6061 aluminum, Inconel®, glass and alumina ceramic	Yttria-coated iridium, nickel, 304 stainless steel, glass, tungsten, platinum clad molybdenum	Tungsten or yttria-coated iridium (filament), nickel, Inconel® X-750, 304 stainless steel, glass, tungsten, platinum	304 stainless steel, platinum alloy, silver brazing alloy, nickel, glass	304 stainless steel, nickel 200, glass, platinum	304, 316 stainless steel	Inconel
Measurement Range	1.0x10 ⁻¹¹ to 1.0x10 ⁻² Torr 1.3x10 ⁻¹¹ to 1.3x10 ⁻² mbar 1.3x10 ⁻⁹ to 1.3 Pascal 1.0x10 ⁻⁸ to 10 Micron	1.0x10 ⁻¹⁰ to 1.0x10 ⁻² Torr 1.3x10 ⁻¹⁰ to 1.3x10 ⁻² mbar 1.3x10 ⁻⁸ to 1.3 Pascal 1.0x10 ⁻⁸ to 1.0x10 Micron	1.0x10 ⁻¹⁰ to 1.0x10 ⁻² Torr 1.3x10 ⁻¹⁰ to 1.3x10 ⁻² mbar 1.3x10 ⁻⁸ to 1.3 Pascal 1.0x10 ⁻⁸ to 1.0x10 Micron	5.0x10 ⁻⁴ Torr to ATM 7.0x10 ⁻⁴ mbar to ATM 7.0x10 ⁻² Pascal to ATM 5.0x10 ⁻¹ Micron to ATM	1.0x10 ⁻³ to 1.0x10 ⁻³ Torr 1.3x10 ⁻³ to 1.3x10 ⁻³ mbar 1.3x10 ⁻¹ to 1.3x10 ⁻⁵ Pascal 1.0x10 ⁻⁶ Micron	1 to 1.0x10 ⁻³ Torr 1.3 to 1.3x10 ⁻³ mbar 1.33 to 1.3x10 ⁻⁵ Pascal	Three decades of measurement below Full Scale
Resolution	1% of indicated decade, except 10% below 10 ⁻¹⁰ Torr and above 10 ⁻³ Torr	1% of indicated decade	1% of indicated decade	% of indicated decade, except 10% below 10 ⁻³ Torr and above 100 Torr - see text	1% of indicated decade	1% of indicated decade	1 x 10 ⁻⁴ of Full Scale
Set Point Response	120 milliseconds	120 milliseconds	120 milliseconds	120 milliseconds	120 milliseconds	120 milliseconds	120 milliseconds
Set Point Range	2.0x10 ⁻¹⁰ to 9.5x10 ⁻³ Torr 2.7x10 ⁻¹⁰ to 1.2x10 ⁻² mbar 2.7x10 ⁻⁸ to 1.2 Pascal 2.0x10 ⁻⁷ to 9.5 micron	5.0x10 ⁻¹⁰ to 9.5x10 ⁻³ Torr 6.5x10 ⁻¹⁰ to 1.2x10 ⁻² mbar 6.5x10 ⁻⁸ to 1.2 Pascal 5.0x10 ⁻⁸ to 9.5x10 ⁻¹ micron	5.0x10 ⁻¹⁰ to 9.5x10 ⁻³ Torr 6.5x10 ⁻¹⁰ to 1.2x10 ⁻² mbar 6.5x10 ⁻⁸ to 1.2 Pascal 5.0x10 ⁻⁸ to 9.5x10 ⁻¹ micron	2.0x10 ⁻³ to 9.5x10 ⁻¹ Torr 2.7x10 ⁻³ to 1.2x10 ⁻² mbar 2.7x10 ⁻¹ to 1.2x10 ⁻⁴ Pascal 2.0 to 9.5x10 ⁻⁴ micron	2.0x10 ⁻³ to 9.5x10 ⁻² Torr 2.7x10 ⁻³ to 1.2x10 ⁻³ mbar 2.7x10 ⁻¹ to 1.2x10 ⁻⁶ Pascal 2.0 to 9.5x10 ⁻⁶ micron	1.0 to 1.0x10 ⁻³ Torr 1.3 to 1.3x10 ⁻³ mbar 1.3x10 ⁻² to 1.3x10 ⁻⁶ Pascal	Dependent on Full Scale range
Reproducibility	5% of indicated pressure	5% of indicated pressure	5% of indicated pressure	5% of indicated pressure	5% of indicated pressure	0.1% of indicated pressure	*
Cables & Connectors	Maximum length is 300 ft Series 431: Cables connected via bayonet type coaxial connectors I-Mag Tube Side: molded connector with a positive locking bolt Controller Side: bayonet connector and threaded coaxial connector	Molded tube connector with locking mechanism, custom D-sub connector to controller, maximum length is 50 ft	Molded tube connector, custom D subconnector to controller, maximum length is 50 ft	Maximum length is 500 ft Series 345: 9-pin D-sub to 9-pin D-sub connectors, multiconductor shielded cable	Maximum length is 500 ft 9 pin D-sub connectors, multiconductor shielded cable	Maximum length is 500 ft 9-pin D-sub to 9-pin D-sub	Maximum length is 50 ft. 9-pin D-sub with polarized key to 15-pin D-sub
Operating Temperature	0° to 70°C (32° to 158°F) A high operating temperature version of the Series 431 is available. Call for information.	0° to 60°C (32° to 140°F)	0° to 60°C (32° to 140°F)	0° to 50°C (32° to 122°F)	0° to 50°C (32° to 122°F)	0° to 50°C (32° to 122°F)	*
Bakeout Temperature	Series 431: 100°C (212°F) cables removed 250°C version available I-Mag: to 400°C (752°F) with CF flanges, with magnet and cable removed	60°C with cable attached, 300°C with CF, 150°C with KF	60°C with cable attached, 300°C with CF, 150°C with KF	50° C (122°F)	150° C (302°F) non-operating, without cable or electronics 100°C (212°F) shielded version *Special order version available to 250° C.	85°C (185°F), non-operating	N/A
Weight	Series 431: 2.8 lbs. (1.3 Kg) w/ CF I-Mag: 2.0 lbs (0.8 Kg) w/ CF	0.8 lb (360 g) CF flange	0.9 lb (400 g) CF flange	0.5 lb (200 g)	0.5 lb (200 g)	3.4 oz (97 g)	Dependent on selected sensor*
Xray Limit		3 x 10 ⁻¹⁰ Torr	3 x 10 ⁻¹⁰ Torr				
Sensitivity		12 Torr ⁻¹ (±20%)	9 Torr ⁻¹ (±20%)				
Degas Power		5 W	20W				
Emission Current		1 mA at < 1 x 10 ⁻⁴ Torr, 100 µA at > 1 x 10 ⁻⁴ Torr, regulated to ±3%	1 mA at < 1 x 10 ⁻⁴ Torr, 100 µA at > 1 x 10 ⁻⁴ Torr, regulated to ±3%				
Volume	Series 431: 1.8 in. ³ (30 cm ³) max I-Mag: 0.9 in. ³ (15 cm ³) max	1.4 in. ³ (23 cm ³)	Zero	0.5 in. ³ (8.0 cm ³) maximum	2.0 in. ³ (33 cm ³) maximum	0.21 in. ³ (3.4 cm ³)	Dependent on selected sensor*

*For Baratron Capacitance Manometer information, please visit the MKS website at www.mksinst.com.

Sensor Drawings and Dimensions

Pirani Sensors

317 Convection Enhanced Pirani

Size	A in./mm
NW 16 KF	2.76 (70)
NW 25 KF	2.76 (70)
1 1/3" CF	3.06 (78)
2 3/4" CF	2.73 (69)
8 VCR-F*	2.83 (72)
4 VCR-F*	2.51 (64)
1/8" NPT-M	2.93 (74)
15 & 18 mm	3.19 (81)

*VCR® or VCO®-compatible parts may be used.

345 Standard Pirani

Size	A (in./mm)
NW 16 KF	4.83 (123)
NW 25 KF	4.34 (110)
1 1/3" CF	5.87 (149)
2 3/4" CF	5.87 (149)
8 VCR-F*	5.83 (148)
1/8" NPT-M	5.65 (144)
15 & 18 mm	5.78 (147)

*VCR® or VCO®-compatible parts may be used.

Capacitance Manometer

Capacitance Manometer (Baratron®)

Dimension A (in./mm)	626B/627D	722B
NW 16 KF	5.18 (132)	4.70 (119)
1 1/3" CF	5.05 (128)	4.57 (116)
1/2" Tube	4.93 (125)	4.75 (121)
8 VCR-F* (low range)	6.05 (154)	5.57 (142)
8 VCR-F* (high range)	6.14 (156)	5.66 (144)
8 VCO-F*	6.05 (154)	5.57 (142)
Weld Stub		3.94 (100)
Dimension B	2.56 (65)	1.50 (38)

*VCR® or VCO®-compatible parts may be used.

Diaphragm Sensors

902 Absolute Piezo

Size	Dimension A (in./mm)
NW 16 KF	2.26 (57)
4 (1/4") VCR-F*	2.59 (66)
8 (1/2") VCR-F*	2.93 (74)

*VCR® or VCO®-compatible parts may be used.

Hot Cathode Sensors

Mini Ion Gauge (MIG)

Size	A (in./mm)
NW 16 KF	3.07 (78)
NW 25 KF	2.31 (59)
NW40 KF	2.31 (59)
1 1/3" CF	3.45 (88)
2 3/4" CF	2.37 (60)
1" Tube	2.16 (55)
3/4" Tube	3.95 (100)

Nude Hot Cathode Ionization Vacuum Sensor

Size	Dimension A (in./mm)
NW 40 KF	1.89 (48)
2 3/4" CF	1.94 (49)

Cold Cathode Sensors

431 Cold Cathode

Size	A (in./mm)
NW 25 KF	6.72 (171)
NW 40 KF	6.32 (161)
2 3/4" CF (non-rotatable)	6.27 (159)
1" Tube	6.22 (158)
8 VCR-F*	7.59 (193)

*VCR® or VCO®-compatible parts may be used.

423 I-Mag® Cold Cathode

Size	Dimension A (in./mm)
NW 25 KF	3.41 (87)
NW 40 KF	3.41 (87)
2 3/4" CF rotatable	3.47 (88)
1" Tube	3.26 (83)



Ordering Information

Controllers

Series 937B Controller

Base Controller	Country Code	Base Gauge Slot "A"	Gauge Choice Slot "B"	Gauge Choice Slot "C"	Communication Port
Part Code	Part Code	Part Code	Part Code	Part Code	Part Code
937B	US	CC Cold Cathode	CC Cold Cathode	CC Cold Cathode	PF Profibus NA Blank
	EU	CT Dual Convection Pirani/ Standard Pirani	CT Dual Convection Pirani/ Standard Pirani	CT Dual Convection Pirani/ Standard Pirani	
		CM Dual Baratron/Piezo	CM Dual Baratron/Piezo	CM Dual Baratron/Piezo	
		HC Hot Cathode Nude/MIG	HC Hot Cathode Nude/MIG	HC Hot Cathode Nude/MIG	
		NA Blank	NA Blank	NA Blank	

Series 959 Controllers

109590015	Torr, 50 Hz, Hot Cathode
109590016	Torr, 60 Hz, Hot Cathode
109590025	mbar, 50 Hz, Hot Cathode
109590026	mbar, 60 Hz, Hot Cathode
109590035	Pascal, 50 Hz, Hot Cathode
109590036	Pascal, 60 Hz, Hot Cathode
109590915	Torr, 50 Hz, Hot Cathode/Pirani
109590916	Torr, 60 Hz, Hot Cathode/Pirani
109590925	mbar, 50 Hz, Hot Cathode/Pirani
109590926	mbar, 60 Hz, Hot Cathode/Pirani
109590935	Pascal, 50 Hz, Hot Cathode/Pirani
109590936	Pascal, 60 Hz, Hot Cathode/Pirani

Series 945 Digital Pirani Controllers

945-A-120-TR	Torr, 120 Volts
945-A-220-TR	Torr, 220 Volts
945-A-120-MC	micron, 120 Volts
945-A-220-MC	micron, 220 Volts
945-A-120-PA	Pascal, 120 Volts
945-A-220-PA	Pascal, 220 Volts
945-A-120-MB	mbar, 120 Volts
945-A-220-MB	mbar, 220 Volts

Series 943 Controllers

943-A-120V50-TR-PC	Torr, 50 Hz, 100-120 volts
943-A-120V60-TR-PC	Torr, 60 Hz, 100-120 volts
943-A-220V50-TR-PC	Torr, 50 Hz, 220-240 volts
943-A-220V60-TR-PC	Torr, 60 Hz, 220-240 volts
943-A-120V50-MB-PC	mbar, 50 Hz, 100-120 volts
943-A-120V60-MB-PC	mbar, 60 Hz, 100-120 volts
943-A-220V50-MB-PC	mbar, 50 Hz, 220-240 volts
943-A-220V60-MB-PC	mbar, 60 Hz, 220-240 volts
943-A-120V50-PA-PC	Pascal, 50 Hz, 100-120 volts
943-A-120V60-PA-PC	Pascal, 60 Hz, 100-120 volts
943-A-220V50-PA-PC	Pascal, 50 Hz, 220-240 volts
943-A-220V60-PA-PC	Pascal, 60 Hz, 220-240 volts

Series 947 Digital Convection-Enhanced Pirani Controllers

947-A-120-TR	Torr, 120 volts
947-A-220-TR	Torr, 220 volts
947-A-120-MC	micron, 120 volts
947-A-220-MC	micron, 220 volts
947-A-120-PA	Pascal, 120 volts
947-A-220-PA	Pascal, 220 volts
947-A-120-MB	mbar, 120 volts
947-A-220-MB	mbar, 220 volts

Cables

421 Cold Cathode Cables (943)

100006171	10 ft. (3.0 m)
100006172	25 ft. (7.6 m)
100006173	50 ft. (15.2 m)
100006174	100 ft. (30.5 m)
100006175	Custom (max length 300 ft.)

423 I-Mag® Cold Cathode Cables (943)

100007873	10 ft. (3.0 m)
100007874	25 ft. (7.6 m)
100002395	50 ft. (15 m)
100008759	Custom (max length 300 ft.)

423 I-Mag Cold Cathode Cables (937B)

100016295	10 ft (3.0 m)
100016296	25 ft (7.6 m)
100016297	50 ft (15.2 m)
100016298	100 ft (30.5 m)
100016299	Custom (max length 300 ft.)

431 Cold Cathode Cables (937B)

100016217	10 ft (3.0 m)
100016218	25 ft (7.6 m)
100016219	50 ft (15.2 m)
100016220	100 ft (30.5 m)
100016221	Custom (max length 300 ft.)

Baratron Cables (937B)

100007555	626 Baratron, 10 ft.
100007556	626 Baratron, 25 ft.
100007557	626 Baratron, 50 ft.
100010000	722 Baratron, 10 ft.
100010001	722 Baratron, 25 ft.
100010002	722 Baratron, 50 ft.

902 Series Cables (937B)

100011869	10 ft.
100011870	25 ft.
100011871	50 ft.
100011872	Custom

Mini Ion Gauge Cables (959)

100011106	10 ft.
100011107	25 ft.
100011108	50 ft.

Nude Hot Cathode Ionization Vacuum Sensor Cables (959, 937B)

100010909	10 ft.
100010910	25 ft.
100010911	50 ft.

317 and 345 Series Sensor Cables (937B, 959, 945, 947)

103170006SH	10 ft. (3.0 m)
103170007SH	25 ft. (7.6 m)
103170008SH	50 ft. (15.2 m)
103170009SH	Custom



Ordering Information

Sensors

317 Convection Pirani Sensor

103170010SH	NW 16 KF
103170011SH	1/8" NPT-M 1/2" tube
103170012SH	8 VCR-F *
103170013SH	1 1/3" CF
103170014SH	2 3/4" CF
103170016SH	15 mm. Tube
103170018SH	18 mm. Tube
103170027SH	NW 25 KF
103170029SH	4 VCR®-F *

*VCR® or VCO®-compatible parts may be used.

423 I-Mag® Cold Cathode Sensor

104230004	NW 25 KF
104230001	NW 40 KF
104230002	2 3/4" CF
104230003	1" Tube

345 Standard Pirani Sensor

103450210	NW 16 KF
103450211	1/8" NPT-M 1/2" tube
103450212	8 VCR-F *
103450213	1 1/3" CF
103450214	2 3/4" CF
103450215	NW 25 KF
103450216	15 mm. Tube
103450218	18 mm. Tube

*VCR® or VCO®-compatible parts may be used.

431 Cold Cathode Sensor (937B)

10431004	NW 25 KF
10431001	NW 40 KF
10431002	2 3/4" CF
10431003	1" Tube
10431005	8 VCR®-F

421 Cold Cathode Sensor (943)

10431004	NW 25 KF
10431001	NW 40 KF
10431002	2 3/4" CF
10431003	1" Tube
10431005	8 VCR®-F

Mini Ion Gauge (MIG) Hot Cathode Sensor

100011085	1" Tube
100011111	1 1/3" CF
100011112	2 3/4" CF
100011113	NW 25 KF
100011114	NW 40 KF
100011118	NW 16 KF
100011127	3/4" Tube

Nude Hot Cathode Ionization Vacuum Sensors

100005987	Tungsten, NW 40 KF
100005980	Tungsten, 2 3/4" CF
100006841	Y ₂ O ₃ coated Ir, NW 40 KF
100006842	Y ₂ O ₃ coated Ir, 2 3/4" CF

Series 902 Piezo Transducer

902-1112	NW 16 KF, RS485
902-1212	4 VCR-F*, RS485
902-1312	8 VCR-F*, RS485
902-1113	NW 16 KF, RS232
902-1213	4 VCR-F*, RS232
902-1313	8 VCR-F*, RS232
902-1105	NW 16 KF, 0-10V
902-1205	4 VCR-F*, 0-10V
902-1305	8 VCR-F*, 0-10V
902001	LED Local Display (Torr)

*VCR® or VCO®-compatible parts may be used.

Baratron® Capacitance Manometers

626B/627D Baratron® Absolute Capacitance Manometer (RoHS Compliant)

Example: Type 626BXXXXYZ; 626B with male Type D connector
Type 627DXXXXYZ; 627D with male Type D connector

Ranges (Torr) (XXX)	Code
0.1	.1T
0.25	RET
1	01T
2	02T
10	11T
20	21T
100	12T
500	52T
1000	13T
10000 (627D only)	14T
20000 (627D only)	24T

Fittings (Y)

1/2" tube	A
Swagelok 8 VCR female	B
Mini-CF, rotatable	C
NW 16 KF	D
Swagelok 8 VCO® female	E
2 3/4" CF, rotatable	L
NW 25 KF	Q

Accuracy (Z)

Standard: 0.25% of Rdg. (optional 0.10 Torr)	E
Standard: 0.50% of Rdg. (0.10 Torr)	F
Optional: 0.15% of Rdg. (10, 100, 1000 Torr ranges only)	D

NOTES:

For gauge isolation, refer to MKS' line of Cv™ Valves and the In Situ Diagnostics Access (IDA™) Valve.

722B Baratron® Compact Absolute Capacitance Manometer (RoHS Compliant)

Example: Type 722BXXXXYWGZ

Ranges (Torr) (XXX)	Code
10	11T
100	12T
1000	13T
10000	14T
25000	RCT

Fittings (Y)

1/2" tube	BA
Swagelok 4 VCR female	CD
Swagelok 8 VCR female	CE
Swagelok 8 VCO® female	DA
NW 16 KF	GA
Mini-CF, rotatable	HA

Input/Output (W)

+13 to +32 VDC input, 0-10 VDC output	2
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Accuracy (G)

Standard: 0.5% of Rdg.	F
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Connector (Z)

9-pin Type "D"	A
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NOTE: High pressure units are not available with NW 16 KF fittings. Consult High Pressure Fitting matrix or contact MKS Applications Engineering.

For complete product specifications and Baratron capacitance manometer datasheets, please visit the MKS website at www.mksinst.com. Contact HPS Applications Engineering for other capacitance manometer options.



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