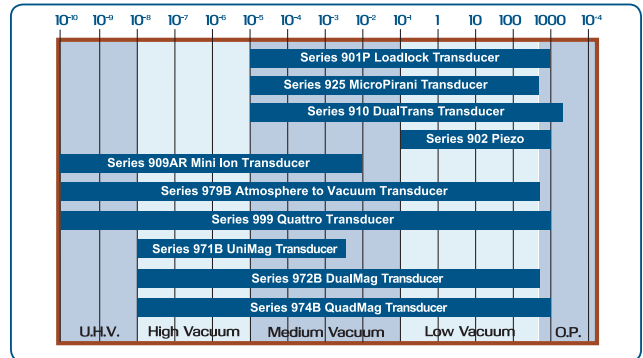


Introduction

HPS® Series 900 vacuum transducers are a complete suite of microprocessor-based, standalone gauges, offering a wide pressure measurement range from above atmosphere to ultra high vacuum. Designed for system integration, the transducers offer both analog and digital communication (RS485 & RS232). Digital transducers allow for all adjustments and monitoring to be delivered real-time, via a host computer. The transducers incorporate MEMS (Micro Electro-Mechanical Systems) based technologies, including MicroPirani™ and Piezo sensors, combined with both Cold Cathode and Mini Ion BA technology resulting in a broad product offering for a wide variety of customer applications.



Operating Pressure Ranges (Torr)

Series 901 Plus MicroPirani™ / Piezo Loadlock Transducer



A unique patented transducer designed specifically for the loadlock environment, the 901 Plus (901P) replaces up to three sensors in one compact package. The 901P provides both pressure measurement and atmospheric switching capabilities, by integrating the MicroPirani™ and piezo sensor technologies. The combined sensor output measures from 1×10^{-5} to 1,000 Torr for monitoring pump-down cycles. The differential sensor ensures accurate atmospheric pressure sensing under varying barometric pressure conditions, for optimum loadlock performance. Options include a display and an IP54 enclosure.

Series 925 MicroPirani™ Transducer



The Series 925 MicroPirani transducer is a thermal conductivity gauge and incorporates a MEMS MicroPirani™ sensor technology in a compact package. The 925 features an increased pressure measurement range from 10^{-5} Torr to atmosphere — two decades below a standard Pirani sensor. The 925 has three optional set point relays. With its extended range, the 925 may replace multiple transducers, in certain applications. Options include a display, an IP54 enclosure and UHV sealing.

Series 910 DualTrans™ MicroPirani™ / Absolute Piezo Transducer



The HPS® Series 910 is a dual sensor transducer, combining MEMS-based MicroPirani and Piezo pressure measurement technologies with integrated electronics. The 910 transducer offers a pressure measurement range of 10^{-5} to 1,500 Torr. The Series 910 provides a single, smoothed output from the MicroPirani and Piezo sensors. The Piezo is a direct absolute pressure sensor, ensuring accurate measurement, gas independent above 11 Torr. The MicroPirani provides base pressure measurements from 10^{-5} to 11 Torr.

Series 902 Absolute Piezo Transducer



The HPS® Series 902 Piezo transducer combines the pressure measurement technology of a MEMS-based Piezo sensor with integrated electronics. The 902 provides an economical, absolute measurement that is independent of gas type.

The sensor includes a unique temperature compensation, allowing for high accuracy over a wide measurement range. The Piezo is available with a 1000 Torr full scale range, and is typically used in applications where greater accuracy or corrosion resistance is required.



Description

Series 909AR Hot Cathode Transducer



The HPS® hot cathode transducer incorporates a miniature Bayard-Alpert sensor, which utilizes a fine wire collector located at the center of a grid. Due to its small area, few x-rays hit the collector; therefore, the gauge can measure very low pressures. The 909C transducer includes two yttria-coated iridium filaments for increased lifetime.

The 909AR also includes RS232 / RS485 digital communication as a standard feature. For additional process control, the 909AR has a set point relay. The Series 909AR also features analog controls and analog output with 0 to 10 volts semilogarithmic output, 1 volt per decade for simplified system integration.

Series 979B Atmosphere to Vacuum MicroPirani/Hot Cathode Transducer



The Series 979B Atmosphere to Vacuum (ATV) transducer provides a wide measurement range from 10^{-10} Torr to atmosphere. It combines the MEMS-based MicroPirani with the Mini Ion BA gauge, covering 13 decades of measurement. The 979B provides a single, smoothed output for a seamless transition between the two sensors.

The Series 979B is ideal for applications requiring a single, compact transducer solution where a broad pressure range is required, such as vacuum coating systems.

Series 999 Quattro™ MicroPirani/Piezo/Hot Cathode Transducer



The Series 999 Quattro™ is the ultimate transducer solution, providing pressure measurement from 10^{-10} Torr to atmosphere, combined with atmospheric switching capabilities.

The 999 combines three of HPS' key technologies into an integrated gauge solution, and has the functionality of four sensors in one compact package. The Quattro™ combines the mini-BA sensor, the MEMS-based MicroPirani™ sensor and a unique Piezo sensor (offering both differential and absolute sensor functions).

The Series 999 Quattro™ has the ability to replace multiple sensors, including: ionization and Pirani gauges, and sub-atmospheric and atmospheric pressure switches. This enables the end-user to save time, money and valuable tool space.

Series 970 Cold Cathode Transducer Family



The 970 Series is a family of compact, low cost, general-purpose transducers that utilize from one to three sensors- cold cathode, MicroPirani™, and Piezo technologies. Combining these sensing technologies enables a wide measurement range from atmosphere to 10^{-8} Torr. In addition to its small size, broad range and lower cost, the 970 Series can be operated via digital communication or as an autonomous analog unit. The family comprises of three transducer models, the 971B UniMag (cold cathode), 972B DualMag (Pirani/cold cathode) and the 974B QuadMag (Piezo/Pirani/cold cathode). Options include a display and an IP54 enclosure.

PDR900 Series 900 Controller



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



Medium Vacuum Transducers

| | Series 901P | Series 925 | Series 910 | Series 902 |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor Type | MicroPirani/Differential Piezo | MicroPirani | MicroPirani/Absolute Piezo | Absolute Piezo |
| Measuring Range | 1.0 x 10 ⁻⁵ to 1,000 Torr | 1.0 x 10 ⁻⁵ Torr to Atmosphere | 1.0 x 10 ⁻⁵ to 1,500 Torr | 1,000 Torr full scale |
| Set Point Range | 5.0 x 10 ⁻⁴ to 1,000 Torr | 5.0 x 10 ⁻⁴ Torr to Atmosphere | 5.0 x 10 ⁻⁴ to 1,500 Torr | 1 to 1,000 Torr |
| Measuring Range - Differential | -760 to +760 Torr | ----- | ----- | ----- |
| Set Point Range - Differential | -760 to +760 Torr | ----- | ----- | ----- |
| Calibration Gas | Air, Argon, Helium, Nitrogen, H ₂ , H ₂ O vapor. Gas independent above 65 Torr | Air, Argon, Helium, Nitrogen, H ₂ , H ₂ O vapor | Air, Argon, Helium, Nitrogen, H ₂ , H ₂ O vapor. Gas independent above 11 Torr | Gas independent |
| Operating Temperature Range | 0° to 40°C (32° to 104°F) | 0° to 40°C (32° to 104°F) | 0° to 40°C (32° to 104°F) | 0° to 50°C (32° to 122°F) |
| Maximum Bakeout Temperature | 85°C (185°F), non-operating | 85°C (185°F), non-operating | 85°C (185°F), non-operating | 85°C (185°F), non-operating |
| Communication | RS232 / RS485 / Analog | RS232 / RS485 / Analog | RS232 / RS485 / Analog | RS232 / RS485 / Analog |
| Controls | Zero adjust, span adjust, pressure units, baud rate, address, factory default, gas type; set point functions: value, hysteresis, direction, enable | Zero adjust, atmosphere adjust, pressure units, baud rate, address, factory default, gas type; set point functions: value, hysteresis, direction, enable | Zero adjust, span adjust, pressure units, baud rate, address, factory default, set point functions: value, hysteresis, direction, enable | Zero adjust, span adjust, pressure units, baud rate, address, factory default, gas type; set point functions: value, hysteresis, direction, enable |
| Status | Pressure reading and units, set point, operating time, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions | Pressure reading and units, set point, operating time, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions | Pressure reading and units, set point, operating time, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions | Pressure reading and units, set point, operating time, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions |
| Analog Output | 1 to 9 VDC, 1 volt/decade | 1 to 9 VDC, 1 volt/decade | 1 to 9.2 VDC, 1 volt/decade | 0 to 5 or 0 to 10 VDC, linear or logarithmic |
| Relays (optional) Relay Contact Rating | 3 relays SPDT 1 A @ 30VAC/DC, resistive | 3 relays SPDT (925) 1 A @ 30VAC/DC, resistive | 3 relays SPDT 1 A @ 30VAC/DC, resistive | 1 relay SPDT 1 A @ 30VAC/DC, resistive |
| Power Requirements | 9 to 30 VDC, < 1.5 watts max | 9 to 30 VDC, < 1.5 watts max | 9 to 30 VDC, < 1.2 W max | 12 to 30 VDC, 30 mA, < 5 W max |
| Accuracy (Typical) | 5 x 10 ⁻⁴ to 10 ⁻³ Torr ±10% of reading 10 ⁻³ to 50 Torr ±5% of reading 50 to 1,000 Torr ±1% of reading ± 100 Torr Diff <1% of reading | 5 x 10 ⁻⁴ to 10 ⁻³ Torr ±10% of reading 10 ⁻³ to 100 Torr ±5% of reading 100 to atm ±25% of reading | 5 x 10 ⁻⁴ to 10 ⁻³ Torr ±10% of reading 10 ⁻³ to 11 Torr ±5% of reading 11 to 1,000 Torr ±0.75% of reading | Accuracy: <1% of reading Temp. Coeff. Span: ± 0.02% of FS/°C Temp. Coeff. Zero: ± 0.02% of FS/°C Resolution: 1 x 10 ⁻⁴ of FS |
| Repeatability (Typical) | 5 x 10 ⁻⁴ to 10 ⁻³ Torr ±8% of reading 10 ⁻³ to 50 ± 2% of reading 50 to 1,000 ± 0.5% of reading ± 100 Torr Diff <0.5% of reading | 5 x 10 ⁻⁴ to 10 ⁻³ Torr ±8% of reading 10 ⁻³ to 100 Torr ± 2% of reading 100 to atm ±10% of reading | 5 x 10 ⁻⁴ to 10 ⁻³ Torr ±8% of reading 10 ⁻³ to 11 Torr ± 2% of reading 11 to 1,000 Torr ± 0.2% of reading | ± 0.03% of full scale |
| Overpressure Limit | 1500 Torr | 1500 Torr | 2250 Torr | 2000 Torr |
| Installation Orientation | Any | Any | Any | Any |
| Internal Volume (KF16) | 2.8 cm ³ maximum | 2.8 cm ³ maximum | 2.8 cm ³ maximum | 3.4 cm ³ |
| Materials Exposed to Vacuum | Silicon, SiO ₂ , SiN ₄ , gold, epoxy resin, 304 stainless steel, Viton® | Silicon, SiO ₂ , SiN ₄ , gold, epoxy resin, 304 stainless steel, Viton® | Silicon, SiO ₂ , SiN ₄ , gold, epoxy resin, stainless steel, Viton® | 304, 316 stainless steel |
| Electronic Casing | 304 stainless steel | 304 stainless steel | 304 stainless steel | 304 stainless steel, aluminum |
| Weight (KF16) | 170 g | 170 g | 170 g | 97 g |
| CE Certification | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC |

Note 1: Accuracy and repeatability are typical values measured with Nitrogen gas at ambient temperature after zero adjustment.

Specifications

Hot Cathode Vacuum Transducers

| | Series 909AR | Series 979B | Series 999 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor Type | Bayard-Alpert | Bayard-Alpert/MicroPirani | Bayard-Alpert/MicroPirani/Differential Piezo |
| Measuring Range | 3.0 X 10 ⁻¹⁰ to 5.0 X 10 ⁻² Torr | 5 x 10 ⁻¹⁰ Torr to Atmosphere | 5 x 10 ⁻¹⁰ Torr to Atmosphere |
| Set Point Range | 5.0 X 10 ⁻¹⁰ to 9.5 X 10 ⁻³ Torr | 5.0 x 10 ⁻¹⁰ to 100 Torr | 5.0 x 10 ⁻¹⁰ Torr to Atmosphere |
| Measuring Range - Differential | ----- | ----- | -760 to +100 Torr |
| Set Point Range - Differential | ----- | ----- | -760 to +100 Torr |
| Calibration Gas | Nitrogen | Nitrogen | Nitrogen |
| Operating Temperature Range | 0° to 40°C (32° to 104°F) | 0° to 40°C (32° to 104°F) | 0° to 40°C (32° to 104°F) |
| Maximum Bakeout Temperature | 300°C max, electronics removed, 150°C max, withKF/Viton seal, electronics removed | 85°C (185°F), non-operating | 85°C (185°F), non-operating |
| Communication | RS232 / RS485 / Analog | RS232 / RS485 / Analog | RS232 / RS485 / Analog |
| Controls | Pressure units, baud rate, address, factory default, user tag, degas, RS485 test, gas correction, emission current, set point functions: value, hysteresis, enable; filament functions: power, protect, selection. Filament on/off, degas on/off, emission current range, active filament | Pressure units, baud rate, address, factory default, user tag, degas, RS485 test, gas correction, emission current, set point functions: value, hysteresis, direction, enable; filament functions: power, protect, selection, control set point, gas type | Pressure units, baud rate, address, factory default, user tag, degas, RS485 test, gas correction, emission current, set point functions: value, hysteresis, direction, enable; filament functions: power, protect, selection, control set point, gas type |
| Status | Pressure reading and units, set point, filament, active filament, filament operating time, transducer temperature, user tag, model, device type, serial number, firmware, hardware versions, analog output | Pressure reading and units, set point, filament, active filament, filament operating time, transducer temperature, user tag, model, device type, serial number, firmware, hardware versions, analog output | Pressure reading and units, set point, filament, active filament, filament operating time, transducer temperature, user tag, model, device type, serial number, firmware, hardware versions, analog output |
| Analog Output | 0 to 10 VDC, semilogarithmic 1 volt/decade | 0.5 to 7 VDC, 0.5 VDC / decade | 0.5 to 7 VDC, 0.5 VDC / decade |
| Relays Relay Contact Rating | 1 relay SPDT 1A @ 30VAC/DC, resistive | 3 relays SPST 1A @ 30VAC/DC, resistive load | 3 relays SPST 1A @ 30VAC/DC, resistive load |
| Power Requirements | 24 VDC, 15 Watts | 24 VDC, 15 Watts | 24 VDC, 15 Watts |
| Accuracy (Typical) | ± 20% of reading | 10 ⁻⁹ to 10 ⁻³ Torr ±20% of reading 10 ⁻³ to 100 Torr ±5% of reading 100 to atm ±25% of reading | 10 ⁻⁹ to 10 ⁻³ Torr ±20% of reading 10 ⁻³ to 50 Torr ± 5% of reading 50 to 1,000 Torr ± 1% of reading ± 100 Torr Diff <1% of reading |
| Repeatability (Typical) | Approx. 5% of reading | 1x10 ⁻⁹ to 10 ⁻³ Torr ±5% of reading 10 ⁻³ to 100 Torr ± 2% of reading 100 to atm ±10% of reading | 1x10 ⁻⁹ to 10 ⁻³ Torr ±5% of reading 10 ⁻³ to 50 Torr ± 2% of reading 50 to 1,000 Torr ± 0.5% of reading ± 100 Torr Diff <0.5% of reading |
| Overpressure Limit | 1500 Torr | 1500 Torr | 1500 Torr |
| Installation Orientation | Any | Any | Any |
| Internal Volume (CF 2.75") | 23 cm ³ | 23 cm ³ | 25 cm ³ |
| Materials Exposed to Vacuum | 304 stainless steel, glass, tungsten, platinum clad molybdenum, yttria-coated iridium (filament) | 304 stainless steel, silicon, SiO ₂ , SiN ₄ , gold, Viton®, glass, tungsten, platinum clad molybdenum, yttria-coated iridium, epoxy resin | 304 stainless steel, silicon, SiO ₂ , SiN ₄ , gold, Viton®, glass, tungsten, platinum clad molybdenum, yttria-coated iridium, Invar, Sn/Ni plating, Sn/Ag solder, epoxy |
| Electronic Casing | Aluminum | Aluminum | Aluminum |
| Weight (KF flange) | 370 g | 422 g | 460 g |
| CE Certification | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC |

Note 1: Accuracy and repeatability are typical values measured with Nitrogen gas at 20°C. Changes to gas type and temperature may effect gauge accuracy.

Cold Cathode Vacuum Transducers

| | Series 971B | Series 972B | Series 974B |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor Type | Cold Cathode | Cold Cathode / MicroPirani (MEMS Thermal Conductivity) | Cold Cathode / MicroPirani (MEMS Thermal Conductivity) / Piezo Differential (MEMS Diaphragm) |
| Measuring Range Absolute | 1 x 10 ⁻⁸ Torr to 5 x 10 ⁻³ Torr | 1 x 10 ⁻³ Torr to Atmosphere | 1 x 10 ⁻⁸ Torr to 1500 Torr |
| Measuring Range Differential | N/A | N/A | -760 to +760 Torr |
| Set Point Range Absolute | 1 x 10 ⁻⁸ Torr to 5 x 10 ⁻³ Torr | 1 x 10 ⁻⁸ Torr to Atmosphere | 1 x 10 ⁻⁸ Torr to 1000 Torr |
| Set Point Range Differential | N/A | N/A | -760 to +760 Torr |
| Calibration Gas | Nitrogen | Nitrogen | Nitrogen |
| Operating Temperature Range | 0° to 40°C (32° to 104°F) | 0° to 40°C (32° to 104°F) | 0° to 40°C (32° to 104°F) |
| Maximum Bakeout Temperature | 85°C (185°F), non-operating | 85°C (185°F), non-operating | 85°C (185°F), non-operating |
| Digital Communications | RS232 / RS485 / Analog | RS232 / RS485 / Analog | RS232 / RS485 / Analog |
| Controls | Pressure units, baud rate, address, factory default, user tag, RS485 test, gas correction; set point functions: value, hysteresis, direction, HV enable, protect, control set point, gas type | Pressure units, baud rate, address, factory default, user tag, RS485 test, gas correction; set point functions: value, hysteresis, direction, HV enable, protect, control set point, gas type | Pressure units, baud rate, address, factory default, user tag, RS485 test, gas correction; set point functions: value, hysteresis, direction, HV enable, protect, control set point, gas type |
| Status | Pressure reading and units, set point, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions | Pressure reading and units, set point, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions | Pressure reading and units, set point, transducer temperature, user tag, model, device type, serial number, firmware and hardware versions |
| Analog Output (Absolute Pressure) | 0.5 VDC / decade 1.5 to 4.5 VDC | 0.5 VDC / decade 1.5 to 7 VDC | 0.5 VDC / decade 1.5 to 7 VDC |
| Relays (optional) | 3 relays, SPDT | 3 relays, SPDT | 3 relays, SPDT |
| Relay Contact Rating | 1 A @ 30VAC/DC, resistive | 1 A @ 30VAC/DC, resistive | 1 A @ 30VAC/DC, resistive |
| Power Requirements | 9-30 VDC, 2 W | 9-30 VDC, 2 W | 9-30 VDC, 2 W |
| Accuracy (Typical) Combined Absolute | 5 x 10 ⁻⁸ Torr to 10 ⁻³ ± 30% of reading | 5 x 10 ⁻⁸ Torr to 10 ⁻³ ± 30% of reading 10 ⁻³ to 100 ± 5% of reading | 5 x 10 ⁻⁸ Torr to 10 ⁻³ ± 30% of reading 10 ⁻³ to 50 Torr ± 5% of reading 50 to 1000 Torr ± 1% of reading |
| Repeatability (Typical) Combined Absolute | 5 x 10 ⁻⁸ Torr to 10 ⁻³ ± 30% of reading | 5 x 10 ⁻⁸ Torr to 10 ⁻³ ± 30% of reading 10 ⁻³ to 100 ± 2% of reading | 5 x 10 ⁻⁸ Torr to 10 ⁻³ ± 30% of reading 10 ⁻³ to 50 ± 2% of reading 50 to 1000 Torr ± 1% of reading |
| Accuracy (Typical) Differential | N/A | N/A | -10 to +10 Torr ± 10% of reading -100 to -10 Torr ± 8% of reading -760 to -100 Torr ± 1% of reading +10 to 100 Torr ± 5% of reading |
| Repeatability (Typical) Differential | N/A | N/A | -760 to +10 Torr ± 1% of reading |
| Zero Stability (Typical) Differential | N/A | N/A | ± 0.1% of Full Scale (F.S. = 760 Torr) |
| Overpressure Limit | 1500 Torr | 1500 Torr | 1500 Torr |
| Installation Orientation | Any | Any | Any |
| Internal Volume | 21 cm ³ | 21 cm ³ | 21 cm ³ |
| Materials Exposed to Vacuum | 304 and 403 stainless steel, Viton®, epoxy resin, ceramic, titanium | 304 and 403 stainless steel, silicon, SiO ₂ , SiN ₄ , gold, Viton®, epoxy resin, ceramic, titanium | 304 and 403 stainless steel, silicon, SiO ₂ , SiN ₄ , gold, Viton®, epoxy resin, ceramic, titanium |
| Electronic Casing | 304 stainless steel | 304 stainless steel | 304 stainless steel |
| Weight (KF25) | 360 g | 360 g | 360 g |
| CE Certification | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC | EMC Directive 2004/108/EC |

Note 1: Accuracy and repeatability are typical values measured with Nitrogen gas at 20°C. Changes to gas type and temperature may effect gauge accuracy.



Ordering Information

Series 901P, 910, 925, 971B, 972B and 974B

| Description | Code |
|-------------------------------------------------------------------------|-------|
| Transducer Model | |
| 901P Load Lock | 901P- |
| 910 DualTrans | 910- |
| 925 MicroPirani | 925- |
| 971B UniMag | 971B- |
| 972B DualMag | 972B- |
| 974B QuadMag | 974B- |
| Flange | |
| KF16 ¹ | 1 |
| KF25 | 2 |
| 1/8" npt ¹ | 3 |
| VCR4 ¹ | 4 |
| VCR8 ¹ | 5 |
| CF1.33 ¹ | 6 |
| CF2.75 ² | 7 |
| KF16 extended ¹ | 8 |
| KF40 | 9 |
| Interface | |
| RS232/ Analog | 1 |
| RS485/Analog | 2 |
| Analog Out | |
| Standard MKS | 0 |
| Connector Relays | |
| SUBD 15pinHD male / no relay | 2 |
| SUBD 15pinHD male / 3 relays | 3 |
| SUBD 15pinHD male/3 relays/ Dual Aout (piezo differential) ³ | 4 |
| SUBD 15pinHD male / 3 relays / Dual Aout (Absolute) ³ | 5 |
| Enclosure Sealing/Display | |
| Standard / Viton sealing | 0 |
| UHV sealing (925 only) | 1 |
| IP54/Viton (910, 925, 971B, 972B only) | 2 |
| IP54/UHV (925 only) | 3 |
| Standard/Viton sealing/Display | 4 |

¹ Not available on 971B, 972B, and/or 974B. ² Not available on 901P, 910, and 925. ³ Consult factory for available outputs.

Ordering Code Example: 901P-11030 = KF16, RS232, standard analog output, Sub D 15 pin HD male, 3 relays, Viton.

Analog Output

The above transducers have a standard 15 pin HD SUBD connector and an analog output voltage pressure signal of 0.5VDC/decade or 1VDC/decade. It can also emulate analog voltage outputs from a variety of other vacuum transducers. The emulation feature can be used to upgrade and replace other vendors' gauges in OEM applications without changing system software. Contact MKS technical support for details.

Series 902

| Description | Code |
|-------------------------|-------|
| Transducer Model | |
| 902-1 Absolute Piezo | 902-1 |
| Flange | |
| KF16 | 1 |
| 4VCR-F | 2 |
| 8VCR-F | 3 |
| Interface | |
| Analog 0-5 VDC | 04 |
| Analog 0-10 VDC | 05 |
| Digital RS485 | 12 |
| Digital RS232 | 13 |

Ordering Code Example: 902-1113 = KF16, RS232



Ordering Information

Series 909AR, 979B, 999

| Description | Code |
|-------------------------|--------|
| Transducer Model | |
| 909AR | 909AR- |
| 979B | 979B- |
| 999 | 999- |
| Flange | |
| CF1.33 | 1 |
| CF2.75 | 2 |
| KF16 | 3 |
| KF25 | 4 |
| KF40 | 5 |
| Interface | |
| RS232/ Analog | 1 |
| RS485/ Analog | 2 |

Ordering Code Example: 999-21 = CF 2½", RS232, analog output

Transducer Accessories

| | |
|--------------|-----------------------------------------------------------------------|
| 100014510 | NW16KF Centering ring with 100µm filter and Viton O-ring ⁴ |
| 100014515 | NW25KF Centering ring with 100µm filter and Viton O-ring ⁴ |
| 100014520 | NW40KF Centering ring with 100µm filter and Viton O-ring ⁴ |
| 900USB-1 | USB Converter (SUBD, 15 pin HD to USB) ⁵ |
| 970B-Anode | Replacement Cold Cathode Anode Module (971, 972, 974 only) |
| 970B-CELLKIT | Anode Screen and Front Screen (971, 972, 974 only) |

⁴Recommended on inlet flange of Series 900 transducers to protect sensors from particulates when used in harsh environments. Other filter sizes available upon request.

⁵Not compatible with 909AR, 979B, 999

PDR900 Series 900 Controller

| | |
|--------------|-----------------------------------------------------------------|
| PDR900-12-US | PDR900 Single Channel Controller, RS232/RS485, US |
| PDR900-12-EU | PDR900 Single Channel Controller, RS232/RS485, EU |
| PDR900-12-UK | PDR900 Single Channel Controller, RS232/RS485, UK |
| PDR900-12-DK | PDR900 Single Channel Controller, RS232/RS485, Denmark |
| PDR900-12-JP | PDR900 Single Channel Controller, RS232/RS485, Japan (SI units) |

PDR900 Cables

| | |
|-----------|--------------------------------------------------------------------------------------------|
| 100013613 | Cable, PDR900 to 902, 9 Pin, 10 ft. (3 m), RS232 |
| 100013615 | Cable, PDR900 to 902, 9 Pin, 25 ft. (7.6 m), RS232 |
| 100013664 | Cable, PDR900 to 902, 9 Pin, 10 ft. (3 m), RS485 |
| 100013666 | Cable, PDR900 to 902, 9 Pin, 25 ft. (7.6 m), RS485 |
| 100013620 | Cable, PDR900 to 901P/909AR/910/925/971B/972B/974B/979B/999, 15 Pin, 10 ft. (3 m), RS232 |
| 100013622 | Cable, PDR900 to 901P/909AR/910/925/971B/972B/974B/979B/999, 15 Pin, 25 ft. (7.6 m), RS232 |
| 100013671 | Cable, PDR900 to 901P/909AR/910/925/971B/972B/974B/979B/999, 15 Pin, 10 ft. (3 m), RS485 |
| 100013673 | Cable, PDR900 to 901P/909AR/910/925/971B/972B/974B/979B/999, 15 Pin, 25 ft. (7.6 m), RS485 |



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