

## Heavy Duty Pressure Transducers Line Guide



### Heavy Duty products. Built for the toughest applications.

Honeywell offers decades of experience in the heavy duty pressure products industry. That's why, industry-wide, our heavy duty pressure transducers are known for enhanced quality, reliability, and service – which adds up to outstanding value for your applications.

**The 13 mm Series and 19 mm Series** were developed for potential use in pressure applications that involve measurement of hostile media in harsh environments compatible with 316L stainless steel, a type of steel that increases corrosion resistance, improves resistance to pitting

from chloride ion solutions, and provides increased strength at high temperatures. They are small, allowing them to be used on their own in tight packages or as building blocks.

**The SPT Series, MLH Series, PX2 Series, and PX3 Series** are complete amplified and compensated pressure measurement solutions. With a choice of ports, connectors, outputs and pressure ranges, these products may be configured to meet the needs of the application. They are engineered to be resistant to a wide variety of media for use in most harsh environments.

## FEATURES

### 13 mm Series.

**Features:** Rugged, isolated stainless steel package • Accommodates media that will not adversely affect 316L stainless steel • Based on reliable semiconductor technology • Calibrated and temperature compensated • Voltage or current supply options • Absolute and sealed gage pressures • For potential applications from 500 psi to 5,000 psi

**Benefits:** Used in high pressure potential applications involving measurement of hostile media in harsh environments. Piezoresistive semiconductor sensor chip in oil-isolated housing with or without an integral ceramic for temperature compensation and calibration is designed to provide reliable, stable, and accurate performance. Weld-ring collar and special back support ring for enhanced cycle life capability as well as further package integration in OEM applications. Potential applications include industrial and hydraulic controls, tank pressure, pressure transmitters, and process control systems.

### 19 mm Series.

**Features:** Rugged, isolated stainless steel package • Accommodates media that will not adversely affect 316L stainless steel • Small size • Based on reliable semiconductor technology • Absolute and gage pressures • Vacuum compatible, isolated sensors • Calibrated and temperature compensated (some listings) • For potential applications up to 500 psi

**Benefits:** Variety of pressure connections allow use in wide range of OEM equipment. Uncompensated version for use in potential applications using specialized circuit designs. Rugged for use in potential applications where corrosive liquids or gases are monitored and may also be exposed to a vacuum such as industrial controls, process control systems, industrial automation and flow control, and pressure calibrators.

### SPT Series.

**Features:** Based on reliable semiconductor technology • Rugged, 316L stainless steel wetted parts • Calibrated and temperature compensated • Absolute, gage, sealed gage, and vacuum gage pressures • For use in potential medical applications where compatibility is a problem

**Benefits:** Variety of pressure connections allows use in wide range of OEM equipment. For use in potential applications where corrosive liquids and gases are monitored such as industrial automation and flow control, pressure instrumentation, hydraulic systems, and process control.

### MLH Series.

**Features:** All-metal wetted parts • No internal elastomeric seals • Stable and creep free • Voltage and current outputs • Less than 2 ms response time • Easy customization • Rated IP65 or better

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## When reliability is demanded, Honeywell delivers.

Heavy Duty Pressure Transducers are found in applications where they cannot be easily replaced — where supreme durability is a top priority. That's why you'll find Honeywell heavy duty pressure products performing expertly in many potential applications, such as compressors and hydraulic controls, and in industries as diverse as aerospace, medical, transportation, agriculture, refrigeration, and industrial. Our full line of products deliver enhanced performance and reliability, plus: absolute, gage and sealed-gage measurement; a wide array of pressure ranges, port styles, termination types, and outputs; package types from miniature surface mount sensors to high-end stainless steel isolated (for stringent process control); pressure ranges from 3 psi to 8,000 psi; and corrosion resistance.



| Heavy Duty Pressure Transducers      | 13 mm Series                                                  | 19 mm Series                                                                                                                                    |
|--------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pressure port type</b>            | weld ring with back support, 1/8-27 NPT, 1/4-18 NPT, 7/16 UNF | weld ring with body O-ring, flush mount, flush mount with flange, 1/4-18 NPT, 1/8-27 NPT, 7/16 UNF, 1/4 BSPP, Euro O-ring, 1/4 VCR (female nut) |
| <b>Measurement type</b>              | absolute, sealed gage                                         | absolute, gage, vacuum gage                                                                                                                     |
| <b>Construction</b>                  | wetted parts 316L SS                                          | wetted parts 316L SS                                                                                                                            |
| <b>Pressure range</b>                | 0 psi to 500 psi through 0 psi to 5000 psi                    | 0 psi to 3 psi through 0 psi to 500 psi                                                                                                         |
| <b>Output</b>                        | 0 mV to 100 mV (nominal)                                      | 0 mV to 100 mV (nominal)                                                                                                                        |
| <b>Linearity</b>                     | ±0.25 %BFSL max.                                              | ±0.25 %BFSL max.                                                                                                                                |
| <b>Amplified</b>                     | no                                                            | no                                                                                                                                              |
| <b>Compensated temperature range</b> | 0°C to 82°C [32°F to 180°F]                                   | 0°C to 82°C [32°F to 180°F]                                                                                                                     |
| <b>Electrical connector type</b>     | ribbon cable                                                  | ribbon cable                                                                                                                                    |



| Heavy Duty Pressure Transducers      | SPT Series                                                      |
|--------------------------------------|-----------------------------------------------------------------|
| <b>Pressure port type</b>            | 1/8-27 NPT, 1/4-18 NPT, 7/16-20 UNF, 1/4-19 BSPP, 1/4 VCR gland |
| <b>Measurement type</b>              | absolute, gage, sealed gage, vacuum gage pressures              |
| <b>Construction</b>                  | wetted parts 316L SS                                            |
| <b>Pressure range</b>                | 0 psi to 3 psi through 0 psi to 5000 psi                        |
| <b>Output</b>                        | 4 mA to 20 mA, 0 mV to 100 mV, 1 Vdc to 5 Vdc                   |
| <b>Linearity</b>                     | ±0.25 %BFSL max.                                                |
| <b>Amplified</b>                     | yes, amplified and unamplified                                  |
| <b>Compensated temperature range</b> | -10°C to 85°C [14°F to 185°F]                                   |
| <b>Electrical connector type</b>     | bayonet connector, cable                                        |



## Heavy Duty Pressure Transducers

### MLH Series

|                                      |                                                                                                                                                                                                                                      |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pressure port type</b>            | 1/4-18 NPT, 1/8-27 NPT, 7/16-20 UNF 1/4 inch 45° Flare Female Schrader (SAE J512), 1/2-14 NPT, R 1/4-19 BSPT (ISO 7-1 tapered thread), R 1/8-28 BSPT (ISO 7-1 tapered thread)                                                        |
| <b>Measurement type</b>              | gage, sealed gage                                                                                                                                                                                                                    |
| <b>Construction</b>                  | port: 304L stainless steel; diaphragm: Haynes 214 alloy                                                                                                                                                                              |
| <b>Pressure range</b>                | 0 psi to 50 psi through 0 psi to 8000 psi                                                                                                                                                                                            |
| <b>Output</b>                        | ratiometric (from 5 Vdc excitation): 0.5 Vdc to 4.5 Vdc<br>regulated: 1 Vdc to 6 Vdc, 0.25 Vdc to 10.25 Vdc, 0.5 Vdc to 4.5 Vdc, 1 Vdc to 5 Vdc<br>current: 4 mA to 20 mA                                                            |
| <b>Accuracy</b>                      | ±0.25 %FSS (±0.5 %FSS on ranges below 100 psi)                                                                                                                                                                                       |
| <b>Amplified</b>                     | yes                                                                                                                                                                                                                                  |
| <b>Compensated temperature range</b> | ratiometric output: -40°C to 125°C [-40°F to 257°F]<br>regulated and current outputs: -40°C to 125°C [-40°F to 257°F]<br>(See product literature for operating and temperature compensated area graphics.)                           |
| <b>Electrical connector type</b>     | Metri-Pack 150, Hirschmann (mates with G4W1F), M12 x 1 (Brad Harrison micro), DIN 43650-C, 8 mm male, AMP Superseal 1.54, Cable (24 AWG, 1 meter), Cable (24 AWG, 3 meter), flying leads (20 AWG, 6 in), Deutsch DTM04-3P (integral) |



## Heavy Duty Pressure Transducers

### PX2 Series

|                                      |                                                                                                                                                                                                                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pressure port type</b>            | 7/16-20 UNF 1/4 in 45° Flare Female Schrader (SAE J512), 7/16-20 UNF 45° Flare Male (SAE J513), 7/16-20 UNF 37° Flare Male (SAE J514), G1/4 (ISO 1179-3), G1/8 (ISO 1179-3), M12 x 1.5 (ISO 6149-3), 1/4-18 NPT, 1/8-27 NPT, 9/16-18 UNF, (SAE J1926-3), 7/16-20 UNF (SAE J1926-3) |
| <b>Measurement type</b>              | absolute, sealed gage, vented gage                                                                                                                                                                                                                                                 |
| <b>Construction</b>                  | port and housing: 304 stainless steel, connector: PBT 30% GF                                                                                                                                                                                                                       |
| <b>Pressure range</b>                | 1 bar to 70 bar   100 kPa to 7 MPa   15 psi to 1000 psi                                                                                                                                                                                                                            |
| <b>Output</b>                        | ratiometric: 5.0 V, 10 %Vs to 90 %Vs; 5.0 V, 5 %Vs to 95 %Vs; 3.3 V, 10 %Vs to 90 %Vs; 3.3 V, 5 %Vs to 95 %Vs<br>regulated: 1 Vdc to 6 Vdc, 0.25 Vdc to 10.25 Vdc, 0.5 Vdc to 4.5 Vdc, 1 Vdc to 5 Vdc<br>current: 4 mA to 20 mA                                                    |
| <b>Accuracy</b>                      | ±0.25 %FSS                                                                                                                                                                                                                                                                         |
| <b>Total Error Band</b>              | ±2 %FSS at -40°C to 125°C [-40°F to 257°F]                                                                                                                                                                                                                                         |
| <b>Amplified</b>                     | yes                                                                                                                                                                                                                                                                                |
| <b>Compensated temperature range</b> | -40°C to 125°C [-40°F to 257°F]                                                                                                                                                                                                                                                    |
| <b>Electrical connector type</b>     | Metri-Pack 150 (UL 94 HB or V-0 options), Micro M12, DIN, Deutsch, cable harness (1 m, 2 m, 3 m, or 5 m).                                                                                                                                                                          |



## Heavy Duty Pressure Transducers

### PX3 Series

|                                      |                                                                                                                                                                                                          |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pressure port type</b>            | 7/16-20 UNF 1/4 inch 45° Flare Female Schrader (SAE J512), G1/4 A-G (1179-3), G1/4 A-L (1179-2), M12 x 1.5 (ISO 6149-3), 1/4-18 NPT, (ANSI/ASME B1.20.1), 1/8-27 NPT, (ANSI/ASME B1.20.1), brazable tube |
| <b>Measurement type</b>              | absolute, sealed gage                                                                                                                                                                                    |
| <b>Construction</b>                  | threaded ports: brass C36000 (lead (Pb) content: 3.7% max.)<br>tube port: copper UNS C12200 (lead (Pb) free)                                                                                             |
| <b>Pressure range</b>                | 1 bar to 50 bar   15 psi to 700 psi                                                                                                                                                                      |
| <b>Output</b>                        | ratiometric: 0.5 Vdc to 4.5 Vdc<br>ratiometric: 0.33 Vdc to 2.97 Vdc<br>current: 4 mA to 20 mA                                                                                                           |
| <b>Accuracy</b>                      | ±0.25 %FSS                                                                                                                                                                                               |
| <b>Total Error Band</b>              | ±1.0 %FSS at -20°C to 85°C [-4°F to 185°F]<br>±2.0 %FSS at <-20°C, >85°C [<-4°F, >185°F]                                                                                                                 |
| <b>Amplified</b>                     | yes                                                                                                                                                                                                      |
| <b>Compensated temperature range</b> | -40°C to 125°C [-40°F to 257°F] (all outputs)                                                                                                                                                            |
| <b>Electrical connector type</b>     | Metri-Pack 150 (UL V-0), DIN (Male, EN 175301-803C), cable harness (PVC or XLPE)                                                                                                                         |

- Exceeds CE heavy industrial EMC for use in areas of high RFI/EMI
- Amplified and temperature compensated
- Wide choice of connections and terminations
- Calibration for special pressure ranges

**Benefits:** Combines ASIC technology with media isolated, metal diaphragm. All-metal wetted parts for use in a variety of potential fluid applications. Amplified outputs often eliminate cost of external amplifiers. Wide selection of industry-standard connectors and process ports for enhanced reliability and user flexibility. Potential applications include compressors, refrigeration and HVAC/R, general industrial and hydraulics, multiple transportation applications including braking and alternate fuels, medical.

### PX2 Series.

**Features:** Cost-effective • Designed for configurability • Application expertise • Global support • Wide selection of options • Short lead time • Small Total Error Band (TEB) • Fast response time • Application life • Six Sigma design standards • Environmentally tough • Wide operating temperature range • Shock and vibration resistant • Good EMC protection

**Benefits:** Precise pressure measurement solution optimizes system performance at a competitive cost. Thousands of possible configurations. Honeywell's knowledgeable application engineers are available to answer customer's specific design questions during the development of their product. Honeywell's global presence offers immediate product and application support throughout the development cycle, from design to global manufacturing. Fast response time

maximizes system performance. 10 million cycles (minimum) to operating pressure provides enhanced life in the application. AC and AD output transfer functions offer a 3.3 V ratiometric output with a <7 ms turn-on time to enable use when energy efficiency is a key requirement. Six Sigma design standards result in a high level of quality, performance, and consistency so that customers are assured that the transducer will perform to specification. Compatibility with a wide variety of harsh media, including brake fluid, common hydrofluorocarbon refrigerants, engine oil, hydraulic fluids, and dry air, up to IP69K ingress protection sealing, and 100 V/m radiated immunity allow for use in tough environments. Wide compensated operating temperature range allows customers to design the same sensor into a variety of applications. Shock and vibration resistance increase flexibility of use

within the application. Good EMC protection means that the transducer will not be affected by environmental electromagnetic interference. Potential applications include industrial HVAC/R and air compressors, as well as a wide variety of general system and factory automation pump, valve and fluid pressure applications.

#### **PX3 Series.**

**Features:** Pressure range: 1 bar to 50 bar | 15 psi to 700 psi (absolute and sealed gage) • Ratiometric output: 0.5 Vdc to 4.5 Vdc or 0.33 Vdc to 2.97 Vdc; current output: 4 mA to 20 mA • Fully calibrated and temperature compensated • Total Error Band:  $\pm 1.0$  %FSS from -20°C to 85°C [-4°F to 185°F] • External freeze/thaw resistance: 6 cycles from -30°C to 50°C [-22°F to 122°F] • High insulation resistance: >100 MOhm • Dielectric strength: AC1500V, 1 min. or AC1800, 1 s • Current consumption for ratiometric output: 3.5 mA max. • EMC (radiated immunity) for ratiometric output: 200 V/m per ISO 11452-2 • Ingress protection IP67 (Metri-Pack 150), IP69K (cable harness) • 4 mA to 20 mA output operational at 125°C • RoHS, REACH, and CE compliant • Seven industry-standard pressure port types, including a tube port which provides for hermetically-sealed process connection

**Benefits:** Total Error Band provides the most comprehensive, clear and meaningful indication of the sensor's true measurement performance over a specified temperature range; small error promotes system uptime and efficiency. Survives exposure to frost, commonly found in refrigeration systems. Protects the user and sensor in high over-voltage situations, and ensures that the device is compliant with industry standards. Operates reliably in the presence of electro-magnetic fields, such as near wireless signals, RF communication,

and electrical devices. Helps to reduce energy costs, and enhances product life if used in battery driven systems. Media compatibility: Common HFC (hydrofluorocarbon) refrigerants such as R410A and R134A, next generation low global warming potential (GWP) refrigerants such as R448A (Solstice® N40), R32 and R1234ZE, engine oil, petroleum-based hydraulic fluids, brake fluids, and dry air. For ammonia and other corrosive media, see Honeywell's SPT Series. Potential industrial applications include refrigerant pressure monitoring in HVAC/R systems and air compressor system pressure. Potential transportation applications include air system monitoring and hydraulic oil pressure monitoring.

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Honeywell Sensing and Internet of Things services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or the nearest Authorized Distributor, visit [sensing.honeywell.com](http://sensing.honeywell.com) or call:

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