

## Heavy Duty Pressure Transducers

PX2 Series, 1 bar to 70 bar | 100 kPa to 7 MPa | 15 psi to 1000 psi

**50069942**

Issue I

Datasheet



### DESCRIPTION

Honeywell's PX2 Series Heavy Duty Pressure Transducers are a portfolio of configurable pressure sensors that use piezoresistive sensing technology with ASIC (Application Specific Integrated Circuit) signal conditioning in a stainless steel housing. The PX2 Series is fully calibrated and compensated for offset, sensitivity, temperature effects and non-linearity using the on-board ASIC. These transducers measure absolute, sealed gage, or vented gage pressure. The absolute versions have an internal vacuum reference and an output value proportional to absolute pressure, sealed gage versions have an internal pressure reference of one atmosphere at sea level, and vented gage versions measure pressure with respect to ambient pressure. They are RoHS compliant and are designed and manufactured according to ISO 9001 standards.

### VALUE TO CUSTOMERS

- 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, DOT 3 brake fluid, and dry air. For ammonia and other corrosive media, see Honeywell's SPT Series.
- Enhanced durability: The PX2 Series can operate in the rigorous environments commonly found in HVAC/R and air compressor applications. The sensor can survive at least 10 million pressure cycles and has an ingress protection rating up to IP69K.

### FEATURES

- Pressure range: 1 bar to 70 bar | 100 kPa to 7 MPa | 15 psi to 1000 psi
- Pressure reference: Absolute, sealed gage or vented gage
- Pressure port types: 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), or 7/16-20 UNF (SAE J1926-3)
- Electrical connector types: Metri-Pack 150 (UL 94 HB or V-0 options), Micro M12, DIN, Deutsch, or cable harness (1 m, 2 m, 3 m, or 5 m)
- Total Error Band:  $\pm 2.0\%$
- Operating and compensated temperature range:  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$  [ $-40^{\circ}\text{F}$  to  $257^{\circ}\text{F}$ ]
- Response time:  $< 2\text{ ms}$
- Life: Minimum of 10 million cycles to operating pressure
- Output transfer function: Ratiometric, regulated or current
- Mechanical shock rating: 100 G per MIL-STD-202F, Method 213B, Cond. F
- Vibration rating: 20 G sweep, 10 Hz to 2000 Hz
- Ingress protection: Up to IP69K
- Radiated immunity protection: Up to 100 V/m (ISO 11452-2)
- Flame retardant options: UL 94 HB standard on all electrical terminations; UL 94 V-0 available upon request

### POTENTIAL APPLICATIONS

- Industrial: Refrigerant pressure monitoring in HVAC/R systems; air compressor system pressure
- Transportation: Air system monitoring; hydraulic oil pressure monitoring

The PX2 Series is not recommended for use with media involving water, saturated air such as steam and vapor, and ammonia.

### PORTFOLIO

Honeywell's PX2 Series joins the PX3 Series, MLH Series, and SPT Series heavy duty pressure transducers.

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**Table 1. Performance Specifications<sup>1</sup>**

Characteristic	Parameter
Operating temperature range <sup>2</sup>	-40°C to 125°C [-40°F to 257°F]
Storage temperature range <sup>3</sup>	-40°C to 125°C [-40°F to 257°F]
Compensated temperature range <sup>4</sup>	-40°C to 125°C [-40°F to 257°F]
Overpressure minimum rating <sup>5</sup>	(See Table 3.)
Burst pressure minimum rating <sup>6</sup>	(See Table 3.)
Long term stability	±0.5 %FSS <sup>9</sup> (1000 hr at 25°C [77°F])
Accuracy <sup>7</sup>	±0.25 %FSS <sup>9</sup> (See Figure 1.)
Offset error <sup>8</sup>	±1 %FSS <sup>9</sup>
Total Error Band <sup>10</sup>	±2 %FSS <sup>9</sup> (-40°C to 125°C [-40°F to 257°F]) (See Figure 1.)
Response time <sup>11</sup>	<2 ms
Turn on time <sup>12</sup>	<7 ms
Life <sup>13</sup>	minimum of 10 million cycles to operating pressure

<sup>1</sup> All specifications apply at 25°C and under operating conditions unless otherwise noted.

<sup>2</sup> Operating Temperature Range: The temperature range over which the product will produce an output proportional to pressure but may not remain within the specified performance limits.

<sup>3</sup> Storage Temperature Range: The temperature range over which the product may safely be exposed without excitation or pressure applied. Under these conditions the product will remain in specification after excursion to any temperatures within this range. Exposure to temperatures outside this range may cause permanent damage to the product.

<sup>4</sup> Compensated Temperature Range: The temperature range (or ranges) over which the product will produce an output proportional to pressure within the specified performance limits.

<sup>5</sup> Overpressure: The absolute maximum rating for pressure which may be safely applied to the product for it to remain in specification once pressure is returned to the operating pressure range. Exposure to higher pressure may cause permanent damage to the product.

<sup>6</sup> Burst Pressure: The maximum pressure that may be applied to the product without causing escape of the pressure media. The product should not be expected to function after exposure to any pressure beyond the rated burst pressure. This rating is also the case burst rating of the product.

<sup>7</sup> Accuracy: The maximum deviation in output from a Best Fit Straight Line (BFSL) fitted to the output measured over the pressure range at 25°C. Includes all errors due to pressure non-linearity, pressure hysteresis, and non-repeatability.

<sup>8</sup> Offset Error: the maximum deviation in the output signal obtained when the reference pressure is applied at 25°C relative to the ideal transfer function.

<sup>9</sup> Full Scale Span (FSS): The algebraic difference between the output signal measured at the maximum (Pmax.) and minimum (Pmin.) limits of the pressure range.

<sup>10</sup> Total Error Band: The maximum deviation from the ideal transfer function over the entire compensated temperature and pressure range. Includes all errors due to offset, full scale span, pressure non-linearity, pressure hysteresis, repeatability, thermal effect on offset, thermal effect on span, and thermal hysteresis.

<sup>11</sup> Response Time: The response time of the transducer is the maximum amount of time that the transducer will take for the transducer to output a change from 10% to 90% of full scale in response to a 0% to 100% full scale step input pressure range.

<sup>12</sup> Turn On Time: Duration from power applied until first valid output.

<sup>13</sup> Life may vary depending on the application in which transducer is used.

**Figure 1. Total Error Band (TEB) for the Total Error Band Series**

