

PRODUCT TRAINING MODULE: Heavy Duty Pressure Transducers PX2 Series



Honeywell

Agenda

- **In this training module, you will learn the following about Honeywell's PX2 Series Heavy Duty Pressure Transducers:**
 - Examples of media in which the PX2 Series may be used
 - PX2 Series' 6 advantages to design engineers not found in competitive products
 - PX2 Series' key features and benefits
 - Applications in which PX2 transducers may potentially be used
 - Honeywell's Heavy Duty Pressure Transducer Portfolio
 - Where to obtain product information



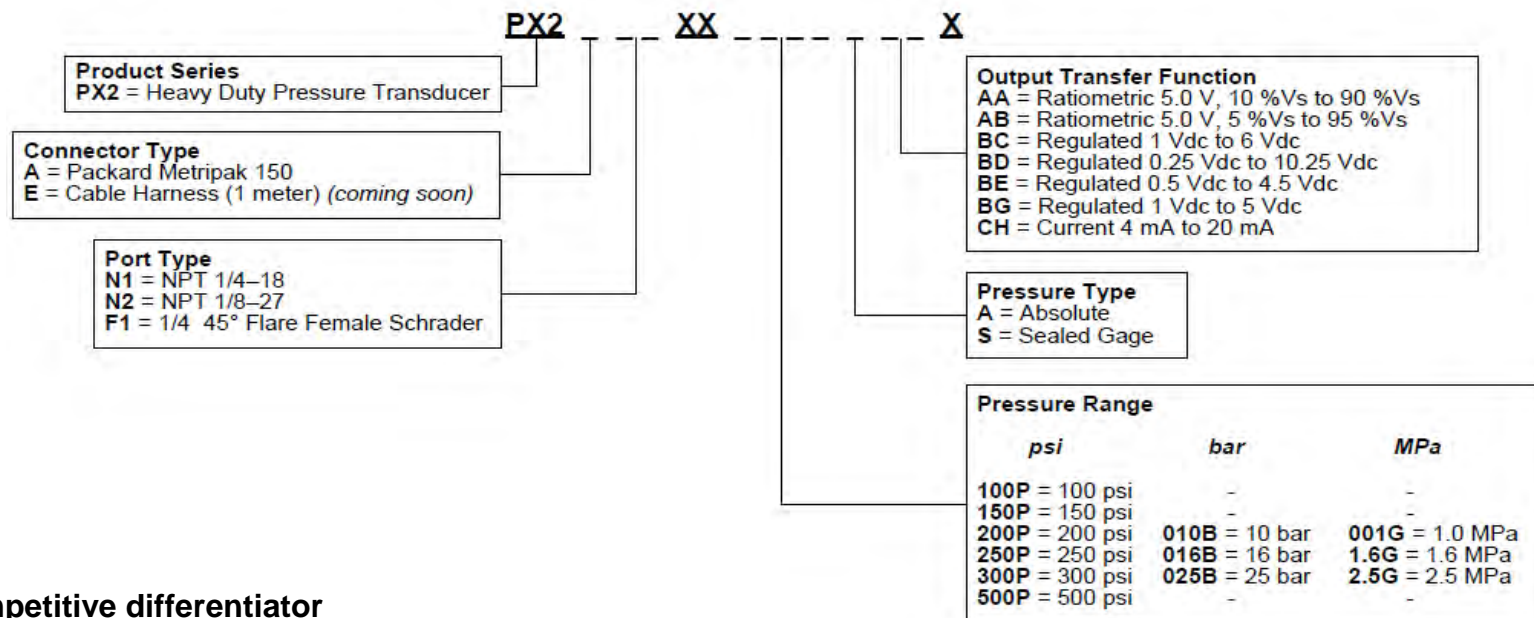
Introduction

- **The PX2 Series are stainless steel pressure measurement solutions engineered to be resistant to moderately harsh media that does not require media isolation of the silicon sense die**
 - Examples of media include brake and hydraulic fluids, refrigerants, engine oil, tap water, and compressed air
- **They may be used to monitor performance and efficiency in many industrial and transportation applications**
- **They offer 6 advantages not found in competitive devices:**
 - ✓ **Configurable:** Design the sensor you need; receive samples quickly
 - ✓ **Cost-effective:** Reduce your design and implementation costs
 - ✓ **Total Error Band:** True $\pm 2\%$ accuracy over a compensated temperature range of $-40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ [$-40\text{ }^{\circ}\text{F}$ to $257\text{ }^{\circ}\text{F}$]
 - ✓ **Designed to Six Sigma standards:** High product quality and performance
 - ✓ **Application expertise:** Rely on Honeywell's knowledgeable engineers
 - ✓ **Global support:** Receive immediate product and application support
- **They offer a wide pressure range of 7 to 34 bar [100 to 500 psi]**
 - Additional pressure ranges coming soon

Value to Customers

1. Designed for configurability★

- A choice of connectors, ports, outputs, and pressure types and ranges allow customers the ability to configure the device to meet their application needs
- The PX2 Series was designed from the start to be configurable, which allows customers the ability to receive samples of new configurations quickly



★ = competitive differentiator

Configurability Allows Customers to Meet Application Needs

Value to Customers

2. Cost-effective★

- The PX2 Series' configurability makes them a cost-effective solution for our customers
- By configuring the transducer to meet their system's needs, the PX2 Series reduces the design and implementation costs of the end product



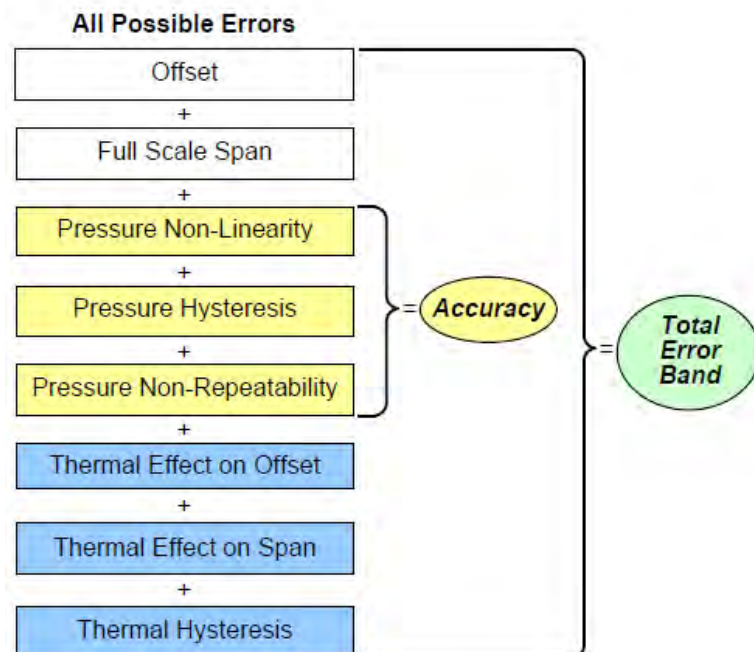
★ = competitive differentiator

Configurability Helps Reduce Design and Implementation Costs

Value to Customers (continued)

3. Industry-leading Total Error Band (TEB) $\pm 2\%$ ★

- Honeywell specifies TEB—the most comprehensive measurement—that provides the transducer’s true accuracy over a compensated temperature range of -40 to 125 °C [-40 to 257 °F]
- It is the most meaningful measurement of accuracy because it is a single specification that includes all possible sources of error
- Provides excellent interchangeability due to minimal part-to-part variation in accuracy
- Eliminates the customers’ need for individual transducer testing and calibration
- Supports system accuracy and warranty requirements



★ = competitive differentiator

Total Error Band States the Device’s True Accuracy

Value to Customers (continued)

4. Designed to Six Sigma standards★

- Provides the highest level of product quality, performance, and consistency, imparting confidence that the transducer will perform to the specification
- Many competitive products are produced to only 1 or 2 Sigma tolerances, which may result in some products not performing to the specification they were designed to

5. Application expertise★

- Honeywell's knowledgeable application engineers are available to answer design questions during the development of the customers' product

6. Global support★

- Honeywell's global presence offers customers immediate product and application expertise, helping the customer throughout the development cycle

★ = competitive differentiator

High Quality and Performance; Experienced Engineering Team

Features and Benefits

- **Piezoresistive sensing technology with ASIC (Application Specific Integrated Circuit) signal conditioning in a stainless steel housing**
 - Compatible with a variety of harsh media
- **Durable**
 - Compatibility with a variety of harsh media, wide operating temperature range, up to IP69K sealing, and CE compliance allows for use in tough environments
- **Fully calibrated and compensated**
 - Provides transducer offset, sensitivity, temperature effects, and non-linearity
- **Measure absolute or sealed gage pressure**
 - Absolute versions: Internal vacuum reference and output value proportional to absolute pressure
 - Sealed gage versions: Internal pressure reference of 1 atmosphere at sea level
- **Broad compensated temperature range**
 - Allows customers to design the same transducer into many applications
- **Good EMC protection**
 - Protected from environmental electromagnetic interference
- **Designed and manufactured to meet ISO 9001 standards**

Potential Industrial Applications – HVACR

- **The PX2 Series may potentially be used in many Industrial HVAC/R applications**
 - Compressor inlet/outlet pressure, oil pressure, and rack rooms
 - Rooftop chillers
 - Refrigerant recovery systems
- **Use in application**
 - May be used to monitor system performance for proper environment control
- **Customer benefits**
 - Broad temperature compensation $\pm 2\%$ accuracy over a compensated temperature range of -40 to 125 °C [-40 to 257 °F] allows the system to function as designed under wide temperature swings
 - Durable



Monitors System Performance in HVACR Systems

Potential Industrial Applications – Air Compressors

- **The PX2 Series may potentially be used in many industrial air compressor applications**
 - Compressor inlet/outlet pressure and oil pressure
 - Filter pressure drop
 - Cooling water inlet and outlet pressure
- **Use in application**
 - May be used to monitor compressor performance and efficiency
- **Benefits to customers**
 - Broad temperature compensation $\pm 2\%$ accuracy over a compensated temperature range of $-40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$ [$-40\text{ }^{\circ}\text{F}$ to $257\text{ }^{\circ}\text{F}$] allows the system to function as designed under wide temperature swings
 - Durable



Monitors Compressor Performance in Air Compressors

Potential Industrial Applications – General Industrial

- **The PX2 Series may potentially be used in many general industrial applications**
 - System pressure
 - Fluid power, flow, level
 - Factory automation, pneumatics
 - Injection molding knock-out valves
 - Pumps and valves
 - Packaging and laminating
 - Solar energy
 - Sprayers, industrial lasers, foam dispensers
 - Emissions monitoring
- **Use in application**
 - May be used to monitor performance and efficiency
- **Benefits to customers**
 - Broad temperature compensation $\pm 2\%$ accuracy over a compensated temperature range of -40 to 125 °C [-40 to 257 °F] allows the system to function as designed under wide temperature swings
 - Durable



Monitors Performance in General Industrial Applications

Potential Transportation Applications

- **Heavy equipment and alternative fuel vehicles**

- System pressure
- Fluid power, flow and level
- Pneumatics
- Light hydraulics
- Brake and engine oil pressure
- Transmission
- Truck and trailer air braking

- **Use in application**

- May be used to maintain heavy equipment performance

- **Customer benefits**

- The transducer's good EMC rating, water ingress protection up to IP69K, and mechanical shock rating to 100g per MIL-STD-202F in a stainless steel housing allow for use in tough, heavy equipment environments



Maintains Heavy Equipment Performance

Honeywell's Heavy Duty Pressure Transducer Portfolio

- Honeywell's Heavy Duty Pressure Transducer portfolio consists of the **PX2 Series**, **MLH Series**, and **SPT Series**
- The portfolio offers customers a wide pressure range from 3 psi to 8000 psi
- The portfolio offers customers the ability to select a product based on the media environment in which the product may be used:
 - **PX2 Series** is designed for use in moderately harsh media environments
 - Examples: refrigerants, brake/hydraulic fluids, engine oil, tap water, compressed air
 - **MLH and SPT Series** are designed for use in aggressive media environments
 - Examples: diesel fuel, ethanol (ethyl alcohol), natural gas, inks, jet fuels (JP1 to JP6), gasoline (petrol/unleaded), kerosene (similar to RP-1 & JP-1), propane, silicone oils, and isopropanol (isopropyl alcohol)



PX2 Series

- 100 to 500 psi
- Durable
- Designed for use in moderately harsh media that does not require media isolation of the silicon sense die



MLH Series

- 50 to 8000 psi
- Extremely durable
- Designed for use in aggressive media that requires Haynes 214 alloy diaphragm for media isolation




SPT Series

- 3 to 5000 psi
- Extremely durable
- Designed for use in aggressive media that requires 316L stainless steel diaphragm for media isolation

PX2 Series Online Resources

- To access more information about the PX2 Series, [click here](#).

PX2 Series Heavy Duty Pressure Transducers




Product Features

* = Competitive Differentiator

1. *Designed for Configurability

Industry-leading ability to configure the device to meet specific application needs

- Numerous standard or custom connectors, ports, pressure types and ranges, and output options
- Allows for quick availability of product samples

Where to Buy 

About Honeywell Sensing and Control Products

- For more information about all of Honeywell Sensing and Control sensor and switch solutions, visit <http://sensing.honeywell.com>



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