

## Application Note

### PX2 Series and PX3 Series Heavy Duty Pressure Transducers for Potential Use in Industrial HVAC/R Applications

#### Background

Heating, ventilation, air conditioning and refrigeration (HVAC/R) systems help maintain an acceptable indoor environment. The three components of an HVAC/R system are:

1. **Heating:** The process of bringing heat to an area. A Heating System is the use of a boiler, furnace or heat pump to heat water, steam or air and distributing it to the area.
2. **Ventilation:** The process of changing air in an area to change the temperature and improving air quality by removing moisture, dust, smoke and other airborne particles.
3. **Air Conditioning and Refrigeration:** The removal of heat from an area. Heat can be removed by using refrigerants like water, air or other cooling chemicals and is accomplished through a process called the refrigeration cycle.

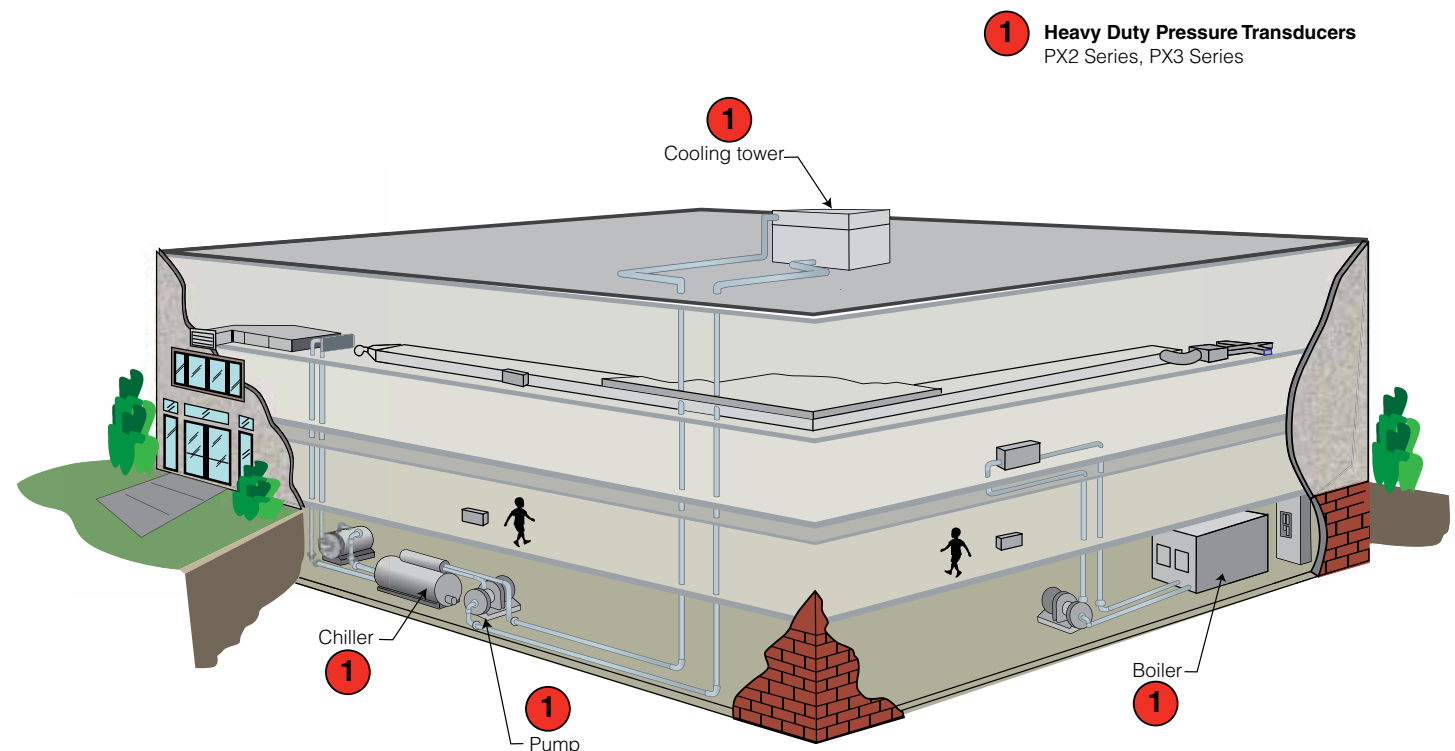
Due to the high cost of energy, HVAC/R systems need to be efficient. Controlling the compressor suction and discharge pressure to match refrigeration needs will help increase efficiency and reduce energy cost.

#### Solution

The PX2 and PX3 Series are designed to provide continuous monitoring of compressor outlet pressure, chiller outlet pressure, evaporator coil outlet pressure, and cooling tower supply pressure to help control the flow of heating/cooling media during partial load conditions. (See Figure 1.) The PX2 and PX3 Series are compatible with common hydrofluorocarbon (HFC) refrigerants such as R410, R134a, R407a.

For Honeywell heavy duty pressure products designed for use with ammonia refrigerants, please see the MLH Series and SPT Series Heavy Duty Pressure Transducers, and the 19 mm and 13 mm Series Heavy Duty Pressure Sensors.

**Figure 1. PX2 Series and PX3 Series Heavy Duty Pressure Transducers in Potential HVAC/R Applications**



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## PX2 Series and PX3 Heavy Duty Pressure Transducers for Potential Use in HVAC/R Applications

**Table 1: PX2 Series and PX3 Series General Comparison**

Characteristic	 <p style="text-align: center;"><b>PX2 Series</b></p>	 <p style="text-align: center;"><b>PX3 Series</b></p>
Operating, compensated, and storage temp. range	-40 °C to 125 °C [-40 °F to 257 °F]	
Total Error Band	<ul style="list-style-type: none"> <li>• ±2 %FSS: -40 °C to 125 °C [-40 °F to 257 °F]</li> </ul>	<ul style="list-style-type: none"> <li>• ±1 %FSS: -20 °C to 85 °C [-4 °F to 185 °F]</li> <li>• ±2 %FSS: &gt;-20 °C [&lt;-4 °F] and &gt;85 °C [185 °F]</li> </ul>
Pressure range	<ul style="list-style-type: none"> <li>• 1 bar to 70 bar</li> <li>• 15 psi to 1000 psi</li> <li>• 100 kPa to 7 MPa</li> </ul>	<ul style="list-style-type: none"> <li>• 1 bar to 46 bar</li> <li>• 15 psi to 667 psi</li> </ul>
Pressure reference	<ul style="list-style-type: none"> <li>• absolute</li> <li>• sealed gage</li> <li>• vented gage</li> </ul>	<ul style="list-style-type: none"> <li>• absolute</li> <li>• sealed gage</li> </ul>
Port material	stainless steel 304	brass C36000 (Pb content: 3.7% max.)
EMC (Radiated Immunity)	100 V/m per ISO 11452-2	200 V/m per ISO 11452-2
Ingress protection	IP65, IP67, IP69K (depends on electrical connector type)	IP67
External freeze/thaw resistance	not specified	>6 cycles from -30 °C to 50 °C [-22 °F to 122 °F]
Media compatibility	<ul style="list-style-type: none"> <li>• common HFC refrigerants (e.g. R410A)</li> <li>• low GWP refrigerants (e.g. R32, R1234ZE)</li> <li>• engine oil, brake fluid, hydraulic fluid</li> <li>• saline (1%), potable water</li> </ul>	<ul style="list-style-type: none"> <li>• common HFC refrigerants (e.g. R410A)</li> <li>• low GWP refrigerants (e.g. R32, R1234ZE)</li> <li>• engine oil, brake fluid, hydraulic fluid</li> <li>• saline (1%)</li> </ul>

### Find out more

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Sensing and Productivity Solutions  
 Honeywell  
 1985 Douglas Drive North  
 Golden Valley, MN 55422  
**honeywell.com**

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