

# HEAVY DUTY PRESSURE TRANSDUCERS FOR POTENTIAL USE IN INDUSTRIAL HVAC/R APPLICATIONS

## MIP SERIES

### Application Note

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

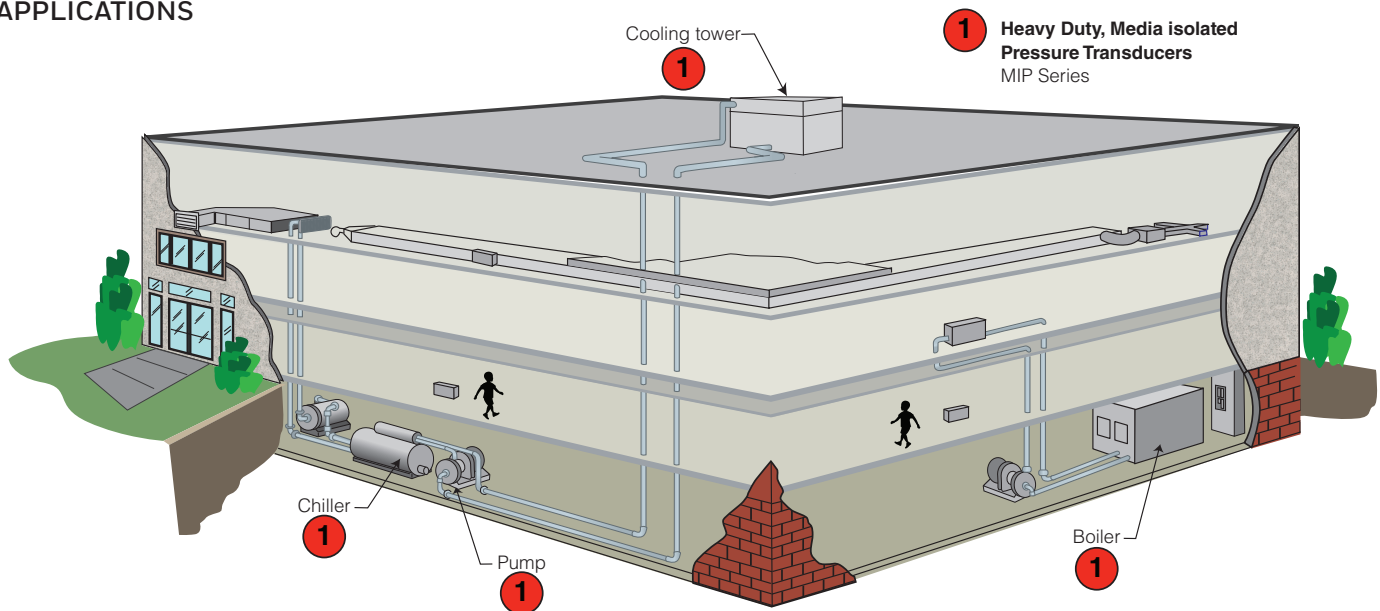
1. **Heating:** The process of bringing heat to an area. A heating system uses a boiler, furnace, or heat pump to heat water, steam, or air for distribution to a specific area or areas.
2. **Ventilation:** The process of changing air in a specific area to change the temperature and improve the air quality by removing moisture, dust, smoke, and other airborne particles.
3. **Air Conditioning and Refrigeration:** Heat can be removed by absorbing and discharging heat through the use of a refrigeration cycle.

Due to the high cost of energy, the HVAC/R systems shown in Figure 1 need to be efficient. Controlling the compressor suction and discharge pressure to match refrigeration needs helps to increase efficiency and reduce energy costs.

The MIP Series offers a media-isolated pressure transducer in a compact, stainless steel construction for use with a wide range of media including corrosive fluids and water. The hermetically-welded design supports almost any media without the use of an internal seal. The transducers are designed to be used in harsh environments that see aggressive media.


See Table 1 for a list of compatible media.

FIGURE 1. MIP SERIES HEAVY DUTY, MEDIA-ISOLATED PRESSURE TRANSDUCERS IN POTENTIAL HVAC/R APPLICATIONS



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**TABLE 1: MIP SERIES SPECIFICATIONS**

CHARACTERISTIC	PARAMETER
	
Operating, compensated, and storage temperature range	-40°C to 125°C [-40°F to 257°F]
Total Error Band	-40°C to 125°C [-40°F to 257°F]: <ul style="list-style-type: none"> <li>• ±1.0 %FSS (≤10 bar)</li> <li>• ±0.75 %FSS (&gt;10 bar)</li> </ul>
Pressure range	<ul style="list-style-type: none"> <li>• 1 bar to 60 bar</li> <li>• 15 psi to 870 psi</li> </ul>
Pressure reference	<ul style="list-style-type: none"> <li>• absolute</li> <li>• sealed gage</li> </ul>
Pressure port material	stainless steel 304L
Output transfer function	ratiometric to 5 Vdc supply: 0.5 Vdc to 4.5 Vdc
EMC (radiated immunity)	100 V/m (200 MHz to 2 GHz) per ISO 11452-2
Ingress protection	IP67 (Metri-Pack 150)
External freeze/thaw resistance	>6 cycles from -30°C to 50°C [-22°F to 122°F]
Media compatibility	<ul style="list-style-type: none"> <li>• <b>Industrial:</b> <ul style="list-style-type: none"> <li>- pumps: water, hydraulic fluids</li> <li>- compressors: compressed air</li> <li>- process: food, beverage, oil, gas, steam</li> </ul> </li> <li>• <b>HVAC/R:</b> refrigerants (butane, propane, ammonia, CO<sub>2</sub>, R134A, R407C, R410A, R448A/ Solstice® N40, R32 and R1234ze, R1234yf, glycol + water</li> <li>• <b>Transportation:</b> gasoline, diesel fuel, engine oil, brake fluid, coolants, CNG</li> <li>• <b>Medical:</b> O<sub>2</sub>, N<sub>2</sub>, CO<sub>2</sub>, N<sub>2</sub>O, air</li> </ul>

## FOR MORE INFORMATION

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