



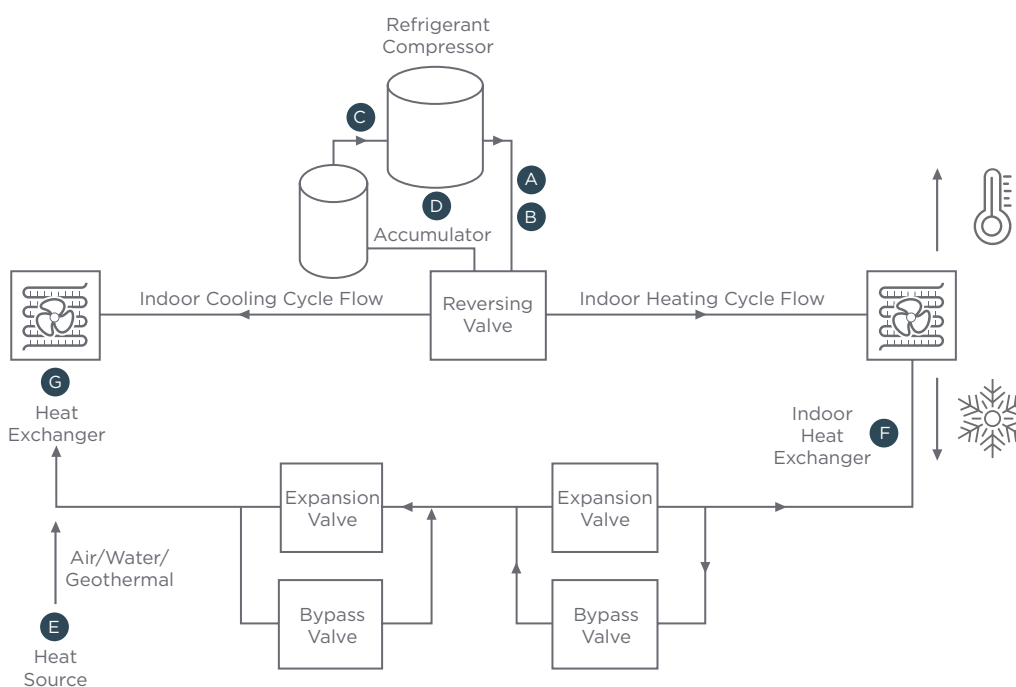
SENSORS FOR INDUSTRIAL HEAT PUMPS

Creating comfortable indoor spaces in buildings cost effectively is a common challenge for modern HVAC systems. Heat pumps are one energy-effective solution that can provide both heating and cooling in a single unit. Sensors for pressure, temperature, flow, and humidity are making these systems smarter and more efficient. However, sensors must be cost effective, accurate and reliable as part of heat pump systems as the environments they operate in can be quite harsh.

TE CONNECTIVITY ADVANTAGES

- Portfolio Breadth
- Industrial Technology Leadership
- Manufacturing Scale
- Customization Capability

HEAT PUMPS



- A** High Pressure Sensor
- B** Refrigerant Vapour Temp
- C** Low Pressure Sensor
- D** Compressor crank case Temperature
- E** Water or Air Temp Sensor
- F** Inside air Temp
- G** Defrost Temperature Sensor

SENSORS FOR INDUSTRIAL HEAT PUMPS

Sensor Technology	Application	Key Product Features	Benefits
M3200 	<ul style="list-style-type: none"> Compact industrial pressure transducer suitable for measurement of gas pressure, refrigerants, and media such as contaminated water, steam, and mildly corrosive fluids 	<ul style="list-style-type: none"> Rugged Microfused design Variety of ports Analog or digital output configurations 17-4PH stainless steel wetted surfaces 	<ul style="list-style-type: none"> Compact Customizable Weatherproof CE Compliant
U7100 	<ul style="list-style-type: none"> High volume low pressure transducer suitable for measurement of liquid or gas pressure in HVAC refrigeration controls 	<ul style="list-style-type: none"> Stainless steel wetted surfaces Gage, absolute, sealed gage Hermetic Pressure Ports Water Resistant 1M Immersion 	<ul style="list-style-type: none"> Rugged for heavy equipment and outdoor use such as HVAC refrigeration systems ±0.25% accuracy Exceeds the latest industrial CE requirements Survives high vibration
U5200 	<ul style="list-style-type: none"> Low Pressure transducer for demanding industrial applications such as advanced HVAC systems and refrigeration systems 	<ul style="list-style-type: none"> Gage, Sealed, Absolute, Compound ranges Variety of pressure ports and electrical configurations 316L stainless steel 	<ul style="list-style-type: none"> Compact CE Compliant and Weatherproof Suitable for measurement for difficult, corrosive media Up to ±0.1% Accuracy Durable
PIPE PROBE 	<ul style="list-style-type: none"> Overmolded NTC surface temperature sensor designed for fast and accurate non-invasive temperature tracking of fluids such as refrigerants or heating/cooling liquids inside HVAC tubing 	<ul style="list-style-type: none"> PRO4-overmolded probe consists of a NTC thermistor soldered to a 24 AWG Stranded TPE cable with integrated clip Supplied with connector, and RoHS Compliant 	<ul style="list-style-type: none"> Robust Compact design Improved overall reliability Fast response time
TPE OVERMOLDED PROBE 	<ul style="list-style-type: none"> Building management, heater control, and air conditioning within HVAC applications 	<ul style="list-style-type: none"> Temperature sensor assembly consists of a NTC thermistor soldered to a single insulated TPE extension cable with an IP 67 rating 	<ul style="list-style-type: none"> High degree of protection against water/moisture ingress Customized tolerances and resistances
HTU21 	<ul style="list-style-type: none"> Humidity and temperature combination sensors for HVAC applications 	<ul style="list-style-type: none"> Calibrated, linearized signals in digital, I²C format Humidity and temperature plug and play transducers Direct interface with a micro-controller with the module for humidity and temperature digital outputs Low power sensor 	<ul style="list-style-type: none"> Relative Humidity and Temperature Digital Output I²C interface Low power consumption for IoT applications Fast response time Full interchangeability with no calibration required in standard conditions
HTU31 	<ul style="list-style-type: none"> Humidity and temperature combination sensors for HVAC applications 	<ul style="list-style-type: none"> High performance humidity and temperature combination sensor Compact and accurate Available in digital and analog versions 	<ul style="list-style-type: none"> Provides fast response time Precision measurement Low hysteresis and sustained performance, even in the harshest environments
HTU35 	<ul style="list-style-type: none"> Humidity and temperature combination sensors for HVAC applications 	<ul style="list-style-type: none"> High performance humidity and temperature combination sensor Compact and accurate Analog output 	<ul style="list-style-type: none"> Relative Humidity and Temperature analog output Low power consumption Fast response time Full interchangeability with no calibration required in standard conditions
HTG35 	<ul style="list-style-type: none"> Humidity and temperature combination sensors designed for high volume and demanding applications where power consumption is critical 	<ul style="list-style-type: none"> Humidity and temperature plug and play transducers Direct interface with a micro-controller with the module for humidity linear voltage and direct NTC outputs Low power sensor 	<ul style="list-style-type: none"> Suitable for small bulk assembly RoHS compliant Full interchangeability Demonstrated reliability and long term stability Reliability not affected by repeated condensation