



Introduction

The **Digital Pressure Temperature Sensor (DPTS)** is a device that measures pressure and up to two temperatures. The hardware is comprised of integrated MEMS pressure sensor and an intelligent micro-processing unit. The wiring harness includes an external temperature sensor, RS485 communication wires, power input wires, PWM output wires and optional wires to add second temperature sensor. The users can communicate with DPTS using a third-party tool via MODBUS RTU or by using DMQ's windows based graphical user interface.

Principle of Operation

The DPTS can be installed on a ¼" access fitting and the temperature sensors can be strapped to a pipe. The user can use pressure and temperature readings as input to send a programmable PWM output to the electrical equipment such as actuators or LED lights. It can also calculate real-time superheat by using the pressure and temperature measurements when installed at the evaporator outlet in HVAC and Refrigeration systems.

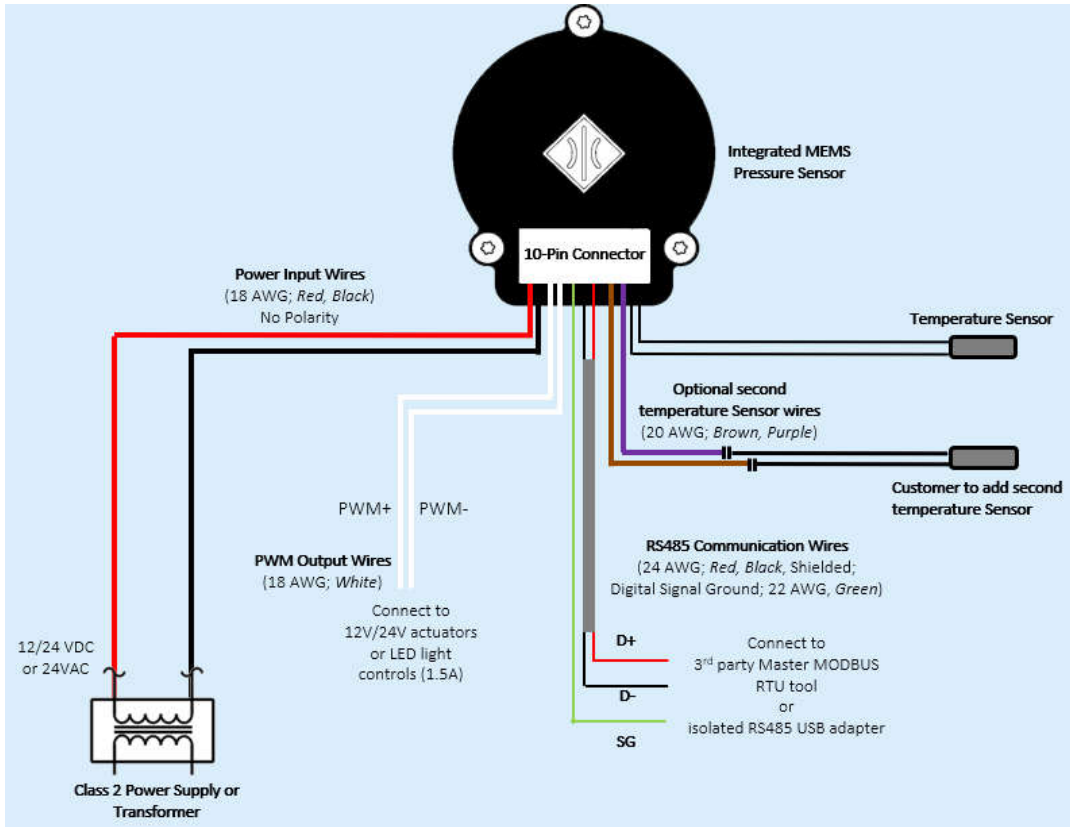
Features and Benefits



Technical Specifications

Suitable Environmental Temperature	-40°F ~ 158°F (-40°C ~ 70°C)
Suitable Environmental Humidity	< 95% RH
Voltage Input	12VDC ±15% for (12V device) or 24VAC ±15% (50/60 Hz ± 1%) or 24VDC ±15% for (24V device)
Power Consumption	P ≤ 40W Load @ 95% Duty Cycle @ 24VDC No Load: P < 500mW @ 24VDC
Operating Pressure	21 to 240 psia (145 KPa to 1.65 MPa)
Pressure Accuracy	± 1.5 psi for 20 psia < P ≤ 200 psia, -4°F ~104°F (-20°C ~ 40°C)
External Temperature Sensor Accuracy	± 2.2°F for -40°F to +158°F (-40°C to +70°C)
Proof Pressure	600 psi (4.14 MPa)
Burst Pressure	1500 psi (10.34 MPa)
Applicable Medium	<ul style="list-style-type: none"> • Gas: N₂, CO₂, Ultra dry air • Electrically nonconductive high boiling point liquids • Hydraulic Oils • Refrigerants: All ASHRAE safety group A1, A2 and A2L refrigerants such as R134A, R22, R404A, R410A. • Refrigerant Oils: Polyolester (POE); Polyalkylene Glycol (PAG); Mineral Oil (MO); Polyvinylether (PVE) Call for all other fluids for compatibility
Communication Hardware Layer	Non-Isolated RS-485 Half-Duplex. An external isolated RS-485 adapter is required when communicating with the DPTS
Fluid Connections	Female ¼" SAE Flare – (7/16"-20)
Service Life	5 years
Weight	75g
Dimensions	2.15"x1.78"x1.41" (54.6mm x 45.1mm x 35.8mm)
Product listing and certifications	UL, FCC, IP67

DPTS and Wire Harness Schematic



Physical Dimensions and Product Markings

