PENDOTECH
Adding Value To Your Process

PendoTECH® Temperature Sensor Transmitter™

Background

The PendoTECH Temperature Sensor Transmitter connects to the PendoTECH Temperature Sensor™ and produces a 4-20milliamp signal that is linear with temperature. It has convenient mounting screws and a convenient DIN rail mounting kit. Digital technology and the narrow 4-20mA output range from 0 to 70ºC ensures accurate and drift free linearization of the sensor output.

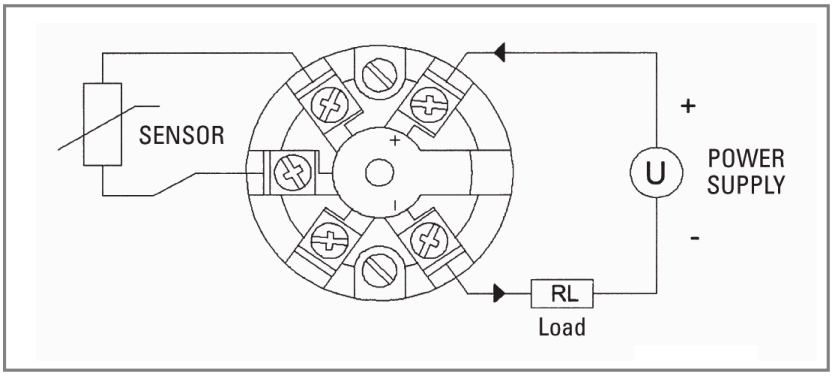
Hose Barb Sensor

Luer Sensor

Transmitter Details

Connections to the transmitter are quick and convenient.

INPUT WIRING: The re-usable temperature sensor monitor cable plugs into a connector installed on two of pins on the top face. To maintain CE compliance, input wires must be less than 10ft. in length which is the maximum length of the PendoTECH reusable monitor cables. Additional wire length also adds additional resistance which can impact accuracy so extensions are not recommended.



Hose Barb Re-usable Monitor Cable

OUTPUT WIRING: The transmitter is “loop powered” and screw terminals allow for quick installation as the unit is powered and the output signal interfaced by connecting the field wiring to the two screw terminals. The figure shows the method of connection to provide a 4-20mA current loop output. Output wiring must be shielded cable grounded at one end only. A hole is provided through the center of the transmitter to thread wires if desired. The screw terminals have been designed to allow all connection wires to enter from either an inner or outer direction. The transmitter is protected against reverse connection, therefore incorrect connection of the output wires will result in near zero current flow in the loop. Incorrect connection of the sensor wires will result in the transmitter output going to burnout condition. The output loop show a 24V DC power supply, used to provide loop excitation, the transmitter, and a load, all connected in series. The load symbol represents other equipment in the loop such as indicators, controllers, loggers etc.

Ordering Information

TT1	PendoTECH Temperature Sensor Transmitter
TT1-DR	PendoTECH Temperature Sensor Transmitter DIN Rail Mounting Kit
PDKT-650-TEMPB	3.0m Re-usable Temperature Sensor Cable with 1/4 Phone Jack for Barb Sensors
PDKT-650-TEMPL	7foot Re-usable Temperature Sensor Cable with 1/4 Phone Jack Term. for Luer Sensors
PDKT-TEMPB-PNL	PendoTECH 12inch Re-usable Temperature Sensor Cable with M8 Termination for Hose Barb Sensors

Specifications

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Input

Max Excitation Current	240µA
Range	0-70°C
Burnout Signal	Upscale 22mA
Sensor Lead Length	<10 feet (to maintain CE)
Sample Rate	500mS per Reading
Accuracy	±0.14°C
Thermal Drift	Zero ±0.01°C/°C Span 50ppm
Connection	1/4inch headphone receptacle

Output

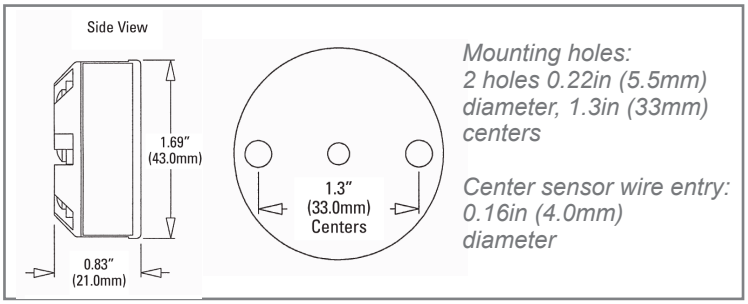
Output	4 to 20mA, 2-wire loop powered (spans to temperature range of 0-70°C)
Maximum Output Range	3.8 to 22mA
Operating Voltage	8 to 30VDC
Accuracy*	± 5µA
Thermal Drift	± 2µA/°C
Response Time^	500mS to reach 70% of final value
Loop Resistance	800R @ 24VDC
Loop Sensitivity	0.4µA/volt
Loop Noise	±0.001µA
Protection	Reverse Polarity Protected
Connectors	Screw Terminals
Input/Output Isolation	Not Isolated
Warm-up Time	2 Minutes to full accuracy
EMC	Emissions : BS EN61326 Susceptibility: BS EN61326
Ambient Temp. Range	-20 to 80°C
Ambient Storage	-40 to 80°C
Ambient Humidity	0 to 95% (Non condensing)
Dimension	1.9inch [43mm] Diameter - 0.83" [21mm] Height
Weight	25grams

** Total system accuracy is transmitter + sensor accuracy.*
^ Response time of transmitter only.

Installation

Care must be taken when designing the 4-20mA circuit to ensure that the total burden of the loop, that is the total voltage requirements of all the equipment in the loop added together, does not exceed the power supply voltage. If a number of devices are connected in the loop, ensure that only one instrument is tied to ground. Grounding the loop at two points will result in shorting out part of the loop and therefore any transmitters in that part of the loop will not operate.

Maximum load resistor, RL, is calculated as follows:
RL = (v-8)/20 x 1000
For 24V supply: RL = (24-8)/20 x 1000 = 800R

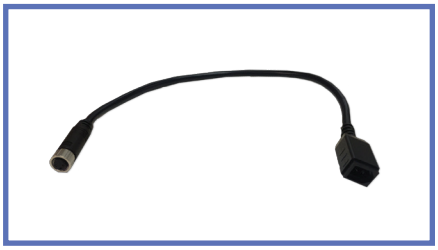


Mounting holes: 2 holes 0.22in (5.5mm) diameter, 1.3in (33mm) centers

Center sensor wire entry: 0.16in (4.0mm) diameter

Temperature Sensor Panel Mount Connector

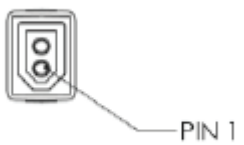
As customized systems with single use sensors become more common, PendoTECH has developed an ideal solution to connect a PendoTECH Single Use Temperature Sensor to a control panel. The sensor has an overmolded connector on it that helps minimizes the sensor cost and the new panel mount cable has the receptacle for the sensor on one end and an industry standard panel mount connector on the other end. This enables it to connect to the panel and the panel receptacle can be wired directly to the PendoTECH Temperature Sensor Transmitter inside the panel.



PDKT-TEMPB-PNL

WIRING DIAGRAM

M8		PINS
3	_____	NC
1 (BROWN)	_____	PIN 1
4 (BLACK)	_____	PIN 2



For warranty information see our website at http://www.pendotech.com/warranty