Predictive Sensor Technology, LLC
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Wireless Temperature Humidity and Dewpoint Sensor
PST-THD

Description

The *iTech Sensor PST THD Sensor is a* cost-effective way to accurately measure the temperature, relative humidity and dewpoint. This information is then transmitted wirelessly, stored in a database, and viewed with *iStatus Reporting* software. The sensor data can be easily scaled to output in whatever engineering units are needed.

Transmitter

This Wireless sensor Transmitter uses two AA batteries with an approximate two-year battery life. These 900 MHz transmitter radios use the license-free 902-928 MHz ISM band. Before each transmission, the radio checks for a clear channel before it sends the sensor data. If the channel is busy, it waits until it finds an opening; then transmits the data. This clear channel assessment approach allows the system to function efficiently in noisy areas or heavy RF traffic areas without disrupting other communications. Data is typically transmitted once every 12 seconds to optimize battery life and minimize RF traffic. This data rate is more than sufficient for condition monitoring applications, but custom update rates are available from the factory if the 12 second rate does not meet the needs of your application. The transmitter range will vary depending on the location. Typical industrial environments are not ideal for RF reception; it is best to evaluate the site with a transmitter and software to find the ideal locations for transmitters and receivers.

Sensor

Temperature Range	-40°F to 255°F (-40°C to 124°C)
Measured Temperature Range	-40 to 255°F
Measurable Relative Humidity Range	0 to 100%
Temperature Resolution	1°F
Temperature Accuracy	+/-0.54 °F
Relative Humidity Resolution	1%
Relative Humidity Accuracy	1.8%
Relative Humidity Response time	8 seconds
Batteries	2 "AA " 1.5 volt cells
Radio Frequency	902 to 928 digitally modulated spread spectrum radio

Parts List

Quantity	Part
1	PST-THD

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How to set up the PST-THD in iStatus Software

Go to the Sensor Setup tab.

1. °F should already be in the Units1 column for the new sensor (**alt** + 248 will give you the ° symbol)
2. Input %RH in the Units2 column for the new sensor
3. Input °F Dewpoint in the Units3 column
4. Move to the right and enter alarm threshold values for your application
5. Select the "Save Changes" button to commit your values to the database

- Sensor1 in iStatus will always be the temperature for this sensor
- Sensor2 in iStatus will always be the relative humidity for this sensor
- Sensor3 in iStatus will always be the Dewpoint for this sensor

To change units, see the example below

Example:

Scale the temperature input to indicate in °C.

The Math:

$$ScaledOutput = (RawInputFromSensor(mA) + ZeroValue\ in\ SensorSetup) * SpanValue\ in\ SensorSetup$$

Step 1: Calculate the zero value.
Zero Value in Sensor Setup = -32.0
Step2 : Calculate the Span value.
Span Value in Sensor Setup =
$Span\ Value = 5/9 = 0.55555556$

Step 3: Enter the calculated values into Sensor Setup table under the Zero1 and Span1 columns.

Step 4: Select the Save Changes button. It can take up to 1 minute for scaling changes to take effect.

Sensor1 in iStatus will always be the temperature

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The Multi-Point Transmitter (MPT) is a low powered low bandwidth device that is designed for the monitoring of equipment and process parameters that change slowly over time. The factory

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default data update rate is 5 times per minute. This slow update rate allows this transmitter to enjoy a long battery life while maintaining a continuous watch on your equipment's health. The data rate is not suitable for control purposes and Predictive Sensor Technology does not recommend that it be used to control equipment.