



Wireless Temperature Sensor

Technical Overview

General Description

The OEM RF Wireless Temperature Sensor uses a type NTC thermistor to measure temperature.

Features

- Accurate to $\pm 1^\circ\text{C}$ ($\pm 1.8^\circ\text{F}$)
- Leaded sensors available.

Principle of Operation

The OEM Wireless Temperature Sensor outputs the ambient temperature in degrees Fahrenheit. It is programmed to sleep for a user-given time interval (heartbeat) and then wakeup, send power to the NTC Thermistor and wait for it to stabilize, and convert the analog data, mathematically compute the temperature and transmit the data to the gateway. To stay within the abilities of the processor, the temperature is computed off a data table provided by the manufacturer. To reduce error, a variable resistor configuration is implemented over specified temperature ranges.

OEM Sensor Core Specifications

- Power: 3.0 V coin cell battery
- Communication: RF 900, 868 and 433 MHz
- Antenna: 4" wire antenna
- Operating Temperature: -40° to 85°C (-40° to 185°F)
- Device Range: 250 - 300 ft. non-line-of-sight*
- Only 1 inch by 1 inch

* Actual range may vary depending on environment.

Applications

- Coolers & Freezers
- Environmental Monitoring
- Smart Machines & Smart Structures
- HVAC Operation & Testing
- Data Center Monitoring

Specifications

Supply Voltage	2.0 - 3.6 VDC *
Current Consumption	0.7 μA (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range	-40°C to $+85^\circ\text{C}$ (-40°F to $+185^\circ\text{F}$) **
Optimal Battery Temperature Range (Coin Cell)	$+10^\circ\text{C}$ to $+60^\circ\text{C}$ ($+50^\circ\text{F}$ to $+140^\circ\text{F}$)
Thermistor Temperature Range	-40°C to $+125^\circ\text{C}$ (-40°F to $+257^\circ\text{F}$) (Limited to Main Unit Circuitry, -40°C to $+85^\circ\text{C}$)
Accuracy @ 25°C	$\pm 2\%$
Time Constant @ 25°C	30 sec

* Hardware can not withstand negative voltage. Please take care when connecting a power device.

** At temperatures above 100°C , it is possible to lose programmed memory.

For more product information, to get a quote, or to place an order, please contact our sales department at 801-561-5555. Visit us on the web at www.oemsensors.com.