Monnit
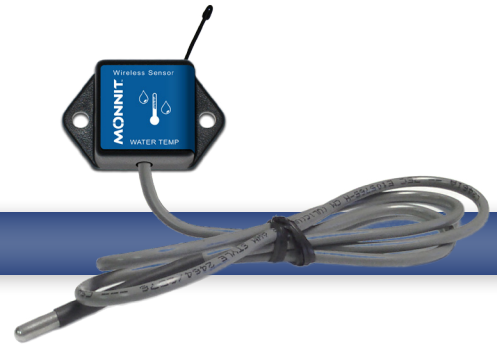## Wireless Water Temperature Sensor

General Description

The Wireless Water Temperature Sensor uses a sealed, type NTC thermistor with 3 ft. lead wires to measure water temperature.

Features

- Accurate to ± 1° C (± 1.8° F).
- Increased accuracy by user calibration to ± 0.25° C (± 0.45° F)
- Probe temperature range of -40°C to +100°C (-40°F to +212°F)
- Sealed, 3 ft. leaded wires.
- Free iMonnit basic online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email.

Principle of Operation

The Monnit Wireless Water Temperature Sensor can collect temperature data of water or other non-combustible liquids using a sealed NTC thermistor with 3 foot lead wires. The sensor is programmed to sleep for a user defined 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. Temperature data can be displayed in degrees Fahrenheit or Celsius.

Power Options

Sensors are powered by a replaceable 3.0 V coin cell battery. Optional AA battery powered sensors are available. The AA version of these sensors are larger in size (3" [L] x 2.1" [W] x 1.2" [H]) and include two long-life AA batteries.

It is recommended that unless you are using the AA battery solution, you set heartbeat to no faster than one hour to preserve battery life.

Monnit Sensor Core Specifications

- Power: Replaceable 3.0 V coin cell battery
- Communication: RF 900, 920, 868 and 433 MHz
- Dimensions: 1.775" x 1.040" x 0.785"
- Antenna: 4" wire antenna
- Operating Temperature: -7° to 60°C (20° to 140°F) Device Range: 250 - 300 ft. non-line-of-sight*
- Battery Life: At 1 hour heartbeat setting, coin cell battery will last ~ 1-2 years.**

* Actual range may vary depending on environment.
** Battery life is determined by sensor reporting frequency and other variables.

1.040 in (26.416 mm)

1.775 in (45.085 mm)

Height: 0.785 in (19.939 mm)
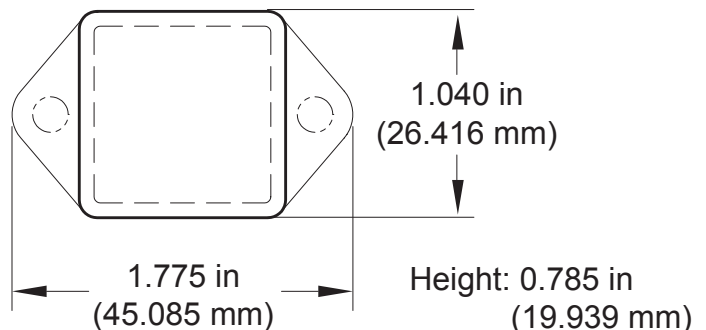
Applications

- Water / Liquid Storage Tanks
- Manufacturing Processes
- Swimming Pools
- Aquariums

The Leader in Low Cost Wireless Sensors

Technical 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 (Board Circuitry and Coin Cell)	-7°C to +60°C (20°F to +140°F)**
Optimal Battery Temperature Range (Coin Cell)	+10°C to +50°C (+50°F to +122°F)
Probe Temperature Range	-40°C to +100°C (-40°F to +212°F)
Accuracy @ 25°C	+/- 1%
User Calibrated Accuracy	+/- 0.25° C (± 0.45° F)
Time Constant @ 25°C	30 sec
Lead Wire Length	3 ft. (36 in.) with Water Tight Seal***
Certifications	FC CE Industry Canada 900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RFSC1. 920 MHz product; ARIB STD-T108 R210-103733. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010 - Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).

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

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

*** While the wire leads and thermistor have a water tight seal, the electronics housing (RF portion) is not sealed for wet environments or outdoor use. If needed, we recommend using Monnit industrial water temperature sensors.

Caution/Notice:

This product is designed for application in an ordinary environment (normal room temperature, humidity and atmospheric pressure). Do not use this sensor under the following conditions as these factors can deteriorate the product characteristics and cause failures and burn-out.

- Corrosive gas or deoxidizing gas - chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxides gas, etc.).
- Volatile or flammable gas.
- Dusty conditions.
- Under low or high pressure.
- Wet or excessively humid locations.
- Places with salt water, oils chemical liquids or organic solvents.
- Where there are excessively strong vibrations.
- Other places where similar hazardous conditions exist.

Use this product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality of this product.

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For more information about our products or to place an order, please contact our sales department at 801-561-5555.

Visit us on the web at www.monnit.com.

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