



WATER TEMP



## Wi-Fi Water Temperature Sensor

### Technical Overview

#### General Description

The OEM Wi-Fi Water Temperature Sensor uses a sealed, type NTC thermistor with 3 ft. lead wires to measure water temperature. Perfect for monitoring temperatures in water or non-combustible liquid storage tanks. An integrated 802.11 b/g radio allows the sensor to work with any existing Wi-Fi network. OEM Wi-Fi sensors can be easily programmed with your Wi-Fi network's WEP or WPA(2) security via the free Wi-Fi Setup Utility (PC application) and a USB programming cable (available in the [Monnit web store](#)). User defined transmission intervals (heartbeats) and sensor threshold settings ensure that sensor data is received when needed, based on the application.

#### Features

- Accurate to  $\pm 1^{\circ}\text{C}$  ( $\pm 1.8^{\circ}\text{F}$ ).
- Increased accuracy by user calibration to  $\pm 0.25^{\circ}\text{C}$  ( $\pm 0.45^{\circ}\text{F}$ ).
- Probe temperature range of  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $+212^{\circ}\text{F}$ )
- Sealed, 3 ft. lead wires.
- Logs data if Wi-Fi network is disrupted.
- Free iMonnit basic online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email.

(iMonnit online software is available as an OEM private / white label platform.)

#### Principle of Operation

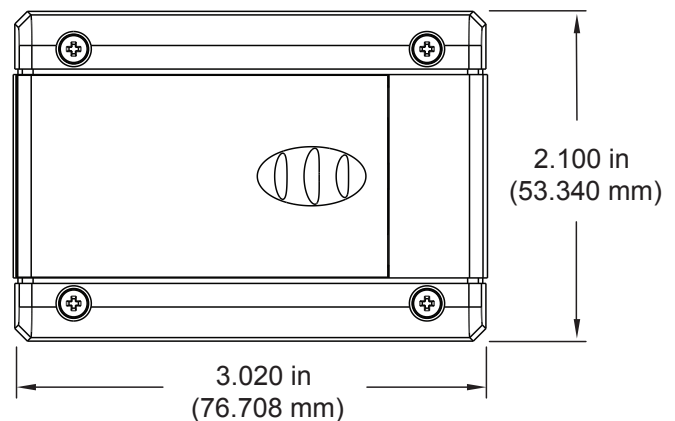
The OEM Wi-Fi Water Temperature Sensor outputs temperature in degrees Fahrenheit. It is programmed to sleep for a user-given time interval (heartbeat) and then wakeup, send power to the NTC Thermistor and wait for it to stabilize, and convert the analog data, mathematically compute the temperature and 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 Wi-Fi Sensor Electronics Specifications

- Power: 2 replaceable 1.5V "AA" batteries (included)
- Communication: 802.11 b/g  
(2.412 - 2.484 GHz)
- Wi-Fi Security: Open, WEP, WPA, WPA2
- Dimensions: 3.02" x 2.1" x 1.27"
- Transmission Range: Up to 250 ft. \*
- Battery Life: Up to 5 years.\*\*

\* Actual range may vary depending on environment.  
\*\* Battery life is affected by sensor type, Wi-Fi security type, distance from Wi-Fi router, reporting frequency and other variables.




Height: 1.270 in (32.258 mm)



#### Applications

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

## Technical Specifications

Networking Standards	IEEE 802.11 b/g
Frequency Band	2.412 - 2.484 GHz
Wi-Fi Security Standards	Open, WEP, WPA, WPA2
Wi-Fi Security Programming	Via PC software using USB cable. (Can be changed through online software.)
Network Settings	Auto DHCP/DNS or Static
Data Logging	Standard - On Wi-Fi disruption, unit will log the first 50 readings and transmit when Wi-Fi connection is re-established. Premiere - Unit can record up to 50,000 readings and transmit when Wi-Fi is available.
Power consumption	4uA sleep, 35mA active RX, 180mA TX (at +12dBm)
Battery Life	Up to 5 years depending on sensor type, Wi-Fi security, distance from Wi-Fi router, reporting frequency and other variables. (Testing surpassed 90,000 transmissions until battery depletion.)
Wi-Fi Data Rate	Auto configures to best rate for maximum range.
Wireless Range	Up to 250 ft. device range (typical to standard Wi-Fi devices)
Electronics Operating Temperature	Using Alkaline Batteries: -18°C to +55°C (0°F to +130°F) Using Lithium Batteries: -40°C to +85°C (-40°F to +185°F) *
LED Light	Status / activity
Certifications	   FCC ID: T9J-RN171. IC: RSS-210 low-power communication device. CE ID: 0681.

## Thermistor Specifications

Thermistor Operating Range	-40°C to 100°C (-40°F to 212°F)
Lead Wire Length	3 ft. ( 36 in.) with Water Tight Seal **
Accuracy @ 25°C	+/- 1%
Resistance @ 25°C	10K ± 1%
B-Constant (25°C – 50°C)	3380 ± 1%
Permissive Operating Current @ 25°C	0.38 mA
Rated Electric Power @ 25°C	15 mW
Dissipation Constant @ 25°C	1.5mW/°C
Time Constant @ 25°C	7 sec

\* 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.

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](http://www.oemsensors.com).

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