

Monnit Industrial Wireless Humidity (RH) Sensor

Technical Overview

General Description

Monnit's industrial wireless humidity sensor allows you to monitor the relative humidity of the air within a room or enclosure. Ideal for monitoring humidity within greenhouses, industrial spaces, museums, saunas and humidors.

Features

- Measures relative humidity, temperature and dew point with high accuracy.
- 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 Wireless Humidity (RH) Sensor measures the relative humidity at the device. The sensor returns RH and temperature values to the iMonnit Online Sensor Monitoring and Notification System. The system calculates dew point from the data and stores all three data points in the online system where the data can be reviewed and exported as a data sheet or graph. Notifications can be set up through the online system to alert the user when defined thresholds have been met or exceeded.

Solar Power Option



Monnit Industrial Sensors are powered by a replaceable 3.6 V battery (included).

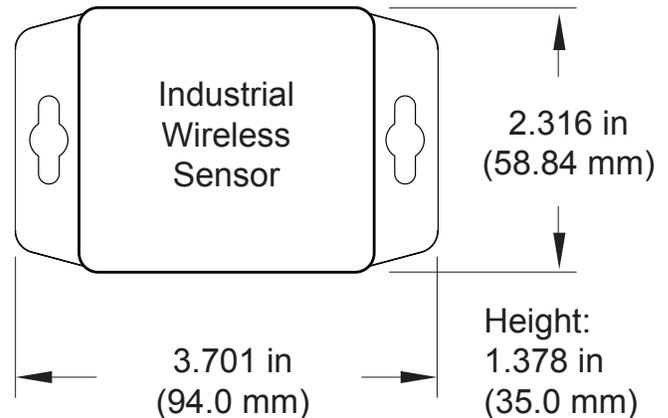
An optional solar powered version is also available. The solar powered sensor uses a Lithium Iron Phosphate rechargeable battery in conjunction with a solar power cell, extending the life of the battery.



Monnit Industrial Sensor Electronics Specifications

- Power: replaceable 3.6V battery (included)
- Communication: RF 900, 920, 868 and 433 MHz
- Dimensions: 3.7" x 2.23" x 1.38"
- Antenna: 3dBi RP SMA antenna
- Operating Temperature: -40° to 85°C (-40° to 185°F)
- Transmission Range: 300 - 350 ft. non-line-of-sight*
- Battery Life: at 1 hour heartbeat setting, battery will last ~ 4-5 years.**

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



Applications

- Greenhouse humidity monitoring.
- Agriculture environmental monitoring.
- Art gallery and museum environmental monitoring.
- Humidor monitoring.
- General weather and environmental monitoring.

The Leader in Low Cost Wireless Sensors

Technical Specifications

Supply Voltage	2.0 - 3.6 VDC *	
Current Consumption	0.7 μ A (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 (Circuitry and Battery)	-40°C to +85°C (-40°F to +185°F) **	
Optimal Battery Temperature Range (Battery)	+10°C to +60°C (+50°F to +140°F)	
Accuracy	\pm 3% under normal conditions (10% - 90% RH)	
RH Operating Range	0 – 100% RH	
RH Response Time	8 sec (tau 63%)	
Enclosure Rating	NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof	

Certifications



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 cannot 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.

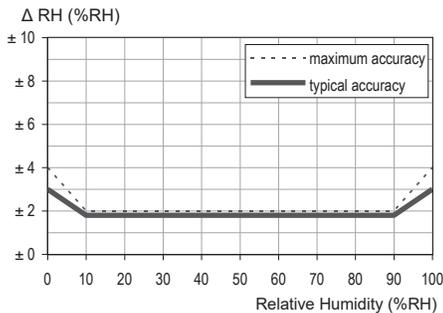


Figure 1. Typical and maximal tolerance at 25°C.

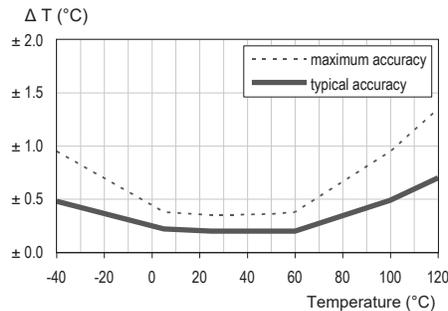


Figure 2. Maximal tolerance for temperature sensor in °C.

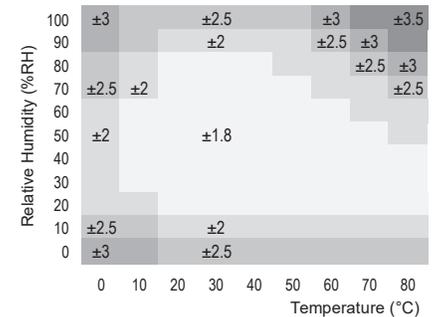


Figure 3. Typical accuracy of relative humidity measurements given in %RH for temperatures between 0 – 80°C.

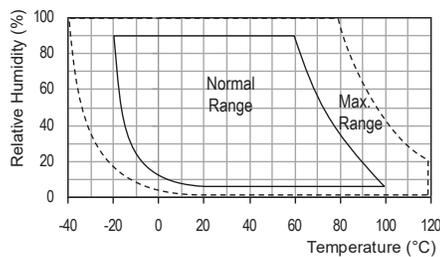


Figure 4. Operating Conditions

Operating Range

The sensor works stable within recommended Normal Range – see Figure 4. Long term exposure to conditions outside Normal Range, especially at humidity >80%RH, may temporarily offset the RH signal (+3%RH after 60h). After return into the Normal Range it will slowly return towards calibration state by itself. Prolonged exposure to extreme conditions may accelerate aging.

Type 1, 2, 4, 4X, 12 and 13 NEMA Rated Enclosure:

Monnit's Industrial sensors are enclosed in reliable, weatherproof NEMA rated enclosures. Our NEMA rated enclosures are constructed for both indoor or outdoor use and protect the sensor circuitry against the ingress of solid foreign objects like dust as well as the damaging effects of water (rain, sleet, snow, splashing water, and hose directed water).

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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