Monnit Industrial
Wireless Low Temperature Sensor

General Description

The Monnit Industrial RF Wireless Low Temperature Sensor uses a glass coated platinum RTD sensor to accurately measure temperatures from -200° C to +162°C (-328°F to +325°F).

Features

- Standard accuracy at 0°C: +/- 3.3°C
- Calibrated accuracy at 0°C: +/- 0.5°C
- RTD temperature range: -200°C to +162°C (-328°F to +325°F)
- 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 industrial wireless low temperature sensor outputs the ambient temperature in degrees Celsius or Fahrenheit. It is programmed to sleep for a user-given time interval (heartbeat) and then wakeup, power up the RTD sensor and wait for it to stabilize then mathematically compute the temperature and transmit the data to the gateway.

Solar Power Option

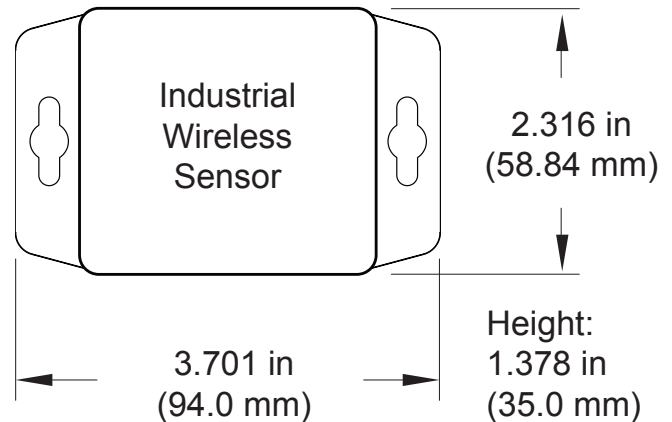Monnit Industrial Sensors are powered by a replaceable 3.6 V battery (included).

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.

Industrial Wireless Sensor

2.316 in (58.84 mm)

3.701 in (94.0 mm)

Height: 1.378 in (35.0 mm)

Applications

- Freezers & Coolers
- Environmental Monitoring
- Smart Machines & Smart Structures
- HVAC Operation & Testing
- And Many More...

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 (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)
Optional Solar Power Feature	3.0 VDC Solar Panel 600 mAH Rechargeable Battery (>2000 Charge Cycles) Charging Temperature Range: 0° to 45°C (32° to 113°F) Max Temperature Range: -20° to 60°C (-4° to 140°F)
Lead Wire Length	3 ft. (36 in.)
Enclosure Rating	NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof
UL Rating	UL Listed to UL508-4x specifications (File E194432)

RTD Technical Specifications

RTD Temperature Range (RTD and Cable Only)	-200°C to +162°C (-328°F to +325°F)
Accuracy @ 0°C	+/- 3.3°C Standard (+/- 0.5°C Calibrated **)
Dissipation Constant	2mW/°C
Thermal Time Constant	15 sec max.

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

  ** For best results, calibrate at 0°C.

RTD Accuracy

Temperature (°C)	Accuracy (±°C)	
	Uncalibrated	Calibrated
-200°C	4.30	1.50
-180°C	4.20	1.40
-160°C	4.10	1.30
-140°C	4.00	1.20
-120°C	3.90	1.10
-100°C	3.80	1.00
-80°C	3.70	0.90
-60°C	3.60	0.80
-40°C	3.50	0.70
-20°C	3.40	0.60
0°C	3.30	0.50
20°C	3.40	0.60
40°C	3.50	0.70
60°C	3.60	0.80
80°C	3.70	0.90
100°C	3.80	1.00
120°C	3.90	1.10
140°C	4.00	1.20
160°C	4.10	1.30

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).

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

Monnit's Industrial sensors are enclosed in reliable, weather-proof 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).

MONNIT®

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For more information about our products or to place an order, please contact our sales department at 801-561-5555 or visit us on the web at www.monnit.com.