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ALTA® by MONNIT

The Leading Enterprise Internet of Things Solution



Industrial Wireless Quad Temperature Sensors

General Description

Monnit's ALTA Industrial Wireless Quad Temperature Sensor uses four individual sensor probes to measure and track temperatures with reliable accuracy. Perfect for monitoring a variety of temperature critical applications such as food coolers, HVAC systems and data centers.

- Accurate to ± 1° C (± 1.8° F).
- Increased accuracy by user calibration to ± 0.25° C (± 0.45° F).
- 4 individual 3 ft. temperature probes.
- 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 ALTA industrial 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 probes, wait for them to stabilize, convert the analog data and mathematically compute the temperatures then transmit the data through the gateway to the online monitoring software. 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.

Example Applications

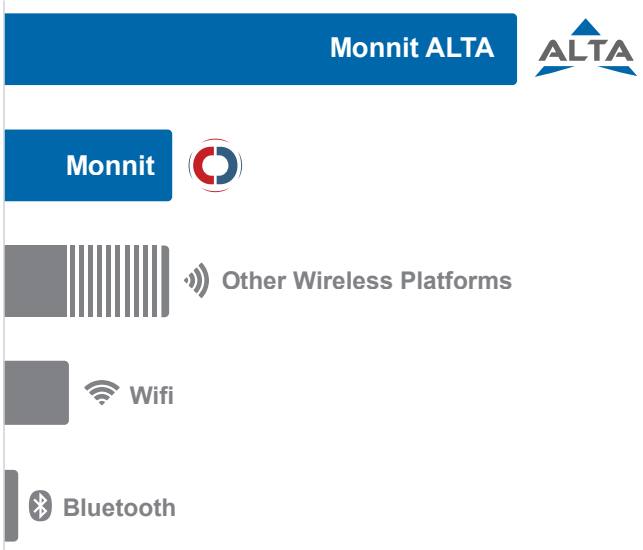
- HVAC Operation & Testing
- Boilers and Pumps
- Coolers & Freezers
- Data Center Monitoring
- Environmental Monitoring
- Smart Machines & Smart Structures
- And many more...

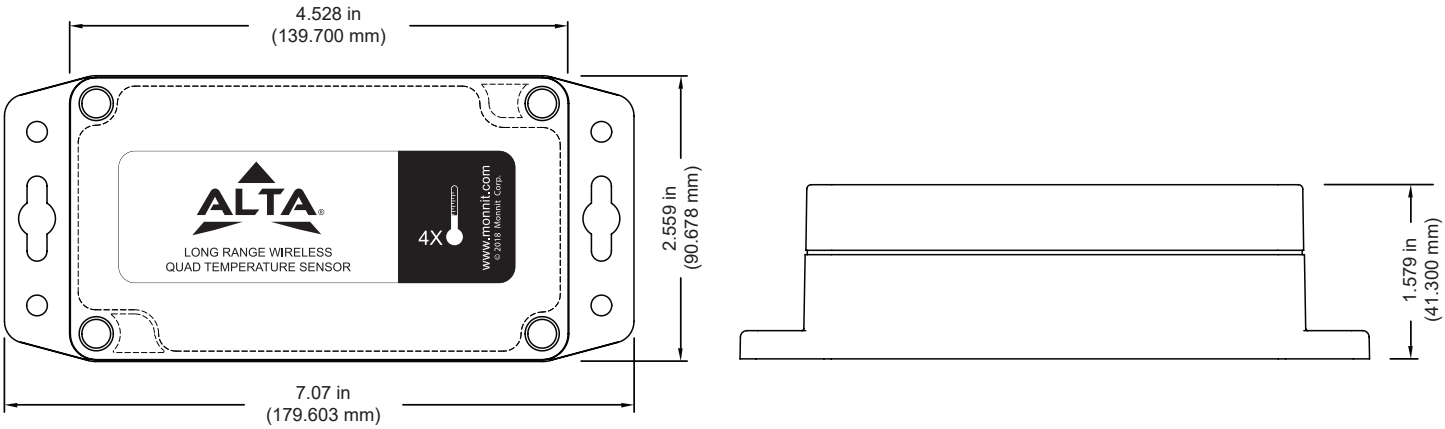
Features of Monnit ALTA Sensors

- Wireless range of 1,000+ feet through 12-14 walls.*
- Frequency Hopping Spread Spectrum (FHSS).
- Improved interference immunity.
- Improved power management for longer battery life.** (10+ years on AA batteries)
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages).
- Onboard data memory / storage (up to 512 readings per sensor).
  - 10 min heartbeats = 3.5 days
  - 2 hour heartbeats = 42 days
- Over-the-air updates (future proof).
- Free iMonnit basic online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email.

* Actual range may vary depending on environment.
** Battery life is determined by sensor reporting frequency and other variables. Other power options are also available.

Wireless Range Comparison





ALTA Industrial Wireless Quad Temperature Sensor - Technical Specifications		
Supply Voltage		2.0 - 3.8 VDC (3.0 - 3.8 VDC Using Power Supply) *
Current Consumption		0.2 µA (Sleep Mode) 0.7 µA (RTC Sleep) 570 µA (MCU Idle) 2.5 mA (MCU Active) 5.5 mA (Radio RX Mode) 22.6 mA (Radio TX Mode)
Operating Temperature Range (Board Circuitry and Battery)		-40°C to +85°C (-40°F to +185°F) **
Included Battery	Max Temperature Range:	-40°C to +85°C (-40°F to +185°F)
	Capacity:	1800 mAh
Optional Solar Feature	Solar Panel:	5VDC / 30mA (53mm x 30mm)
	Charging Temperature Range:	0°C to 45°C (32°F to 113°F)
	Max Temperature Range:	-20°C to 60°C (-4°F to 140°F)
	Included Rechargeable Battery:	600 mAh / >2000 Charge Cycles (80% of initial capacity)
Thermistor Temperature Range (Thermistor Only)		-40°C to +125°C (-40°F to +257°F) (Limited to Main Unit Circuitry, -40°C to +85°C)
Number of Temperature Probes		4 individual temperature probes
Temperature Probe Length		3 ft. (36 in.) / standard
Accuracy @ 25°C		+/- 1% (1°C or 1.8°F)
User Calibrated Accuracy		+/- 0.25°C (± 0.45°F)
Time Constant @ 25°C		30 sec
Integrated Memory		Up to 512 sensor messages
Wireless Range		1,000+ ft. non-line-of-sight
Security		Encrypt-RF™ (256-bit key exchange and AES-128 CTR)
Weight		4.7 Ounces
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)
Certifications FC CE Industry Canada		900 MHz product; FCC ID: ZTL- G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz product tested and found to comply with: EN 300 220-2 V3.1.1 (2017-02), EN 300 220-2 V3.1.1 (2017-02) and EN 60950.

* 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.

Industrial Grade Sensors - 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).

- Safe from falling dirt.
- Protects against wind blown dust.
- Protects against rain, sleet, snow, splashing water, and hose directed water
- Increased level of corrosion resistance
- Will remain undamaged by ice formation on the enclosure

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For more information about our products or to place an order, please contact our sales department at 1300 768 887.

MONNIT

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