



## Wireless Temperature Sensors

### General Description


The ALTA Wireless Temperature Sensor uses a type NTC thermistor to measure temperature.

- Accurate to  $\pm 1^\circ \text{C}$  ( $\pm 1.8^\circ \text{F}$ )
- Increased accuracy by user calibration to  $\pm 0.25^\circ \text{C}$  ( $\pm 0.45^\circ \text{F}$ )

### Principle of Operation

The ALTA Wireless Temperature Sensor measures the ambient thermal conditions of your environment. These sensors accurately monitor temperature changes in your physical location. Settings including notifications, alerts, reports, and maps are customizable in the online interface of iMonnit. The temperature sensor is built to be out of the box and running in minutes.

Industry leading 25 month NIST certified product included on leaded temperature sensors.

 The ALTA Temperature Sensor is not meant for wet, damp, high humidity environments. This sensor should only be operated in dry, low humidity environments. Should you need a temperature sensor that operates at extreme temperatures and can withstand getting wet or condensed on, please consider our Thermocouple Sensors.

### Example Applications

- Ambient temperature monitoring
- Environmental monitoring
- Smart machines & smart structures
- HVAC operation & testing
- Data center monitoring
- Many additional applications

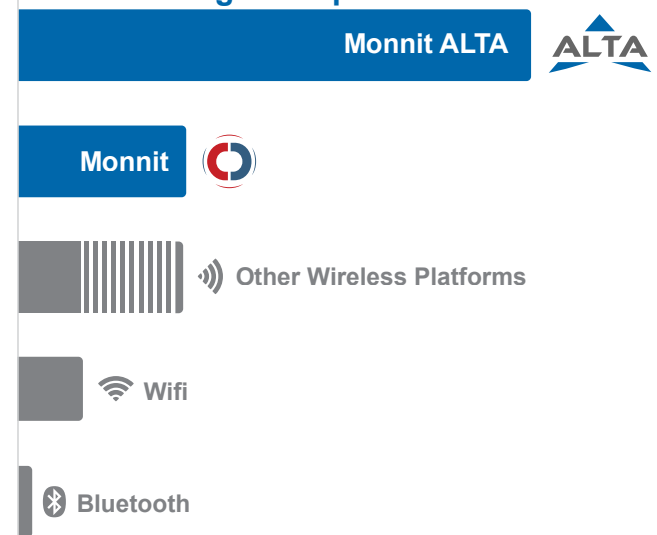
### Features of Monnit ALTA Sensors

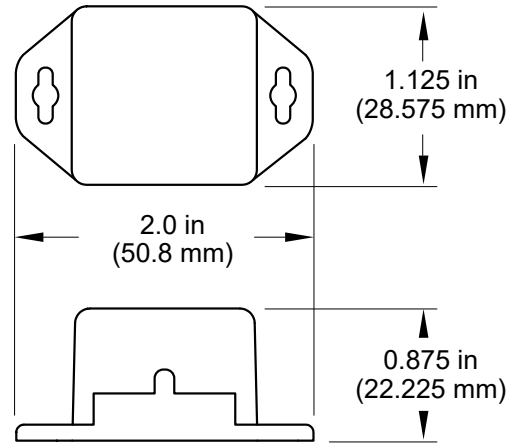
- Wireless range of 1,200+ feet through 12+ walls \*
- Frequency-Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life \*\* (12+ years on AA batteries)
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Datalogs 2000 to 4000 readings if gateway connection is lost (non-volatile flash, persists through the power cycle):
  - 10-minute heartbeats = ~ 22 days
  - 2-hour heartbeats = ~ 266 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 Commercial Coin Cell Wireless Temperature Sensor | Technical Specifications

|   |  |
|---|--|
| Supply voltage  | 2.0–3.8 VDC *  |
| Current consumption   | 0.2 $\mu$ A (sleep mode), 0.7 $\mu$ A (RTC sleep), 570 $\mu$ A (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 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)   |
| External Probe and Lead Operating Range                     | -40°C to +125°C (-40°F to +257°F)  |
| Accuracy @ 25°C   | +/- 1% (1° C or 1.8° F)  |
| User-calibrated accuracy                                    | +/- 0.25° C ( $\pm$ 0.45° F)   |
| Time constant @ 25°C  | 30 sec   |
| Datalogging   | Datalogs 2000 to 4000 readings if gateway connection is lost (non-volatile flash, persists through the power cycle):<br>- 10-minute heartbeats = ~ 22 days<br>- 2-hour heartbeats = ~ 266 days |
| Wireless range  | 1,200+ ft non-line-of-sight  |
| Security  | Encrypt-RF® (256-bit key exchange and AES-128 CTR)   |
| Weight  | 0.7 ounces   |
| Certifications  | 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     |

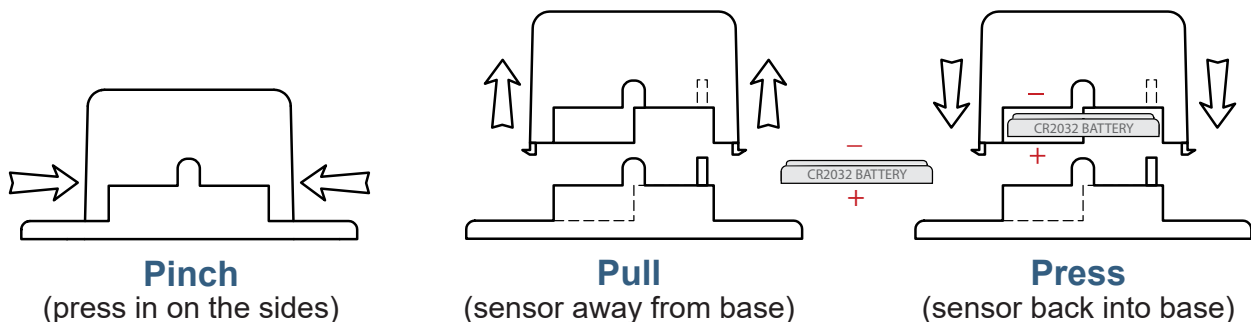


Industry  
Canada

\* Hardware cannot withstand negative voltage. Please take care when connecting a power device.

\*\* The ALTA Temperature sensor is not meant for wet, damp, high humidity environments.

## PinchPower™ Enclosures





## ALTA Commercial AA Wireless Temperature Sensor | Technical Specifications

|   |  |
|---|--|
| Supply voltage  | 2.0–3.8 VDC (3.0–3.8 VDC using power supply) *   |
| Current consumption   | 0.2 $\mu$ A (sleep mode), 0.7 $\mu$ A (RTC sleep), 570 $\mu$ A (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 batteries) | -18°C to 55°C (0°F to 130°F) using alkaline<br>-40°C to 85°C (-40°F to 185°F) using lithium **   |
| Optimal battery temperature range (AA)                      | +10°C to +50°C (+50°F to +122°F)   |
| External Probe and Lead Operating Range                     | --40°C to +125°C ( -40°F to +257°F )   |
| Accuracy @ 25°C   | +/- 1% (1° C or 1.8° F)  |
| User-calibrated accuracy                                    | +/- 0.25° C ( $\pm$ 0.45° F)   |
| Time constant @ 25°C  | 15 sec max   |
| Datalogging   | Datalogs 2000 to 4000 readings if gateway connection is lost (non-volatile flash, persists through the power cycle):<br>- 10-minute heartbeats = ~ 22 days<br>- 2-hour heartbeats = ~ 266 days |
| Wireless range  | 1,200+ ft non-line-of-sight  |
| Security  | Encrypt-RF® (256-bit key exchange and AES-128 CTR)   |
| Weight  | 3.7 ounces   |
| Certifications  | 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     |



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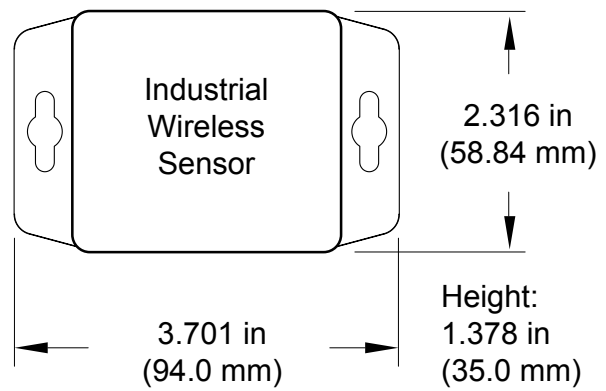
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## Power Options



The standard version of this sensor is powered by two replaceable 1.5 V AA sized batteries (included with purchase).

This sensor is also available with a line power option. The line powered version of this sensor has a barrel power connector allowing it to be powered by a standard 3.0–3.6 V power supply. The line powered version also uses two standard 1.5 V AA batteries as backup for uninterrupted operation in the event of line power outage.

Power options must be selected at time of purchase, as the internal hardware of the sensor must be changed to support the selected power requirements.



## ALTA Industrial Wireless Temperature Sensor | Technical Specifications

|   |   |   |
|---|---|---|
| Supply voltage  | 2.0–3.8 VDC (3.0–3.8 VDC using power supply) *  |   |
| Current consumption                                       | 0.2 $\mu$ A (sleep mode), 0.7 $\mu$ A (RTC sleep), 570 $\mu$ A (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° to +85°C (-40° to +185°F)                        |
|   | Capacity  | 1500 mAh  |
| Optional solar feature                                    | Solar panel   | 5VDC/30mA (53mm x 30mm)                               |
|   | Charging temperature range  | 0° to 45°C (32° to 113°F)                             |
|   | Max temperature range   | -20° to 60°C (-4° to 140°F)                           |
|   | Included rechargeable battery   | 600 mAh/>2000 charge cycles (80% of initial capacity) |
|   | Solar efficiency  | Optimized for high and low-light operation **         |
|   | Charging efficiency   | 40% ***   |
| External Probe and Lead Operating Range                   | -40°C to +125°C (-40°F to +257°F)   |   |
|   | (Limited to main-unit circuitry, -40°C to +85°C)  |   |
| Accuracy @ 25°C   | +/- 1% (1° C or 1.8° F)   |   |
| User-calibrated accuracy                                  | +/- 0.25° C ( $\pm$ 0.45° F)  |   |
| Time constant @ 25°C                                      | 30 sec  |   |
| Datalogging   | Datalogs 2000 to 4000 readings if gateway connection is lost (non-volatile flash, persists through the power cycle):<br>- 10-minute heartbeats = ~ 22 days<br>- 2-hour heartbeats = ~ 266 days  |   |
| Wireless range  | 1,200+ 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  | <div style="display: flex; align-items: center; gap: 10px;">   <span>Industry Canada</span> </div> 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 |   |

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\*\* Light present 25% of day yields 125% of operating power to support 10-minute heartbeats.

\*\*\* Solar feature's energy harvesting circuitry works indoors with low light.

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