

ALTA® Sensor Bases for NIST Detachable Leads

General Description

ALTA Sensor Bases for NIST Detachable Leads are available in the Industrial and Enterprise versions. You can connect the NIST Standard and Low Temperature and Humidity Detachable Leads to compatible ALTA Sensor Bases. Each NIST Detachable Lead has a specific serial ID. The sensor bases and leads connect via sealed M8 6-pin connectors. Each ALTA Sensor Base is sensor-specific, so you can only connect the same type of NIST Detachable Lead.

Key Features

- ▶ Connect NIST Standard Temperature, Low Temperature, and Humidity Detachable Leads to compatible ALTA Industrial and Enterprise Sensor Bases.
- ▶ Leads can be NIST-certified independently.

Principles of Operation

Connect compatible, sensor-specific NIST Detachable Leads to a sensor base via a M8 6-pin sealed connector. Each detachable lead has a memory circuit that stores a serial number, sensor-specific lead properties, and calibration values. When the sensor connects or disconnects, the green LED on the base power button overlay will flash once, then the sensor will communicate with the gateway. After connecting a lead, the iMonnit Software will upload calibration values from the sensor. iMonnit also logs the connection/disconnection times for any lead along with the associated lead serial ID and application name.

Example Applications

- Facilities Management
- Commercial Refrigeration
- Labs & Pharmaceuticals
- Food Services
- Manufacturing & Production
- Greenhouses & Grow Houses
- Agriculture & Livestock
- Data Centers & Server Rooms
- Hospitals & Clinics
- Hospitality & Lodging
- Logistics & Warehousing
- Pest Remediation
- [Additional applications](#)

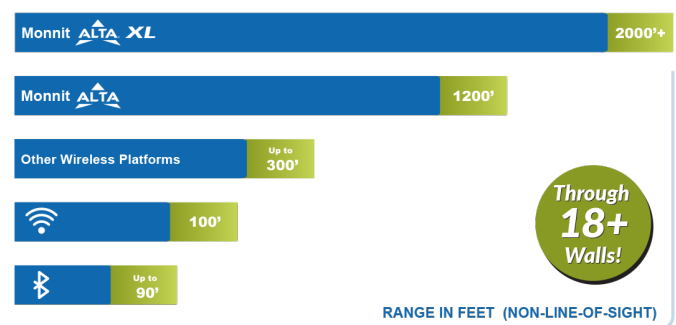
Features of Monnit ALTA Sensors

- Wireless range of 2,000+ feet through 18+ walls¹
- Frequency-Hopping Spread Spectrum (FHSS)
- Best-in-class interference immunity
- Best-in-class power management for longer battery life²
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + Advanced Encryption Standard (AES)-128 Cipher Block Chaining (CBC) for sensor data messages)
- Sensor logs 2000 to 4000 readings if the gateway connection is lost (non-volatile flash, persists through power cycling):
 - 10-minute Heartbeats = ~ 22 days
 - 2-hour Heartbeats = ~ 266 days
- Automatic over-the-air updates to sensor firmware (future-proof)
- Free iMonnit Basic Online Wireless Sensor Monitoring and Notification System to configure sensors, view data, and send alerts via SMS text, email, and voice call

1 Actual range may vary depending on the environment and gateway.

2 Battery life is determined by the sensor reporting frequency and other variables. Other power options are also available.

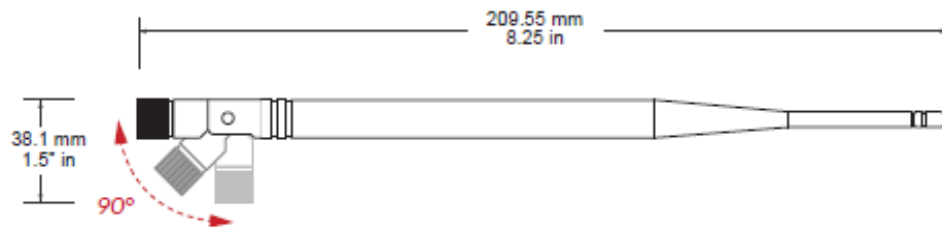
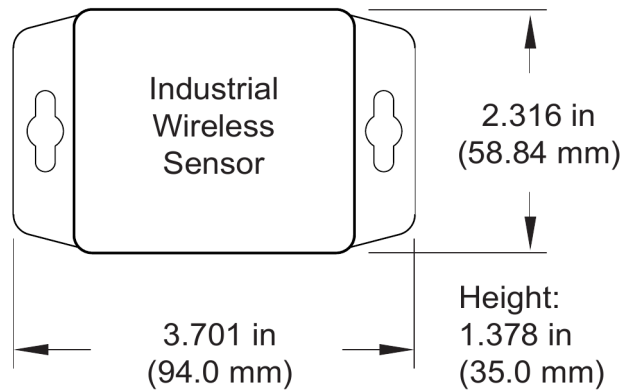
Wireless Range Comparison





Technical Specification | ALTA® Wireless Sensor Base for NIST Detachable Leads

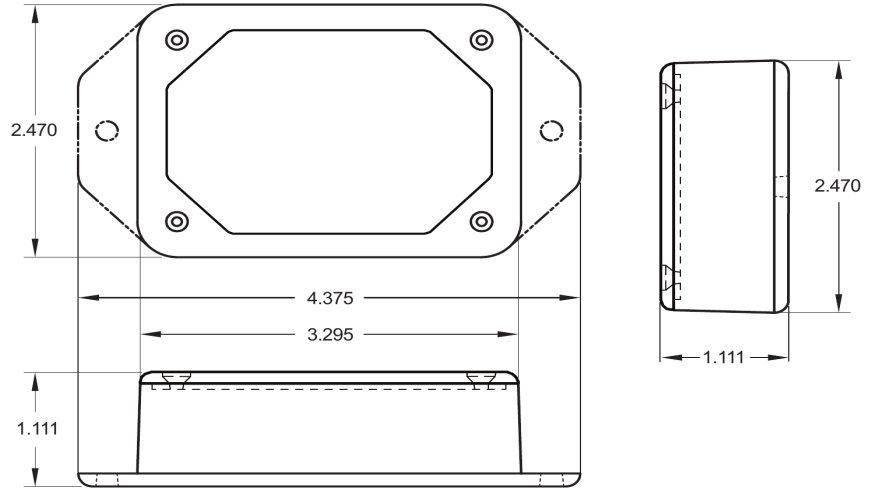
Connector		6-Pin M8 keyed male connector
ALTA Wireless	Data logging	Sensor logs 2000 to 4000 readings if gateway connection is lost (non-volatile flash, persists through power cycling): 10-minute Heartbeats = ~22 days - 2-hour Heartbeats = ~266 days
	Wireless protocol	ALTA Proprietary Frequency-Hopping Spread Spectrum (FHSS)
	Wireless transmission power (EIRP)	50 mW (900MHz), 25 mW (868 MHz), 10 mW (433 MHz)
	Wireless range	2,000+ ft. through 18+ walls with the ALTA XL® Gateway
	Security	Encrypt-RF® (256-bit key exchange and AES-128 CTR)
General	Battery voltage range	2.0 to 3.8 VDC
	Operating/storage altitude (non-pressurized)	-30.48 to 9144 m (-100 to 30000 ft).
	Operating humidity	5 to 85% RH (non-condensing)
	Certifications	900 MHz sensors: FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1 . 868 and 433 MHz sensors tested and comply with: EN 55032: 2015/A11:2020 ; EN 55035:2017/A11:2020 ; ETSI EN 300 220 V3.2.1 (2018-06) ; ETSI EN 301 489-3 V2.2.0. (2021-11) ; and ETSI EN 303 645 . All sensors tested and comply with: EN 61010-1 and EN 60950 and meet RoHS 2015/863 and REACH 224 (June 2022) , according to IEC 63000:2016/AMD1:2022 .



Technical Specifications | ALTA® Industrial Sensor Base for NIST Detachable Leads

Battery	1x 3.6V AA Lithium Thionyl Chloride, 1500mAh, pre-installed
Battery Life	7+ years expected
Operating temperature range (sensor body) ¹	-40°C to 85°C (-40°F to 185°F)
Wireless antenna type	1/2-wave waterproof dipole with RP-SMA connector and swivel neck; dBi of 3.0 (900/868MHz) or 2.5 (433 MHz); length of 8.27" (210mm) (900/868MHz) or 7.68" (195mm) (433 MHz); diameter at thickest point of 0.55" (14mm)
Weight	4.67 oz. (132 g)
Enclosure rating	IP-65 (dust-proof and waterproof but not submersible) NEMA 1, 2, 4, 4x, 12, and 13 rated, sealed, and weatherproof UL Listed to UL508-4x specifications (File E194432)

1. Operating below 0°C (-32°F) degrees will reduce battery life.



Technical Specifications | ALTA® Enterprise Sensor Base for NIST Detachable Leads

Battery	2x 1.5V AA Alkaline, 1500 mAh, (standard) 2x 1.5V AA Lithium, 3000 mAh, (optional)
Battery Life	10+ years expected
External line-power option ¹	Input voltage: 5.0-12.0 V Power jack: 2.1 x 5.5 mm barrel, center positive
Operating temperature range ²	-18°C to 55°C (0°F to 130°F) - AA Alkaline Batteries -40°C to 85°C (-40°F to 185°F)- AA Lithium L91 Batteries 0°C to 40°C (32°F to 104°F) - US 5V Power Supply 10°C to 40°C (50°F to 104°F) - International 5V Power Supply
Wireless antenna type	1/4-wave, 20 gauge wire whip, 3.5" (900/868MHz), 7" (433MHz)
Weight	4.67 oz. (132 g)

1. Batteries will provide backup power in the case the external power is removed.
2. Operating below 0°C (-32°F) degrees will reduce battery life.

Enterprise-Grade Sensors

Monnit ALTA Enterprise Sensors are designed for applications in ordinary environments (normal room temperature, humidity, and atmospheric pressure). Do not use these sensors under the following conditions as these factors can deteriorate the product characteristics and cause failures and burnout.

- Corrosive gas or deoxidizing gas: chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxide gas, etc.
- Volatile or flammable gas
- Dusty conditions
- Low-pressure or high-pressure environments
- Wet or excessively humid locations
- Places with salt water, oils, chemical liquids, or organic solvents
- Where there are excessively strong vibrations
- Other places where similar hazardous conditions exist

Use these products within the specified temperature range. Higher temperatures may cause deterioration of the characteristics or the material quality.

Industrial-Grade Sensors | Type 1, 2, 4, 4X, 12, and 13 NEMA-Rated Enclosure

Monnit ALTA 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 and the damaging effects of 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

Warning

Monnit ALTA Low Temperature Sensors should not be used in submersible applications. They *may* be used in liquid nitrogen applications without any concern of sensor failure.



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