ALTA®

by MONNIT®

The Leading Enterprise Internet of Things Solution

OPEN / CLOSED

Wireless Open/Closed Sensors

General Description

The ALTA Wireless Open/Closed Sensor can be used to detect when a door or window is opened and closed using a magnetic switch.

- Detects when a door or window is accessed.
- Uses magnetic detection switch.

Principle of Operation

The ALTA Wireless Open/Closed Sensor uses an external magnetic switch to detect the presence or removal of a trigger magnet. When the sensor detects that the magnet is removed or returned it sends the information to the iMonnit Online Sensor Monitoring and Notification System. The data is then stored in the online system and can be reviewed and exported as a data sheet or graph. Notification alerts can be set up through the online system to alert the user when a magnetic source is present or not with the ability to only notify within time of day parameters.

Example Applications

- Doors and windows.
- Cabinets and lockers.
- IT server closets.
- Freezer and cooler doors.
- And much more.

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.
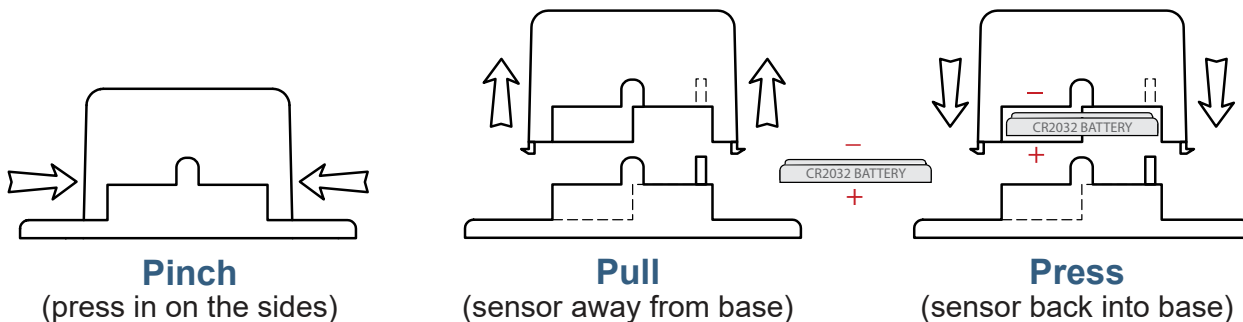
Wireless Range Comparison

Monnit ALTA

Monnit

Other Wireless Platforms

Wifi

Bluetooth
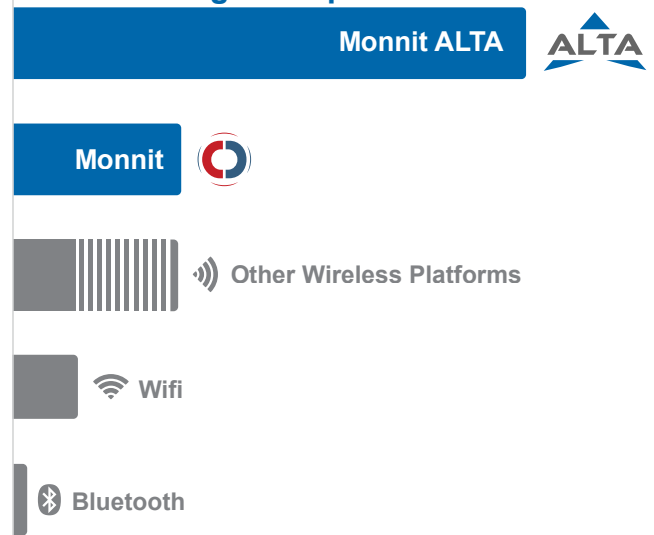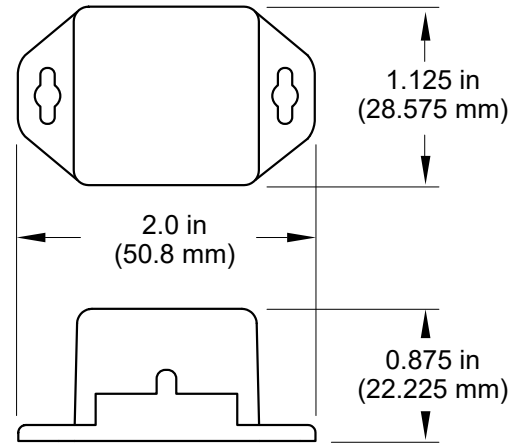
ALTA Commercial Coin Cell Wireless Open/Closed Sensor | Technical Specifications
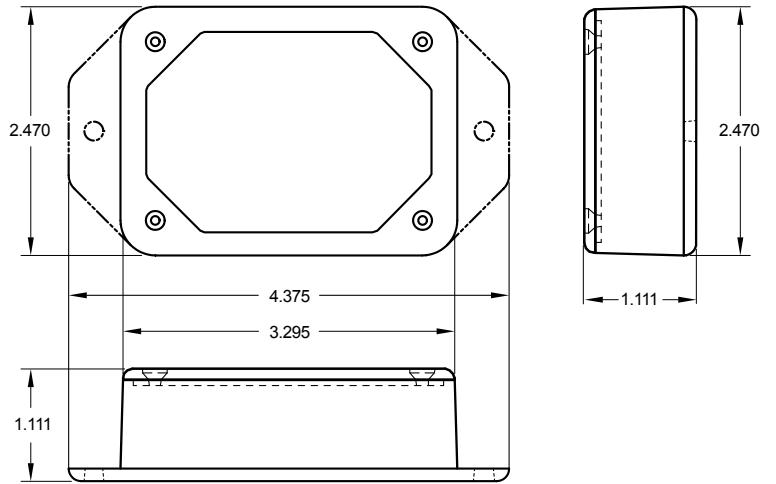
Supply voltage	2.0–3.8 VDC *
Current consumption	0.2 μA (sleep mode), 0.7 μA (RTC sleep), 570 μA (MCU idle), 2.5 mA (MCU active), 5.5 mA (radio RX mode), 22.6 mA (radio TX mode)
Operating temperature range (board circuitry and coin cell)	-7°C to +60°C (20°F to +140°F)
Optimal battery temperature range (coin cell)	+10°C to +50°C (+50°F to +122°F)
Magnetic switch	SPST, gold under -plating with Deactivated Rhodium exterior outer-plating (capable of 50 million activations)
Operation gap	Up to 3/4 inch
Wire leads	22 gauge/15 inch length
Magnet	Alnico magnet/Weatherproof, high-impact ABS exterior plastic covering with self-adhesive backing
Magnet temperature range	-15°F to 160°F (-25°C to 70°C)
Datalogging	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
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

* Circuits cannot withstand negative voltage. Please take care when installing batteries.

PinchPower™ Enclosures

Pinch
(press in on the sides)

Pull
(sensor away from base)

Press
(sensor back into base)

ALTA Commercial AA Wireless Open/Closed Sensor | Technical Specifications

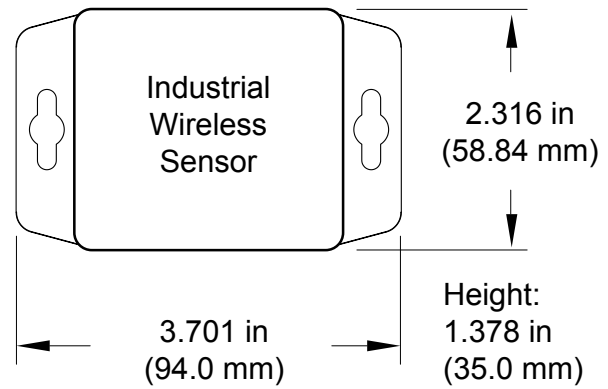|	
Supply voltage	2.0–3.8 VDC (3.0–3.8 VDC using power supply) *
Current consumption	0.2 µA (sleep mode), 0.7 µA (RTC sleep), 570 µA (MCU idle), 2.5 mA (MCU active), 5.5 mA (radio RX mode), 22.6 mA (radio TX mode)
Operating temperature range (board circuitry and batteries)	-18°C to 55°C (0°F to 130°F) using alkaline -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)
Magnetic Switch	SPST, gold under -plating with Deactivated Rhodium exterior outer-plating (capable of 50 million activations)
Operation Gap	Up to 3/4 inch
Wire Leads	22 gauge/15 inch length
Magnet	Alnico magnet/Weatherproof, high-impact ABS exterior plastic covering with self-adhesive backing
Magnet temperature range	-15°F to 160°F (-25°C to 70°C)

Datalogging	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

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

 * Circuits cannot withstand negative voltage. Please take care when installing batteries.

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.

Industrial Wireless Sensor

2.316 in (58.84 mm)

3.701 in (94.0 mm)

Height: 1.378 in (35.0 mm)

ALTA Industrial Wireless Open/Closed 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° 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%***
	Luminous sustainability	Minimum of 250 LUX ***
Magnetic Switch		SPST, gold under -plating with Deactivated Rhodium outer-plating (capable of 50 million activations)
Operation Gap		Up to 3/4 inch
Wire Leads		22 gauge/15 inch length
Magnet		Alnico magnet/Weatherproof, high-impact ABS plastic covering with self-adhesive backing
Magnet temperature range		-15°F to 160°F (-25°C to 70°C)
Datalogging		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
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	FC [*] 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

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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.

Commercial Grade Sensors

Monnit commercial grade 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 oxides 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 temperature 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'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

MONNIT®

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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