ALTA®
by MONNIT®

The Leading Enterprise Internet of Things Solution

Wireless Motion Detection Sensor

General Description

The ALTA wireless motion detection sensor uses an infrared sensor to accurately detect movements made by people/animals within 15 ft (4.5 m) range.
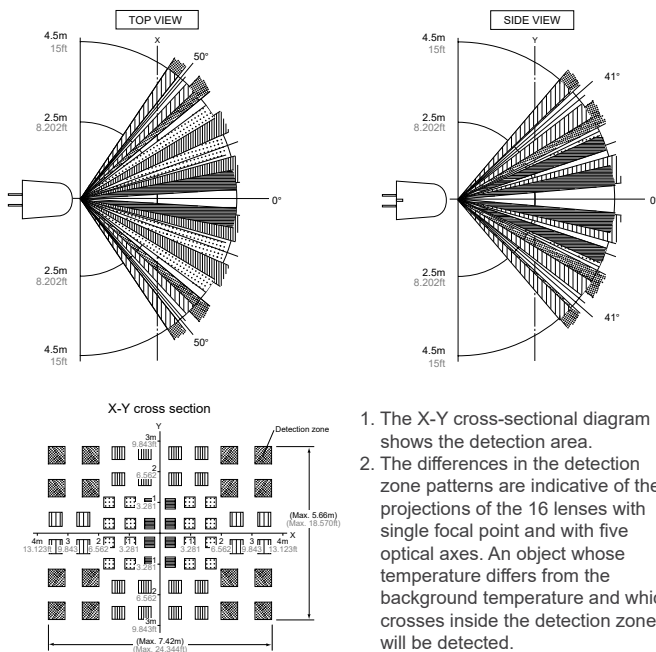
Features

- Software adjustable range (15 ft/12 ft/9 ft)

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 Wireless Motion Detection Sensor detects motion and movement using infrared technology. When the sensor detects movement it communicates with the iMonnit Online Sensor Monitoring and Notification System. iMonnit stores all data in the online system where the data can be reviewed and exported as a data sheet or graph. Notifications can be set up through the online system to alert the user when motion has been detected.

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

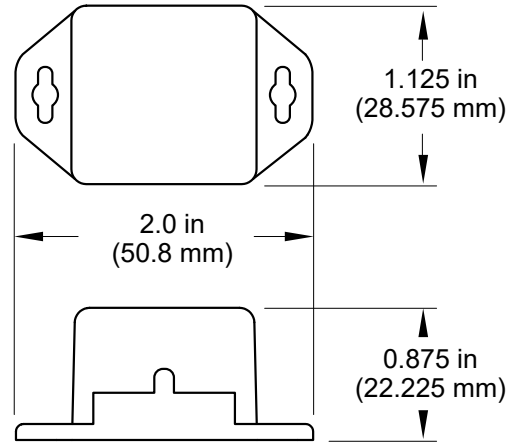 * Actual range may vary depending on environment.

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

Wireless Range Comparison

Monnit ALTA	ALTA
Monnit	
	Other Wireless Platforms
	Wifi
	Bluetooth
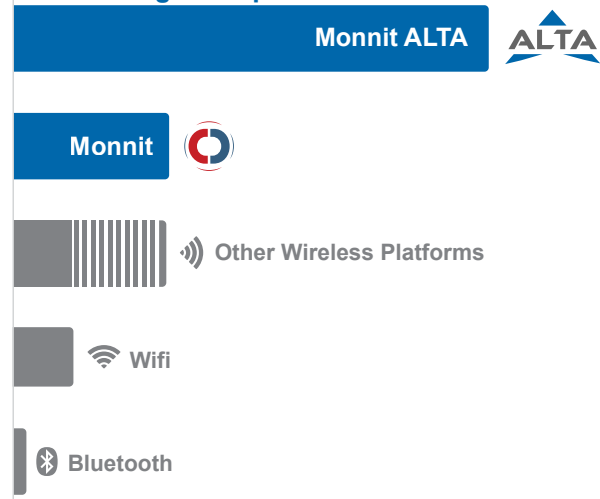
Example Applications

- Monitor area access.
- Detect when people enter a room.
- Many additional applications

TOP VIEW

4.5m 15ft · 50°
2.5m 8.202ft
0°
2.5m 8.202ft
4.5m 15ft · 50°

SIDE VIEW

4.5m 15ft · 41°
2.5m 8.202ft
0°
2.5m 8.202ft
4.5m 15ft · 41°

X-Y cross section

Detection zone

(Max. 5.66m) (Max. 18.570ft)
(Max. 7.42m) (Max. 24.344ft)

1. The X-Y cross-sectional diagram shows the detection area.
2. The differences in the detection zone patterns are indicative of the projections of the 16 lenses with single focal point and with five optical axes. An object whose temperature differs from the background temperature and which crosses inside the detection zone will be detected.

1.125 in (28.575 mm)

2.0 in (50.8 mm)

0.875 in (22.225 mm)

ALTA Commercial Coin Cell Wireless Motion Detection Sensor | Technical Specifications	
Supply voltage	2.0–3.8 VDC *
Current consumption	1.0 µA (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)
Software adjustable sensor detection range	15 ft (4.5 m)/12 ft (3.7 m)/9 ft (2.7 m)
PIR element current consumption	3 µA
Sensor warmup time	7 Seconds

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 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.

PinchPower™ Enclosures

Pinch
(press in on the sides)

Pull
(sensor away from base)

Press
(sensor back into base)
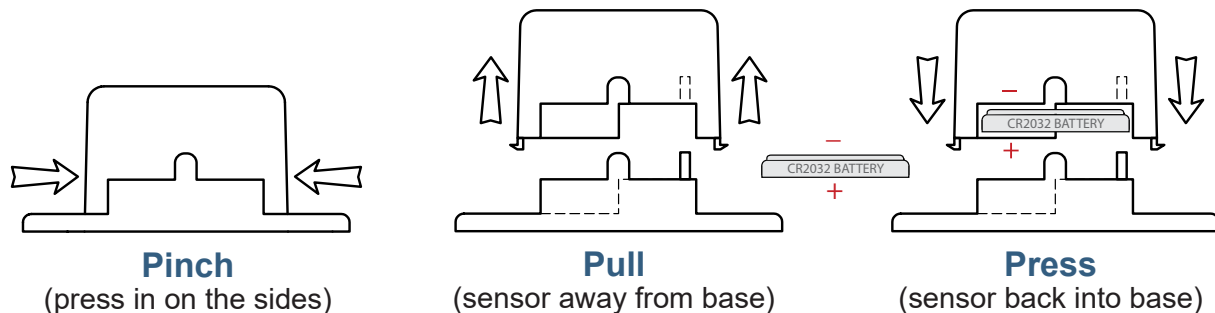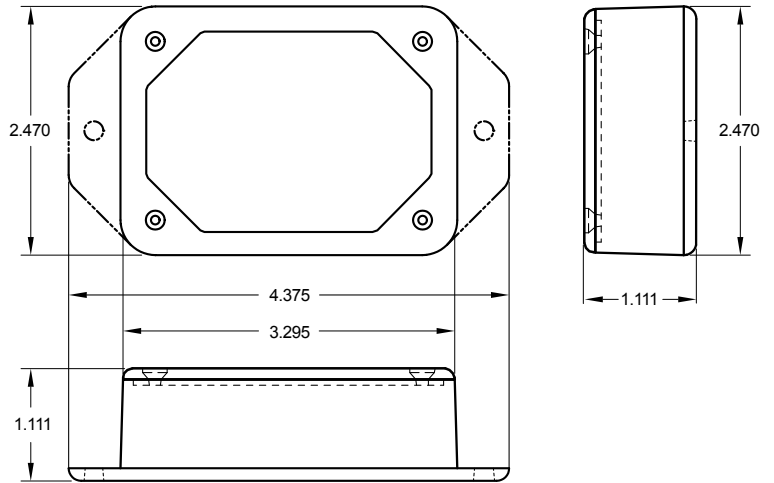
ALTA Commercial AA Wireless Motion Detection Sensor | Technical Specifications

Supply voltage	2.0–3.8 VDC (3.0–3.8 VDC using power supply) *
Current consumption	1.0 µA (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)
Software Adjustable Sensor Detection Range	15 ft (4.5 m)/12 ft (3.7 m)/9 ft (2.7 m)
PIR Element Current consumption	3 µA
Sensor Warmup Time	7 Seconds

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 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.

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.

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.

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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