



Remote Monitoring for Business

ALTA® Wireless Motion Detection Sensor

General Description

The [ALTA Wireless Motion Detection Sensor](#) uses an infrared sensor to accurately detect movements made by people and animals.

Key Features

- ▶ Software adjustable range (9-ft / 12-ft / 15-ft)
- ▶ Standard and wide-angle lens options (80° / 110°)
- ▶ Response time: 1 to 3 seconds
- ▶ Operating Temperatures: -40°C to 85°C (-40°F to 185°F)
- ▶ Accurately detects occupancy and movement

Principles of Operation

The Wireless Motion Detection Sensor detects motion and movement and reports based on a user-configurable time interval or Heartbeat. Using a passive infrared (PIR) motion sensing element, the sensor detects relative changes in temperature caused by warm bodies moving through the viewing area. Once the sensor detects movement, it communicates to a gateway. The gateway will immediately attempt to securely send the message to iMonnit, or other approved data services.

Example Applications

- ▶ Monitor area access
- ▶ Detect when people enter a room
- ▶ Track animals in habitats
- ▶ [Additional applications](#)

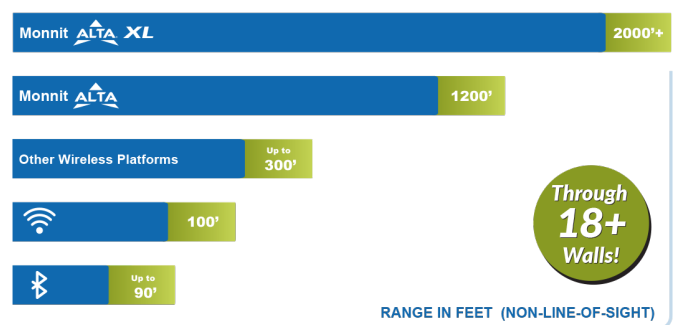
Features of Monnit ALTA Sensors

- 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.

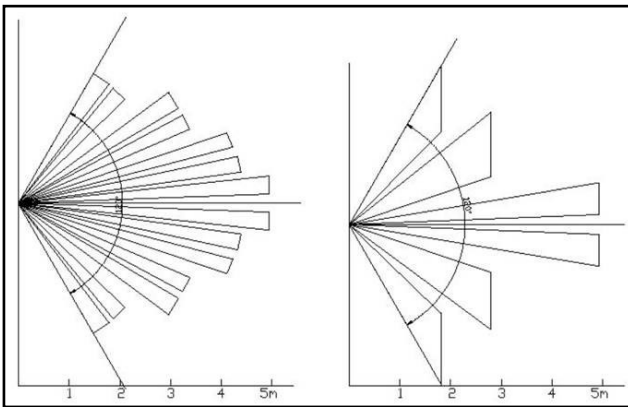
Wireless Range Comparison



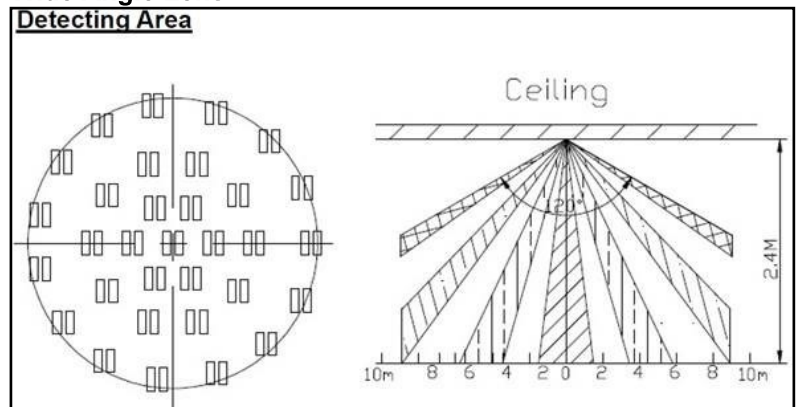
Technical Specification | ALTA® Wireless Motion Detect Sensors

Motion Detection	Motion Sensing Technology		Quad Array Passive Infrared (PIR) Sensing Element
	Current Consumption		3 uA
	Typical Response Time		1 to 3 Seconds ¹
	Operating /Storage Temperature		-40°C to 85°C (-40°F to 185°F)
Lens	Standard Lens	Viewing Angle	80° ⁴
		Max Range	13.1 to 16.4 ft (4 to 5 m) ²
		Configurable Range	9 ft / 12 ft / 15 ft (Software Configurable) ²
	Wide Angle Lens	Viewing Angle	110°
		Max Range	29.5 to 32.8 ft (9 to 10 m) ²
		Configurable Range	18 ft / 24 ft / 30 ft (Software Configurable) ^{3,4}
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 =
	Wireless protocol		ALTA Proprietary Frequency-Hopping Spread Spectrum
	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 altitude (non-pressurized environments)		-15.2 to 1,982 m (-50 to 6,500 ft) ⁵
	Storage altitude (non-pressurized environments)		-15.2 to 3,048 m (-50 to 10,000 ft) ⁵
	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
			

Standard Lens⁴

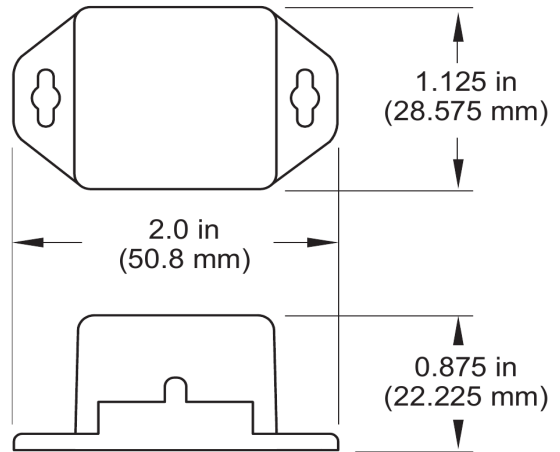
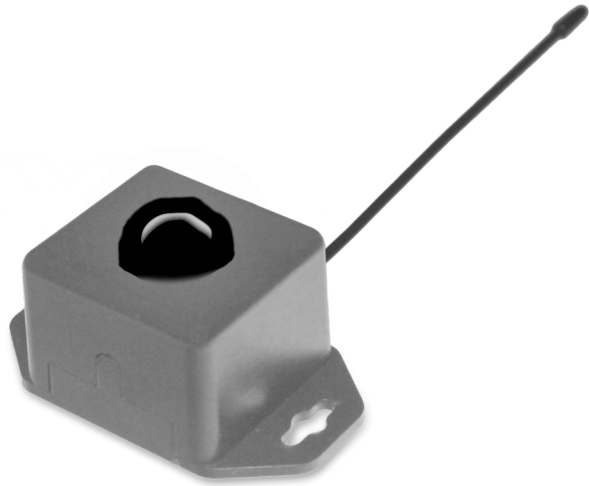


Wide Angle Lens⁴

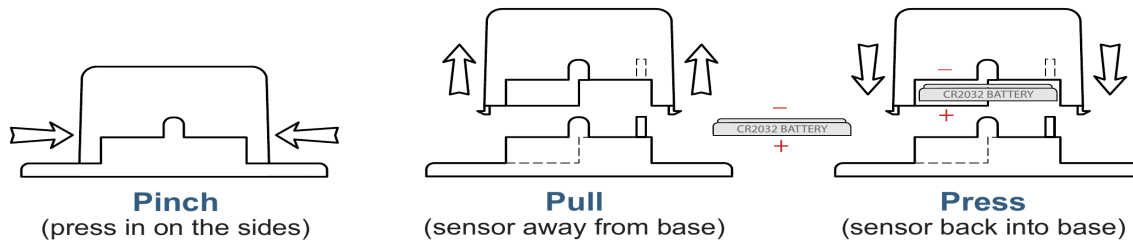


1. The response time may be elongated by up to three seconds after a radio transmission. The sensor is most responsive when used with less frequent heartbeats. Heartbeats of 10 seconds or greater is recommended.
2. The maximum range is greatest when the target is centered on the sensor, as the target moves farther from the center of the sensor in any direction the range reduces gradually (Ex: On standard lens, 5 M range when centered on sensor, 4 M on edge of widest detection angle). Standard lens has a potential viewing angle of 120° but range is reduced to ~2 M beyond 80°.
3. The range assumes a 5' 8", 170-lb person moving across the sensor face from left to right wearing pants and a t-shirt. If the target is fully covered with insulating material or moving toward (not across) the sensor face the actual detection range may be reduced.
4. The software interface for the wide-angle lens may indicate options of 9 / 12 / 15 ft, assume this means 18 / 24 / 30 ft because of the range doubling properties of the wide-angle lens.
5. Operating and storage altitude without DC power supply is -30.48 to 9144 m (-100 to 30000 ft).

The sensor reports when a human or animal is still or moving.



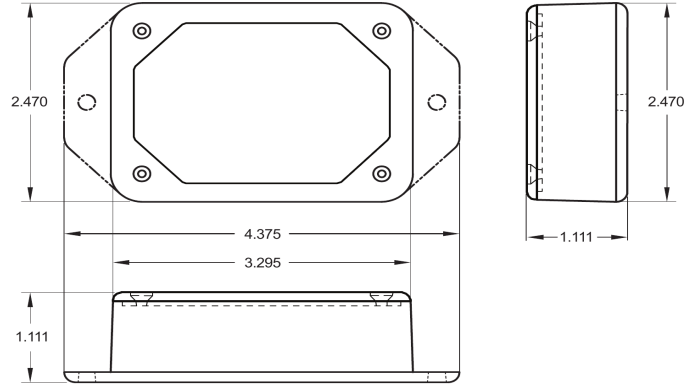
PinchPower™ Enclosures



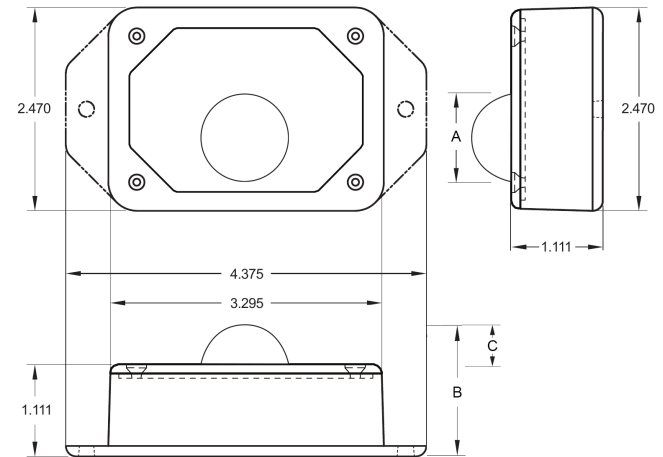
Technical Specifications ALTA® Commercial	
Battery ¹	1x 3.0V CR2032 Button Cell, 100 mAh
Battery Life	2+ years expected
Operating temperature range (non-leaded measurement range)	10°C to 50°C (50°F to 122°F)
Wireless antenna type	1/4-wave, 20 gauge wire whip, 3.5" (900/868MHz), 7" (433MHz)
Weight	0.4 oz. (11.34 g)

1. Hardware cannot withstand negative voltage. Please take care when inserting and removing battery.

Standard Lens



Wide Angle Lens



Sensor Dome Measurements:

(A) 22.8 mm wide (B) 38.8 mm tall in case (C) 28 mm above case

Technical Specifications ALTA® Enterprise	
Battery ¹	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 ²	Input voltage: 5.0-12.0 V Power jack: 2.1 x 5.5 mm barrel, center positive
Operating temperature range ³	-18°C to 55°C (0°F to 130°F) - AA Alkaline Batteries -25°C to 60°C (-13°F to 140°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	3 oz. (85.05 g)

1. Hardware cannot withstand negative voltage. Please take care when inserting and removing batteries.
2. Batteries will provide backup power in the case the external power is removed.
3. Operating below 0°C (-32°F) degrees will reduce battery life.

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 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.



Monnit Corporation

3400 South West Temple • Salt Lake City, UT 84115 • 801-561-5555
www.monnit.com