



Next Motion Detection Sensor

The Next Wi-Fi Motion Detection Sensor uses a passive infrared (PIR) sensor to accurately detect movements made by people and animals.



Principles of Operation

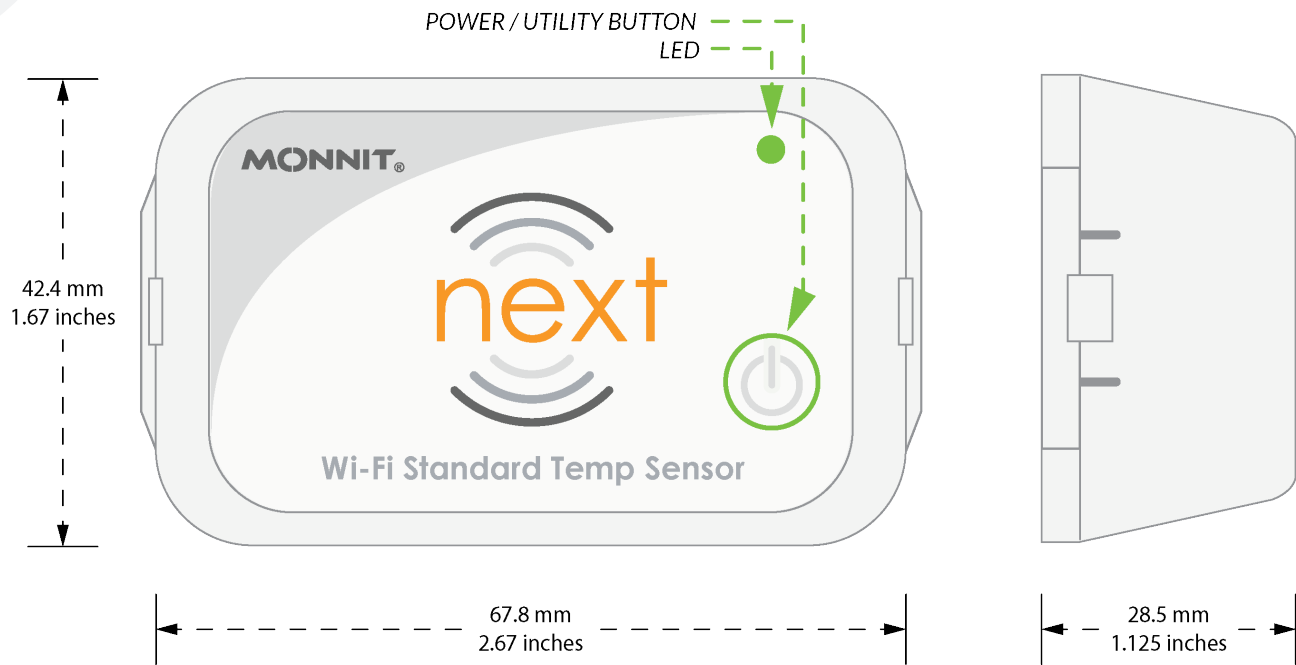
The Next Motion Detection Sensor detects motion and movement and reports based on a user-configurable time interval or Heartbeat. Using a passive infrared (PIR) motion-sensing element, the sensor detects relative changes in temperature caused by warm bodies moving through the viewing area. Once the sensor detects movement, it communicates with Monnit Software through Wi-Fi.

Example Applications

- ▶ Monitor Area Access
- ▶ Detect Occupancy
- ▶ Track Animals
- ▶ [Additional applications](#)

Key Sensor Features

- ▶ Software Adjustable Range: 9-ft / 12-ft / 15-ft
- ▶ Viewing Angle: 80°
- ▶ Response Time: 1 to 3 seconds
- ▶ Operating Temperatures: -40°C to 85°C (-40°F to 185°F)
- ▶ Accurately detects occupancy and movement.
- ▶ Logs data if the Wi-Fi network is disrupted.



Features of Monnit Next Wi-Fi Sensors

- Wireless Range: 125 feet through five walls or 500-ft line of sight¹
- Power: Two replaceable 1.5V AA batteries (included)
- Communications: 802.11 b (2.412-2.484 GHz)
- Wi-Fi Security: OPEN, WPA, WPA2
- Wi-Fi Provisioning: Bluetooth via app
- Sensor data is available in iMonnit after Wi-Fi is successfully provisioned
- Best-in-class power management for longer battery life²
- Data logs up to 4096 readings if the Wi-Fi 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)
- Power/Utility Button: Powers device on/off, triggers data transmission, change operating mode, etc.³
- LED Indicator: Shows status and activity.³
- Free iMonnit Basic Online Wireless Sensor Monitoring and Notification System to configure sensors, view data, and set alerts to be sent via text and email

1. Actual range may vary depending on the environment.

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

3. For a full description of Button/LED behaviors see the Next Sensor General Information Guide.



NEXT MOTION DETECT SENSOR | TECHNICAL SPECIFICATIONS

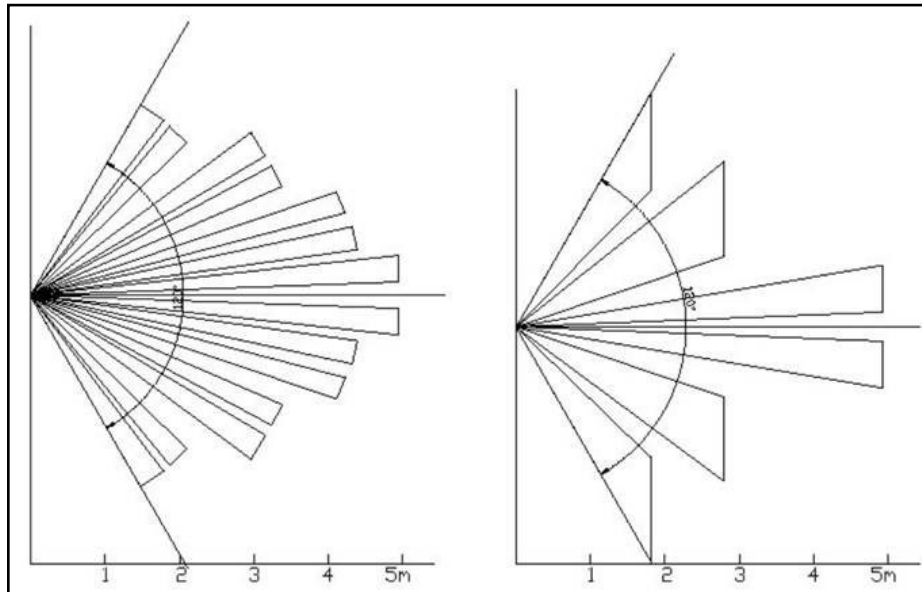
Motion Detection	Motion Sensing Technology		Quad Array Passive Infrared (PIR) Sensing Element
	Current Consumption		3 uA
	Typical Response Time		1 to 3 seconds motion, 5 to 10 seconds no motion ¹
	Operating/Storage Temperature		-40°C to +85°C (-40°F to +185°F)
Lens	Standard Lens	Viewing Angle	80° ⁴
		Max Range	13.1 to 16.4 ft (4 to 5 m) ^{2,3}
		Configurable Range	9 ft / 12 ft / 15 ft (Software Configurable) ^{2,3}
Wi-Fi	Wireless Protocol		802.11 b
	Wireless Range		125 feet through five walls or 500-ft line of sight
	Frequency Band		2.412 - 2.484 GHz
	Security		Wi-Fi: Open, WPA, WPA2
	Provisioning		Over Bluetooth via Monnit provided application
	Network Settings		Auto DHCP/DNS or Static
	Data Rate		Auto configures to best rate for maximum range
Next	Data Logging		Data logs 4000 to 4096 readings if the Wi-Fi connection is lost
	Additional Data Security		Advanced Encryption Standard (AES)-128 Cipher Block Chaining
	LED		RGB (Indicates status and activity) ⁴
	Power/Utility Button		Tactile (Powers device on/off, triggers data transmission, changes operating mode, etc.) ⁴
General	Battery Voltage Range		2.0 to 3.3 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)
	Operating Temperature Range (board circuitry)		-18°C to +55°C (-0.4°F to +131°F)
	Optimal Battery Temperature Range (AA)		+10°C to +50°C (+50°F to +122°F)
	Weight		65 g (2.31 oz)
	Certifications		FCC ID: 2AC7Z-ESPC3MINI1 IC: 21098-ESPC3MINI1



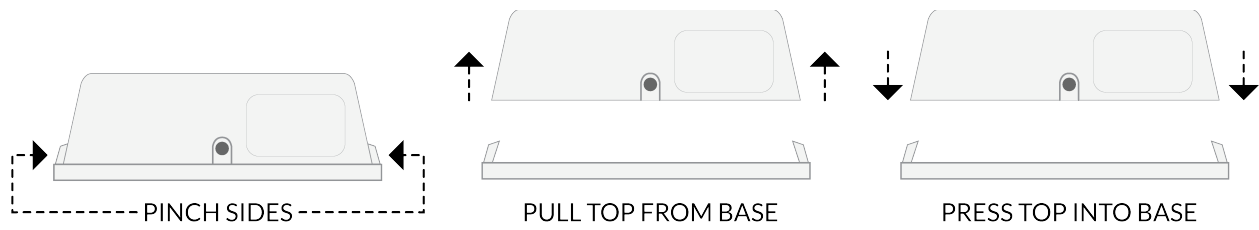
1. The sensor is most responsive when used with less frequent Heartbeats. Heartbeats of 1 minute or greater is recommended.
2. The maximum range is greatest when the target is centered on the sensor, as the target moves farther from the center of the sensor in any direction the range reduces gradually (Ex: 5 M range when centered on sensor and 4 M on edge of widest detection angle). The lens has a potential viewing angle of 120° but the 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. For a full description of Button/LED behaviors see the Next Sensor General Information Guide.
5. Operating and storage altitude without DC power supply is -30.48 to 9144 m (-100 to 30000 ft).



Standard Lens



Next Enclosures



MECHANICAL TECHNICAL SPECIFICATIONS		
Enclosure Material	Housing	Acrylonitrile Butadiene Styrene (ABS)
	Grommet/Plug	Thermoplastic Elastomer (TPE)
	Enclosure Screws x 2	Flat head, #4 screw size, 0.5" length, Phillips, blunt tip, high-low dual-spaced threads, zinc-plated steel
Mounting	Screws x 2	#7 x 7/16, Phillips, pan head, black phosphate-plated steel
	Magnets (optional) x 4	1/2" diameter x 1/16" thick, poles on the flat surface, super strong neodymium (NDFeB) rare earth magnets, approximate pull force: 3 lbs (grade N42), nickel-copper-nickel triple layer coating for corrosion protection Note: Combined pull force is 12 lbs
	Recommendations for Custom Mounting Screws	Max head diameter: 8mm (5/16")
		Min head diameter: 6.5mm (1/4")
		Max head height: 2.54mm (0.1")
Max shaft diameter: 4.75mm (3/16")		

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.



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