Remote Monitoring for Business

Wireless Vehicle Detect/Counter Sensor

General Description

The Monnit Wireless Vehicle Detect/Counter Sensor can be deployed to detect the presence of a vehicle or count oncoming traffic utilizing a 9 ft. pneumatic tube. Deployment is easy with the included hose anchor and mounting spikes. Simply turn the unit on with the included magnet, roll the hose out where you wish to record traffic data and pound the spikes into the asphalt. In software, select "Counting" or "Detecting" and begin recording data.

- Detects presence of vehicles as they pass over the tube.
- Can detect and count moving vehicles.
- Signal hose anchor and mounting spikes included with purchase.
- Power On/Off using included magnet
- Factory calibrated sensitivity.
- Adjustable sensitivity.

Free iMonnit basic online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email.

Principles of Operation

The Industrial ALTA Wireless Vehicle Detect / Counter uses a pressure activated switch to detect or count vehicles that drive over the 9ft. long rubber tube. This device ignores normal human or animal traffic across the tube to prevent miscounts (Stomping on the tube can produce a count/detect). This sensor is ideal for use in parking garages and monitoring traffic conditions for automotive services. The sensor sensitivity is factory calibrated for accuracy, but if it needs adjustment the sensor can be calibrated using the built-in adjustment screw and hex key (5 mm) (see the user guide for adjustment procedure).
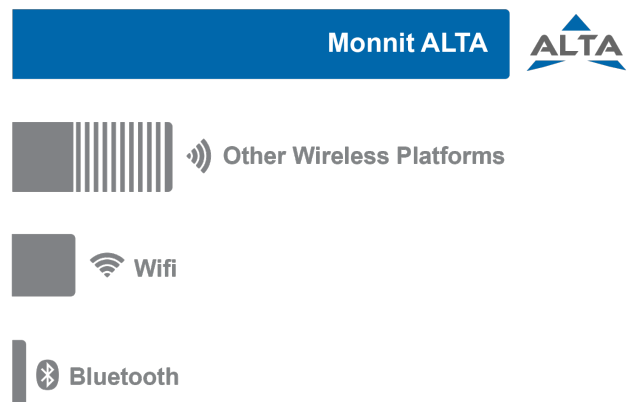
Example Applications

- Parking garages
- Traffic monitoring (volume of flow)
- Automotive service notifications
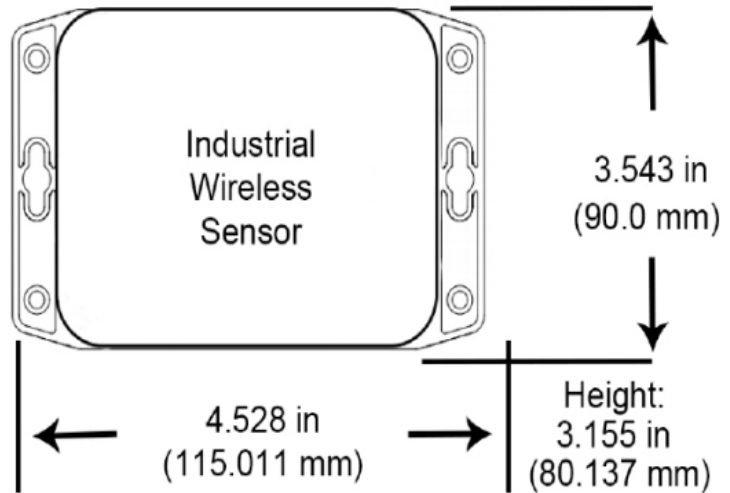- Fleet management
- Additional Applications

Features of Monnit ALTA Sensors

- Wireless range of 1,200+ feet through 12+ walls *
- Frequency-Hopping Spread Spectrum (FHSS)
- Best in class interference immunity
- Best in class power management for longer battery life **
- 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)
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*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

Other Wireless Platforms

Wifi

Bluetooth

ALTA Industrial Wireless Vehicle Detect / Counter | Technical Specifications

Supply Voltage		2.0 - 3.6 VDC *
Operating Temperature Range (Board Circuitry and Battery)		
Included Battery	Operating Temperature Range:	-40°C to +85°C (-40°F to +185°F) **
	Capacity:	1800 mAh
Power On/Off		Magnet included with accessories
Vehicle Sensing		Pneumatic hose coupled to internal pressure switch***
Sensitivity		Adjustable sensitivity (see user guide for adjustment procedure)
Configurable Operating Modes		Single Axle Detection, Double Axle Detection, Double Axle Count
Datalogged Memory		56 kBytes, 2000 - 4000 messages, persists through power cycle or device reset ****
Weight (with hose and accessories)		6 lbs.
Hose Diameter		0.650 inches (16.5 mm)
Enclosure Rating		NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed & weather proof
UL Rating		UL Listed to UL508-4x specifications (File E194432)
Wireless Range		1,200+ ft non-line-of-sight
Security		Encrypt-RF® (256-bit key exchange and AES-128 CTR)
Certifications		900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RFSC1. 920 MHz product; ARIB STD-T108 R210-103733. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010 - Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).

    *   Hardware cannot withstand negative voltage. Please take care when connecting a power device.
   **   Signal hose anchor and mounting spikes included with purchase.

Magnetic Switch and LED Behavior

The Switch / LED only responds after the magnet is applied then released, till it is released the sensor will not respond in any visible way to the magnet.

General Behavior:
- Status Report - Hold the magnet over the switch for 0.2 to 2 seconds then remove it. A two flash sequence will follow. The first LED flash includes the sensor status; green is on, red is off. The second LED flash references the Radio status; green is linked to a gateway, red is not linked to a gateway.

- Power On/Off - Hold the magnet over the switch for greater than 2 seconds. A three flash sequence will follow, indicating the new power state of the sensor; three green flashes mean the sensor is turning on, and three red flashes mean the sensor is turning off.

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®

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Change Log

Revision	Author	Date (yyyy/mm/dd)	Change
1	D. Foley	11/2020	Original release.
2	D. Foley	5/2021	Hose Diameter Updated