

## Wireless DC Voltage Detector

### General Description

Monnit's industrial wireless DC voltage detection sensor detects the presence or absence of electricity. This device is intended for use on battery or other DC sources, up to 50 Volts. Not intended for use with AC Voltages. It is perfect for batteries, adapters, solar equipment, vehicles or machinery, and any other electrical appliance monitoring. The sensor triggers on voltage presence to voltage Absence and vice versa. The data is displayed as "Voltage Detected" or "No Voltage".

- Detects presence or absence of voltage.
- Voltage presence detected above ~.47 volts.
- Voltage absence detected below ~.47 volts.
- Detects voltages up to 50 volts.
- Reverse voltage protection, up to 50 Volts.



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 Monnit industrial wireless DC voltage detection sensor detects the presence or absence of voltage. The sensor triggers on voltage presence to voltage absence and vice versa. The data is displayed as "Voltage Detected" or "No Voltage". If no change is observed within the heartbeat interval, the state is continuously reported on the heartbeat interval. Transitions and heartbeat data is logged into a cloud service. The user can set the system to send an alert on either state, or on the transition of states.

### Example Interfacing

- Battery Power
- Relays/Switches
- Appliances
- Adapters
- Solar
- Power Supplies
- Sump Pumps
- And many more...

### Monnit Sensor Core Specifications

- Wireless Range: 250 - 300 ft. (non line-of-sight / indoors / through walls, ceilings & floors) \*
- Communication: RF 900, 920, 868 and 433 MHz
- Power: Replaceable batteries (optimized for long battery life) - Line-power (AA version) and solar (Industrial version) options available
- Battery Life (at 1 hour heartbeat setting) \*\*
  - AA battery > 4-8 years
  - Coin Cell > 2-3 years.
  - Industrial > 4-8 years

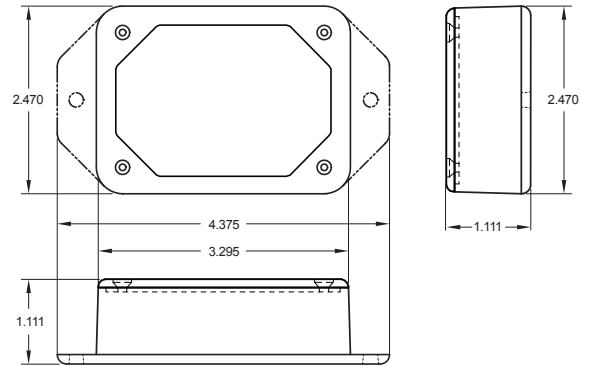
\* Actual range may vary depending on environment.

\*\* Battery life is determined by sensor reporting frequency and other variables.

### Sensor Types & Options

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## Wireless DC Voltage Detector (AA)



### Technical Specifications

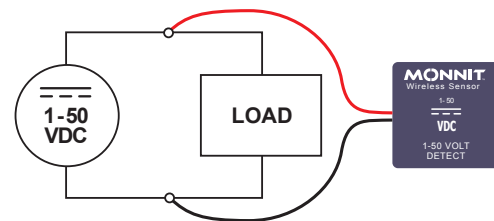
Supply Voltage	2.0 - 3.6 VDC (3.0 - 3.6 VDC Using Power Supply)
Current Consumption	0.7 $\mu$ A (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range (Board Circuitry and Batteries)	-18°C to 55°C (0°F to 130°F) using alkaline -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 )
Maximum Rated Input Voltage	50.0 Volts
Minimum Rated Input Voltage	-50.0 Volts
Voltage Detection Threshold	Present above ~.47 Volt, Absent below ~.47 Volt
Trigger	Transmits data upon state change
Open Circuit Reading	Voltage Absent
Leaded Wire Specification	2 Wires, 1 ft. ( 12 in.), Red (+), Black (-), 18 AWG (Custom lengths available upon request)
Weight	4.0 oz.
Wireless Range	250 - 300 ft. (Indoors / Through walls, ceilings & floors) Range may vary according to environmental variables
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).



\* At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

### Proper Installation

If the sensor is not connected to the power source properly, it will appear that the sensor is broken. Please follow this wiring diagram to ensure proper performance and detection.

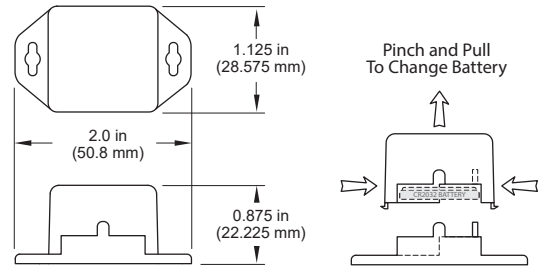


### Power Options

Two replaceable 1.5V AA sized batteries are included with the standard model. A line-power version with battery backup is also available - allowing it to be powered by a standard 3.0 - 3.6V power supply and utilize the internal batteries if there is a power interruption.

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.

# Wireless DC Voltage Detector (Coin Cell)



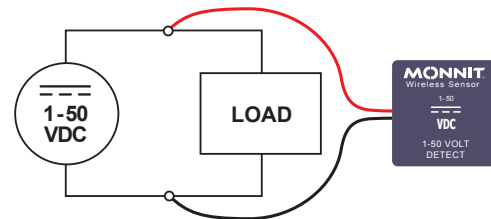
Technical Specifications	
Supply Voltage	2.0 - 3.6 VDC
Current Consumption	0.7 $\mu$ A (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range (Board Circuitry and Batteries)	-7°C to +60°C ( 20°F to +140°F )*
Optimal Battery Temperature Range (AA)	+10°C to +50°C ( +50°F to +122°F )
Maximum Rated Input Voltage	50.0 Volts
Minimum Rated Input Voltage	-50.0 Volts
Voltage Detection Threshold	Present above ~.47 Volt, Absent below ~.47 Volt
Trigger	Transmits data upon state change
Open Circuit Reading	Voltage Absent
Leaded Wire Specification	2 Wires, 1 ft. ( 12 in.), Red (+), Black (-), 18 AWG (Custom lengths available upon request)
Weight	1.0 oz.
Wireless Range	250 - 300 ft. (Indoors / Through walls, ceilings & floors) Range may vary according to environmental variables
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).



\* At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

## Proper Installation

If the sensor is not connected to the power source properly, it will appear that the sensor is broken. Please follow this wiring diagram to ensure proper performance and detection.

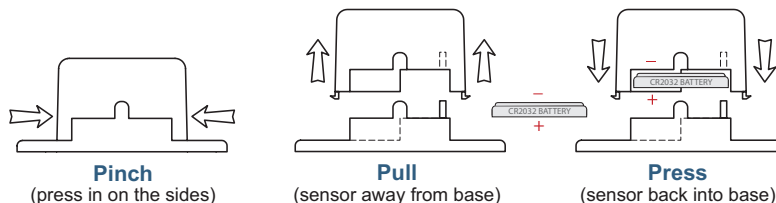


## Power Options

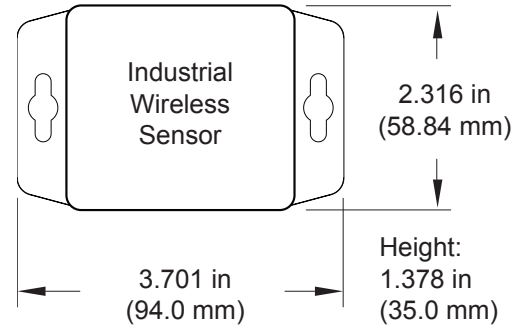
Sensors are powered by a replaceable 3.0 V coin cell battery. Optional AA battery powered sensors are available. The AA version of these sensors are larger in size (3" [L] x 2.1" [W] x 1.2" [H] ) and include two long-life AA batteries.


It is recommended that unless you are using the AA battery solution, you set heartbeat to no faster than one hour to preserve battery life.

## PinchPower™ Enclosure



# Wireless DC Voltage Detector (Industrial)



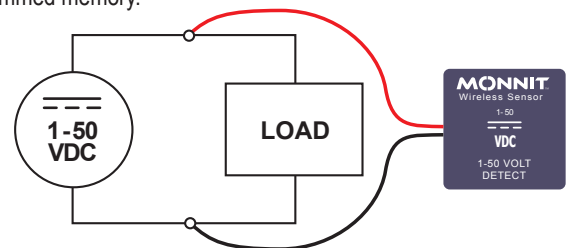
Technical Specifications		
Supply Voltage	2.0 - 3.6 VDC	
Current Consumption	0.7 $\mu$ A (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)	
Operating Temperature Range (Board Circuitry and Batteries)		
Included Battery	Max Temperature Range:	-40°C to +85°C ( -40°F to +185°F ) *
	Capacity:	-40° to +85°C ( -40° to +185°F )
Optional Solar Feature	Solar Panel:	1500 mAh
	Charging Temperature Range:	5VDC / 30mA (53mm x 30mm)
	Max Temperature Range:	0° to 45°C (32° to 113°F)
	Included Rechargeable Battery:	-20° to 60°C (-4° to 140°F)
	Charging efficiency	5% **
	Luminous sustainability	Minimum of 10,000 LUX **
Maximum Rated Input Voltage	50.0 Volts	
Minimum Rated Input Voltage	-50.0 Volts	
Voltage Detection Threshold	Present above ~.47 Volt, Absent below ~.47 Volt	
Trigger	Transmits data upon state change	
Open Circuit Reading	Voltage Absent	
Leaded Wire Specification	2 Wires, 1 ft. ( 12 in.), Red (+), Black (-), 18 AWG (Custom lengths available upon request)	
Weight	5.0 oz.	
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	250 - 300 ft. (Indoors / Through walls, ceilings & floors) Range may vary according to environmental variables	
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).	

\* At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

\*\* Solar Feature is only chargeable outside on full sunlight.

## Proper Installation

If the sensor is not connected to the power source properly, it will appear that the sensor is broken. Please follow this wiring diagram to ensure proper performance and detection.



## Notes

### 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 burn-out.

- 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.
- Under low or high pressure.
- 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



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](http://www.monnit.com).

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