

# Monnit Industrial

## Wireless Voltage Meter (0-50 VDC)

### Technical Overview

#### General Description

Monnit's industrial wireless voltage meter measures the voltage between two electrical points. It can be connected to the power and ground of any voltage source and measure within stated accuracy up to 50 VDC. It can be connected to any kind of variable resistance device, such as a transducer or sensor that outputs voltage. If the device to be measured is passive, the user must supply their own excitation voltage to the device.

#### Features

- Accurate to  $\pm 3.0\%$  full scale (FS) of voltage range.
- Accurate to  $\pm 0.5\%$  FS with user calibration.
- Interfaces with any variable voltage device.
- 5 mV Resolution.
- Measures voltage up to 50 VDC.
- 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 voltage meter outputs the voltage difference between two electrical points and reports back the measured voltage. It is programmed to sleep for a user-given time interval (heartbeat), wakeup, convert the analog data, mathematically compute the voltage, and transmit the data to the gateway, where it is then logged into a cloud service. The user can configure defined thresholds and have the system alert on threshold breaches.

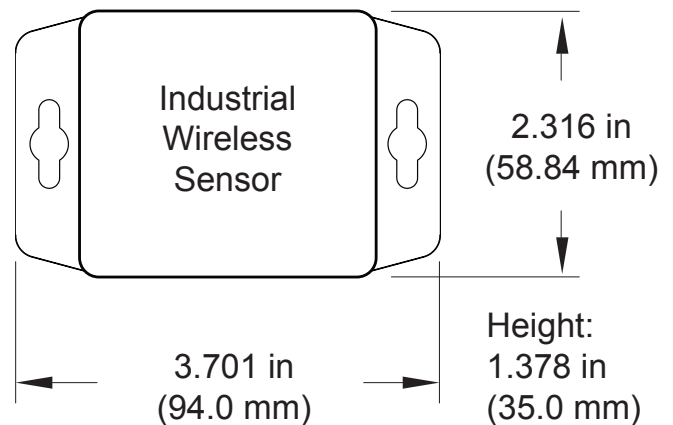


#### Monnit Industrial Sensor Electronics Specifications

- Power: replaceable 3.6V battery (included)
- Communication: RF 900, 920, 868 and 433 MHz
- Dimensions: 3.7" x 2.23" x 1.38"
- Antenna: 3dBi RP SMA antenna
- Operating Temperature:  $-40^{\circ}$  to  $85^{\circ}\text{C}$  ( $-40^{\circ}$  to  $185^{\circ}\text{F}$ )
- Transmission Range: 300 - 350 ft. non-line-of-sight\*
- Battery Life: at 1 hour heartbeat setting, battery will last  $\sim 4\text{-}5$  years.\*\*

\* Actual range may vary depending on environment.


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



#### Example Interfacing

- Industrial Equipment Battery Monitoring
- Car Battery Monitoring
- Boat and Marine Battery Monitoring
- RV Battery Monitoring
- ATV / Motorcycle Battery Monitoring
- Lawn Mowers and Utility Vehicle Battery Monitoring
- And many more...

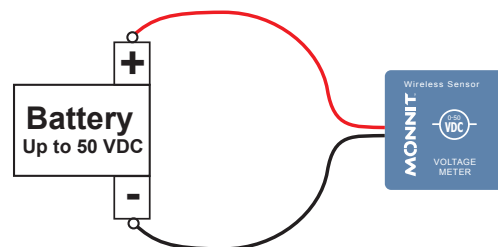
**The Leader in Low Cost Wireless Sensors**

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 Battery)	-40°C to +85°C ( -40°F to +185°F ) **
Optimal Battery Temperature Range (Battery)	+10°C to +60°C ( +50°F to +140°F )
Conversion Time	228 $\mu$ s
Sensor Resolution	0.025 VDC
Full Scale Voltage	0 - 48 VDC ***
Absolute Maximum Voltage	75 VDC ***
75 VDC ***	NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof
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 can not withstand negative voltage. Please take care when connecting a power device.
- \*\* At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.
- \*\*\* If application exceeds 48 VDC the sensor will return a maximum reading of 48 V. Voltage over the absolute maximum may damage sensor hardware.
- \*\*\*\* For best results calibrate at a voltage between 50% and 90% of the voltage range.

### 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.



### 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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