

# Monnit

## Wireless Pulse Counter - 1 Input (AA)



### Technical Overview

#### General Description

The wireless pulse counter can be connected to the pulse output of a system (water meter, power meter, etc.) to count the number of actuations within a given time frame.

#### Features

- Counts the number of pulses in given time frame, or aggregates pulses in an ongoing accumulation.
- 3 filter settings: No filter, 4 Hz filter, and 40 Hz filter.
- Capable of counting passive (open/closed switch) and active (Up to +15 VDC) pulses.
- Capable of counting the positive edge, negative edge, or both edges of a pulse.
- 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 wireless filtered pulse counter is an electronic counter capable of counting passive(open/closed switch) or active (Up to +15 VDC) pulses. The counter includes 3 software configurable low pass filter settings (No filter, 40 Hz filter, or 4 Hz filter). The pulse counter filters pulses with pulse widths greater than those designated in the technical specifications. For example, if the 4Hz filter is set, the pulse counter will count a pulse if the pulse width is longer than 250 ms, if the pulse width is shorter than 250 ms it will be completely or partially filtered (See the Technical Specification table for detailed filtering information). The sensor can be set to send an alert through the iMonnit Online Sensor Monitoring and Notification System when a given number of pulses have been reached within a set time frame. Alerts from the iMonnit system are sent as they happen (in real time) via SMS text or email.

#### Power Options

The standard version of this sensor is powered by two replaceable 1.5 V AA sized batteries (included with purchase).

Line powered option:

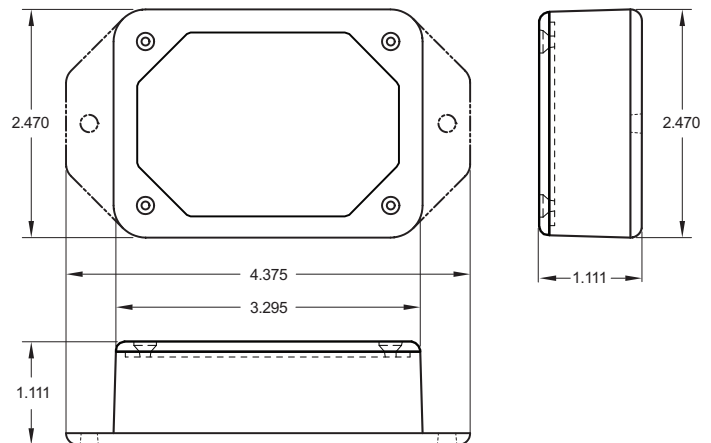
The line powered version of this sensor has a barrel power connector allowing it to be powered by a standard 3.0 - 3.6 V power supply. The line powered version can also use two 1.5 V AA batteries as a battery backup if line power is disrupted.

#### Monnit Sensor Core Specifications

- Power: Two replaceable 1.5 V AA batteries (Option for line power with battery backup)
- Communication: RF 900, 920, 868 and 433 MHz
- Dimensions: 4.375" x 2.470" x 1.111"
- Antenna: 4" wire antenna
- Operating Temperature: -40° to 85°C (-40° to 185°F)  
Device Range: 250 - 300 ft. non-line-of-sight\*
- Battery Life: At 1 hour heartbeat setting, standard AA batteries will last up to 4 years.\*\*

\* Actual range may vary depending on environment.




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



#### Example Applications

- Water, gas and air flow meters.
- Door access counter.
- Turn style counting.
- Forklift seat switches.
- Button or switch integration.
- Production line tracking.

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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 **		
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).		
  			
Pulse Counter Specifications			
Maximum Count	4294967296 (32 bit number)		
Input Voltage	0 to 15 Volts DC		
Detection Wires	High Impedance (2-Wire), 3 ft. length		
Counter Operation	Positive and / or Negative Edge Pulses		
Compatibility	Open Collector NPN Switches (Passive) Mechanical Switches (Passive) 0-15V Driven Source (Active)***		
Max Input Pulse Rate / Min Pulse Width with Passive Input****		Max Pulse Rate	Min Pulse Width*****
	No Filter	~ 2 KHz	~ 0.5 ms
	4 Hz Filter	~ 4 Hz	~ 250 ms
	40 Hz Filter	~ 40 Hz	~ 25 ms

\* Hardware can not withstand negative voltage. Take care when connecting a power device.

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

\*\*\* Low Pulse: 0 Volts to .2 \* VBatt, High Pulse: .8 \* VBatt to 15 Volts.

\*\*\*\* High pulse count rates can impact battery life. AA battery powered sensors are recommended if counting pulses faster than 1x per second.

\*\*\*\*\* Input pulse rate must be less than specified Max Pulse Rate and input pulse width must be greater than specified Min Pulse Width to ensure the input pulse is counted.

## Caution/Notice:

This product is designed for application in an ordinary environment (normal room temperature, humidity and atmospheric pressure). Do not use this sensor 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 this product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality of this product.

