

Monnit Industrial

Wireless Pulse Counter - 1 Input

Technical Overview

General Description

Monnit's industrial wireless pulse counter can be integrated with a system (water meter, power meter, etc.) that provides an output pulse to count the number of actuations within a given 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

Monnit's industrial 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 filter settings (no filter, 4 Hz filter, or 40 Hz filter). Each filter is capable of filtering non periodic noise/ bounce based on the pulse width. For example, the 4Hz filter will count a pulse if the pulse width is longer than 250 ms, if the pulse width is shorter than 250 ms it may be filtered and not counted (see the technical specification table for more 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.

Solar Power Option

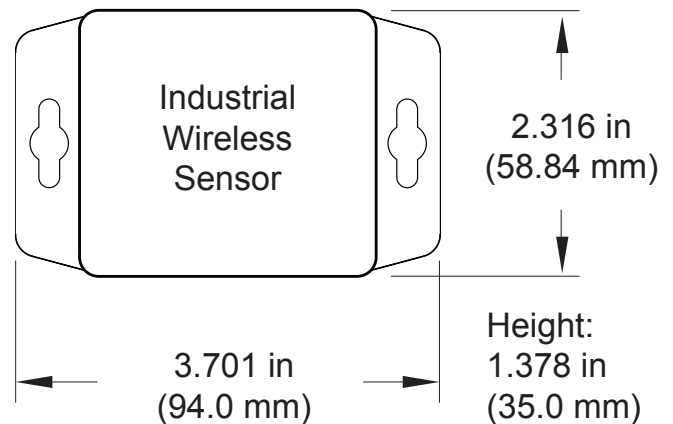
Monnit Industrial Sensors are powered by a replaceable 3.6 V battery (included). An optional solar powered version is also available. The solar powered sensor uses a Lithium Iron Phosphate rechargeable battery in conjunction with a solar power cell, extending the life of the battery.



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° to 85°C (-40° to 185°F)
- Transmission Range: 300 - 350 ft. non-line-of-sight*
- Battery Life: at 1 hour heartbeat setting, battery will last ~ 4-5 years.**

* Actual range may vary depending on environment.
** Battery life is determined by sensor reporting frequency and other variables.



Applications

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

The Leader in Low Cost Wireless Sensors

Technical Specifications

Supply Voltage	2.0 - 3.6 VDC *
Current Consumption	0.7 μ 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 Coin Cell)	-7°C to +60°C (20°F to +140°F)**
Optimal Battery Temperature Range (Coin Cell)	+10°C to +50°C (+50°F to +122°F)
Enclosure Rating	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).



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		(Positive Edge)	(Negative Edge)
	No Filter	~1.2 KHz / 800 us	~1.2 KHz / 800 us
	4 Hz Filter	~5 Hz / 200 ms	~34 Hz / 29 ms
	40 Hz Filter	~50 Hz / 20 ms	~280 Hz / 3.6 ms

Pulse Width With Active Input Positive Edge (active input only affects the positive edge). See figures 1 and 2 below.

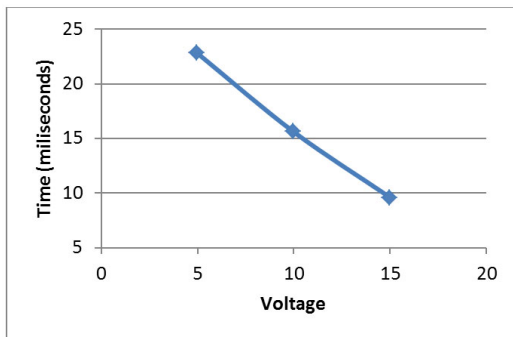


Figure 1 - 4 Hz Filter on Positive Edge with Active Voltage Input

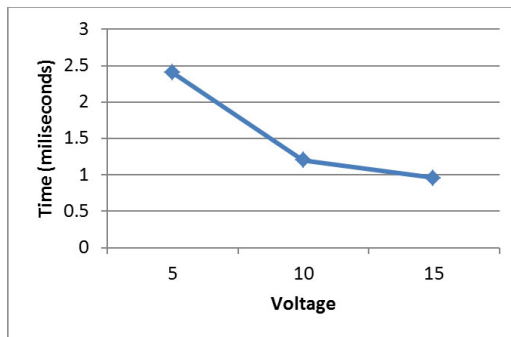


Figure 2 - 40 Hz Filter on Positive Edge with Active Voltage Input

- * Hardware cannot 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.
- *** High pulse count rates can impact battery life. AA battery powered sensors are recommended if counting pulses faster than 1x per second.

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, ice, splashing water, and hose directed water).



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.

Monnit Corporation
4403 South 500 West
Murray, UT 84123
801-561-5555
www.monnit.com