MONNIT®

The Leader in Low-Cost, Remote Monitoring Solutions

Wireless Pulse Counter - 4 Input

General Description

The multi input wireless pulse counter can be integrated with a water or power meter that provides a pulse output to count the number of actuations occurring within a given time frame. This sensor supports up to four simultaneous inputs.

- Counts the number of pulses in given time frame. (User can set to aggregate pulses, or report each pulse as an individual event.)
- 3 ft. leaded wires
- Support up to four separate inputs
- Can integrate with switch and closure mechanisms

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 multi input wireless pulse counter is an electronic counter that counts how many times a pulse is detected on the input wires when there is contact between the wired end points. The pulse counter is by default, set-up to operate with signals that are less than 10Hz. Through software it can be changed to a maximum of 20Hz. It can easily be integrated into existing mechanical switches or contact plates. The sensor can be set to send an alert through the iMonnit Online Sensor Monitoring and Notification System when a given number of pulses has 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.

Example Applications

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

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
    Industrial >   4-8 years

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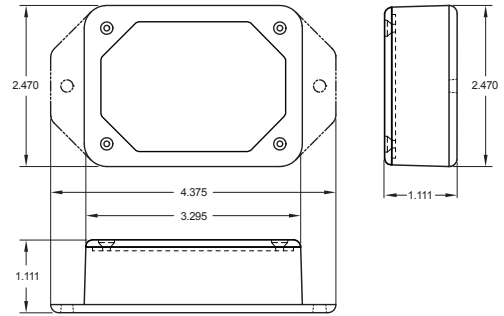** Battery life is determined by sensor reporting frequency and other variables.

Sensor Types & Options

Wireless Pulse Counter - 4 Input (AA)

Technical Specifications

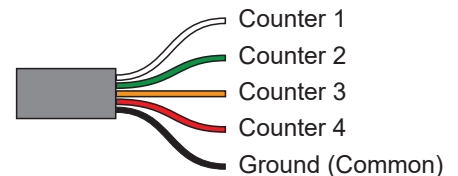|	
Supply Voltage	2.0 - 3.6 VDC (3.0 - 3.6 VDC Using Power Supply) *
Current Consumption	0.7 µA (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range (Board Circuitry and Batteries)	-18°C to 55°C (0°F to 130°F) using alkaline -40°C to 85°C (-40°F to 185°F) using lithium **
Weight	3.7 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).

*   Hardware cannot 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.

Pulse Counter Specifications

Number of Inputs / Counters	4
Counter Bit Depth	16 bit
Detection Wires	High Impedance (5-Wire)
Counter Operation	Positive and / or Negative Edge Pulses
Transition Counting	Does Not Count Transitions
Compatibility	Open Collector NPN Switches, Mechanical Switches
Transactions per Counter Input	65,000 Max / Heartbeat (Transmission)
Max Input Pulse Rate	20 Hz (20 / second) (4 or less / second recommended) ***
Lead Wire Length	3 ft. (36 in.)

***   High pulse count rates can severely impact battery life.

Wire Connections

When connecting the wires of the pulse counter to your devices, black needs to be connected to the device ground. (ex. red & black, orange & black etc.)
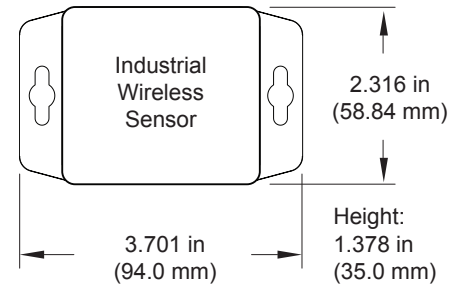

Power Options

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 use 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 Pulse Counter - 4 Input (Industrial)

Industrial Wireless Sensor

2.316 in (58.84 mm)

3.701 in (94.0 mm)

Height: 1.378 in (35.0 mm)

Technical Specifications

Supply Voltage		2.0 - 3.6 VDC *
Current Consumption		0.7 µA (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)		
Included Battery	Max Temperature Range:	-40°C to +85°C (-40°F to +185°F) **
	Capacity:	1500 mAh
Optional Solar Feature	Solar Panel:	5VDC / 30mA (53mm x 30mm)
	Charging Temperature Range:	0° to 45°C (32° to 113°F)
	Max Temperature Range:	-20° to 60°C (-4° to 140°F)
	Included Rechargeable Battery:	600 mAh / >2000 Charge Cycles (80% of initial capacity)
	Charging efficiency	5% ***
	Luminous sustainability	Minimum of 10,000 LUX ***
Enclosure Rating		NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed & weather proof
UL Rating		UL Listed to UL508-4x specifications (File E194432)
Weight		5.7 oz.
Wireless Range		250 - 300 ft. (Indoors / Through walls, ceilings & floors) Range may vary according to environmental variables.
Certifications FC CE Industry Canada		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.
**   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.

Pulse Counter Specifications

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Number of Inputs / Counters	4
Counter Bit Depth	16 bit
Detection Wires	High Impedance (5-Wire)
Counter Operation	Positive and / or Negative Edge Pulses
Transition Counting	Does Not Count Transitions
Compatibility	Open Collector NPN Switches, Mechanical Switches
Transactions per Counter Input	65,000 Max / Heartbeat (Transmission)
Max Input Pulse Rate	20 Hz (20 / second) (4 or less / second recommended) ***
Lead Wire Length	3 ft. (36 in.)

***   High pulse count rates can severely impact battery life.

Wire Connections Diagram and Solar Power Options on next page >>>

Wire Connections

When connecting the wires of the pulse counter to your devices, black needs to be connected to the device ground. (ex. red & black, orange & black etc.)

Counter 1
Counter 2
Counter 3
Counter 4
Ground (Common)
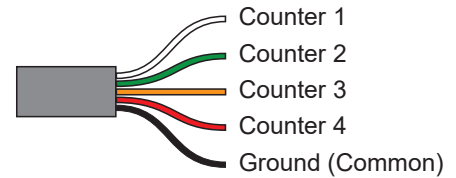
Solar Power Option

Monnit Industrial Sensors are powered by a replaceable 3.6V Lithium 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 to extend battery life.

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

MONNIT®

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.

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