

## Wireless 0-20 mA Current Meter

### General Description

The Wireless 0-20 mA Current Meter is capable of measuring the current off another device or sensor up to 20mA VDC.

### Features

- Measures current up to 20 mA.



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

By connecting the leads on the Monnit Wireless 0-20 mA Current Meter to the positive and ground terminals of another device, the sensor can measure the current and send data to the iMonnit Online Sensor Monitoring and Notification System. The data is stored in the online system and can be reviewed and exported as a data sheet or graph. Notifications can be set up through the online system to alert the user when certain thresholds have been met or exceeded.

### Example Applications

- Current transducers.
- pH sensors.
- Dissolved oxygen sensors
- Pressure sensors.
- Magnetic flow sensors.

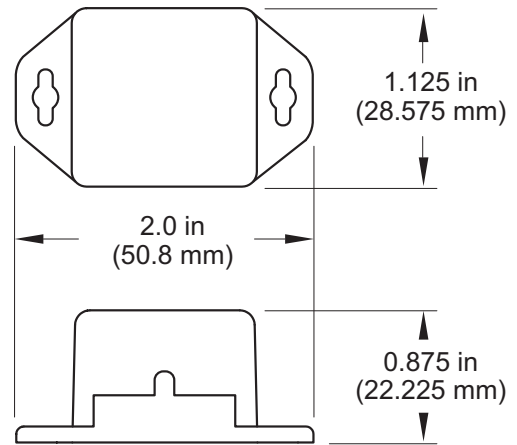
And many more...

### 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 and solar (Industrial only) options are available.
- Battery Life (at 1 hour heartbeat setting): \*\*
  - Coin Cell > 2-3 years.
  - 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.



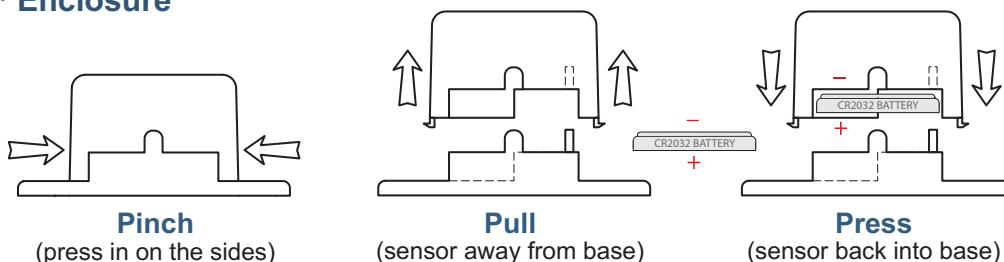
### Wireless 0-20 mA Current Meter (Coin Cell) - Technical Specifications

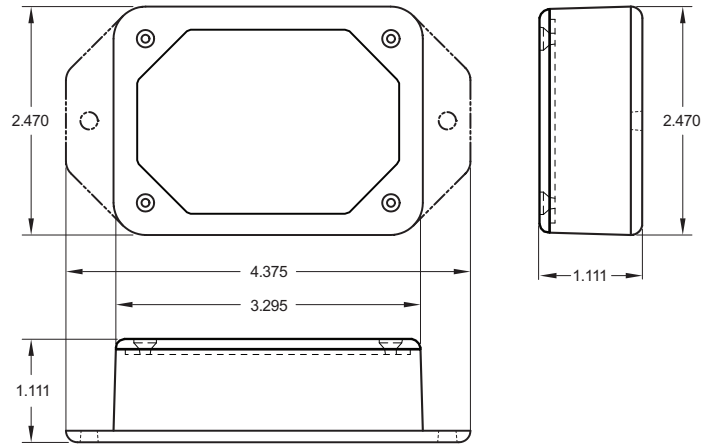
Supply Voltage	2.0 - 3.6 VDC *
Current Consumption	0.7 $\mu$ A (sleep mode after measurement) 6 $\mu$ A (accelerometer listening for vibrations) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range (Board Circuitry and Coin Cell)	-7°C to +60°C (20°F to +140°F) **
Optimal Battery Temperature Range (Coin Cell)	+10°C to +50°C (+50°F to +122°F)
Sensor Resolution	~ 0.01 mA (11-bit single ended)
Accuracy	Uncalibrated: 0.7mA, 0.35mA typical Caibrated: 0.05mA
Conversion Time	228 $\mu$ s
Full Scale Current	0 - 20 mA ***
Input Resistance	51 ohms
Weight	0.7 oz
Wireless Range	250 - 300 ft. (Through walls, ceilings and 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.
- \*\*\* If application exceeds 20 mA the sensor will return a maximum reading of 20 mA. If current applied to measurement port exceeds 30 mA, circuit protection and conditioning is required.

### PinchPower™ Enclosure





## Wireless 0-20 mA Current Meter (AA) - Technical Specifications

Supply Voltage	2.0 - 3.6 VDC *
Current Consumption	0.7 $\mu$ A (sleep mode after measurement) 6 $\mu$ A (accelerometer listening for vibrations) 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 60°C (-40°F to 140°F) using lithium **
Optimal Battery Temperature Range (AA)	+10°C to +50°C (+50°F to +122°F)
Sensor Resolution	~ 0.01 mA (11-bit single ended)
Accuracy	Uncalibrated: 0.7mA, 0.35mA typical Caibrated: 0.05mA
Conversion Time	228 $\mu$ s
Full Scale Current	0 - 20 mA ***
Input Resistance	51 ohms
Weight	3.7 oz.
Wireless Range	250 - 300 ft. (Through walls, ceilings and 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.

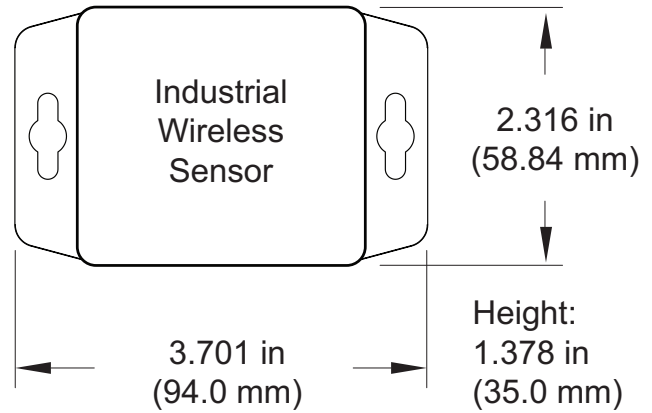
\*\* At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

\*\*\* If application exceeds 20 mA the sensor will return a maximum reading of 20 mA. If current applied to measurement port exceeds 30 mA, circuit protection and conditioning is required.

### 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 0-20 mA Current Meter (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 Battery)		
Included Battery	Max Temperature Range:	-40°C to +85°C (-40°F to +185°F) **
	Capacity:	1800 mAh
Optional Solar Feature	Solar Panel:	5VDC / 30mA (53mm x 30mm)
	Charging Temperature Range:	0°C to 45°C (32°F to 113°F)
	Max Temperature Range:	-20°C to 60°C (-4°F to 140°F)
	Included Rechargeable Battery:	600 mAh / >2000 Charge Cycles (80% of initial capacity)
Sensor Resolution	~ 0.01 mA (11-bit single ended)	
Accuracy	Uncalibrated: 0.7mA, 0.35mA typical Caibrated: 0.05mA	
Conversion Time	228 $\mu$ s	
Full Scale Current	0 - 20 mA ***	
Input Resistance	51 ohms	
Enclosure Rating	NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof	
UL Rating	UL Listed to UL508-4x specifications (File E194432)	
Weight	4.7 oz	
Wireless Range	250 - 300 ft. (Through walls, ceilings and 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.

\*\*\* If application exceeds 20 mA the sensor will return a maximum reading of 20 mA. If current applied to measurement port exceeds 30 mA, circuit protection and conditioning is required.



### 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

