

Wireless 0-1 mA Current Meter

General Description

The Wireless 0-1 mA DC Current Meter is designed to work with the Flex-Core MCT5 current transducer that converts 5 Amps AC into a DC signal up to 1 mA.

(Additionally a current transformer (CT) can be used to interface the MCT5 to higher amperage systems.)

- Measures current up to 1 mA DC



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 of the Monnit wireless 0-1 mA current meter to the output of the Flex-Core MCT5 current transducer, the sensor wirelessly transmits data through a Monnit Gateway to the iMonnit Online Sensor Monitoring and Notification System. The sensors data is transformed back to the original current reading and stored in the online system where it 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 (AA version) and solar (Industrial version) options available
- Battery Life (at 1 hour heartbeat setting) **
 - AA battery > 4-8 years
 - Coin Cell > 2-3 years.
 - Industrial > 4-8 years

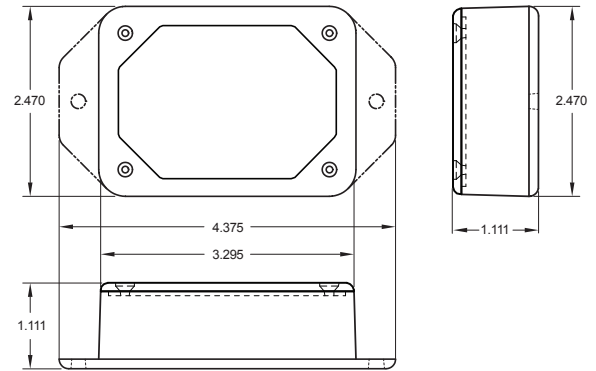
* Actual range may vary depending on environment.

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

Sensor Types & Options

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Wireless 0-1 mA Current Meter (AA)



Technical Specifications

Supply Voltage	2.0 - 3.6 VDC (3.0 - 3.6 VDC Using Power Supply) *
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 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 **
Optimal Battery Temperature Range (AA)	+10°C to +50°C (+50°F to +122°F)
Sensor Resolution	11-bit single ended 0-1 mA Input ~ 0.5 μ A 0-5 Amp Input ~ 2.5 mA 200 Amp CT Input ~ 10 mA
Conversion Time	228 μ s
Full Scale Current	0 - 1 mA ***
Input Resistance	1.2 kohms
Weight	4.0 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.

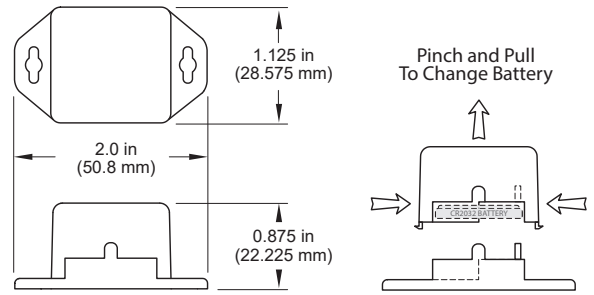
*** If application exceeds 1 mA the sensor will return a maximum reading of 1 mA.
If current applied to measurement port exceeds 2 mA, circuit protection and conditioning is required.

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 utilize 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 0-1 mA Current Meter (Coin Cell)



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)
Sensor Resolution	11-bit single ended 0-1 mA Input ~ 0.5 μ A 0-5 Amp Input ~ 2.5 mA 200 Amp CT Input ~ 10 mA
Conversion Time	228 μ s
Full Scale Current	0 - 1 mA ***
Input Resistance	1.2 kohms
Weight	1.0 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).



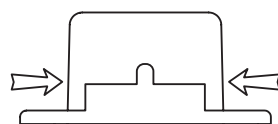
- * Hardware cannot withstand negative voltage. Please take care when connecting a power device.
- ** At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.
- *** If application exceeds 1 mA the sensor will return a maximum reading of 1 mA.
If current applied to measurement port exceeds 2 mA, circuit protection and conditioning is required.

Power Options

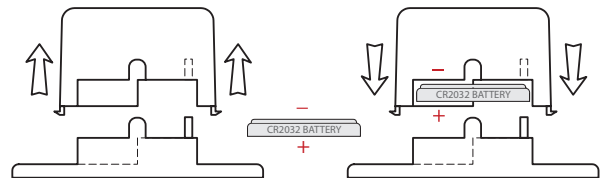
Sensors are powered by a replaceable 3.0 V coin cell battery. Optional AA battery powered sensors are available. The AA version of these sensors are larger in size (3" [L] x 2.1" [W] x 1.2" [H]) and include two long-life AA batteries.

It is recommended that unless you are using the AA battery solution, you set heartbeat to no faster than one hour to preserve battery life.

PinchPower™ Enclosure



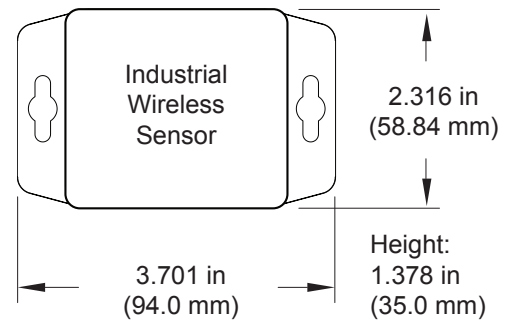
Pinch
(press in on the sides)




Pull
(sensor away from base)

Press
(sensor back into base)

Wireless 0-1 mA Current Meter (Industrial)



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 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 ****
Sensor Resolution	0-1 mA Input 0-5 Amp Input 200 Amp CT Input	11-bit single ended ~ 0.5 μ A ~ 2.5 mA ~ 10 mA
Conversion Time	228 μ s	
Full Scale Current	0 - 1 mA ***	
Input Resistance	1.2 kohms	
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	5.0 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.

*** If application exceeds 1 mA the sensor will return a maximum reading of 1 mA. If current applied to measurement port exceeds 2 mA, circuit protection and conditioning is required.

**** Solar Feature is only chargeable outside on full sunlight.

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



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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