



WECM01-020-1 Series



- Wireless range of 1,000+ feet through 12-14 walls
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life (10+ years on AA batteries)
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Onboard data memory / storage (up to 512 readings per sensor) 10 min heartbeats = 3.5 days 2 hour heartbeats = 42 days
- Over-the-air updates (future proof)

DESCRIPTION

The WECM01-020-1 is a current meter manufactured for simple measurements on a variety of applications. This system can use Phoenix Sensors various sensors to supply the appropriate solution for industrial, consumer, and commercial applications.

Simply setup the Phoenix Sensors back-end Online and Mobile application from our website and connect to the device. The sensor can measure the relative humidity in a given area. The battery version will last up to 10 years on average. Please contact us for Custom design availability.

The Mobile Software enables the user to store data to the cloud for evaluate later. The output of this information will be in a data sheet or graph. You can also export your readings onto your device.

APPLICATIONS

- Current Transducer Measurements
- pH Sensor Measurements
- Dissolved Oxygen Sensor Measuring
- Pressure Sensor Monitoring
- Magnetic Flow Sensor Monitoring
- And many more...

Maximum Environmental Ratings

Operating Temperature -18°C to 55 °C (alkaline)
 -40°C to 85°C (lithium)

Optimal Battery Temperature..... 10 °C to 50 °C

WECM01-020-1 Operational Characteristics

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.

PARAMETER	UNIT	INFORMATION	NOTE
Supply Voltage	v	2.0 - 3.8 VDC (3.0 - 3.8 VDC Using Power Supply)	Cannot withstand negative voltage
Current Consumption	uA	0.2 uA (Sleep Mode) 0.7 uA (RTC Sleep) 570 uA (MCU Idle) 2.5 mA (MCU Active) 5.5 mA (Radio RX Mode) 22.6 mA (Radio TX Mode)	
Security		Encrypt-RF™ (256-bit key exchange and AES-128 CTR)	
Wireless Range	Feet	1000+ feet	
Integrated Memory		Up to 512 sensor messages	
Conversion Time	µs	228 µs	
Full Scale Current	mA	0 - 20 mA	
Input Resistance	ohms	51 ohms	
Sensor Resolution	mA	~ 0.01 mA (11-bit single ended)	
Accuracy	mA	Uncalibrated: 0.7mA, 0.35mA typical Calibrated: 0.05mA	
Operating Temperature Range (Circuitry/Batteries)	Celsius	-18°C to 55°C (0°F to 130°F) using alkaline -40°C to 85°C (-40°F to 185°F) using lithium	Temps above 100°C cause board to lose memory
Optimal Temperature Range AA Battery)	Celsius	+10°C to +50°C (+50°F to +122°F)	

Application Information

Temperature

It is important you don't use this sensor outside of the normal temperature range. Doing so could cause the sensor to eventually fail. It is ideal to keep the temperature of the batteries anywhere from 10°C to 50 °C. The operating temperature range depends on if alkaline or lithium batteries are used (precise temperatures above). This is a large temperature range and will make sure it fits your needs.

Accuracy

The readings from this sensor are slightly different when calibrated and uncalibrated. When uncalibrated, the sensor can be off 0.7mA, but 0.35mA is average. However, once the sensor is calibrated, it is only off by 0.05mA. This ensures that your readings are accurate and correct.

Range

This current meter can reach a connection of 1000+ feet. The connection can also go through approximately 12-14 walls. This ensures that this sensor will be a solid solution to most applications.

Media

While it is not water-proof, this should not be an issue due to the fact that most applications are measuring the current indoors. If measuring the current outdoors, an industrial version is available that is dust-proof and also water-proof.

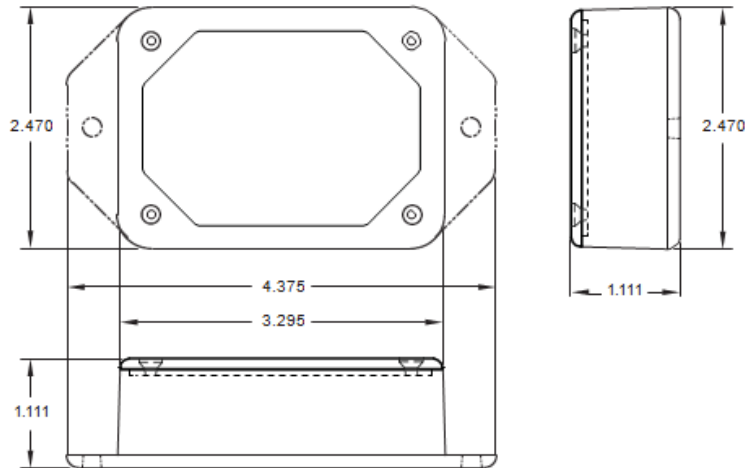
Full Scale Current

This current meter can measure currents from 0 mA to 20mA. If the application exceeds 20mA the sensor will return a maximum reading of 20 mA. If the current applied to measurement port exceeds 30 mA, circuit protection and conditioning is required.

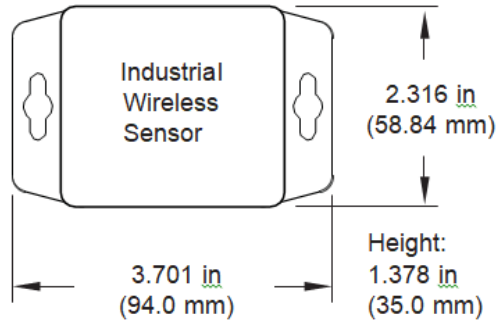
Important to Know

Using this sensor under extreme conditions will accelerate aging. Do not use this sensor for the following applications, as they can cause this sensor to fail: corrosive gas or deoxidizing gas, 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, or places with excessively strong vibrations.

Mechanical Dimensions (inches)

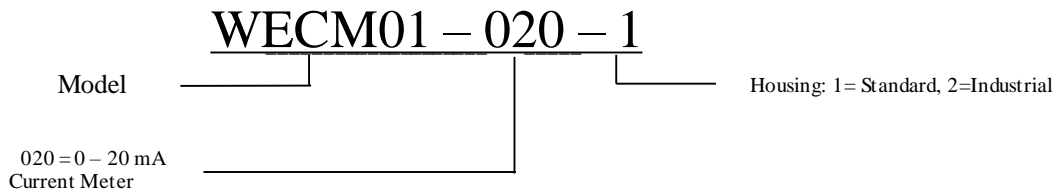


Pic. 1 - Standard Housing IP55



Pic. 2 - Industrial Housing IP65

Part Number Configuration



Ph: (480) 462 1810 sales@PhoenixSensors.com

Notice:

Phoenix Sensors LLC reserves the right to make changes to the product contained in this publication. Phoenix Sensors LLC assumes no responsibility for the use of any circuits described herein, conveys no license under any patent or other right, and makes no representation that the circuits are free of patent infringement. While the information in this publication has been checked, no responsibility, however, is assumed for inaccuracies.

Phoenix Sensors LLC does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of a life-support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications.