

# Monnit

## Wireless Carbon Monoxide (CO) Sensor



### Technical Overview

#### General Description

The Wireless Carbon Monoxide (CO) sensor allows you to monitor the level of carbon monoxide (CO) gas in the surrounding air.

Monnit wireless CO sensors have a small footprint and low cost but boast industry standard setting, premium performance specifications and are the longest lifetime sensors in the industry (powered by a coin cell battery and last over a year at 1 hour heartbeat).

#### Features

- Measures CO levels in surrounding air.
- 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 Wireless Carbon Monoxide (CO) Sensor measures the amount of CO gas in the surrounding air. The sensor returns carbon monoxide level and temperature values to the iMonnit Online Sensor Monitoring and Notification System. The system stores both data points in the online system where the data 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 defined CO levels have been met or exceeded.

#### 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.

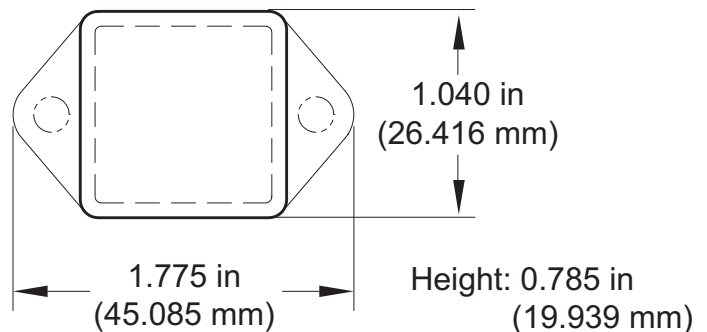
It is recommended that unless you are using the AA battery solution, you set heartbeat to no faster than one hour to preserve battery life.

#### Monnit Sensors Core Specifications

- Power: Replaceable 3.0 V coin cell battery
- Communication: RF 900, 920, 868 and 433 MHz
- Dimensions: 1.775" x 1.040" x 0.785"
- Antenna: 4" wire antenna
- Operating Temperature: -7° to 50°C (20° to 122°F)
- Device Range: 250 - 300 ft. non-line-of-sight\*
- Battery Life: At 1 hour heartbeat setting, coin cell battery will last ~ 1 year.\*\*

\* Actual range may vary depending on environment.

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




#### Example Applications

Monitor flame-fueled devices such as;

- Gas ranges and ovens
- Gas clothes dryers
- Furnaces
- Fireplaces
- Grills
- Space heaters
- Vehicles
- Water heaters

**The Leader in Low Cost Wireless Sensors**

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 Coin Cell)	-7°C to +50°C ( 20°F to +122°F )**
Optimal Battery Temperature Range (Coin Cell)	+10°C to +35°C ( +50°F to +95°F )
Operating Pressure Range	$\pm$ 0.2 atm (recommended)
Operating Humidity Range	15 to 85% RH
Measuring Range	0-500 PPM
Maximum Overload	1500 PPM
Measuring Principle	Electrochemical Oxidation of CO
Resolution	$\pm$ 0.5 PPM
Response Time (t-90)	< 30 seconds typical at 20°C
Stabilization Time	< 30 seconds
Long Term Drift – Zero	Zero Signal $\leq$ $\pm$ 2 PPM / month
Long Term Drift – Span	Output Signal $\leq$ $\pm$ 2% of reading per month
Maximum Zero Shift	< 8 ppm equivalent (-20°C to +40°C)
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 can not withstand negative voltage. Please take care when powering device.

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

### Caution/Notice:

This product is designed for application in an ordinary environment (normal room temperature, humidity and atmospheric pressure). Do not use this sensor 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 this product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality of this product.

**MONNIT**<sup>®</sup>