EN1245 Family Wireless CO Detector
Installation Instructions

1 Overview

The wireless CO detector features an onboard sounder, a CO sensor, LED indicators and local test capability to allow the user total visibility of its functionality. It is self-monitoring, alerting the user when sensor maintenance is needed or batteries are low and automatically supervising the radio link.

The wireless CO detector is available in the following configurations:

Part #	Check-In	Location
EN1245	3 minutes	North America
EN1245-60	60 minutes	North America
EN1245A	3 minutes	Australia
EN1245Z	3 minutes	New Zealand

The wireless CO detector is intended for open area protection and for connection to a compatible control unit for operation as part of a household fire alarm system (UL985).

Note: For UL 2560 installations, refer to the *EN6080 Area Control Gateway Installation Instructions*.

1.1 Maximum Number of Repeaters for a UL 2560 Installation

To achieve the 99.99% alarm message reliability required for UL 2560 compliance, system installations must operate within the following limits for end device and repeater counts.

End Devices	Maximum Repeaters
150	397
250	386
350	375
500	360
1000	313
2000	238
3000	184

1.2 Inovonics Contact Information
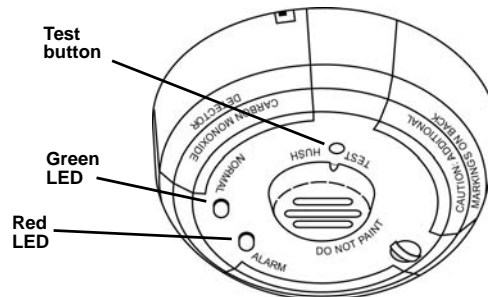
For product and installation videos visit us at www.inovonics.com/videos or use the QR code below.

If you have any problems with this procedure, contact Inovonics technical services:

- E-mail: support@inovonics.com.
- Phone: (800) 782-2709; (303) 939-9336.

1.3 Wireless CO Detector External Components

Figure 1 Wireless CO detector external components

Device Indicators

	Green LED	Red LED	Sounder
Normal (standby)	Blinks every 10 seconds	Off	Off
Alarm/test	Off	Blinks every one second	Temporal 4 pattern: Four short beeps followed by a five second pause. If conditions return to normal, the detector self-restores out of alarm.
Low battery	Off	Blinks every 45 seconds for 37 days	Chirps every 45 seconds beginning seven days after the LED begins blinking; continues for 30 days
Detector trouble	Off	Blinks every five seconds	Chirps every 45 seconds
Detector end-of-life	Off	Blinks every 10 seconds	Chirps every 45 seconds
Power up	LED blinks every ten seconds for a total of four times	LED blinks every ten seconds for a total of four times	Off

1.4 What's In The Carton

- One 3V-Lithium battery, installed.
- Two drywall anchors.
- Two mounting screws.

2 Installation and Startup

2.1 Installation Notes

- These products are designed to be maintained by professional security technicians.
- Products are tested for indoor use.
- All products should be manually tested semi-annually.

2.2 Activate the Battery

1. Twist the detector counterclockwise and lift it off of the mounting base.
2. Remove the tag in the battery compartment to connect the battery.
3. Ensure the battery is seated.

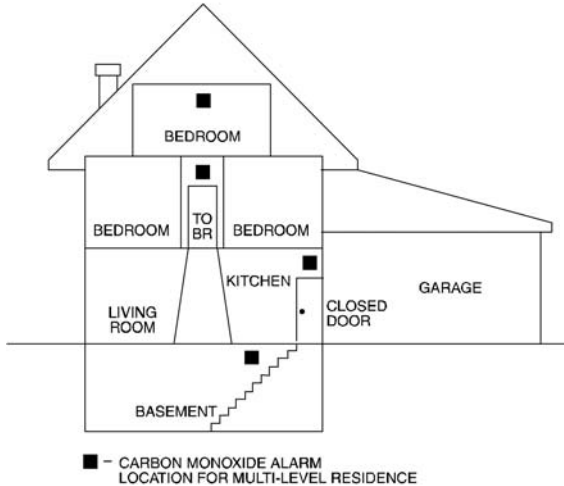## 2.3 Register the Wireless CO Detector

The wireless CO detector must be registered to function in your EchoStream system. Transmitters must be registered with the system in order to be monitored and supervised. EN1245, EN1245A and EN1245Z wireless CO detectors send a check-in message every three minutes; EN1245-60 wireless CO detectors send a check-in message every 60 minutes.

Note: For UL 2560 installations, transmitters must have a minimum check-in time of 60 minutes.

Refer to your receiver, network coordinator or control panel manual for registration instructions. Inovonics recommends all EchoStream transmitters be supervised.

4. When prompted to register the device, remove and reinstall the battery per section 6.1, "Replace the Battery" on page 4.

2.4 Mount the Wireless CO Detector.

Figure 2 CO detector placement in multi-level residence

Choose a location for the wireless CO detector, paying attention to the following guidelines.
Do install:

- Within 10 feet of all sleeping areas.
- On every floor of the building.
- In every room that contains a fuel-burning appliance.

Note: If the room with a fuel-burning appliance is not normally used, such as a boiler room, the detector should be placed just outside the room so that the alarm can be more easily heard.

Warning: In order to comply with FCC RF exposure requirements, a 3.94" (10 cm) distance must be maintained between all persons and the wireless CO detector.

Do not install:

- Within 10 feet of any cooking appliance.
- Directly above a sink, cooker, stove or oven.
- Next to a door or window that would be affected by drafts.
- Near an extractor fan or air vent.
- Outside.
- In any environment that does not comply with the detector's environmental specifications.
- In or below a cupboard.
- Where air flow would be obstructed by curtains or furniture.
- Where dirt or dust could collect and block the sensor.
- Where the detector could be knocked, damaged, or inadvertently removed.

- To removable ceiling panels. Attach the detector across panel support as shown in Figure 3.
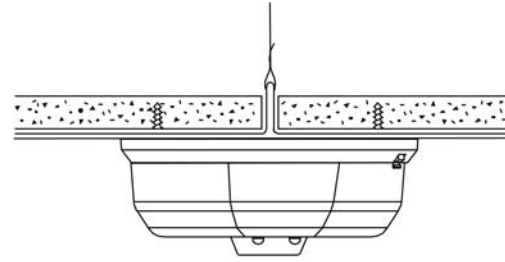
Figure 3 Mount the CO detector across ceiling panel support

Caution: Airborne dust particles can enter the detector. Inovonics recommends removing CO detectors before beginning construction or any other dust-producing activity. Carbon monoxide detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

5. Referring to figure 4, use the included mounting screws and dry wall anchors to mount the wireless CO detector.
6. Referring to figure 4, fit the detector inside the base by aligning it such that the detector's alignment notch is slightly offset from mounting base's tamper release tab.
7. Turn the detector in a clockwise direction until it clicks into place.
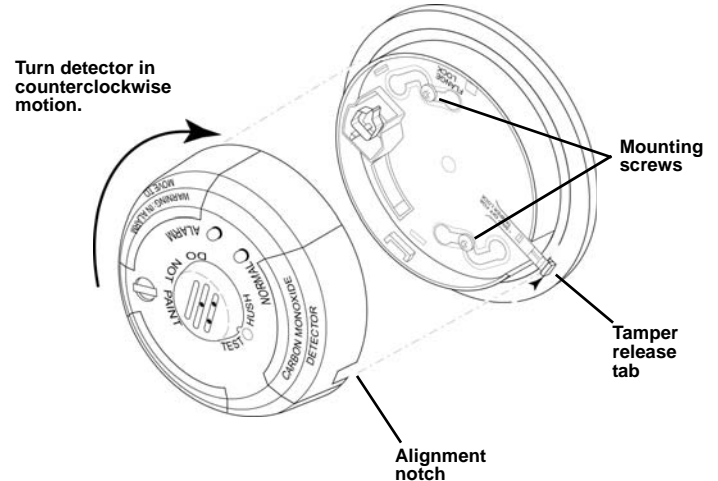
Figure 4 Mounting the wireless CO detector

8. Refer to section 3, "Test the Wireless CO Detector" to test the wireless CO detector.

## 3 Test the Wireless CO Detector

There are two ways to test the wireless CO detector sensor: The system test and CO test. Both tests should be performed at least semi-annually per NFPA 720.

The wireless CO detector should also be tested after initial registration, as well as each time the battery is replaced.

Caution: Performing a system or a CO test will transmit an alarm signal.

3.1 System Test

1. Use a small screwdriver or Allen key with maximum diameter of 0.18" to push and hold the recessed test button for a minimum of five seconds before releasing.
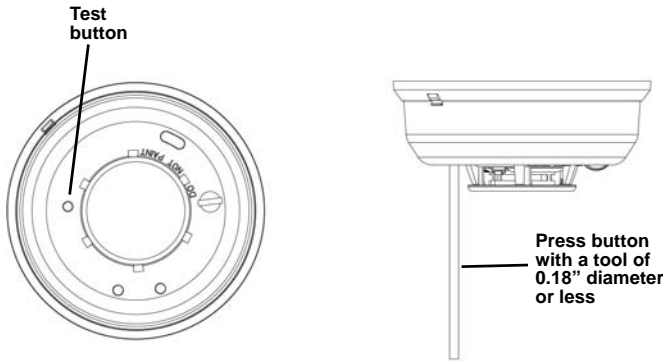
Figure 5 Press and hold the recessed test button

2. Ensure the sounder activates, the red LED lights briefly, and the control panel, serial receiver or network coordinator receives a test signal, followed a few seconds later by a restoral.

3.2 CO Test

1. Use a small screwdriver or Allen key with maximum diameter of 0.18" to push and hold the recessed test button for one to four seconds.
   - The green LED should begin to blink rapidly to indicate the CO detector is in CO test mode.
2. Spray a small amount of CO agent, such as Solo C6 Carbon Monoxide Detector Tester Aerosol, within 1/4" of the gas entry ports.
3. Ensure the sounder activates, the red LED lights briefly, and the control panel, serial receiver or network coordinator receives an alarm, followed a few seconds later by a restoral.

4 Operation

4.1 Carbon Monoxide Gas and Detection

This CO detector is designed for indoor use only. Do not expose it to rain or moisture. Do not drop the detector or subject it to other physical shock. Do not open or tamper with the detector as this may cause it to malfunction. The detector will not protect against the risk of carbon monoxide poisoning if not properly installed.

Note: The detector will only indicate the presence of carbon monoxide gas in the vicinity of the detector itself. Carbon monoxide gas may be present in other areas.

This CO detector is not:

Designed to detect smoke, fire or any gas other than carbon monoxide

- A substitute for the proper servicing of fuel-burning appliances or the sweeping of chimneys.
- To be used on an intermittent basis, or as a portable alarm for the spillage of combustion products from fuel-burning appliances or chimneys.

Carbon monoxide gas is a highly poisonous gas which is released when fuels are burned. It is invisible, has no smell and is therefore impossible to detect with the human senses. Under normal conditions in a room where fuel burning appliances are well maintained and correctly ventilated, the amount of carbon monoxide released into the room by such appliances should not be dangerous.

4.2 Symptoms of Carbon Monoxide Poisoning

Carbon monoxide bonds to the hemoglobin in the blood and reduces the amount of oxygen being circulated in the body. The following symptoms are related to carbon monoxide poisoning and should be discussed with all people in the facility:

- Mild exposure: Slight headache, nausea, vomiting, fatigue (often described as flu-like symptoms).
- Medium exposure: Sever throbbing headache, drowsiness, confusion, fast heart rate.
- Extreme exposure: Unconsciousness, convulsions, cardio respiratory failure, death.

Many causes of reported carbon monoxide poisoning indicate that while victims are aware that they are not well, they become so disoriented that they are unable to save themselves by either exiting the building or calling for assistance.

Also, young children and pets may be the first to be affected.

4.3 Alarm Thresholds

Alarm thresholds are as follows:

Parts per million	Detector response time, min.
30 ± 3ppm	No alarm within 30 days
70 ± 5ppm	60-240
150 ± 5ppm	10-50
400 ± 10ppm	4-15

4.4 In the Case of an Alarm

Actuation of your CO alarm indicates the presence of carbon monoxide (CO), which can cause injury or death.

Individuals with medical problems may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 350ppm.

What to do if the carbon monoxide detector goes into alarm:

1. Push the test button. If the detector reactivates or the detector does not silence, continue with step 2.
2. Immediately move to fresh air, outdoors or by an open window. Check that all persons are accounted for.
3. Call your local fire department from a phone in an area where the air is safe. Do not reenter the premises nor move away from the open door/window until emergency service responders have arrived.
4. If your detector reactivates within a 24-hour period, repeat steps 1 through 3 and call a qualified appliance technician to investigate possible sources of CO from fuel burning equipment and appliances, and check for proper operation of this equipment. If problems are identified during this inspection, have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturer's instructions, or contact the manufacturers directly, for more information about CO safety and this equipment. Make sure that motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residence.

Caution: This detector should be tested and maintained regularly following National Fire Protection Association (NFPA) 720 requirements. This detector should be fully tested at least once per month.

4.5 CO Technology Limitations

The EN1245 uses an electrochemical CO sensing element, and therefore has certain performance limitations. The CO sensing element has a typical life of ten years from the date of manufacture, and while the product has a timer to create a trouble condition after ten years of operating, the date code of the product, rather than the timer, should determine when the product is replaced.

The CO sensing element has a carbon filter that provides resistance to false alarms caused by cross-interference gasses, but the filter can be saturated, and so the product should not be installed in locations where high concentrations of these gasses are present. Cross-interference gasses include, but are not limited to: Methane, Butane, Heptane, Ethyl Acetate, Isopropyl Alcohol, Carbon Dioxide, Ammonia, Ethanol, Toluene, Trichloroethane, and Acetone. Only a cloth moistened with water should be used to clean the EN1245 housing.

The movement of gases into the sensing element can be impaired if a sealant blocks the porous surface of the CO sensor. The EN1245 should not be exposed to aerosol products such as furniture polish, paint or varnish that can coat the CO sensing element and render it inoperative.

5 Maintenance

Occasionally clean the outside casing with a clean water-moistened cloth. Ensure that the holes on the front of the alarm are not blocked with dirt and dust. Do not paint, and do not use cleaning agents, bleach, or polish on the detector.

6 Detector Replacement

This detector is manufactured with a long-life carbon monoxide sensor. Over time the sensor will lose sensitivity, and will need to be replaced with a new carbon monoxide detector. This detector's lifespan is approximately ten years from the date of manufacture. The user should periodically check the detector's replacement date. Remove the detector from its base and check the replacement date label on the underside of the detector. The label indicates the date that the detector should be replaced.

Note: When the detector is removed from its base, a message is sent to the central station. If the system is armed, a tamper alarm message is sent; if disarmed, a trouble message is sent. The detector will also indicate a trouble condition when it has reached the end of its useful life. If this occurs, it is time to replace the detector.

Note: Before replacing the detector, notify your central station that maintenance is being performed and the system will be temporarily out of service. Disable the zone or system undergoing maintenance to prevent any unwanted alarms. Dispose of detector in accordance with any local regulations.

Caution: It should be noted that installation, operation, testing and maintenance of the CO detector is different than smoke detectors. Per NFPA 720 section 5.3.7.2 the detector shall not be connected to a zone that signals a fire condition (i.e. smoke detector zones). Therefore, the CO detector must be programmed as a non-fire zone. See the control panel's Installation Instructions for the appropriate carbon monoxide zone type to be programmed.

6.1 Replace the Battery

Caution: Never install a used or depleted battery, as this can result in unreliable operation. Only install new batteries.

To replace the battery:

1. Twist the wireless CO detector counterclockwise and remove it from the mountain base.
2. Remove the battery, properly disposing of it.
3. To ensure the proper power-down sequence, wait at least 20 seconds before installing the new battery.
4. Following the polarity diagram inside the battery compartment, install the new 3-volt CR123A lithium battery.
5. Reinstall the detector onto the mounting base, and turn it clockwise to lock it into place.
6. Ensure the green LED is blinking about once every 10 seconds to indicate normal operation.
7. Test the CO detector as described in section 3, "Test the Wireless CO Detector".

7 Television and Radio Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

8 FCC Part 15 and Industry Canada Compliance

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

9 Specifications

Dimensions: Detector: 5.3" x 2.3".

Weight: 8.5 oz. without battery.

Operating temperature: 32°F to 122°F (-0°C to 50°C).

Humidity: 15% to 95% non-condensing.

Battery: One 3V-lithium batteries. Panasonic CR123A is recommended.

Audible signal (temporal 4 tone): 85 dBA minimum at ten feet when in alarm.

Compatible receiver for UL 2560 installations with EN1245-60: EN6080.

Compatible repeater for UL 2560 installations with EN1245-60: EN5040-20T.

Note: The EN1245-60 is a supplemental device that can be installed in a UL 2560 certified system.

The EN1245 complies with: FCC Part 15 rules; NFPA 720; NFPA 72; Industry Canada certified; UL Listed to UL 2034 and UL 2075; compatible for usage in a UL 985 Household Fire Alarm System.

Note: Specifications and data are subject to change without notice.