



not power-up, check for correct battery installation and for a fully charged battery.

CONSTANT EXPOSURES TO HIGH OR LOW TEMPERATURES OR HIGH HUMIDITY MAY REDUCE BATTERY LIFE.

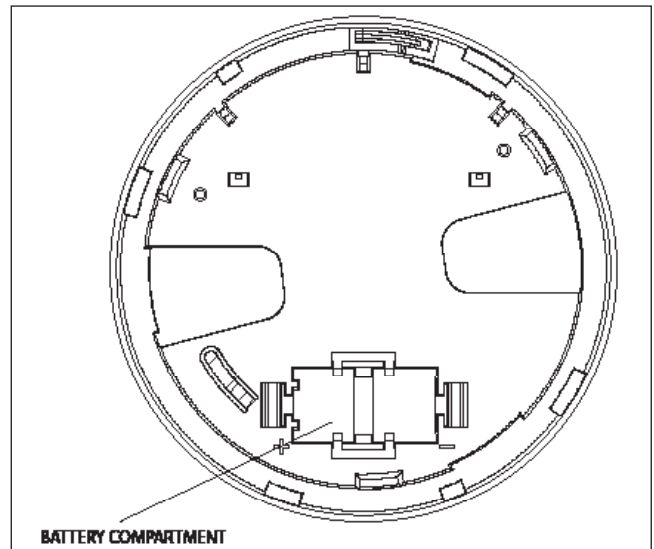
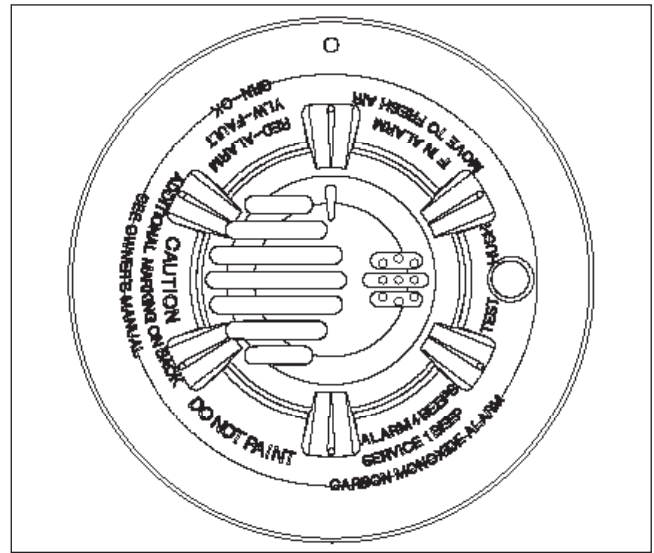


Fig 1. Wireless Carbon Monoxide Alarm

**PROGRAMMING**

Before testing the detector, the internal wireless transmitter must be programmed into the Control Panel.

1. Refer to the Control Panel's instructions to program the receiver with the CO detector's serial number (TX ID from the label).
2. Press the detector's TEST/HUSH button for 4 seconds. The detector will perform a sounder test, a sensitivity test, and send a test signal to the Control Panel.
3. Verify that the signal was received by the Control Panel.
4. Exit Control Panel programming before testing the CO detector.

**MOUNTING THE DETECTOR**

**Note:** These alarm devices should only be installed by a competent engineer.

First, determine the best location for the detector, one that provides proper carbon monoxide detection (see Figure 2 for suggested detection locations) .

**Proper Carbon Monoxide Detection Location**

Wall-mounted detectors should be positioned at least as high as a light switch, and at least six inches (15 cm) from the ceiling. In a ceiling location, the detector should be at least 12 inches (30 cm) from any wall.

Where to install, ideally:

- Within 10 feet (3 m) of a sleeping area
- Inside the bedroom if it contains a fuel burning appliance
- On every floor of the building
- Ideally, install in any room that contains a fuel burning appliance
- If the appliance or the room is not normally used, such as the boiler room, the detector should be placed just outside the room so the alarm can be heard more easily

Where NOT to install, ideally:

- Directly above a sink, cooker, stove or oven
- Do not locate detector within 5 feet (1.5 m) of any cooking appliance
- Next to a door or window that would be affected by drafts i.e. extractor fan or air vent
- Outside
- Do not install 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 it could be knocked, damaged, or inadvertently removed

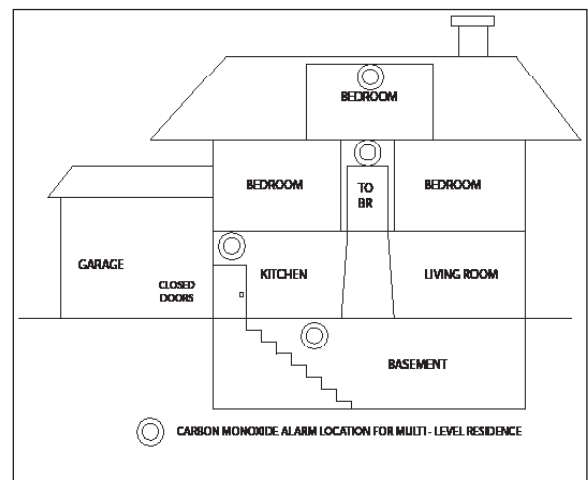


Fig 2. Detector Location Diagram

**Mounting Procedure**

Once a suitable location is found, mount the detector as follows:

1. Refer to the diagram overleaf and install the mounting base on the ceiling or on the wall (if local ordinances permit) using screw locations as required. Use the two screws and anchors provided. Maneuver the base so the screws are at the elbow of the screw slots and secure.
2. Fit the detector inside the base by aligning it over the base as shown (detector's alignment notch should be slightly offset from mounting base tamper release tab), then turn the detector in a clockwise direction until it clicks into place.
3. Test the detector after completing the installation (as described in the TESTING THE DETECTOR section of this manual) and refer to the control system's instructions for additional information concerning the use of wireless devices.



**Wireless Carbon Monoxide Alarm Installation Guide**

4002453

**Attention:** This manual should be read prior to use and retained for further information.

**GENERAL INFORMATION**

The Wireless Carbon Monoxide Alarm, part number 51000-001USA is a 3V battery powered wireless detector intended for use with wireless alarm systems.

The detector consists of an electrochemical carbon monoxide sensor assembly coupled to a wireless transmitter. The Wireless Carbon Monoxide Alarm communicates with the control panel and can send alarm, tamper and battery condition messages to the system's receiver. Refer to the wireless system's instruction for the maximum number of transmitters that can be supported.

**IMPORTANT:** This detector must be tested and maintained regularly following NFPA 720 requirements.

This device is designed to protect individuals from the acute effects of carbon monoxide exposure. It will not fully safeguard individuals with specific medical conditions. If in doubt consult a medical practitioner.



**WARNING**  
This product is intended for use in ordinary indoor residential areas. It is not designed to measure compliance with Occupational Safety & Health Administration (OSHA) commercial and industrial standards.

**Contents of box:**

- Wireless Carbon Monoxide Alarm with base
- Installation guide
- Pack of screws and fixings
- Stickers as appropriate
- 1 CR123A Panasonic battery

The Wireless Carbon Monoxide Alarm contains a sounder which generates the ANSI S3.41 temporal 4 pattern in an alarm condition (see Table 1 for temporal 4 pattern). In alarm, a message is also sent to the control panel and the detector's ID is displayed at the console. During an alarm condition, pressing the detector's hush button will silence the sounder for five minutes. The mounting base installation is simplified by the incorporation of features compatible for both drywall fasteners (not supplied) and other methods.

Tricoloured LED (green, yellow, red) and a sounder on the detector provide local visual and audible indication of the detector's status as listed in Table 1.

During initial power-up the LED blinks alternately green, yellow then red. It takes about 60 seconds for the detector's CO sensor to stabilize.

After power-up has completed and the detector is functioning normally, the green LED blinks once every 12 seconds.

Status	LEDs	Sounder (does not pulse the sounder and LED concurrently)	Radio signalling	Apollo Control Panel response
Normal	Green flash every 12 seconds	Off	Normal (None)	Normal (None)
Alarm/ Test	Red flash every 12 seconds	ANSI S3.41 temporal 4 (press button to hush for 5 minutes)	Alarm	On screen and audible Alarm (user code to silence)
Detector trouble	Yellow flash every 6 seconds	One 100ms chirp every 45 seconds	Fault	On Screen Alert shown (after 12 hours) "Device name -- Loss of Supervision
Low battery	Yellow flash every 12 seconds	One 100ms chirp every 45 seconds (press button to hush for 12 hours)	Low Battery	On screen Alert shown "Device name -- Battery low
Detector end of life	Yellow flash every 23 seconds	One 100ms chirp every 45 seconds	Fault	On Screen Alert shown (after 12 hours) "Device name -- Loss of Supervision
Power-up	Green, yellow, red flash sequence every 12 seconds	One 100ms chirp at end of power-up sequence	None	Normal (None)
Tamper	Green, yellow, red flash sequence every 12 seconds	Off	Tamper	On screen Alert shown "Device name -- Tamper

Table 1. Detector status and indication

**Detector Trouble:** When the sensor supervision is in trouble condition, the yellow LED blinks once every six seconds and there is a chirp every 45 seconds. After 12 hours the panel will display a loss of supervision message.

**Detector end of life feature:** When the detector has reached the end of its life, the yellow LED blinks once every 23 seconds and there is a chirp every 45 seconds. After 12 hours the panel will display a loss of supervision message. This indicates that the CO sensor inside the detector has passed the end of its life and the detector must be replaced. The detector lifespan is five years from the date of manufacture. Refer to DETECTOR REPLACEMENT section.

**Low Battery Detection:** The Wireless Carbon Monoxide Alarm is powered by a single 3-volt CR123A Panasonic Lithium battery (included). The detector regularly checks for a low battery. If a low battery is detected, the transmitter sends a low battery message to the control panel, which displays the detector's ID at low battery. In addition, the yellow LED of the detector will blink every 12 seconds. The detector's sounder will chirp every 45 seconds (yellow LED continues to blink) until the battery is replaced. Pressing the hush button will silence the chirps for 12 hours, if no other trouble conditions exist. The battery should be replaced WHEN the chirps begin. Be sure to replace the battery with a fresh one.

Unauthorized changes or modifications could void the user's authority to operate the equipment.

**BATTERY INSTALLATION AND REPLACEMENT**

To replace the battery:

1. Remove the detector from its mounting base by twisting the detector counter-clockwise. Remove and dispose of the battery according to your local regulations.
2. To ensure proper power-down sequence, wait a minimum of 20 seconds before installing new battery.
3. Install a new 3-volt CR123A Panasonic Lithium battery (available from your Panasonic dealer) in the battery compartment. Follow the polarity diagram inside the compartment. If the battery is incorrectly inserted please remove gently with a non-conductive tool and correctly reinsert.
4. Reinstall the detector onto the mounting base by turning the detector clockwise.
5. After the power-up sequence the green LED should blink about once every 12 seconds to indicate normal operation. If the battery is not installed correctly, the detector will not operate and the battery may be damaged. If the detector does

DO NOT attach the detector to removable ceiling panels.

**NOTE:** Two warning labels are provided in the detector box. Please stick one next to the CO detector and another near to a source of fresh air where members of the household will gather if alarm signal sounds.

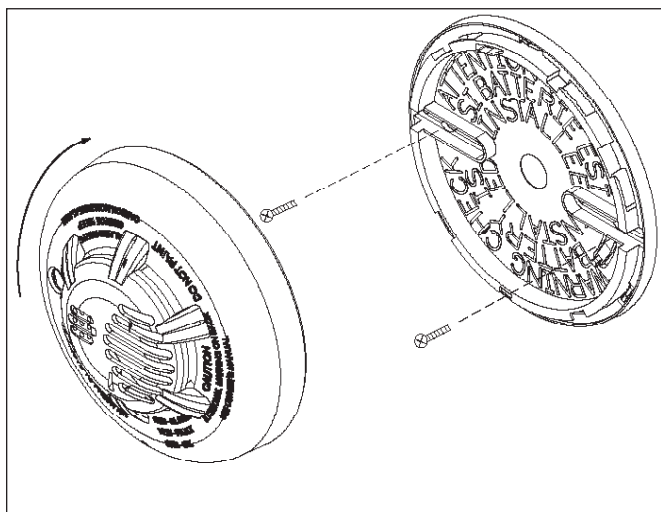


Fig 3. Mounting the detector

**CAUTION**

Airborne dust particles can enter the detector. Apollo recommends the removal of 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.

*Tamper Protection*

This detector has a built-in tamper switch that will cause a Tamper signal to be displayed at the console of the alarm system if it is removed from its mounting base.

The Wireless Carbon Monoxide Alarm includes a tamper resistant feature that prevents removal from the mounting base without the use of a tool. To engage the tamper resistant feature, cut the small plastic tab located on the mounting base and then install the detector. To remove the detector from the base once it has been made tamper resistant, use appropriate screwdriver to depress the square tamper release tab located on the skirt of the mounting base and turn the detector counterclockwise.

**TESTING THE DETECTOR**

**NOTE:** Before testing, notify the central station that the detector system is undergoing maintenance in order to prevent unwanted alarms. Testing the detector will activate an alarm and send a signal to the panel. Also, the test function cannot be used if the detector has a trouble or end-of-life condition.

Detectors must be tested after installation and following periodic maintenance.

**Testing Detector Operation**

This test checks the detector's sounder, LEDs, and transmitter.

1. The test button is located on the detector housing.
2. Push and hold the test button for a minimum of 5 seconds. The alarm panel will trigger and then the detector will go into alarm. The sounder begins the temporal 4 pattern and the red LED blinks. The alarm panel's keypad should display the detector's name in alarm.

**CAUTION: Carbon Monoxide Gas and its Detection**

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

**CAUTION:** This device will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.

This carbon monoxide alarming device is designed to detect carbon monoxide gas from ANY source of combustion. It is NOT designed to detect smoke, fire or other gases unless the product has been investigated and determined to comply with applicable requirements.

This device should not be installed as a substitute for proper installation, use, and maintenance of fuel burning appliances, including appropriate ventilation and exhaust systems.

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 appliances should not be dangerous.



Conditions that can result in transient CO situations:

1. Excessive spillage or reverse venting of fuel-burning appliances caused by
  - outdoor ambient conditions, such as wind direction and/or velocity, including high gusts of wind, and insufficient draft in the vent pipes,
  - negative pressure differential resulting from the use of exhaust fans,
  - simultaneous operation of several fuel-burning appliances competing for limited internal air,
  - loose vent pipe connections from fuel-fired appliances,
  - obstructions, or unconventional vent pipe designs that can amplify the above situations,
  - poorly designed or maintained chimneys and/or vents,
2. Extended operation of unvented fuel-burning devices (range, oven, fireplace, etc),
3. Temperature inversions that can trap exhaust gases near the ground,
4. Car idling in an open or closed attached garage, or near a home.

The following symptoms may be related to **CARBON MONOXIDE POISONING** and should be discussed with ALL members of the household:

- **Mild exposure:** Headache, running nose, sore eyes, often described as 'flu-like' symptoms

- **Medium exposure:** Dizziness, drowsiness, vomiting

- **Extreme exposure:** Unconsciousness, brain damage, death

Many causes of reported CARBON MONOXIDE POISONING indicate that while victims are aware 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.

Carbon monoxide concentration, ppm	Response time, minutes
70±5	60-240
150±5	10-50
400±10	4-15
Carbon monoxide concentration, ppm	Exposure time, (no alarm)
30±3	30 days
70±5	60 minutes

Table 2. Response time and resistance specification for carbon monoxide concentration

**WARNING: IMPORTANT INFORMATION FOR THE USER**

Individuals with medical problems may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 30 ppm.



**WARNING**

Actuation of this device indicates the presence of carbon monoxide (CO) which can KILL YOU.

If alarm signal sounds, four beeps:

1. Operate hush/test button.
2. Immediately move to fresh air – outdoors or by an open window.
3. Check all persons are accounted for.
4. Do not re-enter the premises or move away from the open door/window until the emergency services' responders have arrived, the premises have been aired out, and your alarm remains in its normal condition.
5. Call your emergency local service, fire department or 911
6. If service signal sounds, one chirp, then check the service section to try and correct.
7. After following steps 1-6, if your alarm reactivates within a 24 hour period, repeat steps 1-6 and call your local qualified technician to investigate for sources of CO from fuel burning equipment and appliances and inspect 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.

The premises should be well ventilated when household cleaning supplies or similar contaminants are used.

**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. The detector's lifespan is 5 years from the date of manufacture.

**NOTE:** When the detector is removed from its base, a Tamper message is sent to the central station.

The detector will also cause a trouble condition once 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 the proper authorities 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 the detector in accordance with any local regulations.

**NOTE:** The replacement date that appears on the device is the date beyond which the device may no longer detect carbon monoxide accurately and should be immediately replaced.

**CAUTION**

It should be noted the installation, operation, testing and maintenance of the Wireless Carbon Monoxide Alarm 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 detectors zones). Therefore, the Wireless Carbon Monoxide Alarm must be programmed as a non-fire zone. See the control's Installation Instructions for the appropriate carbon monoxide zone type to be programmed.

**SPECIFICATIONS**

- Transmitter Frequency: 345.000 MHz (crystal controlled)
- Transmitter Frequency Tolerance: ± 15 kHz
- Transmitter Bandwidth: 24 kHz
- Modulation Type: Amplitude Shift Keying—On/Off Keying (ASK-OOK)
- Unique ID Codes: Over one (1) million different code combinations
- Dimensions: Ø 5" x 1 7/8" high (Ø 125mm x 48mm high)
- Weight (including battery): 7.09 oz (201 g)
- Housing Material: UL 94 V-0 Polycarbonate
- Color: White
- Audible Signal (Temp 4 tone): 85dBA min. in alarm
- Operating Current: 10 uA
- Operating Temperature: 40° to 100°F (4.4° to 37.8°C)
- Relative Humidity: 15-90% Non-Condensing
- Battery (included): One (1) Panasonic CR123A Lithium battery
- Regulatory Listing: ETL to UL 2034, CSA 6.19-01; FCC Part 15 and Industry Canada
- Warranty: Two (2) years
- Included Accessories: Mounting Hardware Package

This device complies with Part 15 of the FCC rules and RSS-210 of Industry Canada. Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation of the device.

**LIMITED WARRANTY**

This Apollo product is warranted against defects in material and workmanship for two (2) years. **This warranty extends only to wholesale customers** who buy direct from Apollo or through Apollo's normal distribution channels. **Apollo does not warrant this product to consumers.** Consumers should inquire from their selling dealer as to the nature of the dealer's warranty, if any. **There are no obligations or liabilities on the part of Apollo for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstallation.** All implied warranties, including implied warranties for merchantability and implied warranties for fitness, are valid only until warranty expires. **This Apollo Warranty is in lieu of all other warranties express or implied.**

All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Apollo Fire Detectors at 02392 492412 for an RPA# and other important details.

Warranty service return address: see below.

For additional warranty and compliance information, visit our Web site at: [www.apollo-fire.co.uk](http://www.apollo-fire.co.uk)

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