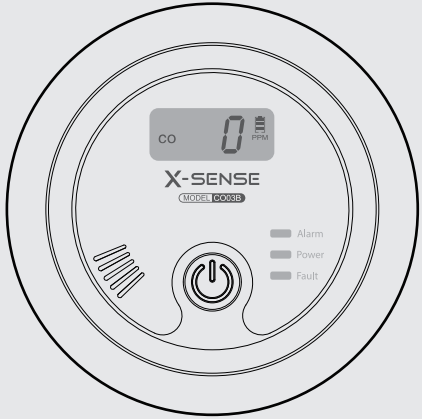
X-SENSE



User Manual

Carbon Monoxide Alarm CO03B

F.1.05.CD1102

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X-Sense Innovations Co., Ltd.

X-SENSE

Important Note

This user manual contains important information regarding the installation and operation of your carbon monoxide alarm. Please take a few minutes to thoroughly read this manual which should be saved for future reference. If you are installing the carbon monoxide alarm for use by others, you must leave this manual—or a copy of it—with the end user.

Introduction

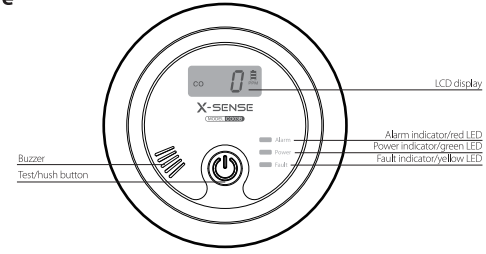
This device is a battery-powered stand-alone CO (carbon monoxide) alarm with an advanced electrochemical sensor for domestic use. Please note that this device does not detect smoke, heat, flames or any hazardous gas other than carbon monoxide even though carbon monoxide can be generated by fire. For this reason you must install smoke alarms to provide early warning of fire and to protect you and your family from fire and its related hazards.

Warning!

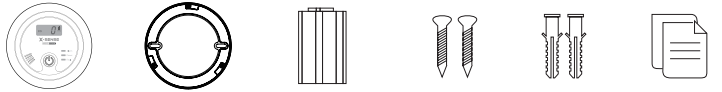
* The installation of the apparatus should not be used as a substitute for proper installation, use and maintenance of fuel-burning appliances including appropriate ventilation and exhaust systems.
* This apparatus is to be installed by a competent person.

⚠ It is not tested for use in a caravan or boat.

Product Profile



Package Contents



1 × CO Alarm | 1 × Mounting bracket | 1 × 9 V alkaline battery | 2 × Screws | 2 × Anchor plugs | 1 × User manual

Product Features

Low-battery warning

If the battery voltage is low, the unit will chirp once every 60 seconds to indicate the need for battery replacement.

End-of-life indication

IMPORTANT: Ten (10) years after it is first powered, the alarm will chirp 2 times every 30 seconds to indicate that it is time to replace the alarm.

End-of-life hush control

This model has an end-of-life hush feature, which disables the "chirps" for a period of 3 days by pressing the "test/hush" button. You can replace your alarm within this time at your convenience. The chirp sound will be issued again every 3 days and can be hushed again for a total period of 30 days until a replacement is finally required.
During this end-of-life hush period, your alarm continues monitoring CO and provides protection as usual.
To help identify the date to replace the alarm, write down the date of first operation on the dedicated label on the side of the alarm.

Technical Specifications

Power supply	9 V alkaline battery (replaceable)
Standby current	< 25 µA
Working current	< 50 mA
Operating ambient temperature	40 to 100 °F (4.4 to 37.8 °C)
Operating relative humidity	≤ 85% RH (non-condensing)
Alarm decibel level	> 85 dB at 3.28 ft (1 m)
Low-battery voltage	< 7.9 V
Storage and transport conditions	-4 to 140 °F (-20 to 60 °C), 5% to 95% RH (non-condensing)

Where to Locate

1. A CO alarm should be centrally located outside of each sleeping area in the immediate vicinity of all bedrooms. For added protection, install additional CO alarms in each separate bedroom and on each level of your house.
2. If your bedroom hallway is longer than 40 feet (12 meters), install a CO alarm at BOTH ends of the hallway.
3. In a single-level house, install at least one CO alarm near or within each separate sleeping area. For added protection, install an additional CO alarm at least 20 feet (6 meters), away from any furnace or fuel burning heat source.
4. In multi-level houses, in addition to 3 above, install at least one CO alarm near or within each separate sleeping area. For added protection, install at least one CO alarm on each level of the house. If you have a basement, install a CO alarm at the top of the basement stairs.

Locations to Avoid

Important note

Improper location can affect the sensitive electronic components in this alarm. To avoid causing damage to the unit, to provide optimum performance and to prevent unnecessary nuisance alarms, **do not locate CO alarms** in the following areas:

1. In garages or in any extremely dusty, dirty or greasy areas.
2. Where there is the possibility of smoke or fumes under normal operating circumstances.

3. In poorly ventilated kitchens, garages and furnace rooms. Keep the CO alarms at least 20 feet (6 meters) from potential smoke or fume sources (e.g. stoves, furnaces, water heaters, space heaters) if possible.
4. In areas where a 20-foot (6-meter) distance from a potential smoke or fume source is not possible. In modular, mobile or smaller houses, it is recommended the CO alarm be placed as far from any potential smoke or fume sources.
5. Within 5 feet (1.5 meters) of any cooking appliance.
6. In extremely humid areas. This alarm should be at least 10 feet (3 meters) from a bath or shower, sauna, humidifier, vaporizer, dishwasher, laundry room, utility room or other source of high humidity.
7. In areas where the temperature is colder than 40 °F (4.4 °C) or hotter than 100 °F (37.8 °C). For example, non-air-conditioned crawl spaces, unfinished attics, uninsulated or poorly insulated ceilings, porches and garages.
8. Where the air is turbulent, such as near ceiling fans, heat vents, air conditioner vents, fresh air return vents, or open windows. Excessive air flow may prevent any CO from reaching the sensors.
9. In direct sunlight.

Installation

Installing the battery

1. Remove the alarm from the mounting bracket by rotating counterclockwise, then slide open the battery compartment.
2. Install the 9 V alkaline battery. When the battery is installed, the unit will beep once and the red, green and yellow LEDs will flash in sequence. "--" will be displayed on the screen with a blue backlight. In 1-2 minutes, the backlight will turn off and the green light will flash every 60 seconds indicating that the unit is operational.
3. Reattach the unit to the mounting bracket and secure by rotating clockwise.

Important note

Constant exposures to high or low humidity may reduce battery life. A good safety measure is to replace the battery at least once a year, or (if applicable) at the same time you change your clocks for daylight saving time. After installing or changing the batteries, reinstall your alarm, and test your alarm by using the test/hush button (see below).

Wall mounting

1. Draw a horizontal line 6 inches (10 cm) long at the position where this CO alarm is to be located.
2. Place the mounting bracket in the chosen position. Align the two longest mounting slots with the line and draw a mark in the center of each slot.
   Note: When mounting on a wall, make sure that the arrow marked on the bracket is pointing vertically.
3. Drill holes of 1.1 in (28 mm) or deeper at the marks using a 1/4 in (6 mm) drill bit.
4. Strike the two plastic plugs into the holes with a hammer and screw the mounting bracket in the chosen position. Do not over-tighten the screws, as this may distort the mounting plate.
5. Hook the CO alarm onto the keyholes in the back of the mounting plate and turn the alarm clockwise into the mounting bracket until it snaps into place.
6. Test the unit by pressing the test/hush button. Ensure the unit sounds in an alarm pattern.

Operating Instructions

Testing

Test your alarm by holding the test/hush button until the unit beeps once and the red LED flashes once, then release the test button. The blue backlight will be lit, and the unit will proceed to beep 4 times with the red LED flashing 4 times. After 5 seconds of silence, the unit will beep 4 times with the red LED flashing 4 times again. It is then followed by a single beep and the red LED flashing once. The LCD display will show "--", then "PAS" and finally "0".

Hushing

When the CO alarm is sounding an alarm after a suspected false alarm, you can press the test/hush button and the device will beep intermittently, the blue backlight will be off and the green LED will be lit. The device will resume its normal monitoring status after 4-15 minutes. If the CO level is still at a dangerous level, the alarm will sound again.

CO alarm levels

The X-Sense's CO03B battery-operated carbon monoxide alarm is programmed to sound an alarm at the following CO concentrations within the time periods listed:

30 ppm over 120 minutes,
50 ppm for 60-90 minutes,
100 ppm for 10-40 minutes,
and 300 ppm for 0-3 minutes.

When CO is detected and the alarm sounds, the CO concentration will be displayed on the LCD and a blue backlight will be lit. The red LED will flash and the alarm will issue 4 short beeps, repeating the cycle every 5.8 seconds. After 4 minutes, the device will issue 4 short beeps every 1 minute until the alarm condition disappears.

CO concentration and symptoms

The table below shows the effects of different levels of CO poisoning on the body:

Parts per million (PPM)	Effects on adults
100	Slight headache, nausea, fatigue (flu-like symptoms)
200	Dizziness and headache within 2-3 hours
400	Nausea, frontal headache, drowsiness, confusion and rapid heart rate. Risk to life after over 3 hours of exposure
800	Severe headaches, convulsions, vital organ failures. Death possible within 2-3 hours

⚠ **WARNING: This device is designed to protect individuals from acute effects of carbon monoxide exposure. It may not fully safeguard individuals with specific medical conditions. If in doubt, consult a medical practitioner.**

The following table describes the audible alarm patterns and the recommended actions to take.

LCD display	Alarm LED	Alarm sound	Unit status	Advice
"For example"	A CO concentration from 30 to 999 ppm within a certain time period. Blue backlight is lit, and red LED flashes 4 times every 5.8 seconds. After 4 mins, it flashes 4 times per minute.	4 beeps repeating every 5.8 seconds. After 4 mins, 4 beeps per minute.	Alarm condition. Dangerous concentrations of CO detected.	Please refer to "What to Do When the Alarm Sounds".
	A CO concentration from 30 to 999 ppm outside of a certain time period (refer to page 7). Green LED flashes once every 60 seconds.	None	CO detected, but alarm status not reached, potential danger condition.	1. Please check for the CO source first. 2. Open your windows and doors and immediately move to an open area of fresh air.
	Red LED flashes 4 times, then repeats 4 times, finally flashing once.	4 beeps, then repeats 4 beeps, finally sounding 1 beep.	The detector is self-checking (test button was pressed).	None
	Red, green and yellow LEDs will flash in sequence.	1 short beep.	The detector is powered.	None
	Green LED flashes once every 60 seconds.	None	Normal operation with good battery life.	None
	Display alternates between "Lb" and current CO level. Yellow LED flashes once every 60 seconds.	1 quick beep every 60 seconds.	Low battery levels.	Replace battery.

	Yellow LED flashes 1 to 3 times every 40 seconds.	2 quick beeps every 40 seconds.	Unit malfunction. The unit will not respond to any CO.	If "Err" continues to display, the unit has malfunctioned and must be replaced immediately.
	Yellow LED flashes 2 times every 30 seconds.	2 quick beeps every 30 seconds.	End of unit life.	Replace unit immediately.

What to Do When the Alarm Sounds

1. Call emergency services as soon as possible.

2. Immediately move to an area of fresh air—outdoors or by an open door/window. Do a head count to check that all persons are accounted for. Do not re-enter the premises or move away from the open door/window until the emergency services have arrived, the premises have been aired out, and your alarm returns to its normal operating condition.

3. After following steps 1-2 above, if your alarm reactivates within a 24 hour period, repeat steps 1-2 and call a qualified appliance technician to investigate sources of CO from fuel-burning equipment and appliances, and inspect for proper operation of this equipment.

4. If problems are identified during this inspection, have the equipment serviced immediately. Note any combustion equipment that has not been 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.

Maintenance

To keep your alarm in good working order, you should adhere to the following steps.

1. Test the alarm once a week by pressing the test/hush button.

2. Vacuum the alarm cover once a month to remove any accumulated dust.

3. Never use detergents or solvents to clean the alarm. Chemicals can permanently damage or temporarily contaminate the sensor.

4. Avoid spraying air fresheners, hair spray, paint or other aerosols near the alarm.

5. Do not paint the unit. Paint may clog the openings to the sensing chamber and prevent the unit from operating properly.

⚠ Warning: Do not tamper with the apparatus, as there is a risk of electric shock or malfunction.

Battery replacement

Remove the old battery and replace with a 9 V alkaline battery (The Golden Power GL6F22A alkaline battery is recommended) when the LCD displays an "Lb" icon and the yellow LED blinks once every 60 seconds with the buzzer chirping. After changing the battery, reinstall your alarm, and test your alarm by pressing the test/hush button.

NOTE: Rechargeable batteries are not recommended for use with this device.

Limitations of CO Alarms

1. CO alarms may not wake up all individuals. If children or others do not readily awaken to the sound of the CO alarm, or if there are infants or family members with mobility limitations, make sure that someone assists them in the event of an emergency.

2. This CO alarm will not sense carbon monoxide that does not reach the sensor. This CO alarm will only detect CO that reaches the sensor. CO may be present in other areas. Doors or other obstructions may affect the rate at which CO reaches the CO alarm. For this reason, if bedroom doors are usually closed at night, it is recommended that you install a CO alarm in each bedroom and in the hallway between them.

3. CO alarms may not sense CO on another level of the house. For example, a CO alarm on the second level, near the bedrooms, may not sense CO in the basement. For this reason, one CO alarm may not give an adequate warning. Complete coverage is recommended by placing CO alarms on each level of the house.

4. CO alarms may not be heard. The alarm horn intensity meets or exceeds current UL standards of 85 dB at a distance of 3.28 feet (1 meter). However, if the CO alarm is installed outside the bedroom, it may not awaken a sound sleeper or one who has recently used drugs or has been drinking alcohol. This is especially true if the door is closed or only partially open. Even persons who are awake may not hear the alarm horn if the sound is blocked by distance or closed doors. Noise from traffic, stereos, radios, televisions, air conditioners, or other appliances may even prevent alert persons from hearing the alarm horn. This CO alarm is not intended for people who are hearing impaired.

5. CO alarms are not a substitute for a smoke alarm. Although fire is a source of CO, this CO alarm does not sense smoke or fire. This CO alarm senses CO that may be escaping unnoticed from malfunctioning furnaces, appliances, or other possible sources of incomplete combustion. The installation of a smoke alarm is required for an early warning of fire.

6. CO alarms are not a substitute for life insurance. Though these CO alarms warn against increasing CO levels, we do not warrant or imply in any way that they will protect lives from CO poisoning. Homeowners and renters must still insure their lives.

7. CO alarms have a limited life. Although the CO alarm and all of its parts have passed many stringent tests and are designed to be as reliable as possible, any of these parts could fail at any time. Therefore, you are strongly recommended to test your CO alarm weekly.

8. CO alarms are not foolproof. Like all other electronic devices, CO alarms have limitations. They can only detect CO that reaches their sensors. They may not give early warning of rising CO levels if the CO is coming from a remote part of the house, or is at some distance from the CO alarm.

Environmental Protection

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

Manufacturer and Service Information

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