



Carbon Monoxide Alarm Installation Instructions



Description

The SafeAir™ carbon monoxide (CO) alarm is designed to monitor the levels of CO gas in residential dwellings and give early warning when potentially dangerous levels exist. The alarm monitors the air continuously and alarms when dangerous levels exist. To ensure proper operation, the alarm also performs a self-test every 2 minutes.

The SafeAir™ is a 4-wire device designed to use a Class 2 output from a UL Listed fire or UL Listed fire/burglary alarm control panel.

Important: Use only with a UL Listed control panel capable of differentiating between alarm signals (fire, burglary, CO etc.) and providing distinct identification for each.

Selecting a Location for the Alarm

Selecting a suitable location is critical to the operation of CO alarms. You should install an alarm in every bedroom and on each level of a dwelling. At a minimum, one alarm should be placed outside the sleeping areas. See Figure 1.

Use the following guidelines to select a suitable location for the installation of CO alarms:

- < Mount alarms on a ceiling or wall at least 5 feet up from the floor.
- < Mount alarms at least 5 feet from outside doors and windows.
- < Mount at least 5 feet from open flame appliances such as furnaces, stoves, and fireplaces.
- < Mount at least 5 feet from any cooking appliance.
- < For sloped, gabled, or peaked ceilings, locate the alarm 3 feet from the highest point.
- < In hallways 12 feet or longer, install two alarms.
- < Locate in a suitable environment as follows:
 - Temperature between 40°F and 100°F
 - Humidity between 15 and 90% non-condensing
- < Locate away from air conditioners, heating registers, and any other ventilation source that may interfere with CO gas entering the alarm.
- < Do not mount where furniture or draperies may obstruct the airflow.
- < Mount alarms on a firm permanent surface.

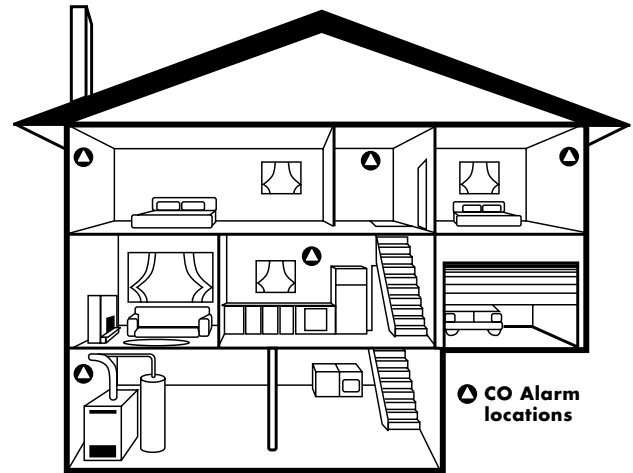


Figure 1

Installing the Alarm

All wiring must conform to the National Electric Code (NEC) and/or local codes having jurisdiction. Use 16 to 22 AWG wire to install the alarm.

Important: DO NOT connect the CO alarm on an initiating circuit with fire and/or security devices.

Use the following steps to install the CO alarm:

1. Run the security system wiring to the alarm location.
2. Remove the cover from the alarm. It should just lift off.

Important: J1 is factory set for manufacturing purposes. **DO NOT** change the setting.
3. Using the base for a template, mark the two top screw hole locations on the mounting surface.
4. Install two screws on the marks. If necessary, use wall anchors.
5. Line up the base with the screws, pull the wiring through the square hole and slide the base down the screws to the wall. For surface wiring, pull the wires through the wiring channel at the top of the base.
6. Strip 3/8 inch of insulation from each wire, and insert under the appropriate screw terminal. See Figure 2.
7. Install two screws in the bottom two mounting holes and tighten all four screws until the base is firmly on the wall.
8. Replace the alarm cover.
9. Apply power. The LED should flash green for approximately 15 seconds and then light steadily.
10. Test the installation. See Testing the Alarm.

UL Listed
Class 2
control panel

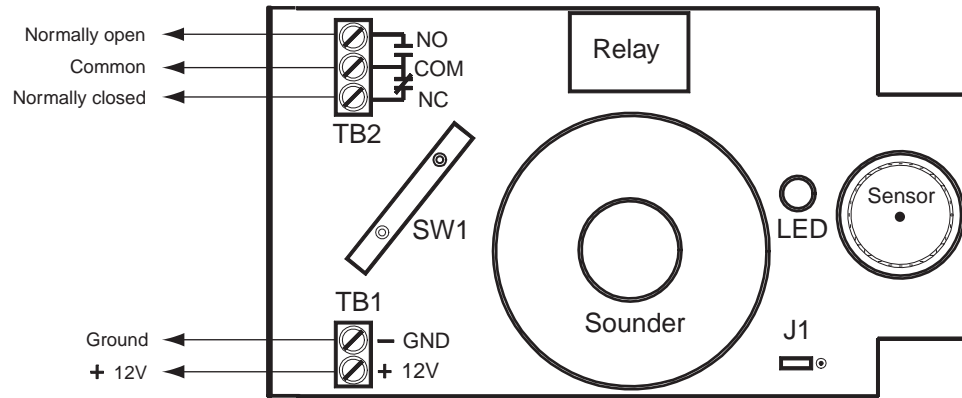


Figure 2

Testing the Alarm

The alarm should be tested regularly to verify it is functioning properly.

Use the following steps to test the alarm:

1. **To test the CO alarm operation**, press the TEST/HUSH button until the LED turns red, then release. The alarm should beep 4 times, pause 5 seconds, and beep 4 times, then the LED should turn green to indicate the CO alarm is installed and functioning properly.
2. **To test the relay contacts and panel**, press the TEST/HUSH button until the LED flashes amber, then release. The LED should continue to flash amber and the relay should trip. After 9 seconds, the relay resets and the LED should return to green.
3. If the alarm fails the test, wait a few minutes and repeat.
4. If the alarm fails again, replace the unit.

Servicing the Alarm

For servicing, return the alarm to:

Sentrol
12345 SW Leveton Drive
Tualatin, OR 97062

A note describing the nature of the malfunction should be included. Use the proper packaging to prevent shipping damage.

Maintaining the Alarm

When installed and used properly, the SafeAir™ CO alarm will provide years of service with minimal maintenance. You should test the alarm regularly as described in Testing the Alarm.

Clean the alarm as needed to keep it free from dust and dirt. Use only a clean dry or damp (water) cloth when cleaning the alarm.

Important: DO NOT paint the alarm or expose it to any cleaning solutions.

Specifications

Input voltage.....	12VDC
	supplied by a UL Listed control panel
Current consumption:	
Normal.....	8mA
Alarm.....	60mA max
Relay contact.....	50mA@ 12VDC
Electrical configuration.....	NO, NC
CO alarm level.....	70 ppm/60-189 minutes
Operating temperature.....	40-100°F (4.4-37.8°C)
Relative humidity.....	15-90% non-condensing
Dimensions:	
Width.....	2.7" (6.9 cm)
Length.....	6" (15.2 cm)
Depth.....	1.4" (3.6 cm)
Weight.....	4oz (114 g)
Color.....	white
Listings.....	UL 2075

Limited Warranty

Sentrol warrants the alarm to be free from defects in materials and workmanship under normal intended use and service for a period of 5 years from the date of purchase.

Product Ordering

Model Number	Description
240-CO	SafeAir™ carbon monoxide (CO) alarm, Form C, 12VDC

Understanding and Preventing CO Poisoning

Recognizing CO Poisoning

The following symptoms are related to CO poisoning and should be discussed with all members of the household:

- 1) **Mild Exposure:** Slight headache, nausea, vomiting, fatigue (often described as “Flu-like” symptoms).
- 2) **Medium Exposure:** Severe throbbing headache, drowsiness, confusion, fast heart rate.
- 3) **Extreme Exposure:** Unconsciousness, convulsions, cardio-respiratory failure, death.

Many cases of reported CO 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. Young children and pets may be the first affected.

Sources of CO

CO comes from the incomplete combustion of ANY fuel, such as: wood, natural gas, propane, oil, coal, charcoal, gasoline, or kerosene. The following conditions can produce dangerous transient levels of CO:

- < Excessive spillage or reverse venting of fuel-burning appliances caused by outdoor ambient conditions as follows:
 - Wind direction and/or velocity, including high gusts of wind or heavy air in the vent pipes (cold/humid air with extended periods between cycles).
 - Negative pressure differential resulting from the use of exhaust fans.
 - Simultaneous operation of several fuel-burning appliances competing for limited internal air.
 - Vent pipes connections vibrating loose from clothes dryers, furnaces, or water heaters.
 - Obstructions in the vent pipe or unconventional vent pipe designs which can amplify the above situations.
- < Extended operation of unvented fuel-burning devices (range, oven, fireplace, etc.).
- < Temperature inversions which can trap exhaust gasses near the ground.
- < Car idling in an open or closed attached garage or near a home.

CO Precautions

No detection device can protect life in all situations. Therefore, safeguards should be taken to avoid potentially dangerous situations as follows:

- 1) Regularly inspect all fuel-burning appliances for proper operation and ventilation.

- 2) Clean all chimneys, flues and vents annually. Keep them free of debris and check for blockage, corrosion, rust, and cracks.
- 3) Have all heating equipment checked yearly by a qualified technician.
- 4) Ensure that exhaust and ventilation fans and fireplaces do not interfere with the air supply to your furnace.
- 5) Leave a window or door open a couple of inches to help ensure enough oxygen is present to facilitate combustion.

When CO is Detected

The SafeAir™ goes into alarm if harmful levels of CO are present. The LED light turns red, the sounder emits four rapid beeps every 5 seconds, and the relay triggers a UL Listed control panel to produce an alarm.

Press the TEST/HUSH button to silence the sounder. If CO is still present, the alarm will resume.

In the Event of a CO Alarm

WARNING

Actuation of this alarm indicates the presence of CO which can KILL YOU.

If alarm signal sounds:

- 1) Operate the TEST/HUSH button.
- 2) Call your fire department or 911 (_____).
- 3) Immediately move to fresh air—outdoors or by an open door or window. Do a head count to verify all persons are accounted for. Do not reenter the premises nor move away from the open door/window until emergency services arrive, the premises are aired out, and your alarm remains in normal operation.
- 4) If the alarm reactivates within 24 hours, repeat steps 1-3 and call a qualified technician to examine and/or turn off your gas/kerosene/oil-burning appliances, such as space heaters, furnaces, water heaters, ranges, ovens, clothes dryers, or log fire place. If your RV, automobile, or truck is idling in an attached garage, turn off the engine.

Important: To prevent false alarms, be sure there is adequate ventilation when using household cleaning solutions or similar contaminants.

Important: The alarm automatically resets to normal operation when the CO dissipates.

Understanding the LED and Sounder

The SafeAir™ provides a multi-colored LED and a sounder to indicate the alarm status. The alarm automatically resets when CO is no longer detected. Use the following table to determine the status of the alarm.

LED	Sounder	Status	Description
Green	Off	Safe air	The alarm has power and is functioning properly.
Red	Sounds 4 rapid beeps every 5 seconds.	Alarm	Dangerous level of CO is detected. The relay triggers if connected. Evacuate the premises. Press the TEST/HUSH button to silence the sounder.
Flashing amber every 30-60 sec.	Chirps following each LED flash	Trouble	There is a problem with the alarm. Investigate and replace if necessary.

General Limitations of CO Alarms

CO alarms require a source of power to work. Verify the green LED on the alarm is on at all times. This unit is powered by a UL Listed fire or UL Listed fire/burglary alarm control panel; therefore, the unit may not operate during a power failure or if the central control panel is disabled.

⚠WARNING! This device may not alarm at low CO levels. The Occupational Safety and Health Association (OSHA) has established that continuous exposure of levels of 50 ppm should not be exceeded in an 8 hour period. This alarm has not been investigated for carbon monoxide levels below 70 ppm.

People with special medical problems should consider using specialized detection devices with under 30 ppm alarming capabilities.

⚠CAUTION! This alarm will only indicate the presence of carbon monoxide gas at the sensor. CO may be present in other areas. Anything preventing CO from reaching the sensor, such as closed doors, could delay or prevent the alarm being activated. We recommend that a sensor be installed in each bedroom and in the hallways between them.

CO alarms are not smoke alarms. This alarm is designed to detect CO from any combustion source. It is NOT designed to detect smoke, fire or any other gas.

CO alarms may not be heard. A sound sleeper, or someone who has taken drugs or alcohol, may not awaken if the alarm is installed outside a bedroom. Normal noise due to stereos, television etc. may also prevent hearing the alarm if the sound is blocked by distance or closed doors. Closed or partially closed doors and distance can block sound. This unit is not designed for the hearing impaired.

CO alarms are not a substitute for life insurance. Though these alarms will warn against increasing CO levels, we do not warrant or imply in any way that they will protect lives from CO poisoning. They should only be considered as an integral part of a comprehensive safety program. Home owners and renters must still insure their own lives.

Replacement Information

This product is designed to work reliably for 5 years after the installation date. After 5 years, you should contact your local distributor to replace the alarm.

Installation Date: _____

Distributor: _____

SENTROL

12345 SW Leveton Dr., Tualatin, OR 97062

Tel.: 503.692.4052 Fax: 503.691.7566

<http://www.sentrol.com>

U.S. & Canada: 800.547.2556

Technical Service: 800.648.7424

FaxBack: 1.800.483.2495

Sentrol reserves the right to change specifications without notice.

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