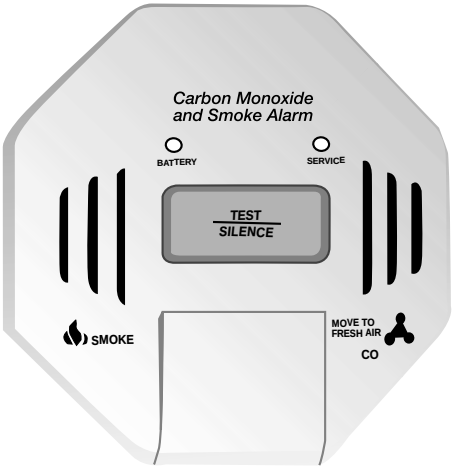
BRK ELECTRONICS®

MODEL SC1000BN—User's Manual

Smoke and Carbon Monoxide Alarm



For your records, please record:
Date and Where Purchased:

UL®

M06-1048-000 11/99

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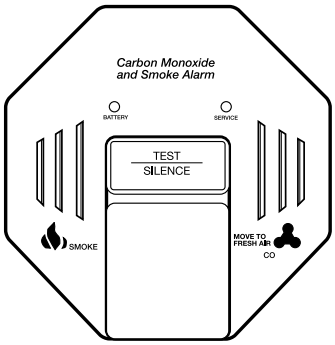
PLEASE READ CAREFULLY AND SAVE: This unit was shipped with a user's manual that contains important information about its operation. If you are installing this unit for use by others, you must leave this manual—or a copy of it—with the user.

CHAPTER 1: *Introduction*

BASIC FEATURES

- Separate sensor and alarm to detect smoke and CO. The two alarm systems work independently.
- Powered by a single 9V alkaline or lithium battery
- Flip-open battery door for easy battery replacement
- Large, easy-to-use Test/Silence button
- Colored lights indicate battery status and service needed.



The CO Alarm

The Carbon Monoxide (CO) Alarm measures CO levels in the air. It will alarm if CO levels rise quickly (if the heat exchanger on your furnace breaks, for example), or if CO is consistently present (a slow CO leak in your stove or water heater).

- Features Solid-state Infrared Reservoir (SIR) Sensor System
- "CO" alarm light flashes when CO alarm is triggered
- Silence feature quiets alarm horn while you take corrective action

The Smoke Alarm

The Smoke Alarm monitors the air for the presence of combustion particles (produced when something burns). When enough combustion particles reach the smoke sensing chamber, it triggers an alarm.

- Ionization Technology
- "SMOKE" alarm light flashes when smoke alarm is triggered
- Silence feature quiets alarm horn in response to unwanted alarms like those caused by cooking smoke

BASIC SAFETY INFORMATION

IMPORTANT!

Dangers, Warnings, and Cautions alert you to important operating instructions or to potentially hazardous situations. Pay special attention to these items.

⚠ CAUTION!

This combination Smoke and Carbon Monoxide Alarm has two separate alarms. The CO alarm is not designed to detect fire or any other gas. It will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas. The Smoke Alarm will only indicate the presence of smoke that reaches the sensor. The smoke alarm will not sense gas, heat or flames.

IMPORTANT!

This smoke/CO alarm is approved for use in single-family residences. It is NOT designed for marine or RV use.

IMPORTANT!

This device is not intended to alert hearing impaired residents. Smoke alarms specifically designed for the hearing impaired, which feature devices like flashing strobe lights, are available to alert the hearing impaired in case of fire.

⚠ WARNING!

This smoke/CO alarm cannot operate without a working battery. Removing the battery for any reason, or failing to replace the battery at the end of its service life, removes your protection.

⚠ WARNING!

NEVER ignore any alarm. Refer to Chapter 3 for more information on how to respond to an alarm. Failure to respond can result in injury or death.

⚠ WARNING!

The silence feature is for your convenience only and will not correct a problem. See Chapter 3 for details on using the silence feature.

⚠ WARNING!

Test this smoke/CO alarm once a week. If it ever fails to test correctly, have it replaced immediately! If the alarm is not working properly, it cannot alert you to a problem.

⚠ CAUTION!

Do not paint over the smoke/CO alarm. Paint may clog the openings to the sensing chamber and prevent the sensors from operating properly.

ALARM SPECIFICATIONS

Audible Alarm: 85dB minimum at 10 feet (3 meters)

Power: Powered by 9V battery. Green light flashes about twice a minute when device is receiving battery power.

This alarm is designed to sound for up to 12 hours in alarm conditions, provided the battery is fresh and installed correctly.

Warranty: 5-year limited warranty.

The Smoke Alarm

During Alarm: Repeating Horn Pattern: horn sounds three times, then pauses, then sounds three times, then pauses, until silence button is pressed, smoke dissipates, or battery runs down. Red “SMOKE” indicator flashes rapidly.

Standards: Underwriters Laboratories Inc. Single and Multiple Station Smoke Alarms UL217.

The Carbon Monoxide Alarm

Gas Detection at Typical Temperature and Humidity Ranges: The CO alarm is not formulated to detect CO levels below 30 ppm typically. UL tested for false alarm resistance to Methane (500 ppm), Butane (300 ppm), Heptane (500 ppm), Ethyl Acetate (200 ppm), Isopropyl Alcohol (200 ppm) and Carbon Dioxide (5000 ppm). Values measure gas and vapor concentrations in parts per million (ppm).

Required Alarm Levels: Before 10% COHb exposure at levels of 30% to 70% Relative Humidity (RH):

- 400 ppm CO between 4 and 15 minutes
- 150 ppm CO between 10 and 50 minutes
- 70 ppm CO between 60 and 240 minutes

The unit is designed not to alarm when exposed to a constant level of 30 ppm for 30 days.

During Alarm: Repeating Horn Pattern: horn sounds 4 times, then pauses, then sounds four times, then pauses, until silence button is pressed, CO dissipates, or battery runs down. Red “CO” indicator light flashes rapidly.

Standards: Underwriters Laboratories Inc. Single and Multiple Station Carbon Monoxide Alarms UL2034.

The Carbon Monoxide Alarm (continued)

According to Underwriters Laboratories Inc. UL2034, Section 1.2: “Carbon monoxide alarms covered by these requirements are intended to respond to the presence of carbon monoxide from sources such as, but not limited to, exhaust from internal-combustion engines, abnormal operation of fuel-fired appliances, and fireplaces. Carbon monoxide alarms are intended to alarm at carbon monoxide levels below those that could cause a loss of ability to react to the dangers of carbon monoxide exposure.

This CO alarm monitors the air, and is designed to alarm before CO levels become life threatening. This allows you precious time to leave the house and correct the problem. This is only possible if alarms are located, installed, and maintained as described in this manual.

This CO alarm is designed to alert you to a potentially dangerous build-up of CO over time. It cannot fix a CO problem, and it cannot identify a specific source of CO. The company shall not be obligated to pay for any carbon monoxide investigation or service call conducted by a Fire Department, or licensed investigator or repairman, arranged by the homeowner in response to an alarm.

⚠ WARNING!

This product is intended for use in ordinary indoor locations of family living units. It is not designed to measure CO levels in compliance with Occupational Safety and Health Administration (OSHA) commercial or industrial standards. Individuals with medical conditions may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 30 ppm.

CHAPTER 2: *Installation*

WHERE TO INSTALL THIS ALARM

Minimum coverage for smoke alarms, as recommended by the National Fire Protection Association (NFPA), is one smoke alarm on every floor, in every sleeping area, and in every bedroom (See Chapter 8 for details on the NFPA recommendations).

The Consumer Product Safety Commission (CPSC) recommends the use of at least one CO alarm per household, located near the sleeping area.

NOTE:
For added protection, install an additional CO alarm at least 15 feet (5 meters) away from the furnace or fuel burning heat source.

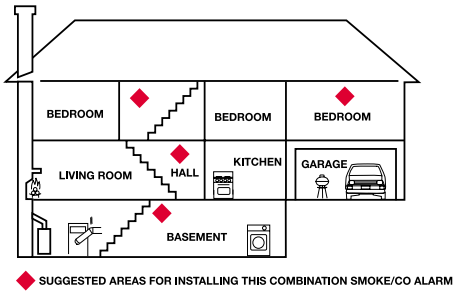
In general, install combination Smoke and Carbon Monoxide Alarms:

- On every level of your home, including finished attics and basements.
- Inside every bedroom, especially if people sleep with the door partly or completely closed.
- In the hall near every sleeping area. If your home has multiple sleeping areas, install a unit in each. If a hall is more than 40 feet (12 meters) long, install a unit at each end.
- At the top of first-to-second floor stairs.
- At the bottom of the basement stairs.
- For additional coverage, install alarms in all rooms, halls, and storage areas, where temperatures normally remain between 40˚F and 100˚F (4˚C and 38˚C).

In a Mobile Home:

- Install alarms on inside walls ONLY! Uninsulated outside walls and roofs of mobile homes often transfer heat and cold from outdoors.

Recommended Placement



- When installing on the wall, the smoke alarm should be placed between 4 inches (102 mm) and 12 inches (305 mm) from the wall/ceiling line.
- When installing on the ceiling, place the alarm as close to the center as possible.
- In either case, install at least 4 inches (102 mm) from where the wall and ceiling meet. See “Avoiding Dead Air Spaces” on page 7 for more information.

NOTE:
For any location, make sure no door or other obstruction could keep carbon monoxide or smoke from reaching the alarm.

WHERE NOT TO INSTALL THIS ALARM

Do NOT locate this smoke/CO alarm:

- In garages, kitchens, furnace rooms, crawl spaces and unfinished attics. Avoid extremely dusty, dirty or greasy areas.
- Closer than 20 feet (6 meters) from a furnace or other fuel burning heat source, or fuel burning appliances like a water heater.
- Where combustion particles (formed when something burns) are produced. Avoid poorly ventilated kitchens, garages, and furnace rooms. Keep this smoke/CO alarm at least 20 feet (6 meters) from sources of combustion particles (stove, vehicle, furnace) whenever possible.
- Within 5 feet of any cooking appliance. In air streams near kitchens. Air currents can draw cooking smoke into the smoke sensor and cause unwanted alarms.
- In extremely humid areas. This alarm should be at least 10 feet (3 meters) from a shower, sauna, humidifier, vaporizer, dishwasher, laundry room, utility room, or other source of high humidity.
- In direct sunlight.
- In turbulent air, like near ceiling fans or open windows. Blowing air may prevent CO or smoke from reaching the sensors.

Continued on next page...

Do NOT locate this smoke/CO alarm:

- Where the temperatures are regularly below 40˚ F (4˚C) or above 100˚ F (38˚ C) including unheated buildings, outdoor rooms, porches, or unfinished attics or basements. Extreme temperatures may shorten component or battery life.
- In insect infested areas. Insects can clog the openings to the sensing chamber.
- Less than 12 inches (305 mm) away from fluorescent lights. Electrical “noise” can interfere with the sensor.

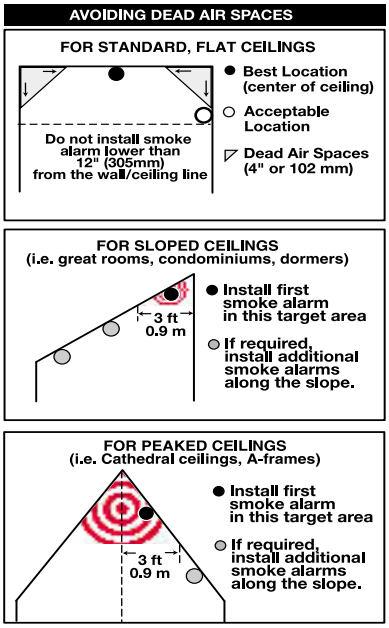
Avoiding Dead Air Spaces

“Dead air” spaces may prevent smoke from reaching the smoke alarm. To avoid dead air spaces, follow installation recommendations:

On ceilings, install smoke alarms as close to the center of the ceiling as possible. If this is not possible, install the smoke alarm at least 4 inches (102 mm) from the wall or corner.

On a peaked, gabled, or cathedral ceiling,install the first smoke alarm within 3 feet (0.9 meters) of the peak of the ceiling, measured horizontally. Additional smoke alarms may be required depending on the length, angle, etc. of the ceiling's slope. Refer to NFPA 72 for details on requirements for sloped or peaked ceilings.

For wall mounting (if allowed by building codes), the smoke alarm should be placed between 4 inches (102 mm) and 12 inches (305 mm) from the wall/ceiling line, below typical “dead air” spaces.



HOW TO INSTALL THIS ALARM

IMPORTANT!

This combination smoke/CO alarm was designed to be mounted on the ceiling or wall. It is not a tabletop device. You must install this device on the ceiling or wall as outlined below. Read "Where To Install This Alarm" before starting. Tools you will need: pencil, drill with 3/16" or 5mm drill bit, flathead screwdriver, hammer.

Before you start installation, find the pair of self-adhesive labels included with this alarm. On each label write in the phone number of your emergency responder (like 911) and a qualified appliance technician. Place one label near the Alarm, and the other label in the "fresh air" location you plan to go if the alarm sounds.

NOTE:
A qualified appliance technician is defined as "a person, firm, corporation, or company that either in person or through a representative, is engaged in and responsible for the installation, testing, servicing, or replacement of heating, ventilation and air conditioning (HVAC) equipment, combustion appliances and equipment, and/or gas fireplaces or other decorative combustion equipment."

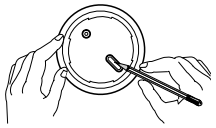
⚠ CAUTION!

Do not connect this unit to any other alarm or auxiliary device. It is a single-station unit that cannot be linked to other devices. Connecting anything else to this unit may prevent it from working properly.

⚠ CAUTION!

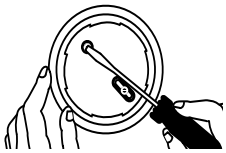
Do not install this unit over an electrical junction box. Air currents around junction boxes can prevent smoke from reaching the sensing chamber and prevent the unit from alarming. Only AC powered units are intended for installation over junction boxes.

1. Hold base firmly and twist the mounting bracket counterclockwise (left) to separate it from the unit.
2. Hold the mounting bracket against the ceiling (or wall) and use a pencil to mark the center of each mounting slot.

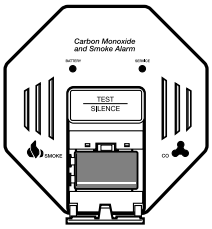


3. Put the unit where it won't get covered with dust when you drill the mounting holes.
4. Using a 3/16-inch (5 mm) drill bit, drill a hole through each pencil mark.
5. Insert the plastic screw anchors into the holes. Tap the screw anchors gently with a hammer, if necessary, until they are flush with the ceiling or wall.

6. Line the mounting bracket up over the plastic screw anchors.
7. Screw the mounting bracket to the ceiling or wall through the mounting slots using the two screws provided.



8. Before attaching the alarm to the bracket, insert the 9V battery (included) into the battery compartment. Match the terminals on the end of the battery with the terminals on the unit. Match "+" to "+" and "-" to "-." Push the battery in until it snaps in securely and cannot be shaken loose. If the battery is not snapped in completely, the unit cannot receive battery power.

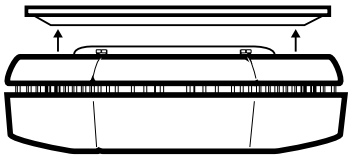


NOTE:
The unit may beep briefly when you install the battery. This is normal.

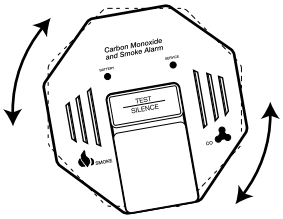
⚠WARNING!

The battery door will not close unless a battery is installed. This warns you the unit will not operate without a battery.

9. Align the tabs on the base with the tabs on the mounting bracket. Turn the base until it snaps into place.



10. If the cover does not line up the way you wanted, adjust it by slowly rotating it in either direction.



11. Test the smoke/CO alarm. See "Weekly Testing" (page 14) for details.

CHAPTER 3: *If Your Smoke/CO Alarm Sounds*

WHAT TO DO FIRST—IDENTIFY THE TYPE OF ALARM

Type of alarm:	The Alarm is...	This means...	You should...
Carbon Monoxide	CO Light: Flashing RED Horn: 4 beeps — silence, repeating	The device has detected carbon monoxide	See "What To Do If Carbon Monoxide Is Detected."(Page 11)
Smoke	SMOKE Light: Flashing RED Horn: 3 beeps — silence, repeating	The device has detected smoke	See "What To Do If Smoke Is Detected." (Page 12)

Problem...	The Alarm is...	This means...	You should...
Low Battery	BATTERY Light: Flashing yellow Horn: Chirps every 30 seconds	The battery in the alarm is low	Install a new 9V alkaline or lithium battery*. *For a list of acceptable replacement batteries, see "Regular Maintenance." (Pg. 15)
Service	SERVICE Light: Flashing yellow Horn: Chirps three times every 30 seconds	The device is not working properly	See "Testing and Maintenance." (Page 14)

WHAT TO DO IF CARBON MONOXIDE IS DETECTED

⚠WARNING!

Actuation of your CO alarm indicates the presence of carbon monoxide (CO) which can kill you. In other words, when your CO alarm sounds, you must not ignore it!

If the Alarm Sounds:

1. Operate the Test/Silence button.
2. Call your emergency services, fire department or 911. Write down the number of your local emergency service here:

3. Immediately move to fresh air—outdoors or by an open door or 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 or window until the emergency services responder has arrived, the premises have been aired out, and your CO alarm remains in its normal condition.
4. After following steps 1-3, if your CO alarm reactivates within a 24-hour period, repeat steps 1-3 and call a qualified appliance 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 manufacturers' 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. Write down the number of a qualified appliance technician here:

_____

"ALARM-MOVE TO FRESH AIR"

If you hear the alarm horn and the red light is flashing, move everyone to a source of fresh air. DO NOT move the CO alarm!

Finding the Source of CO After an Alarm

Because CO may dissipate by the time an investigator arrives, it may be difficult to locate the source of CO. See Chapter 6 "What You Need To Know About CO." (Page 18.) **BRK Brands, Inc. shall not be obligated to pay for any carbon monoxide investigation or service call.**

WHAT TO DO IF SMOKE IS DETECTED

⚠WARNING!

NEVER ignore any alarm. Ignoring the alarm may result in injury or death. If the alarm sounds and you are not absolutely certain of the source of the smoke, get everyone out of the house immediately.

If the alarm sounds and you are not absolutely certain of the source of the smoke, get everyone out of the house immediately.

If the unit alarms and you are certain that the source of smoke is not a fire emergency —cooking smoke or an extremely dusty furnace, for example—use the silence feature to quiet the alarm, then open a nearby window or door and fan the smoke away from the unit. In most cases this will silence the alarm, and once the smoke clears the unit will reset automatically.

Responding to An Alarm

- Don't panic; stay calm. Follow your family escape plan. Your safe escape may depend on thinking clearly and remembering what you have practiced. Get out of the house as quickly as possible. Don't stop to get dressed or collect anything.
- Feel doors with the back of your hand before opening them to see if they are hot. If a door is cool, open it slowly. Don't open a hot door—use an alternate escape route.
- Stay close to the floor. Smoke and hot gases rise.
- Keep doors and windows closed, unless you need to escape through them.
- Meet at your planned meeting place outside your home, and do a head count to make sure everyone got out safely.
- Call the Fire Department as soon as possible from outside. Give your address, then your name.
- Never go back inside a burning building for any reason.

Contact your Fire Department for more ideas on making your home safer and on creating your own family escape plan.

USING THE SILENCE FEATURE

The silence feature is intended to temporarily silence the horn while you identify and correct the problem. Do not use the silence feature in emergency situations. It will not correct a CO problem or extinguish a fire.

To use the silence feature, press and hold the Test/Silence button on the cover of the smoke/CO alarm for 3 seconds.

⚠WARNING!

Never remove the batteries to quiet an unwanted alarm. Removing the batteries disables the alarm and removes your protection.

When the smoke alarm is silenced....	**When the CO alarm is silenced...**
The smoke alarm will remain silent for up to 15 minutes and then return to normal operation. If the smoke has not cleared—or increases at any time,— the device will go back into alarm.	The CO alarm will remain silent for 4 minutes. After 4 minutes, if CO levels remain potentially dangerous the horn will start sounding again.
⚠WARNING! **Use the silence feature only if you are certain of the source of smoke. If you are not certain of the source or a fire starts while you are clearing smoke, evacuate the house immediately.**	IMPORTANT! The silence feature is intended to temporarily silence the alarm horn. It will not correct a CO problem.

CHAPTER 4: *Testing and Maintenance*

WEEKLY TESTING

⚠WARNING!

DO NOT stand close to the alarm when the horn is sounding. Exposure at close range may be harmful to your hearing. When testing, step away when horn starts sounding.

Push and hold the Test/Silence button on the cover until you hear a “chirp.” The “chirp” marks the start of the self-test sequence.

- First, the BATTERY (green) and SERVICE (yellow) lights will flash briefly—this is normal.
- Next, the smoke alarm will sound. The smoke symbol will flash, and you will hear this horn pattern: 3 beeps, pause, 3 beeps, pause.
- Finally, the CO alarm will sound. The CO symbol will flash, and you will hear this horn pattern: 4 beeps, pause, 4 beeps, pause.

If the unit does not alarm, make sure the battery is correctly installed, and test again. If the unit still does not alarm, replace it immediately.

NOTE:
During testing, if the yellow service light comes on and the horn “chirps” 3 times, the device should be replaced. If the battery light flashes yellow, replace the battery immediately.

If the alarm does not test properly:

1. Make sure the battery is installed correctly.
2. Be sure the alarm is clean and dust-free.
3. Install a fresh 9V alkaline or lithium battery* and test the alarm again.

If the CO alarm is not working properly, refer to the “Limited Warranty” at the end of this manual.

⚠WARNING!

If there is still a problem, do not try to fix the alarm yourself. This will void your warranty!

⚠CAUTION!

The Test/Silence button is the ONLY proper way to test this smoke/CO alarm. NEVER use vehicle exhaust, open flame, or aerosol smoke. Using anything but the Test/Silence button will damage the unit, and may cause personal injury or property damage.

**For a list of acceptable replacement batteries, see “Regular Maintenance.” (Page 15)*

REGULAR MAINTENANCE

To keep the alarm in good working order:

- Test it every week using the Test/Silence button.
- Vacuum the alarm cover at least once a month, using the soft brush attachment. Test the alarm again after vacuuming.
- Replace the battery when the alarm “chirps” and the yellow light blinks twice a minute (the low battery warning).

NOTE:
The low battery warning should last for 30 days, but you should replace the battery immediately to continue your protection.

Choosing a replacement battery:

This unit requires one standard 9V alkaline battery. The following alkaline battery is acceptable as a replacement: Duracell #MN1604. You can also use an Ultralife 9 volt lithium battery, #U9VL for longer service life between battery changes. These replacement batteries are commonly available at local retail stores.

IMPORTANT!

Use only the alkaline or lithium replacement batteries listed. The unit may not operate properly with other batteries. Never use rechargeable batteries since they may not provide a constant charge.

⚠ CAUTION!

DO NOT spray cleaning chemicals or insect sprays directly on or near the alarm.
DO NOT paint over the alarm. Doing so may permanently damage the alarm.

IMPORTANT!

Household cleaners, aerosol chemicals, and other contaminants can affect the sensor. When using any of these materials near the alarm, make sure the room is well ventilated.

NOTE:
All products have a limited life. The unit should be replaced immediately if it is not operating properly.

CHAPTER 5: *Protecting Your Family*

Protecting Your Family From CO Poisoning

A CO alarm is an excellent means of protection. It monitors the air and sounds a loud alarm before carbon monoxide levels become threatening for average, healthy adults.

A CO alarm is not a substitute for proper maintenance of home appliances.

To help prevent CO problems and reduce the risk of CO poisoning:

- Clean chimneys and flues yearly. Keep them free of debris, leaves, and nests for proper air flow. Also, have a professional check for rust and corrosion, cracks, or separations. These conditions can prevent proper air movement and cause back-drafting. Never “cap” or cover a chimney in any way that would block air flow.
- Test and maintain all fuel-burning equipment annually. Many local gas or oil companies and HVAC companies offer appliance inspections for a nominal fee.
- Make regular visual inspections of all fuel-burning appliances. Check appliances for excessive rust and scaling. Also check the flame on the burner and pilot lights. The flame should be blue. A yellow flame means fuel is not being burned completely and CO may be present. Keep the blower door on the furnace closed. Use vents or fans when they are available on all fuel-burning appliances. Make sure appliances are vented to the outside. Do not grill or barbecue indoors, or in garages or on screen porches.
- Check for exhaust backflow from CO sources. Check the draft hood on an operating furnace for a backdraft. Look for cracks on furnace heat exchangers.
- Check the house or garage on the other side of shared wall.
- Keep windows and doors open slightly. If you suspect that CO is escaping into your home, open a window or a door. Opening windows and doors can significantly decrease CO levels.

In addition, familiarize yourself with the enclosed checklist, read this manual in its entirety, and make sure you understand what to do if your alarm sounds.

PROTECTING YOUR FAMILY FROM FIRE

Putting up smoke alarms is just one step in protecting your family from fires. You must also reduce the chance a fire will start in your home, and have a plan for escaping safely if one does. To have a good fire safety program, you must:

- Develop a family escape plan and practice it with everyone in your family, including small children. 1) Draw a floor plan of your home and identify at least two exits from each room and one way to get out of each bedroom without opening the door; 2) Decide on a meeting place a safe distance from home, and make sure everyone knows to wait there; 3) Know where to go to call the Fire Department from outside the home; 4) Make sure everyone—including all children—know what the alarm signal means and how to react to it. Teach them they must be prepared to leave the home by themselves if needed; 5) Hold fire drills every 6 months and practice how to escape safely. Show children how to check if doors are hot before opening them. Show them how to use an alternate exit if a door is hot and shouldn't be opened. Teach them to stay close to the floor and crawl if necessary.
- Install at least one smoke alarm on every level of your home, in every bedroom, and in every sleeping area. Keep alarms clean, and test them weekly. Replace smoke alarms immediately if they are not working properly. Smoke alarms that do not work cannot alert you to a fire.
- Keep at least one working fire extinguisher on every floor, and an additional one in the kitchen. Have fire escape ladders or other reliable means of escape from an upper floor in case the stairs are blocked.
- Follow safety rules, and prevent hazardous situations: 1) Use smoking materials properly. Never smoke in bed. 2) Keep matches or lighters away from children; 3) Store flammable materials in proper containers; 4) Keep electrical appliances in good condition and don't overload electrical circuits; 5) Keep stoves, barbecue grills, fireplaces and chimneys free from grease and debris; 6) Never leave anything cooking on the stove unattended; 7) Keep portable heaters and open flames, like candles, away from flammable materials; 8) Don't allow rubbish to accumulate.

CHAPTER 6: *What You Need To Know About CO*

What is CO?

CO is an invisible, odorless, tasteless gas produced when fossil fuels do not burn completely, or are exposed to heat (usually fire). Electrical appliances typically do not produce CO.

These fuels include: Wood, coal, charcoal, oil, natural gas, gasoline, kerosene, and propane.

Common appliances are often sources of CO. If they are not properly maintained, are improperly ventilated, or malfunction, CO levels can rise quickly. CO is a real danger now that homes are more energy efficient. “Air-tight” homes with added insulation, sealed windows, and other weatherproofing can “trap” CO inside.

Symptoms of CO Poisoning

These symptoms are related to CO POISONING and should be discussed with ALL household members.

Mild Exposure Slight headache, nausea, vomiting, fatigue (“flu-like” symptoms).

Medium Exposure Throbbing headache, drowsiness, confusion, fast heart rate.

Extreme Exposure Convulsions, unconsciousness, heart and lung failure. Exposure to carbon monoxide can cause brain damage, death.

⚠ CAUTION!

Some individuals are more sensitive to CO than others, including people with cardiac or respiratory problems, infants, unborn babies, pregnant mothers, or elderly people can be more quickly and severely affected by CO. Members of sensitive populations should consult their doctors for advice on taking additional precautions.

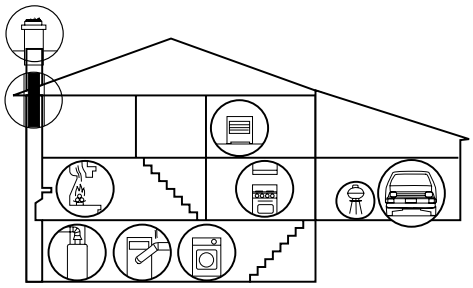
Finding the Source of CO After an Alarm

Carbon monoxide is an odorless, invisible gas, which often makes it difficult to locate the source of CO after an alarm. These are a few of the factors that can make it difficult to locate sources of CO:

- House well ventilated before the investigator arrives.
- Problem caused by “backdrafting.”
- Transient CO problem caused by special circumstances.

BRK Brands, Inc. shall not be obligated to pay for any carbon monoxide investigation or service call.

Potential Sources Of CO In The Home



Fuel-burning appliances like: portable heater, gas or wood burning fireplace, gas kitchen range or cooktop, gas clothes dryer.

Damaged or insufficient venting: corroded or disconnected water heater vent pipe, leaking chimney pipe or flue, or cracked heat exchanger, blocked or clogged chimney opening.

Improper use of appliance/device: operating a barbecue grill or vehicle in an enclosed area (like a garage or screened porch).

Transient CO Problems: "transient" or on-again-off-again CO problems can be caused by outdoor conditions and other special circumstances.

The following conditions can result in transient CO situations:

1. Excessive spillage or reverse venting of fuel appliances caused by outdoor conditions such as:
   - Wind direction and/or velocity, including high, gusty winds. Heavy air in the vent pipes (cold/humid air with extended periods between cycles).
   - Negative pressure differential resulting from the use of exhaust fans.
   - Several appliances running at the same time competing for limited fresh air.
   - Vent pipe connections vibrating loose from clothes dryers, furnaces, or water heaters.
   - Obstructions in or unconventional vent pipe designs which can amplify the above situations.
2. Extended operation of unvented fuel burning devices (range, oven, fireplace).
3. Temperature inversions, which can trap exhaust close to the ground.
4. Car idling in an open or closed attached garage, or near a home.

These conditions are dangerous because they can trap exhaust in your home. Since these conditions can come and go, they are also hard to recreate during a CO investigation.

CHAPTER 7: *Regulatory Information for CO Alarms*

What Levels of CO Cause an Alarm?

Underwriters Laboratories Inc. UL2034 defines three specific alarm points by which all residential CO alarms must sound. They are measured in parts per million (ppm) of CO over time (in minutes).

UL2034 Required Alarm Points:

- If the alarm is exposed to **400 ppm** of CO, IT MUST ALARM BETWEEN 4 and 15 MINUTES
- If the alarm is exposed to **150 ppm** of CO, IT MUST ALARM BETWEEN 10 and 50 MINUTES.
- If the alarm is exposed to **70 ppm** of CO, IT MUST ALARM BETWEEN 60 and 240 MINUTES.

IMPORTANT**!**

CO alarms are designed to sound before there is an immediate life threat. Since you cannot see or smell CO, never assume it's not present.

- An exposure to 70 ppm of CO for 4 hours may cause headaches.
- An exposure to 400 ppm of CO may cause headaches in average, healthy adults after 35 minutes, but can cause death after 2 hours.

IMPORTANT**!**

This CO alarm measures exposure to CO over time. It alarms if CO levels are extremely high in a short period of time, or if CO levels reach a certain minimum over a long period of time. The CO alarm generally sounds an alarm before the onset of symptoms in average, healthy adults.

Why is this important? Because you need to be warned of a potential CO problem while you can still react in time. In many reported cases of CO exposure, victims may be aware that they are not feeling well, but become disoriented and can no longer react well enough to exit the building or get help. Also, young children and pets may be the first affected.

The average healthy adult might not feel any symptoms when the CO alarm sounds. However, people with cardiac or respiratory problems, infants, unborn babies, pregnant mothers, or elderly people can be more quickly and severely affected by CO. If you experience even mild symptoms of CO poisoning, consult your doctor immediately!

CHAPTER 8: *Regulatory Info. For Smoke Alarms*

AGENCY PLACEMENT RECOMMENDATIONS

NFPA Standard 72 Section 2-2.1.1.1

2-2.1.1.1 Smoke alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit, including basements and excluding crawl spaces and unfinished attics. In new construction a smoke alarm shall also be installed in each sleeping room. Chapter 2 also reads as follows: 2-2.2.1; In new construction, where more than one smoke alarm is required by 2-2.1, they shall be so arranged that operation of any smoke alarm shall cause the alarm in all smoke alarms within the dwelling to sound. A-2.5.2.1 Smoke Detection — Are More Smoke Alarms Desirable? The required number of smoke alarms may not provide reliable early warning protection for those areas separated by a door from the areas protected by the required alarms. For this reason, it is recommended that the householder consider the use of additional smoke alarms for those areas for increased protection. The additional areas include the basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required smoke alarms. The installation of smoke alarms in kitchens, attics (finished or unfinished), or garages is not normally recommended, as these locations occasionally experience conditions that can result in improper operation.

California State Fire Marshall

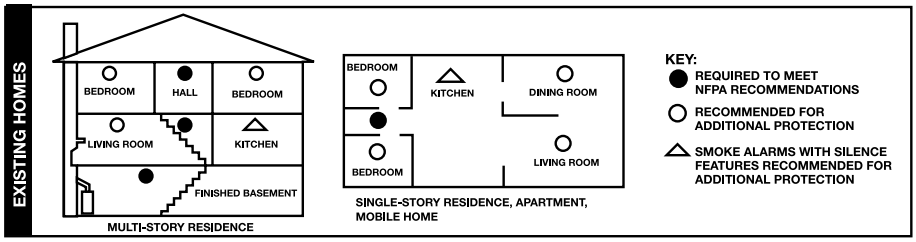
Early warning detection is best achieved by the installation of fire detection equipment in all rooms and areas of the household as follows: A smoke alarm installed in each separate sleeping area (in the vicinity, but outside bedrooms), and heat or smoke alarms in the living rooms, dining rooms, bedrooms, kitchens, hallways, finished attics, furnace rooms, closets, utility and storage rooms, basements, and attached garages.

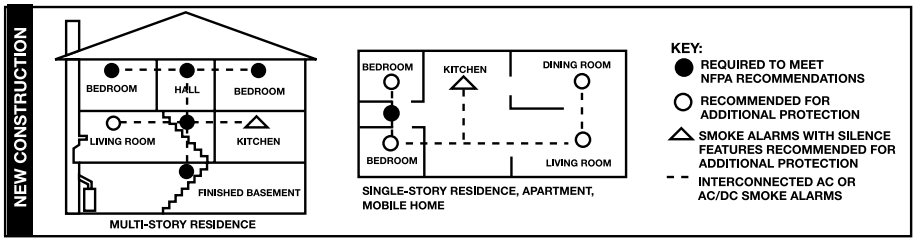
IMPORTANT**!**

This equipment should be installed in accordance with the National Fire Protection Association's Standard 72. National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269-9101. **Additional local building and regulatory codes may apply in your area. Always check compliance requirements before beginning any installation.**

Specific requirements for smoke alarm installation vary from state to state and from region to region. Check with your local Fire Department for current requirements in your area. If you install AC or AC/DC units, it is recommended they be interconnected for added protection.

Recommended Placement





Installing Smoke Alarms in Mobile Homes

For minimum security install one smoke alarm as close to each sleeping area as possible. For more security, put one unit in each room. Many older mobile homes (especially those built before 1978) have little or no insulation. If your mobile home is not well insulated, or if you are unsure of the amount of insulation, it is important to install units on inside walls only.

SPECIAL COMPLIANCE CONSIDERATIONS

⚠WARNING!

This unit alone is not a suitable substitute for complete fire detection systems in places housing many people—like apartment buildings, condominiums, hotels, motels, dormitories, hospitals, long-term health care facilities, nursing homes, day care facilities, or group homes of any kind—even if they were once single-family homes. It is not a suitable substitute for complete fire detection systems in warehouses, industrial facilities, commercial buildings, and special-purpose non-residential buildings which require special fire detection and alarm systems. Depending on the building codes in your area, this unit may be used to provide additional protection in these facilities.

The following information applies to all five types of buildings listed: In new construction, most building codes require the use of AC or AC/DC powered smoke alarms only. AC, AC/DC, or DC powered smoke alarms can be used in existing construction as specified by local building codes. Refer to NFPA 101 (Life Safety Code) or NFPA 72 (National Fire Alarm Code), local building codes, or consult your Fire Department for detailed fire protection requirements in buildings not defined as "households."

1. Single-Family Residence:
Single family home, townhouse.

2. Multi-Family or Mixed Occupant Residence:
Apartment building, condominium. This type of unit is suitable for use in individual apartments or condos, provided a primary fire detection system already exists to meet fire detection requirements in common areas like lobbies, hallways, or porches. Using this type of unit in common areas may not provide sufficient warning to all residents or meet local fire protection ordinances/regulations.

3. Institutions: Hospitals, day care facilities, long-term health care facilities. This type of unit is suitable for use in individual patient sleeping/resident rooms, provided a primary fire detection system already exists to meet fire detection requirements in common areas like lobbies, hallways, or porches. Using this type of unit in common areas may not provide sufficient warning to all residents or meet local fire protection ordinances/regulations.

4. Hotels/Motels: Also boarding houses and dormitories. This type of unit is suitable for use inside individual sleeping/resident rooms, provided a primary fire detection system already exists to meet fire detection requirements in common areas like lobbies, hallways, or porches. Using this type of unit in common areas may not provide sufficient warning to all residents or meet local fire protection ordinances/regulations.

5. Warehouses/Commercial Buildings:
DO NOT use this smoke/CO alarm in warehouses, industrial or commercial buildings, special-purpose non-residential buildings, RVs, boats, or airplanes. This CO alarm is specifically designed for residential use, and may not provide adequate protection in non-residential applications.

DIFFERENT TYPES OF SMOKE ALARMS

Battery operated units: Provide protection even when electricity fails, provided the batteries are fresh and correctly installed. Units are easy to install, and do not require professional installation.

AC powered units: Can be interconnected so if one unit senses smoke, all units alarm. They do not operate if electricity fails. Units must be installed by a qualified electrician.

AC powered units with battery back-up: Can be interconnected so if one unit senses smoke, all units alarm. They will operate if electricity fails, provided the batteries are fresh and correctly installed. Units must be installed by a qualified electrician.

Units for the hearing impaired: Include a visual alarm and an audible alarm horn, and meet the requirements of the Americans With Disabilities Act. ***BRK Electronics***® smoke alarm model 100S is an AC powered unit that has an 85 decibel alarm and a 177 candela strobe light, which flashes rapidly when the unit is in alarm. These units can be interconnected so if one unit senses smoke, all units alarm. They do not operate if electricity fails. Units must be installed by a qualified electrician.

All these units are designed to provide early warning of fires if located, installed and cared for as described in the user's manual, and if smoke reaches them. If you are unsure which type of unit to install, refer to Chapter 2 of the National Fire Protection Association (NFPA) Standard 72 (National Fire Alarm Code) and NFPA 101 (Life Safety Code). National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269-9101. Local building codes may also require specific units in new construction or in different areas of the home.

IONIZATION SMOKE ALARMS

These units are generally more effective at detecting fast, flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires may include paper burning in a wastebasket or a grease fire in the kitchen.

PHOTOELECTRIC SMOKE ALARMS

These units are generally more effective at detecting slow, smoldering fires which smolder for hours before bursting into flame. Sources of these fires may include cigarettes burning in couches or bedding.

For maximum protection, use both types of smoke alarms on each level of your home.

CHAPTER 9: ***Troubleshooting Guide***

Problem...	**If the CO Alarm...**	**You Should...**
The BATTERY light turns YELLOW. It flashes and the horn “chirps” twice a minute.	Low battery warning.	Install a new 9V alkaline or lithium battery*.
Horn chirps and yellow service light blinks three times every 30 seconds.	Device is not working properly, and needs to be replaced.	Units under warranty should be returned to manufacturer for replacement. See “Limited Warranty” for details. (Back Cover)
During testing, when you press and hold the Test/Silence button, the BATTERY light turns YELLOW	Low battery	Install a new 9V alkaline or lithium battery*.
Carbon Monoxide Alarm Only		
CO alarm goes back into alarm 4 minutes after you press the Test/Silence button.	CO levels indicate a potentially dangerous situation.	IF YOU ARE FEELING SYMPTOMS OF CO POISONING, EVACUATE your home and call 911 or the Fire Department. If not, press the Test/ Silence button again and keep ventilating your home.
CO alarm sounds frequently even though no high levels of CO are revealed in an investigation.	The alarm may be improperly located. Refer to “Where to Install This Alarm.” (Page 5)	Relocate your alarm. If frequent alarms continue, have home rechecked for potential CO problems. You may be experiencing an intermittent CO problem.
Smoke Alarm Only		
Smoke alarm sounds when no smoke is visible.	Unwanted alarm may be caused by non-emergency source like cooking smoke.	Clean the alarm’s cover with a soft, clean cloth. If frequent unwanted alarms continue, relocate your alarm. Alarm may be too close to a kitchen, cooking appliance, or steamy bathroom.
*For a list of acceptable replacement batteries, see “Regular Maintenance.” (Page 15)		
If you have questions that cannot be answered by reading this manual, call Consumer Affairs at 1-800-323-9005.		

CHAPTER 10: *General Limitations Of This Alarm*

This smoke/CO alarm is intended for residential use. It is not intended for use in industrial applications where Occupational Safety and Health Administration (OSHA) requirements for carbon monoxide alarms must be met. The smoke alarm portion of this device is not intended to alert hearing impaired residents. Special purpose smoke alarms should be installed for hearing impaired residents (CO alarms may not be available for the hearing impaired).

This smoke/CO alarm will not work without power. This alarm requires a 9V alkaline or lithium battery to operate.

This smoke/CO alarm will not sense carbon monoxide or smoke that does not reach the sensors. It will only sense CO or smoke at the sensor. CO or smoke may be present in other areas. Doors or other obstructions may affect the rate at which CO or smoke reaches the sensors. If bedroom doors are usually closed at night, we recommend you install an alarm device (combination smoke/CO alarm, or separate smoke and CO alarms) in each bedroom and in the hallway between them.

This smoke/CO alarm may not sense CO or smoke on another level of the home. Example: This alarm device, installed on the second floor, may not sense CO or smoke in the basement. For this reason, one alarm device may not give adequate early warning. Recommended minimum protection is one alarm device in every sleeping area, every bedroom, and on every level of your home. Some experts recommend battery powered smoke and CO alarms be used in conjunction with interconnected AC powered smoke alarms. For details, see "Different Types of Smoke Alarms" (see page 24 for details).

This smoke/CO alarm may not be heard. The alarm horn loudness meets or exceeds the current UL standards. However, if the device is installed outside the bedroom, it may not wake up a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. This is especially true if the door is closed or only partly 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, stereo, radio, television, air conditioner, or other appliances may also prevent alert persons from hearing the alarm horn. This alarm device is not intended for people who are hearing impaired.

The smoke alarm may not have time to alarm before the fire itself causes damage, injury, or death, since smoke from some fires may not reach the unit immediately. Examples of this include persons smoking in bed, children playing with matches, or fires caused by violent explosions resulting from escaping gas.

This smoke/CO alarm is not a substitute for life insurance. Though this smoke/CO alarm warns against increasing CO levels or the presence of smoke, BRK Brands, Inc. does not warrant or imply in any way that they will protect lives. Homeowners and renters must still insure their lives.

This smoke/CO alarm has a limited life. Although the this smoke/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 must test this device weekly.

This smoke/CO alarm is not foolproof. Like all other electronic devices, this smoke/CO alarm has limitations. It can only detect CO or smoke that reaches the sensors. It may not give early warning of the source of CO or smoke is in a remote part of the home, away from the alarm device.

Limited Warranty

Coverage: BRK Brands, Inc. warrants its enclosed Smoke/CO alarm to be free from defects in materials and workmanship under normal use for a period of five years from the date of purchase. During the first year after the date of purchase, BRK Brands, Inc. will replace any defective Smoke/CO alarm without charge. During the next four years, BRK Brands, Inc. will replace any defective Smoke/CO alarm at a charge to you not to exceed BRK Brands, Inc.'s cost. This is your exclusive warranty.

This warranty is valid for the original retail purchaser from the date of initial retail purchase and is not transferable. Keep the original sales receipt. Proof of purchase is required to obtain warranty performance. Dealers, service centers, or retail stores selling this product do not have the right to alter, modify or any way change the terms and conditions of this warranty. In new construction, if your Smoke/CO alarms were installed by a contractor, this warranty is valid for the homeowner at the time of installation from the date of original installation and is not transferable.

This warranty does not cover normal wear of parts or damage resulting from any of the following: negligent use or misuse of the product, use on improper voltage, current or battery, use contrary to the operating instructions, disassembly, repair or alteration by anyone other than BRK Brands, Inc. Further, the warranty does not cover acts of God, such as fire, flood, hurricanes and tornadoes.

BRK Brands, Inc. shall not be liable for any incidental or consequential damages caused by the breach of any express or implied warranty. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose is limited in duration for 5 years.

Some states, provinces or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state, or province to province.

Service: Units under warranty and in need of repair should be returned, shipping prepaid, to BRK Brands, Inc., Attn.: Consumer Affairs, 3920 Enterprise Court, Aurora, IL 60504-8132.

Warranty: BRK Brands, Inc. makes no warranty, express or implied, written or oral, including that of merchantability or fitness for any particular purpose, with respect to the battery.

IONIZATION SMOKE ALARMS: These units are generally more effective at detecting fast, flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires may include paper burning in a wastebasket or a grease fire in the kitchen.

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