



## USER'S MANUAL

### SMOKE & CARBON MONOXIDE ALARM

BATTERY POWERED WITH  
WIRELESS INTERCONNECT AND  
VOICE & LOCATION

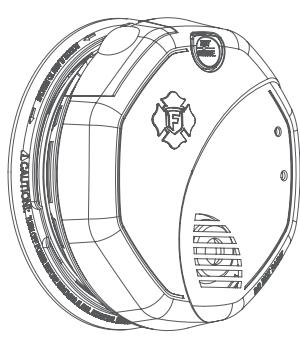
Model SMCO500V

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#### IMPORTANT! PLEASE READ CAREFULLY AND SAVE.

The warnings/limitations card and manual contains important information about your smoke alarm's operation. If you are installing this alarm for use by others, you must leave this manual—or a copy of it—with the end user.

Para el manual del usuario en español, por favor visite firstalert.com



## 01 INTRODUCTION

Thank you for choosing First Alert® for your smoke and carbon monoxide alarm needs. You have purchased a state-of-the-art smoke & carbon monoxide alarm designed to help provide you with early warning of a smoke and/or carbon monoxide danger.

### 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.

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

#### CAUTION!

This combination smoke/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 is not designed to sense gas, heat or flames.

#### WARNING!

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

This Smoke/CO Alarm cannot operate without working batteries. Removing the batteries for any reason, or failing to replace the batteries at the end of their service life, removes your protection.

**NEVER** ignore any alarm. See "If Your Smoke/CO Alarm Sounds" for more information on how to respond to an alarm. Failure to respond can result in injury or death.

The Silence Features are for your convenience only and will not correct a problem. See "Using the Silence Features" for details. Always check your home for a potential problem after any alarm. Failure to do so can result in injury or death.

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

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 that may make them more sensitive to carbon monoxide may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 30 ppm. For additional information on carbon monoxide and your medical condition contact your physician.

## 02 ABOUT SMOKE ALARMS

### TYPES OF ALARMS

All these smoke alarms 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 the alarm. If you are unsure which type of smoke alarm to install, refer the National Fire Protection Association (NFPA) Standard 72 (National Fire Alarm and Signaling 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.

**Battery (DC) operated smoke alarms:** 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 smoke alarms:** Can be interconnected so if one unit senses smoke, all units alarm. They do not operate if electricity fails.

**AC with battery (DC) back-up:** will operate if electricity fails, provided the batteries are fresh and correctly installed. AC and AC/DC units must be installed by a qualified electrician.

**Smoke/CO alarms for solar or wind energy users and battery backup power systems:** AC powered smoke/CO alarms should only be operated with true or pure sine wave inverters. Operating this alarm with most battery-powered UPS (uninterruptible power supply) products or square wave or "quasineutral wave" inverters will damage the alarm. If you are not sure about your inverter or UPS type, please consult with the manufacturer to verify.

**Smoke alarms for the hearing impaired:** Special purpose smoke alarms should be installed for the hearing impaired. They include a visual alarm and an audible alarm horn, and meet the requirements of the Americans With Disabilities Act. Can be interconnected so if one unit senses smoke, all units alarm.

**Smoke alarms are not to be used with detector guards** unless the combination has been evaluated and found suitable for that purpose.

All First Alert® smoke alarms conform to regulatory requirements, including UL217 and are designed to detect particles of combustion. Smoke particles of varying number and size are produced in all fires.

Ionization technology is generally more sensitive than photoelectric technology at detecting small particles, which tend to be produced in greater amounts by 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 technology is generally more sensitive than ionization technology at detecting large particles, which tend to be produced in greater amounts by smoldering fires, which may 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 and in every bedroom of your home.

## 03 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 "Regulatory Information For Smoke Alarms" for details on the NFPA recommendations).

For CO alarms, the National Fire Protection Association (NFPA) recommends that a CO alarm should be centrally located outside of each separate sleeping area in the immediate vicinity of the bedrooms. For added protection, install additional CO alarms in each separate bedroom, and on every level of your home.

**NOTE:** For added protection, install an additional smoke/CO alarm at least 15 feet (4.6 meters) away from the furnace or fuel burning heat source where possible. In smaller homes or in manufactured homes where this distance cannot be maintained, install the alarm as far away as possible from the furnace or other fuel burning source. Installing the alarm closer than 15 feet (4.6 meters) will not harm the alarm, but may increase the frequency of unwanted alarms.

### 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 (4.4° C and 37.8° C).

### RECOMMENDED PLACEMENT:



**Smoke Alarm**  
One on every level and in every bedroom

**CO Carbon Monoxide Alarm**  
One on every level and in every bedroom

**Fire Extinguisher**  
One on every level and in every bedroom

- When installing on the wall, the top edge of smoke alarms 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" for more information.

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

### INSTALLING SMOKE/CO ALARMS IN MOBILE HOMES

For minimum security install one smoke/CO 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.

### WHERE NOT TO INSTALL THIS ALARM

#### DO NOT LOCATE THIS SMOKE/CO ALARM:

- In garages, furnace rooms, crawl spaces and unfinished attics. Avoid extremely dusty, dirty or greasy areas.
- Where combustion particles are produced. Combustion particles form when something burns. Areas to avoid include poorly ventilated kitchens, garages, and furnace rooms. Keep units at least 20 feet (6 meters) from the sources of combustion particles (stove, furnace, water heater, space heater) if possible. In areas where a 20-foot (6 meter) distance is not possible – in modular, mobile, or smaller homes, for example – it is recommended the smoke alarm be placed as far from these fuel-burning sources as possible. The placement recommendations are intended to keep these alarms at a reasonable distance from a fuel-burning source, and thus reduce "unwanted" alarms. Unwanted alarms can occur if a smoke alarm is placed directly next to a fuel-burning source. Ventilate these areas as much as possible.
- Within 5 feet (1.5 meters) of any cooking appliance. 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.
- In areas where temperature is colder than 40° F (4.4° C) or hotter than 100° F (37.8° C). These areas include non-air conditioned crawl spaces, unfinished attics, uninsulated or poorly insulated ceilings, porches, and garages.
- 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.
- In "dead air" spaces.

### AVOIDING DEAD AIR SPACES

"Dead air" spaces may prevent smoke from reaching the smoke alarm. To avoid dead air spaces, follow installation recommendations below.

**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.

**For wall mounting** (if allowed by building codes), the top edge of smoke alarms should be placed between 4 inches (102 mm) and 12 inches (305 mm) from the wall/ceiling line, below typical "dead air" spaces.

**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.

### WIRELESS OPERATION

First Alert® Wireless Interconnect Technology is the easy, cost-effective way to provide your family with whole-home safety. Compatible Wireless Interconnect alarms communicate with each other without wires or connectors. When one alarm sounds, they all sound. This provides your family with an earlier warning of potential danger, and gives you more time to react.

The communication distance (range) between any two compatible Wireless Interconnect alarms is typically 100 feet (30 meters) inside of a home. Some features of a home, such as the number of levels, number/size of rooms, furniture and types of building materials used may reduce the range of the alarms. Examples include: suspended ceilings, ductwork, large metallic appliances (refrigerators) and metal studs. A feature of Wireless Interconnect alarms is that they operate as a mesh network. All alarms will repeat any alarm signal that is received to all other Wireless Interconnect alarms. Interference from structural conditions can be overcome by adding additional alarms to route the wireless signal around obstructions.

Compatible Wireless Interconnect Alarms: SM500V, SM500-AC

#### IMPORTANT:

- The range and proper operation of any wireless device will vary depending on its surroundings. It is very important that each alarm is tested individually before and after installation to make sure that all alarms respond properly.

The Wireless Interconnect alarms are not to be used outdoors or to transmit between buildings. The alarms will not communicate properly under these conditions.

Metals objects and metallic wallpaper may interfere with signals from wireless alarms. Alarms should be tested after changes to your home such as remodeling, moving furniture, and with metal doors opened and closed.

Your First Alert® Wireless Interconnect Smoke/CO alarm will automatically communicate potential fires with all other compatible First Alert® Wireless Interconnect Smoke/CO alarms.

### 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.

#### CAUTION!

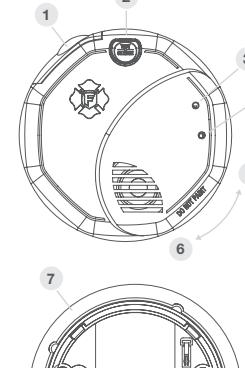
- Do not connect this unit to any other alarm or auxiliary device. It is a single-station unit that cannot be linked to other devices. Connecting anything else to this unit may prevent it from working properly.
- Do not install this unit over an electrical junction box. Air currents around junction boxes 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.

This unit is designed to be mounted on the ceiling, or on the wall if necessary.

**Tools you will need:** pencil, drill with 3/16" (5 mm) drill bit, standard flathead screwdriver, hammer

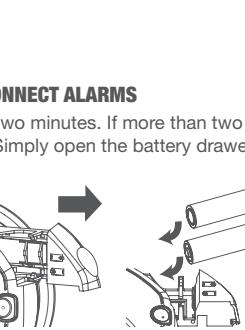
### THE PARTS OF THIS SMOKE/CO ALARM

- Battery compartment, install batteries here
- Test/Silence button
- CO Alarm LED
- Power/Smoke Alarm LED
- Turn this way to attach
- Turn this way to remove
- Mounting bracket
- Mounting slots



### FOLLOW THESE SIMPLE STEPS

- Choose a location. See "Where to Install This Alarm" for reference.  
**WARNING!** Do not install this alarm over an existing electrical box. Only AC powered units are intended for installation over electrical boxes.
- Hold the mounting bracket against the ceiling (or wall) so the vertical mounting slot is aligned in the 12 o'clock position and trace around the inside of the mounting slot (vertical and horizontal mounting).
- Put the unit where it won't get covered with dust when you drill the mounting holes.
- Using a 3/16" (5 mm) drill bit, drill a hole through the center of the oval outlines you traced.
- Insert the plastic screw anchors (in the plastic bag with screws) into the holes. Tap the screw anchors gently with a hammer, if necessary, until they are flush with the ceiling or wall.
- Line the mounting bracket up over the plastic screw anchors. Screw the mounting bracket to the ceiling or wall through the mounting slots using the two screws provided.
- Install the batteries. First install the battery closest to the outside of the alarm and then the battery which is closer to the inside of the alarm. Match the + and - orientation to that shown on the alarm. Push the batteries in until they snap securely. If the batteries are not snapped in completely, the unit cannot receive battery power. **NOTE:** After you install the batteries, there will be LED and horn activation prompts.
- Position the base of the alarm over the mounting bracket and turn. Turn the alarm clockwise until the unit is in place.
- Test the alarm. See "Weekly Testing."



### ADDING AND LINKING ADDITIONAL WIRELESS INTERCONNECT ALARMS

NOTE: Steps 1 through 3 need to be completed within two minutes. If more than two minutes pass, the Green power LED will stop blinking. Simply open the battery drawer of the second alarm and repeat steps 1 through 3.

- Insert the batteries into the battery drawer of the next alarm. DO NOT CLOSE THE DRAWER.
- Press and hold the test button and then close the battery drawer.

- Once you hear the unit chirp, release the test button. The Green power LED will start to blink indicating the Wireless Interconnect alarm is waiting for program data from one of the other setup Wireless Interconnect alarms.

### STEP BY STEP GUIDE TO PROGRAMMING THIS ALARM

For First Time and When Changing Batteries

Action	Alarm Will Say
Insert batteries (2, AA batteries)	"Welcome, First Alert Carbon Monoxide and Smoke Alarm." "No location programmed" if first time or "[Location, example: "Basement"]" location programmed" when changing batteries. "To select location, press and hold test button now."
Press & hold test button if you would like to program the location or change the location of the alarm. Release button after alarm responds.	"To save location, press and hold test button after location is heard." Alarm will speak list of locations (see below).
After you hear the location of where you are placing the alarm, press & hold the test button.	"[Location, example: "Basement"] location saved." If no location is chosen: "No location saved."
	Your alarm has now been programmed for the location of your choice. <b>Available Locations:</b> Basement, Hallway, Office, Child's Bedroom, Kitchen, Utility Room, Dining Room, Living Room, Family Room, Master Bedroom, Guest Bedroom, No Location.

### TO UNLOCK THE BATTERY COMPARTMENT

1. Remove the alarm from the mounting bracket. If the unit is locked to the bracket, see the section "To Unlock the Mounting Bracket".

2. Insert a flathead screwdriver

The alarms are linked but do not communicate with each other.

Possible interference. Reference the **Wireless Operation** section of this manual.

Move alarms to different locations. Add an additional alarm between the unresponsive alarms to route the signal around obstructions.

## CARBON MONOXIDE ALARM ONLY

CO alarm goes back into alarm 4 minutes after you Silence it.

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. Refer to "If The CO Alarm Sounds" for details.**

CO alarm sounds frequently even though no high levels of CO are revealed in an investigation.

The CO alarm may be improperly located. Refer to "Where to Install This Alarm" for details.

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

Silence alarm using Test/Silence button; 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."

If you have questions that cannot be answered by reading this manual, call the Customer Service Team at 1-800-323-9005

## FIRE SAFETY TIPS

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 grease- and debris-free; 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 let rubbish accumulate. Keep alarms clean, and test them weekly. Replace 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 level, and an additional one in the kitchen. Have fire escape ladders or other reliable means of escape from an upper level in case stairs are blocked; 9) Have an escape plan and practice it regularly.

## 06 IF YOUR SMOKE/CO ALARM SOUNDS

### WHAT TO DO FIRST—IDENTIFY THE TYPE OF ALARM SIGNAL

Type of alarm	What You See and Hear
Carbon Monoxide (CO)	Voice: "Warning, evacuate carbon monoxide in [Location, example: "Hallway"], Evacuate." _____ ppm.; Horn: 4 beeps, pause, 4 beeps, voice; LED: Flashes Red
Smoke	Voice: "Warning, evacuate smoke in [Location, example: "Hallway"], Evacuate." Horn: 3 beeps, pause, 3 beeps, voice; LED: Flashes Red

## IF THE CO ALARM SOUNDS

### "ALARM—MOVE TO FRESH AIR"

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

### WARNING!

Activation 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 CO ALARM SIGNAL SOUNDS:

1. Press 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:

**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, air conditioning (HVAC) equipment, combustion appliances and equipment, and/or gas fireplaces or other decorative combustion equipment."

### AFTER AN ALARM

After the emergency responders arrive, the premises aired out, and your CO Alarm remains in its normal condition, you can check what the highest carbon monoxide level sensed was:

Action	Alarm Will Say
Press & Hold Test Button	"Highest carbon monoxide level was _____ ppm. Please see manual." "To clear highest carbon monoxide level, press and hold test button now."

Press & Hold Test Button, if you would like to clear the highest level sensed. If you would like to keep the highest level in memory, do not press anything.

"Highest carbon monoxide level cleared." Alarm will say nothing.

## SMART INTERCONNECT FEATURE

This alarm includes "Smart Interconnect" which enables the Alarm to be interconnected with other First Alert® and BRK Smoke, Heat and "Smart Interconnect" CO Alarms. When smoke is detected, all Alarms will sound the smoke horn pattern. When CO is detected, "Smart Interconnect" Alarms will sound the CO horn pattern. Alarms that do not have the "Smart Interconnect" feature will remain silent during a CO alarm.

## IF THE SMOKE ALARM SOUNDS: RESPONDING TO AN ALARM

**WARNING!**

- If the unit alarms and you are not testing the unit, it is warning you of a potentially dangerous situation that requires your immediate attention. NEVER ignore any alarm. Ignoring the alarm may result in injury or death.
- Never remove the batteries from a battery operated smoke/CO alarm to stop an unwanted alarm (caused by cooking smoke, etc.). Removing batteries disables the alarm so it cannot sense smoke, and removes your protection. Instead open a window or fan the smoke away from the unit. The alarm will reset automatically.
- If the unit alarms get everyone out of the house immediately.

**WHAT TO DO IN CASE OF FIRE**

- Don't panic; stay calm. Follow your family escape plan.
- 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. If a door is cool, open it slowly. Don't open a hot door. Keep doors and windows closed, unless you must escape through them.
- Cover your nose and mouth with a cloth (preferably damp). Take short, shallow breaths.
- Meet at your planned meeting place outside your home, and do a head count to make sure everybody 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 ideas on making your home safer.

**WARNING!** Alarms have various limitations. See "General Limitations of smoke/CO alarms" for details.

## 07 USING THE SILENCE FEATURES

### WARNING!

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

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.

The Silence Feature can temporarily quiet an unwanted alarm for several minutes. You can silence this Smoke/CO Alarm by pressing the Test/ Silence button on the alarm cover for at least 3-5 seconds. After the Test/Silence button is released, the Red LED blinks during the silence mode. Activate the alarm test, reset or silence function by use of a finger or thumb. Use of any other instrument is strictly prohibited.

When the Smoke Alarm is Silenced	When the CO Alarm is Silenced
The smoke alarm will remain silent for up to 15 minutes, then return to normal operation. If the smoke has not cleared—or continues to increase—the device will go back into alarm.	The CO Alarm will remain silent for up to 4 minutes. After 4 minutes, if CO levels remain potentially dangerous the horn will start sounding again.

### SILENCING THE LOW BATTERY WARNING

This silence feature can temporarily quiet the low battery warning "chirp" for up to 8 hours. You can silence the low battery warning "chirp" by pressing the Test/Silence button on the alarm cover.

Once the low battery warning "chirp" silence feature is activated, the unit continues to flash the Green light approximately every 45 seconds for 8 hours. After 8 hours, the low battery "chirp" will resume. Replace the batteries as soon as possible; this unit will not operate without battery power!

To deactivate this feature: Press the Test/Silence button again. The unit will go into Test Mode and the low battery warning will resume (LED flashes and unit sounds "chirp" approximately every 45 seconds).

### SILENCING THE END OF LIFE SIGNAL

This silence feature can temporarily quiet the End of Life warning "chirp" for up to 2 days, up to a total of 14 days. You can silence the End of Life warning "chirp" by pressing the Test/Silence button. The horn will chirp, acknowledging that the End of Life silence feature has been activated. After approximately 2 days, the End of Life "chirp" will resume.

## 08 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.

### SYMPOMTS 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.

### 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!

### FINDING THE SOURCE OF CO AFTER AN ALARM

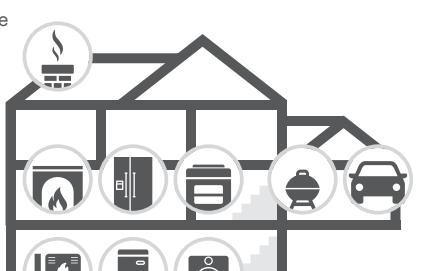
Carbon monoxide is an odorless, invisible gas, which often makes it difficult to locate the source of CO after an alarm. These are a few of the factors that can make it difficult to locate sources of CO:

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

Because CO may dissipate by the time an investigator arrives, it may be difficult to locate the source of CO. 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:** corruded 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 pipe (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.

## 09 HOW CAN I PROTECT MY 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 backdrafting. 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 and 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 all enclosed materials. Read this manual in its entirety, and make sure you understand what to do if your CO alarm sounds.

## 10 REGULATORY INFORMATION FOR SMOKE ALARMS

### RECOMMENDED LOCATIONS FOR SMOKE ALARMS

#### INSTALLING SMOKE ALARMS IN SINGLE-FAMILY RESIDENCES

Installing Smoke Alarms in Single-Family Residences The National Fire Protection Association (NFPA), recommends one smoke alarm on every floor, in every sleeping

area, and in every bedroom. In new construction, the smoke alarms must be AC powered and interconnected. See "Agency Placement Recommendations" for details. For additional coverage, it is recommended that you install a smoke alarm in all rooms, halls, storage areas, finished attics, and basements, where temperatures normally remain between 40° F (4.4° C) and 100° F (37.8° C). Make sure no door or other obstruction could keep smoke from reaching the smoke alarms.

### MORE SPECIFICALLY, INSTALL SMOKE ALARMS:

- On every level of your home, including finished attics and basements.
- Inside every bedroom, especially if people sleep with doors closed.
- In the hall near every sleeping area. If your home has multiple sleeping areas, install a unit in each.
- If a hall is over 40 feet (12 meters) long, install an alarm at each end.
- At the top of the first-to-second floor stairway, and at bottom of basement stairway.

### IMPORTANT:

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. It is recommended that AC or DC units be interconnected for added protection.

### EXISTING HOMES

### NEW CONSTRUCTION

### KEY

### SMOKE ALARMS FOR MINIMUM PROTECTION

### ADDITIONAL SMOKE ALARMS FOR BETTER COVERAGE

### INTERCONNECTED AC OR DC/AC SMOKE ALARMS

### 11 REGULATORY INFORMATION FOR CO ALARMS