Kidde

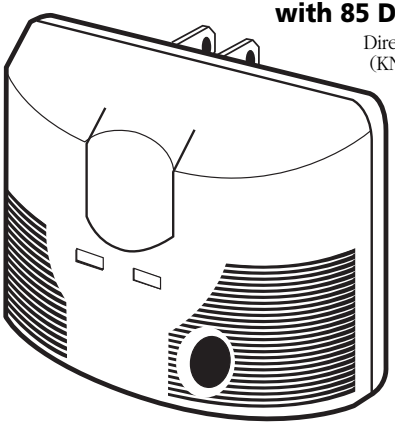
AC Powered

Carbon Monoxide Alarm

User's Guide

Kidde CO Alarm with 85 Decibel Alarm

Direct Plug Model
(KN-COB-DP-H)
900-0107



CSA 6.19-01

ATTENTION: Please take a few minutes to thoroughly read this manual, which should be saved for future reference and passed on to any subsequent owner. If you have any questions about the operation or installation of your alarm, please call our toll free Consumer Hotline at 1-800-880-6788.

810-1439 REV. B

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IMPORTANT

THIS CARBON MONOXIDE ALARM IS DESIGNED TO DETECT CARBON MONOXIDE FROM ANY SOURCE OF COMBUSTION. IT IS NOT DESIGNED TO DETECT SMOKE, FIRE, OR ANY OTHER GAS.

NOT SUITABLE FOR INSTALLATION IN HAZARDOUS LOCATIONS AS DEFINED IN THE NATIONAL ELECTRIC CODE.

UNIT WILL NOT OPERATE DURING A POWER OUTAGE, BUT AUTOMATICALLY RESETS WHEN POWER IS RESTORED.

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Consumer Hotline: 1-800-880-6788
www.kidde.ca

About This User's Guide

Notice we call this booklet a "User's Guide" and not an "Owner's Manual." This is because our intention is for you to *use* this guide just as you will be using your Kidde CO alarm. Keep the guide in a handy location and refer to it when you have questions about your CO alarm, its functions and features, or if you have questions about carbon monoxide. It will take about an hour of your time, but it's well worth it. Please read it in the sequence presented. Reading this guide is the only way to learn how to use your CO alarm wisely and to know how to react in the event of an alarm.

Part One
Your Kidde Carbon Monoxide Alarm, covers the unique features of your Kidde carbon monoxide alarm, how and where to install it, as well as information on testing and maintaining your CO alarm.

Part Two
Carbon Monoxide - The Silent Killer, contains valuable information about carbon monoxide (CO). From discovering the most common sources of CO in your home to recognizing the symptoms of CO poisoning, this section provides tips and information that could help protect your family from carbon monoxide poisoning.

Part Three
What You Should Know Before the Alarm Sounds, describes the effects of exposure to CO levels over time and when your Kidde CO alarm will alarm. It also tells you how to determine who is at high risk for CO poisoning.

Part Four
What to do When the Unit Alarms, gives you step-by step information on how to respond to an alarm situation. Also covered is whom to call for help if you think you have CO in your home.

Part Five
Technical Information, covers the technical specifications of your Kidde CO alarm.

Part Six
Frequently Asked Questions, contains the most commonly asked questions about our alarms. Part six was written by Kidde customer service representatives who handle thousands of calls per month, year 'round. This section provides you with answers and tips that will most likely answer any questions you might have after reading this user's guide.

Introduction

This Kidde carbon monoxide (CO) alarm is an important part of your family's home safety plan. So important, the U.S. Consumer Product Safety Commission (CPSC) recommends that every household should have at least one carbon monoxide alarm. In fact, the CPSC chairman has said that CO alarms are "as important to home safety as smoke alarms." Yet because CO alarms for the home haven't been available until recently, most people haven't had much experience using them. As a new owner of a CO alarm, there are some basic facts you should know for your protection *and* convenience.

Many people think that CO alarms operate like smoke alarms. And in some basic ways, this is true. Like smoke alarms, CO alarms continuously monitor the air in your home and sound a loud alarm to warn you of trouble.

But, the similarities end here. The way you respond to a CO alarm is quite different than that of a smoke alarm. That's because a house fire and a carbon monoxide problem are two distinctly different situations. If your smoke alarm were to alarm, you would quickly be able to judge the level of danger you were in (if any) with your five senses: you could see and smell the smoke, you could feel the heat, you could see and even hear the fire burning. You could also readily see if your smoke alarm were alarming in a non-emergency situation, say if someone smoked up the kitchen with some seriously burnt toast. Because your sense of sight, smell, hearing and touch give you so much information, you could almost instantly judge what action to take if you heard your smoke alarm.

But now, what about a CO alarm? Carbon monoxide (CO) is invisible, odorless, tasteless and non-irritating–completely undetectable to your five senses. That's why it's so important to your safety that you have a carbon monoxide alarm. But, how do you know what to do if your unit alarms?

You have to *learn* what to do, because your five senses won't tell you. That's why this user's guide is so important. Please take the time to read this guide from cover to cover, to familiarize yourself with the facts about carbon monoxide, how your new alarm works, and what to do if it alarms. Then, find a handy place to keep the guide so it will be readily available in the future when you have a question. You might want to write down Kidde's toll-free customer service number and keep it with your other important phone numbers for the same reason.

Thank you for making Kidde a part of your complete home safety program. With proper installation and use, your new Kidde CO alarm should provide you with years of dependable service.

We urge you to read this entire manual in the sequence it is presented. But, if you only read one part of this manual initially, read these two pages!

Listed below are five easy steps for setting up your Kidde CO alarm. Please read the entire guide for complete information.

Setting up your CO alarm for first time operation:

Step 1

Determine the best location for your CO alarm(s). Usually this is in or near bedrooms. Refer to page 11 for complete information.

Step 2

Plug the CO alarm into a standard, unswitched 120 volt AC electric outlet. You will hear the alarm sound briefly to indicate the alarm is receiving power. Refer to page 13 for more details.

Step 3

The green Operate light will come on and stay on showing the CO alarm is receiving power.

Step 4

Next, test the alarm's operation by pressing and releasing the Test/Reset button. The unit will beep quickly 4 times – followed by 5 seconds of silence – followed by 4 quick beeps. This is also the alarm cycle in the event of a CO problem. Familiarize yourself and household members with this alarm pattern. The red Alarm light will come on when the alarm sounds. For complete testing information, refer to page 15.

Step 5

While testing the CO alarm, have someone else check that the alarm can be heard easily from the sleeping areas. The CO alarm should be located where it can wake you if it alarms at night. See page 11 for complete information on the best locations for your CO alarm.

Caution: Continuous exposure to the loud 85 decibel alarm at close range over an extended period of time may cause hearing loss.

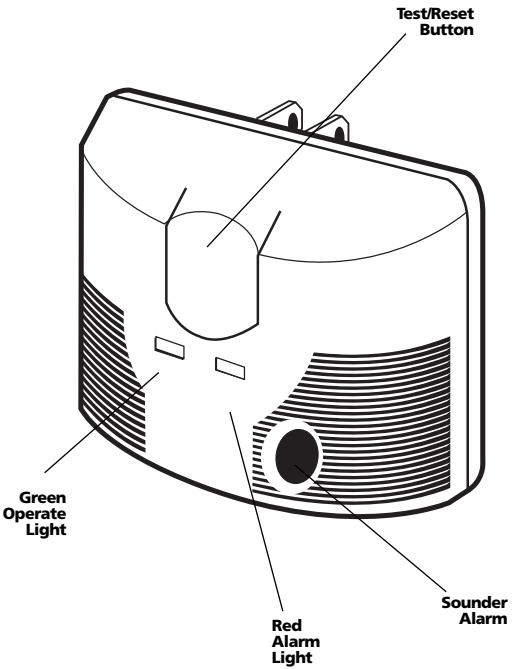
That's it. Your Kidde CO alarm is now monitoring for the presence of carbon monoxide.

Part One – Your Kidde CO Alarm

About Your CO Alarm

While many other CO alarms require costly sensor or battery pack replacement, there are no replacement parts on Kidde CO alarms. This is just one reason why over 4.5 million families have chosen Kidde over every other brand for this kind of life-saving protection.

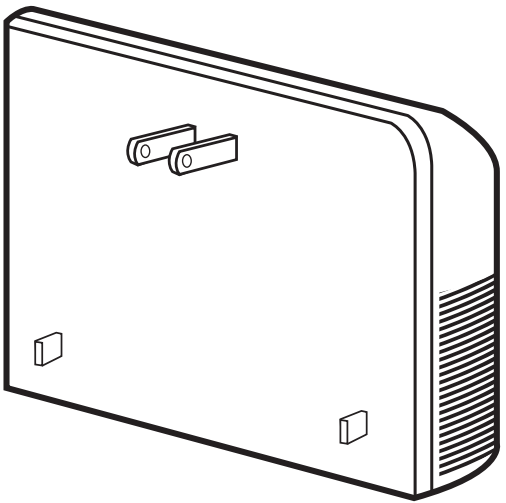
Kidde CO Alarm – front view



Part One – Your Kidde CO Alarm

Kidde CO Alarm – rear view

Direct plug unit
(KN-COB-DP-H)



Kidde's Unique Features

Test/Reset Button

This button has two functions. First, this is the button you press when you test the unit weekly (see page 15 for further details). Secondly, you press this button if the unit alarms and you want to turn it off. This will *reset* the unit and it will then again start monitoring for CO. **(If CO concentration is above 70 ppm, the alarm will again sound within 6 minutes.)**

Vents

Air (and CO) enters into the alarm at the bottom vent and circulates through the sensing chamber. For proper air circulation, keep vents free of dust, dirt or grease, (see "How to care for your CO alarm" page 17). Do not obstruct or block vents, (see "Where to install your CO alarm" on page 11).

Sensor

The sensor is a highly sensitive, electrochemical sensor that is CO-specific to help avoid false alarms. Turn to page 17 for more information on how to care for and protect the CO alarm.

Sounder Alarm

This is the loud 85 decibel pulsing alarm that will sound to alert you to a potential problem. Alarm condition is 4 quick beeps – followed by 5 seconds of silence – followed by 4 quick beeps, repeat. **Caution:** Continuous exposure to this sound level at close range over an extended period of time may cause hearing loss. We recommend you cover the sounder with your finger while testing. More on testing on page 15.

What Carbon Monoxide Alarms Can and Cannot Do

CO alarms are designed to sense unacceptable levels of CO from malfunctioning furnaces, appliances, gas engines or other sources.

CO alarms provide early warning of the presence of carbon monoxide, usually before a healthy adult would experience symptoms.

This early warning is possible, however, only if your Kidde CO alarm is located, installed and maintained as described in this user's guide.

This CO alarm is designed to act as a continuous monitor, it is not designed for use as a short-term testing device to perform a quick check for the presence of CO.

Part One – Your Kidde CO Alarm

CO alarms have limitations. Like any other electronic device, CO alarms are not fool-proof.

CO alarms have a limited operational life. You must test your CO alarm weekly, because it could fail to operate at any time. If your CO alarm fails to test properly, or if its self-diagnostic test reveals a malfunction, immediately have the alarm replaced. See page 34 for warranty information.

CO alarms will not work without power. This CO alarm requires a continuous supply of electric power.

CO alarms can only sense CO that reaches the CO alarm's sensor. Carbon monoxide may be present in other areas without reaching the alarm. The rate at which CO reaches the alarm may be affected by doors or other obstructions. In addition, fresh air from a vent or open window or any other source may prevent CO from reaching the sensor. Please observe cautions on page 11, "Where to install your CO alarm."

CO could be present on one level of the home and not reach a CO alarm installed on a different level. For example, CO in the basement may not reach a alarm on the second level, near the bedrooms. For this reason, we recommend you provide complete coverage by placing a CO alarm on every level of the home.

CO alarms are not smoke alarms. CO alarms do not sense smoke or fire. For early warning of fire you must install smoke alarms, even though carbon monoxide can be generated by a fire.

CO alarms should not be used to detect the presence of natural gas (methane), propane, butane, or other combustible fuels.

CO alarms are not a substitute for property, disability, life or other insurance of any kind. Appropriate insurance coverage is your responsibility. Consult your insurance agent.

Where to Install Your CO Alarm

Your Kidde CO alarm should be mounted in or near bedrooms and living areas. It is recommended that you install a Kidde CO alarm on each level of a multi-level home. You may use the number and location of smoke alarms installed in your home according to current building code requirements as a guide to the location of your Kidde CO alarm(s).

WHEN CHOOSING YOUR INSTALLATION LOCATIONS, MAKE SURE YOU CAN HEAR THE ALARM FROM ALL SLEEPING AREAS. IF YOU INSTALL ONLY ONE CARBON MONOXIDE ALARM IN YOUR HOME, INSTALL THE ALARM NEAR BEDROOMS, NOT IN THE BASEMENT OR FURNACE ROOM.

Seven (7) years after initial power up, this unit will "chirp" every 30 seconds to indicate that it is time to replace the alarm. After seven years the device may no longer detect carbon monoxide accurately and should be replaced immediately. To help identify the date to replace the unit, a label has been affixed to the side of the alarm. Write the "Replace by" date (7 years from power up) in permanent marker on the label.

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

IMPORTANT: Improper location can affect the sensitive electronic components in this CO alarm. Please see the next section describing where NOT to install this CO alarm.

Where Not to Install Your CO Alarm

To avoid causing damage to the CO alarm, to provide optimum protection, and to prevent unnecessary alarms, follow the directions below where NOT to install this CO alarm:

It is not recommended that you install this CO alarm in garages, kitchens or furnace rooms. Installation in these areas could lead to nuisance alarms, may expose the sensor to substances that could damage or contaminate it, or the alarm may not be heard by persons in other areas of the home, especially if they are sleeping.

In the garage, vehicle exhaust can contain some carbon monoxide. These levels are higher when the engine is first started. CO levels in a garage may not be sufficient to activate the alarm immediately. Within hours of starting a vehicle and backing it out of the garage, the levels present over time can activate the alarm and become a nuisance.

In the kitchen and furnace room, some gas appliances can emit a short burst of carbon monoxide upon startup. This is normal. If your CO alarm is mounted too close to these appliances, it may alarm often and become a nuisance.

If you must install a Kidde CO alarm near a cooking or heating appliance, **install at least 5 feet away from the appliance.**

Do not install in excessively dusty, dirty or greasy areas such as kitchens, garages and furnace rooms. Dust, grease or household chemicals can contaminate or coat the alarm's sensor, causing the unit not to operate properly.

Do not obstruct the vents of the CO alarm. Place the CO alarm where drapes, furniture or other objects do not block the flow of air to the vents.

Do not install in dead air space, such as peaks of vaulted ceilings or gabled roofs, where carbon monoxide may not reach the sensor in time to provide early warning.

Do not install in turbulent air from ceiling fans. Do not install near doors and windows that open to the outside, near fresh air vents, or anywhere that is drafty. Rapid air circulation from fans or fresh air from outside may affect the unit's alarm response time.

Do not install this CO alarm in a switch- or dimmer-controlled outlet.

Do not install in areas where the temperature is colder than 40˚F (4.4˚C) or hotter than 100˚F (37.8˚C). These areas include unconditioned crawl spaces, attics, porches and garages. Extreme temperatures will affect the sensitivity of the CO alarm.

Do not install CO alarm near deep cell large batteries. Large batteries have emissions that can cause the CO alarm to perform at less than optimal performance.

The following conditions can result in transient CO situations:

Excessive spillage or reverse venting of fuel-burning appliances caused by:

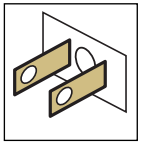
- outdoor ambient conditions, such as wind direction and/or velocity, including high gusts of wind, and insufficient draft in the vent pipes;
- negative pressure differential resulting from the use of exhaust fans;
- simultaneous operation of several fuel-burning appliances competing for limited internal air;
- loose vent pipe connections from fuel-fired appliances;
- obstructions, or unconventional vent pipe designs that can amplify the above situations;
- poorly designed or maintained chimneys and/or vents;

Extended operation of unvented fuel-burning devices (range, oven, fireplace, etc.);

Temperature inversions that can trap exhaust gasses near the ground; and a

Car idling in an open or closed attached garage, or near a home.

Direct Plug Unit (KN-COB-DP-H)



First, refer to "Where to Install Your CO Alarm" on page 11 for general guidelines as to where to locate your CO alarm.

To install:

1. Choose a standard 120V outlet to plug alarm into.

CAUTION: Do not rotate unit while plugged in, as damage to plug may result.

Normal Operating Characteristics

When you first power up the alarm, the red alarm light will come on and the alarm will sound briefly, then the green operate light will come on. All this is to let you know the CO alarm is receiving power and that the alarm circuit is functioning.

Within a few minutes, your carbon monoxide alarm will start monitoring for CO and will continue to do so as long as it receives power.

Your Kidde CO alarm will now sample the air every fifteen seconds and alert you if it senses dangerous CO levels.

For more information about the effects of CO exposure at different levels over time, refer to the chart on 23 as well as the information on pages 24-26.

When the CO alarm is unplugged or loses power, a fading alarm will sound briefly to alert you that it has been disconnected from its power source. For example, this fading alarm will sound in the event of a power outage. A brief alarm will also sound to alert you when the power is restored.

For information about how the unit alarms, turn to page 29.

For information about alarm's malfunction alert, turn to page 16.

Testing the Electronics

You should test the alarm once a week, following the directions listed below. If at any time you test the alarm and it does not perform as described below, have it replaced immediately. Turn to page 16 "How to know if your alarm is malfunctioning" for a description of the characteristics of a malfunctioning alarm and what you should do if a malfunction occurs.

Observe the CO alarm regularly to make sure the green operate light is on, indicating normal operation.

If the green operate light is not on, unplug the CO alarm for three minutes, then plug in again. This will clear the alarm for restart. If the green operate light does not come back on, your CO alarm may be malfunctioning.

To test the CO alarm, press and release the Test/Reset button, within 15 seconds if the CO alarm is operating properly, you will hear 4 quick beeps – followed by 5 seconds of silence – followed by 4 quick beeps. Notice the Red Alarm Light flashes when the unit alarms.

When you test the CO alarm, we advise you to place your finger over the sounder opening in the front of the CO alarm.

Within a minute, the alarm will then return to monitoring for carbon monoxide.

NOTE: Pressing the Test/Reset button tests the functions of the CO alarm's internal components, circuitry and micro-computer. **YOU DO NOT NEED TO PRESS THE TEST BUTTON TO TAKE A CO READING.**

Part One – Your Kidde CO Alarm

How to Know If Your Alarm is Malfunctioning

Your CO alarm performs an internal self-diagnosis every fifteen seconds to make sure that it is functioning properly. The CO alarm is designed to alert you in the unusual event of a malfunction.

If the alarm malfunctions.

In the rare event that your alarm malfunctions, it will alert you with one of these signal groups (depending upon the type of malfunction that occurs):

Malfunction Signal Group 1 - Component Failure

- An intermittent "chirping" alarm will sound every 30 seconds.

OR,

Malfunction Signal Group 2 - Microprocessor Failure

- The alarm will sound continuously, and
- The alarm cannot be shut off by pushing the "Test/Reset" button

Unplug the CO alarm immediately and return for warranty exchange (see "Warranty" on page 34).

What to do if you're not sure...

PLEASE familiarize yourself with the malfunction alert, and do not confuse these signals with an alarm. After reading the information above, if you are still unsure whether your CO alarm is operating properly, call the Kidde toll-free consumer hotline at 1 800-581-6742 to do a quick diagnostic check of the alarm over the phone. The customer service representative will be able to assist you and answer your questions.

If your CO alarm sounder is beeping, and you are not sure if it is a CO alarm or a malfunction alert, reset the alarm, open windows for ventilation, turn off fuel-burning appliances (like kerosene or oil heaters, furnaces, gas ranges, wood-burning stoves, water heaters, or other fossil-fuel burning appliances). For furnaces, you can simply turn down the thermostat to its lowest setting. Open windows and doors for ventilation. Then call the Kidde toll-free consumer hotline at 1 800-581-6742 for assistance.

Before you call a qualified technician (such as a licensed heating contractor, utility service technician, chimney sweep or fuel provider) to check your residence for CO, remember that you will probably be charged for a service call. Kidde customer service operators are available to answer your questions and assist you in non-emergency situations at no charge.

Never ignore a CO unit's alarm. A true alarm is an indication of potentially dangerous levels of carbon monoxide. CO alarms are designed to alert you to the presence of carbon monoxide before an emergency, before most people would experience symptoms of carbon monoxide poisoning, giving you time to resolve the problem calmly.

Part One – Your Kidde CO Alarm

How to Care for Your CO Alarm

To keep your CO alarm in good working order, you must follow these simple steps:

WHAT YOU SHOULD DO:

- Test the CO alarm once a week by pressing the Test/Reset button
- Vacuum the alarm cover once a month to remove accumulated dust. Use the soft brush attachment of your vacuum cleaner, and unplug the CO alarm from the electrical outlet before vacuuming.
- Instruct children never to touch, unplug or otherwise interfere with the unit. Warn children of the dangers of CO poisoning.

WHAT YOU SHOULD NOT DO:

- Never use detergents or solvents to clean the CO alarm. Chemicals can permanently damage or temporarily contaminate the sensor.
- Avoid spraying air fresheners, hair spray, paint or other aerosols near the CO alarm.
- Do not paint the CO alarm. Paint will seal the vents and interfere with proper sensor operation.
- Do not mount the CO alarm directly above or near a diaper pail, as high amounts of methane gas can cause temporary readings on the digital display.

Note: If you will be staining or stripping wood floors or furniture, painting, wall-papering, or using aerosols or adhesives for a do-it-yourself project or hobby, **before you begin: Remove the CO alarm to a remote location to prevent possible damage to or contamination of the sensor.** You may wish to unplug the CO alarm and store it in a plastic bag during the project.

The following is a list of substances which, at high levels, can affect the sensor and may cause a nuisance alarm that is not a carbon monoxide alarm.

Methane, propane, iso-butane, ethylene, ethanol, alcohol, iso-propanol, benzene, toluene, ethyl acetate, hydrogen, hydrogen sulfide, sulfur dioxides.

Also most aerosol sprays, alcohol based products, paints, thinners, solvents, adhesives, hair sprays, after shaves, perfumes, auto exhaust (cold start) and some cleaning agents.

Part Two – Carbon Monoxide - The Silent Killer

What is Carbon Monoxide?

Carbon monoxide (CO) is an odorless, colorless, poisonous gas created when any fuel is burned – gasoline, propane, natural gas, oil, wood, coal, and even tobacco. When combustion air is limited, more CO is produced. Serious problems can develop when combustion by-products are not properly vented outside the house.

You've probably heard about carbon monoxide poisoning in the news recently. It's a problem receiving more attention because groups like the American Lung Association and the Consumer Product Safety Commission have made it a priority to warn the public about the dangers of this deadly household poison.

What are the Effects of CO Exposure?

When you breathe carbon monoxide, it enters your bloodstream through your lungs and attaches to red blood cells. These red blood cells, called hemoglobin, carry oxygen throughout your body. Carbon monoxide molecules attach to the red blood cells 200 times faster than oxygen, preventing the flow of oxygen to your heart, brain and vital organs. As carbon monoxide accumulates in your bloodstream, your body becomes starved for oxygen. The amount of carbon monoxide in a person's body can be measured by a simple blood test, called a "carboxyhemoglobin level" test .

The early symptoms of carbon monoxide poisoning are often mistaken for the flu – headache, dizziness, weakness, nausea, vomiting, sleepiness, and confusion.

Breathing very high concentrations of carbon monoxide can be lethal in minutes. Breathing low concentrations over time is dangerous, too. Long term exposure to low levels could cause permanent heart and brain damage.

Could Your Family be at Risk for CO Poisoning?

Carbon monoxide is the number one cause of poisoning deaths in the United States. According to the Mayo Clinic, at least 10,000 Americans are affected by CO poisoning each year.

While anyone is susceptible, experts agree that unborn babies, small children, senior citizens and people with heart or respiratory problems are especially vulnerable to CO and are at the greatest risk for death or serious injury.

Part Two – Carbon Monoxide - The Silent Killer

Where Does CO Come From?

Inside your home, appliances used for heating and cooking are the most likely sources of carbon monoxide. Vehicles running in attached garages can also produce dangerous levels of carbon monoxide.

A by-product of combustion, carbon monoxide can be a potential problem from a number of common sources – automobiles, furnaces, water heaters, fireplaces, wood stoves, charcoal grills, gas ranges, space heaters and portable generators.

When these appliances are in good working condition with proper ventilation, lethal carbon monoxide gas is vented outdoors where it quickly disperses. But even the slightest malfunction or misuse of any of these sources can lead to a build-up of carbon monoxide in your home that can become deadly before you'd even know it's there.

And you don't have to have ancient appliances to have a problem. Today's more energy-efficient, airtight home designs can trap CO-polluted air inside where it can quickly build to lethal levels.

What Can You do to Protect Your Family?

To be safe, know the possible sources of CO in your home. Keep fuel-burning appliances and their chimneys and vents in good working condition. Learn the early symptoms of exposure, and if you suspect carbon monoxide poisoning, move outside to fresh air and get emergency help. A blood test can confirm that CO caused the problem.

Your first line of defense is an annual inspection and regular maintenance of your appliances. Contact a licensed contractor or call your local utility company for assistance.

But remember, problems can begin after an inspection is over, like a crack in a furnace heat exchanger, or a leak in a water heater vent or a bird's nest blocking a flue. That's why you need the 24-hour protection provided by a CO alarm.

Part Two – Carbon Monoxide - The Silent Killer

Home Safety Tips

What You Can Do...

- Buy only appliances approved by a nationally recognized testing laboratory.
- Choose fuel-burning appliances that can be vented to the outdoors, whenever possible.
- Make sure appliances are installed according to manufacturer's instructions and local building codes. Most appliances should be installed by professionals and should be inspected by the proper authority after installation.
- Have the heating system, vents, chimney and flue inspected and cleaned by a qualified technician every year.
- Follow manufacturer's directions for safe operation of all fuel-burning appliances.
- Examine vents and chimneys regularly for improper connections, visible rust or stains.
- Open a window when a fireplace or wood-burning stove is in use, and provide adequate outdoor air for furnace and water heater.
- Notice problems that could indicate improper appliance operation:
  - Decreasing hot water supply
  - Furnace unable to heat house or runs constantly
  - Sooting, especially on appliances
  - Unfamiliar or burning odor
  - Yellow or orange flame
- Be aware of the symptoms of carbon monoxide poisoning:
  - headaches, dizziness, weakness, sleepiness, nausea, vomiting, confusion and disorientation.
- Recognize that CO poisoning may be the cause when family members suffer from flu-like symptoms that don't disappear but improve when they leave home for extended periods of time.

Part Two – Carbon Monoxide - The Silent Killer

What You Should Not Do...

- Never burn charcoal inside a home, garage, cabin, RV or camper.
- Never install, service, or convert fuel-burning appliances from one type to another without proper knowledge, skills, and tools.
- Never use a gas range, oven, or clothes dryer for heating.
- Never operate unvented gas-burning appliances, such as kerosene or natural gas space heaters, in a closed room.
- Never operate gasoline-powered engines (like vehicles, motorcycles, lawn mowers, yard equipment or power tools) in confined areas such as garages or basements, **even if** an outside door or window is open.
- Never ignore a safety device when it shuts off an appliance.
- Never ignore a CO alarm.

Be Aware of the Warning Signs of Carbon Monoxide: Clues You Can See...

- Streaks of carbon or soot around the service door of your fuel-burning appliances.
- A yellow or orange flame may indicate a problem with natural gas appliances.
- Excessive rusting on flue pipes or appliance jackets.
- Loose or missing furnace panel.
- Moisture collecting on the windows and walls of furnace rooms.
- Loose or disconnected vent/chimney, fireplace or appliance.
- Small amounts of water leaking from the base of the chimney, vent or flue pipe.
- Rust on the portion of the vent pipe visible from outside your home.
- The absence of a draft in your chimney (indicating blockage).
- Fallen soot from the fireplace chimney.
- Loose, damaged or discolored bricks on your chimney.

Clues You Cannot See...

- Internal appliance damage or malfunctioning components.
- Improper burner adjustment.
- Hidden blockage or damage in chimneys.

Part Three – What You Should Know Before the Alarms Sounds

Determine if anyone in the household is at high risk for CO poisoning:

Many cases of reported carbon monoxide poisoning indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the building or calling for assistance.

You should **take extra precautions to protect high risk persons** from CO exposure because they may experience ill effects from carbon monoxide at levels that would not ordinarily affect a healthy adult.

Are there any infants or small children in the home? Be sure to check them for signs of possible CO poisoning because they might have trouble explaining their symptoms. Infants and children are more susceptible to CO poisoning than a healthy adult.

Pregnant women should be aware that their unborn fetus could be harmed by exposure to carbon monoxide, even when the mother suffers no ill effect herself. Any pregnant woman who suspects she may have been exposed to carbon monoxide should immediately contact her physician.

Is there anyone in the household who is elderly, or who has anemia, heart disease or respiratory problems, emphysema or chronic bronchitis? These individuals are at higher risk for CO poisoning and for health problems from exposure to low levels of carbon monoxide.

If anyone in the household is at high risk for CO poisoning, we urge you to take extra precautions to prevent possible poisoning. If the unit alarms, remove the at-risk person from the premises, if possible. Ventilate the area. The high-risk person(s) should not re-enter the residence until the source of the CO problem has been identified and corrected.

Part Three – What You Should Know Before the Alarms Sounds

Understand the Effects of Carbon Monoxide Exposure

Concentration of CO in Air *(ppm = parts per million)*	Approximate Inhalation Time and Symptoms Developed
50 ppm	The maximum allowable concentration for continuous exposure for healthy adults in any 8-hour period, according to OSHA*.
200 ppm	Slight headache, fatigue, dizziness, nausea after 2-3 hours.
400 ppm	Frontal headaches within 1-2 hours, life threatening after 3 hours.
800 ppm	Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2-3 hours.
1 600 ppm	Headache, dizziness and nausea within 20 minutes. Death within 1 hour.
3 200 ppm	Headache, dizziness and nausea within 5-10 minutes. Death within 25-30 minutes.
6 400 ppm	Headache, dizziness and nausea within 1-2 minutes. Death within 10-15 minutes.
12 800 ppm	Death within 1-3 minutes.

** Occupational Safety and Health Administration*

Reminder: The chart above relates to the exposure of healthy adults. Read the info on the previous page for descriptions of those who are at higher risk.

Part Four – What to do When the Alarm Sounds

Determine if anyone in the household is experiencing symptoms of CO poisoning. 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. Also young children and household pets may be the first affected. The following symptoms are related to CARBON MONOXIDE POISONING and should be discussed with ALL members of the household:

Mild Exposure: Headaches, running nose, sore eyes, often described as "flu-like" symptoms.

Medium Exposure: Dizziness, drowsiness, vomiting.

Extreme Exposure: Unconsciousness, brain damage, death.

Become familiar with these common symptoms from CO poisoning.

If you experience even mild symptoms of CO poisoning, consult your doctor immediately!

Carbon Monoxide Alarm Procedure

WARNING: Actuation of the CO Alarm indicates the presence of Carbon Monoxide (CO) which can kill you.

If alarm signal sounds 4 quick beeps, 5 seconds off:

1) Immediately move to fresh air - outdoors or by an open door or window. Check that all persons are accounted for. Do not re-enter the premises or move away from the open door/window until emergency services responders have arrived, the premises have been aired out, and your alarm remains in its normal operating condition.

2) Call your emergency local service (fire deptartment or 911).

PHONE NUMBER

Never restart the source of a CO problem until it has been corrected. **Never ignore the sound of the alarm!**

Part Four – What to do When the Alarm Sounds

Treatment for CO Poisoning

Any person who is suspected to have carbon monoxide poisoning should leave the potentially dangerous environment, get fresh air immediately and seek care from a physician. CO poisoning can be determined by a simple blood test, called a "carboxyhemoglobin" test. This test measures the amount of carbon monoxide in the bloodstream. For this test to be accurate, it must be done immediately after CO exposure. Acute CO poisoning is usually treated by breathing in oxygen. When CO poisoning is severe, (for example, when there is an altered state of consciousness), high pressure oxygen therapy in a special "hyperbaric chamber" may be used. A physician will make this determination and administer treatment if necessary.

Calling a Qualified Technician to Find and Repair the Problem

If you call a qualified service technician (such as a licensed heating contractor, utility service technician, chimney sweep or fuel provider) to inspect your home for possible sources of CO, you will want to tell them which appliances (if any) were operating before the alarm sounded. Do not restart these appliances until the problem is corrected. Request service for as soon as possible, like **TODAY.**

Please be aware that some service technicians may charge a fee to inspect your home, even if the source of CO is not found. You may wish to find out if you will be charged for the service and the amount of the fee before you request service. Some public utilities do not charge for inspection. Some service technicians do not charge if you purchased your appliance from them. To know for sure, you need to ask before the technician comes to your home. Repair work or replacement of appliances may be necessary to fix the problem that is creating the CO in your home. Remember, a CO alarm can only warn you of the presence of CO, it does not prevent CO from occurring, nor can it solve an existing CO problem.

Because you've provided ventilation by leaving your windows and doors open, the CO buildup may have dissipated by the time help responds. Although your problem may appear to be temporarily solved, it's crucial that the source of the CO is determined and appropriate repairs are made.

Part Four – What to do When the Alarm Sounds

Sometimes it's Difficult to Find the Source of CO in a Home

It can be difficult for responders to locate the source(s) of CO if:

- The house was ventilated before they arrived and the fresh air caused the CO to dissipate.
- The CO problem was caused by a source that fluctuates on and off, sometimes creating CO and sometimes not. Such a situation makes it nearly impossible to pinpoint the source of CO in a short period of time.
- The cause of CO problem was backdrafting – when air in a chimney or flue is sucked into the home instead of venting outside. The exact situation that created a negative air pressure inside the home (the cause of backdrafting) is difficult to recreate during an investigation for CO. Sometimes the CO problem disappears when a door or window is opened. Backdrafting may or may not happen again.

Part Five – Technical Information

Power:	120V AC units: 60 Hz, Current 60 mA max.
Sensor:	Sensor calibrated at 150 ppm (±25 ppm).
Temperature:	Operating range: 40˚F (4.4˚C) to 100˚F (37.8˚C).
Mounting:	**Direct Plug-In:** No mounting screws needed.
Alarm:	85+ dB at 10' @ 3.4 ± 0.5 KHz pulsing alarm. In alarm condition you will hear 4 quick beeps, 5 seconds off, 4 quick beeps, repeat.
Unit Malfunction:	Red "Alarm" light will flash and alarm will sound every 30 seconds. Refer to pages 15 and 16.
Test/Reset Button:	Test button verifies proper unit operation and resets the unit in the event of a CO alarm.
Size:	5"W x 4"H x 1.75"D.
Housing:	Rigid plastic case meets UL94-5V rating.
Warranty:	Five-year warranty from date of purchase against defects in material and workmanship.

Part Five – Technical Information

How the CO alarm determines when to alarm

Your Kidde CO alarm uses advanced technology to monitor the environment in your home and warn you of unacceptable levels of carbon monoxide. An internal microcomputer works together with the carbon monoxide sensor inside the alarm to determine the levels of carbon monoxide in the air and to calculate the rate that CO would be absorbed into the human body.

The microcomputer is calibrated to trigger the alarm before most people would experience any symptoms of carbon monoxide poisoning. Because carbon monoxide is a cumulative poison, long-term exposures to low levels can cause symptoms, as well as short-term exposures to high levels. Your Kidde CO alarm has a time weighted alarm, so the higher the level of carbon monoxide present, the sooner the alarm will be triggered.

This CO alarm meets response time requirements as follows:
At 70 ppm, the unit must alarm within 60-240 minutes.
At 150 ppm, the unit must alarm within 10-50 minutes.
At 400 ppm, the unit must alarm within 4-15 minutes.

WARNING: This product is intended for use in ordinary indoor residentual areas. It is not designed to measure compliance with commercial and industrial standards. This device is designed to protect individuals from acute effects of carbon monoxide exposure. It will not fully safeguard individuals with specific medical conditions. If in doubt, consult a medical practitioner. Individuals with medical problems may consider using warning devices, which provide audible and visual signals for carbon monoxide concentrations under 30 ppm.

Part Six – Frequently Asked Questions

Q. How many alarms do I need in my house? How much square footage will one CO alarm cover?

A. We recommend you place alarms near the sleeping area(s). If you have a multi-level home, you should place a CO alarm on each level of the home. A good rule of thumb for the number and placement of CO alarms for your particular home is to place CO alarms near smoke alarms that have been installed to meet current building code requirements.

Generally, one CO alarm can be adequate for 1,200 to 1,500 square feet of living space. The most important determination for the number of alarms needed is whether an alarm can be heard in all sleeping areas.

Q. What is the lowest level at which the CO alarm will sound?

A. The lowest level of carbon monoxide at which the alarm will sound is 45 ppm. The CO alarm must be exposed continuously to this level for at least three hours.

Q. Can you explain what "time-weighted alarm" means?

A. Because carbon monoxide is a cumulative poison, two factors determine how the body is affected by CO: the level of exposure and the length of exposure. For example, being continuously exposed to low levels of carbon monoxide for many hours can be as dangerous as being exposed to higher levels of CO for a short period of time.

The microchip inside your Kidde CO alarm monitors the air for the presence of carbon monoxide and computes the levels and length of exposure, alarming when you should be concerned about CO exposure.

For more information about the alarm, see page 29.

Q. Do I have to press the test button to get a CO alarm?

A. No. If it detects a dangerous level of CO it will alarm automatically. To test the internal components and circuitry of your CO alarm, press the Test/Reset button.

Q. What happens if the power goes out?
A. If the power goes out, your alarm will sound a fading alarm to alert you that power has been disconnected. When the power is restored, the CO alarm will automatically reset and will sound a brief alarm to indicate it is receiving power.

In the event of a power outage, it is important to remember never to use alternative sources of heat indoors such as charcoal, a gas oven or unvented space heaters. These heat sources can cause extremely dangerous amounts of carbon monoxide.

Q. My unit has never alarmed. Is it really working?
A. If the green operate light is always on and the alarm operates as described on page 15 when you test it, your CO alarm is constantly monitoring for the presence of CO.

Q. You warranty the alarm for five years. How will I know when it doesn't work anymore and I need to buy a new one?
A. In any event of malfunction, your alarm should alert you with malfunction signals. These signals are described in detail on page 16.

Q. I called in someone to inspect my home for CO after my unit alarmed, and he couldn't find anything wrong. Why? Does that mean this alarm "false alarmed"?
A. No. Please read the information explaining why a CO problem can be difficult to diagnose on page 27. Also, please read the information on page 16 to make sure you experienced an alarm and not a malfunction alert.

Q. How much electricity does it take to run the CO alarm?
A. The CO alarm uses less than one watt of electricity. A typical night light uses four watts.

Q. Will the CO alarm last longer if I unplug it during the summer months and only use it during the winter?
A. No. Some components of the CO alarm can deteriorate over time if not used regularly. We recommend the CO alarm be plugged in continuously for maximum alarm life.

Part Six – Frequently Asked Questions

Q. I use the CO alarm in a vacation home that isn't always occupied and can have temperature extremes when no one is there (no heat or no air conditioning). Will that hurt the CO alarm? Should I leave it plugged in all the time?
A. We recommend that your CO alarm not be installed in areas where temperatures fall below 40˚F (4.4˚C) or rise above 100˚F (37.8˚C). Your CO alarm was designed to be constantly plugged in for maximum performance.

Q. I plugged in the CO alarm at my house (my parents', my neighbors', etc.) and the alarm hasn't sounded. Does that mean everything is OK? (I'm thinking I can return the CO alarm since everything checks out OK.)
A. This CO alarm is designed to act as a continuous monitor, it is not designed for use as a short-term testing device to perform a quick check for the presence of CO.

Remember, a carbon monoxide problem can occur at any time, even after a professional inspection has determined that everything is in proper working order. Examples of problems that can develop are a crack in a furnace heat exchanger, a leak in a water heater vent, or a bird's nest blocking a flue.

That's why you need the 24-hour protection provided by a CO alarm.

Notes

Limited Warranty

WARRANTY COVERAGE: THE MANUFACTURER WARRANTS TO THE ORIGINAL CONSUMER PURCHASER, THAT THIS PRODUCT WILL BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF FIVE (5) YEARS FROM DATE OF PURCHASE. THE MANUFACTURER'S LIABILITY HEREUNDER IS LIMITED TO REPLACEMENT OF THE PRODUCT. REPAIR OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT WITH REPAIRED PRODUCT AT THE DISCRETION OF THE MANUFACTURER. THIS WARRANTY IS VOID IF THE PRODUCT HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLECT, TAMPERING OR OTHER CAUSES NOT ARISING FROM DEFECTS IN MATERIAL OR WORKMANSHIP. THIS WARRANTY EXTENDS TO THE ORIGINAL CONSUMER PURCHASER OF THE PRODUCT ONLY.

Warranty Disclaimers: Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and fitness for a particular purpose, are limited in duration to the above warranty period. In no event shall the Manufacturer be liable for loss of use of this product or for any indirect, special, incidental or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The Manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage of any kind resulting from gas leakage, fire or explosion.

Some provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Some provinces do not allow the exclusion or limitation of consequential or incidental damages, so the above limitations or exclusions may not apply to you.

Legal Remedies: This warranty gives you specific legal rights and you may also have other rights that vary from province to province.

Warranty Performance: During the above warranty period, your product will be replaced with a comparable product if the defective product is returned, postage prepaid, to Kidde / Pyrene, Customer Service Department, 130 Esna Park Drive, Markham ON L3R 1E3 1-800-880-6788, together with proof of purchase date. Please include a note describing the problem when you return the unit. The replacement product will be in warranty for the remainder of the original warranty period or for six months, whichever is longer. Other than the cost of postage, no charge will be made for replacement of the defective product.

Important: Do not remove back cover. Back cover removal will void warranty.

Your *Kidde Carbon Monoxide Alarm* is not a substitute for property, disability, life or other insurance of any kind. Appropriate insurance coverage is your responsibility. Consult your insurance agent.

Limited Warranty

The model number and assembly number can be found on the label on the back of the CO alarm.

For Warranty Service:
In many cases the quickest way to exchange your CO alarm is to return it to the original place of purchase. If you have questions, call the KIDDE customer service department at 1-800-880-6788 for assistance.

Please have the following information ready when calling:

CO Alarm Model Number (Located on the back of alarm):
CO Alarm Assembly Number (Located on back of alarm):
Date of Manufacture (Located on back of alarm):
Date of Purchase:
Where Purchased:

For questions concerning your Carbon Monoxide Alarm, please call our Consumer Hotline at 1-800-880-6788

Kidde / Pyrene Corp.

130 Esna Park Drive, Markham, ON, L3R 1E3
Consumer Hotline: 1-800-880-6788
www.kidde.ca

Custom Assembled in China with U.S. and Foreign Components.