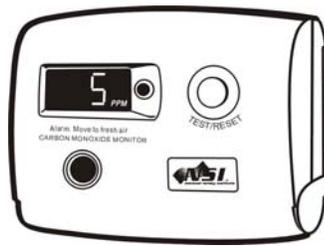


NSI 3000 LOW LEVEL CARBON MONOXIDE MONITOR



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Your new National Safety Institute Low-level Carbon Monoxide Monitor

We at National Safety Institute are pleased that you have chosen the most advanced low-level carbon monoxide monitor available.

This unit features

- An advanced electrochemical sensor designed to accurately measure low-levels of carbon monoxide (CO) providing an early warning of toxic CO levels in your home
- Detects carbon monoxide continuously
- Resistant to false alarms caused by normal household contaminants
- Sounds a loud 85 dB alarm to alert you in case of an emergency
- Digital readout of CO level in parts per million (ppm)
- A continuous circling line on the display when the reading is below 5 ppm
- Remembers peak CO level until battery is removed
- Test/Reset button clears display to 0 ppm
- Icons to identify various status conditions (reset button clears)
- Simple to mount, portable, ideal for traveling
- 5 year limited warranty (*batteries excluded*)

Please read this product manual for your new low-level carbon monoxide monitor carefully. Used properly, this low-level carbon monoxide monitor may not only save a life, but will help protect against chronic low level CO poisoning.

Carbon Monoxide and how it can affect you and your family

Carbon monoxide kills thousands of people each year and injures many more. Like oxygen, CO enters the body through the lungs during the normal breathing process. It competes with oxygen by replacing it in the red blood cells, thereby reducing the flow of oxygen to the heart, brain and other vital organs. In high concentrations, CO can kill in minutes.

Many cases of reported CARBON MONOXIDE POISONING indicate that while victims are aware they are not feeling well, they become disoriented and unable to save themselves by either exiting the building or calling for assistance.

Common Sources of CO

- Oil and gas furnaces, boilers, water heaters
- Wood stoves
- Barbecues
- Wood or gas fireplaces
- Gas & Electric Ovens
- Portable generators
- Idling automobiles
- Gas or kerosene heaters
- Gasoline powered tools
- Cigarette smoke

DO NOT:

- Burn charcoal inside your home, camper, tent or cabin, or outside an open window
- Install, convert or service fuel-burning appliances without proper knowledge, skill and expertise.
- Use a gas range, oven or clothes dryer for heating.
- Operate unvented gas burning appliances using kerosene or natural gas in closed rooms.
- Operate gasoline-powered engines indoors or in confined areas.
- Ignore a safety device when it shuts an appliance off.
- Use this Low Level CO Monitor as a substitute for a UL listed CO detector or alarm as your local, state or federal codes may require CO detectors or alarms to be listed under UL 2034.
- Use as a portable CO Analyzer to test directly for spillage of CO from fuel-burning appliances or chimneys.

EDUCATE YOURSELF AND YOUR FAMILY ON THE SOURCES AND SYMPTOMS OF CO POISONING AND HOW TO USE YOUR LOW-LEVEL CO MONITOR:

- Buy appliances accepted by a recognized testing laboratory
- Install appliances according to the manufacturer's instructions & precautions
- Have appliance installations done by professionals
- Have your appliances checked regularly by a certified serviceman
- Clean chimneys and flues yearly
- Make regular visual inspections of all fuel-burning appliances
- Do not barbecue indoors, or in an attached garage
- Open windows when a fireplace or wood burning stove is in use
- Be aware of CO poisoning symptoms
- Install an additional UL listed CO alarm or detector to comply with local, state or federal law.

Symptoms of CO poisoning

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

- **Low-level Exposure** (*less than 35 ppm*): of carbon monoxide poisoning can be confused with flu-like symptoms, food poisoning or other illnesses and can have significant long-term health risks if left untreated.
- **High Level Exposure** (*more than 35 ppm; less than 70ppm*): Severe throbbing headache, drowsiness, confusion, fast heart rate.
- **Crisis Level Exposure** (*more than 70ppm*): Unconsciousness, convulsions, cardio respiratory failure, death.

9ppm – Maximum allowable CO in living space for 8 hours(ASHRAE)

9ppm - Maximum allowable outdoors 8 hours (EPA)

15-30ppm – **First level reported to cause harmful affects(World Health Organization)**

30ppm – **Earliest onset of exercise induced angina(World Health Organization)**

50 ppm - The maximum allowable concentration for continuous exposure for healthy adults in any 8 hour period, as recommended by the Occupational Safety and Health Administration (OSHA) in a work environment

70 ppm – First level U.L. approved alarms must go off 2-4 hours

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

These symptoms are typical for healthy adults. The critically or chronically ill, pregnant women, infants and others with respiratory difficulties can be impacted earlier and experience more adverse effects.

Installation of your new low-level CO monitor

Where To Install Your Low-level CO monitor

WARNING: This low-level CO monitor will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.

In which room should the low-level CO monitor be installed?

Ideally, you should have a low-level CO monitor in or near every room that contains a fuel-burning appliance. However, if you have more than one appliance, but only one low-level CO monitor, you should take the following into consideration when deciding where best to locate the low-level CO monitor:

Always have one monitor in or near the bedroom you sleep

- If there is an appliance in the room where you sleep, you should put the low-level CO monitor in that room.
- If there is an appliance in a room that you use a lot, e.g. a sitting room, you should put it in that room.
- If you live in a studio, put the low-level CO monitor away from the cooking appliances, and closer to the place where you sleep.
- If the appliance is in a room not normally used (e.g. a boiler room), put the low-level CO monitor just outside the room so that you will be able to hear the alarm more easily.

Where in the room should I place the low-level CO monitor?

The recommended position for the low-level CO monitor should be at least (5 feet) above floor level or eye level. The low-level CO monitor should be 5 feet from the appliance.

CAUTION: When wall mounting, place out of the reach of children.

Do not put the low-level CO monitor

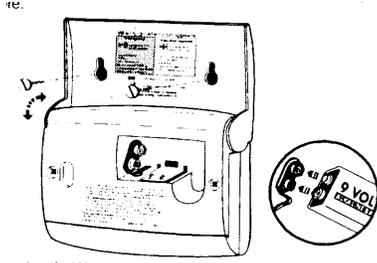
- Outside the building
- In or below a cupboard
- In a damp or humid area
- Directly above a sink or cooking appliance
- Next to a door or window or anywhere that it would be affected by drafts
- Where it would be obstructed by curtains or furniture
- In an area where the temperature could drop below 25°F or rise above 105°F.
- Where dirt or dust could block the sensor and stop it working
- Where it could be easily knocked or damaged, or where it could be accidentally turned off.

How To Install Your Low-level CO monitor

To install your unit, follow the illustration below.

Your low-level CO monitor can be installed on the wall or a table top.

For Table Top Mounting: Fold the monitor casing down and place on table.



To Mount on the Wall: Hold the mounting bracket against the wall and mark the inside location of each keyhole. Drill a 5mm (3/16") hole into the wall. Insert the plastic screw anchors into the mounting holes. Screw the mounting bracket to the wall. Now install the approved 9 volt alkaline battery required, as provided with your low-level CO monitor.

Operating Features

Your low-level CO monitor offers many features, which set it apart from the competition.

Test/Reset Button Feature

This button will:

- test your horn and battery
- silence the loud 85dB horn during an alarm only at levels below 70 ppm. See below
- when held down, the readout will display the peak level of CO recorded over the last 4 weeks
- reset the low-level CO monitor icons
- allow you to test the sensor by blowing smoke into the low-level CO monitor

Digital Display and Action Prompts

Digital Display

NSI's unique digital readout displays the amount of CO in the area of the sensor, expressed in parts per million (ppm). Your low-level CO monitor is designed to display levels from 5 ppm to 999 ppm.



A level below 5 ppm will display as a circling line.



Low-level Icon

This icon will appear and a loud, 85 dB alarm will sound a double beep every eight seconds when a **low-level of CO (15 ppm – 34 ppm)** has been continuously detected for 5 minutes. To silence the low-level CO monitor, press the Test/Reset button. If the CO level remains in this range for the next 5 minutes, the icon will re-appear and the horn will sound again.

If the low-level icon is visible, but the horn is not sounding, the low-level CO monitor has, in your absence, registered at least 15 ppm of CO for 5 minutes. The CO level has since returned to levels below 15 ppm, and the low-level CO monitor has stopped sounding. The icon remains on to alert you that the CO low-level CO monitor had sounded.

Continued low-level alarms are an indication that the potential of a high level alarm exists. You should treat this alarm level very seriously. *Prolonged low-levels of CO are believed to cause brain damage and heart disease, particularly in children and pregnant women. Call a CO certified technician and have the problem investigated and rectified immediately.*



High Level Icon

High Level Alarm

If a **high level of CO. (between 36 ppm - 70 ppm)** has been detected for 5 minutes this icon will appear and a loud, 85 dB alarm will sound four beeps every four seconds. Press the Test/Reset button to turn the high level icon off and silence the low-level CO monitor for 5 minutes. If the CO level remains in this range during this 5 minutes, the monitor will alarm again sound, and the icon will reappear.

Operating Features



High Level Icon

Crisis Level Alarm-70 ppm and higher

If a **crisis level of CO, (between 70 ppm to 999 ppm)** has been detected (there is no delay, The low-level CO monitor sounds an alarm immediately when a level of 70 ppm or above is detected), this icon will appear and a loud, 85 dB alarm will sound four beeps every two seconds. This alarm level cannot be silenced without fresh air exposure and levels below 70ppm.

If the high level icon is visible but the horn is not sounding, the low-level CO monitor has sensed a high level of CO in your absence. Immediately vacate the premises and seek professional help. Treat this as a serious warning. Call a qualified technician and have the problem investigated and rectified immediately.

Note: If the PPM reading exceeds 70 at any point the low-level CO monitor cannot be silenced until it senses fresh air for a certain period of time.



Low Battery Icon

When your battery needs replacing, the low battery icon will appear and the unit will beep each minute for up to 30 days. Replace the battery immediately! When there is no battery in place, the red 'missing battery' indicator will appear at the top of the unit to remind you to replace the battery.



“Err” – Unit Malfunction

If the readout displays “Err”, the unit has detected an error and will beep each minute indicating that your low-level CO monitor has failed. Also, if the low-level CO monitor has a fresh battery and the red light is not flashing, the low-level CO monitor has malfunctioned.

Contact customer service 8 am – 5 pm Eastern Standard Time, Monday - Friday

Telephone: 440-949-1850

e-mail: nsi@ncihvac.com

Testing the Horn and Battery

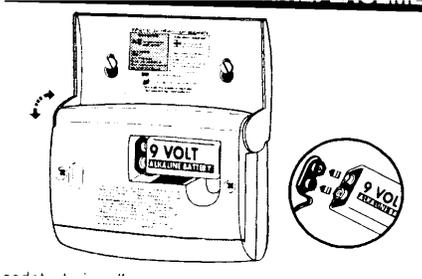
Test the unit by pressing the Test/Reset button briefly to confirm that the low-level CO monitor is operating properly. The low-level CO monitor should sound as soon as the button is pressed, indicating that the horn is working and the battery is providing power to the unit. Release the test/reset button to silence the horn. The horn and battery should be tested on a weekly basis.

Peak Level Reading Feature

The peak level reading is the highest level of CO recorded by the unit until the battery is disconnected. To display the peak level reading first place your left thumb or finger over the sounder vent, then press and hold the test/reset button down with your right thumb or finger. The horn will sound and the low-level CO monitor will display the peak level reading stored in the memory until you release the button or for a maximum of 4 seconds. This feature is helpful to a technician servicing your home or possibly to yourself when returning home after a period of time and discovering the high or low-level icon displayed on the digital display.

Replacing the battery will cause the peak level reading to reset to 0.

Battery Installation/Replacement



- If the low-level CO monitor is wall mounted, flip the low-level CO monitor casing down so that the battery compartment is exposed.
- Remove the battery cover.
- Replace the battery with an approved 9 volt alkaline battery, making sure the battery terminals align properly with the low-level CO monitor terminals and push the battery into place. Replace the battery cover and return the low-level CO monitor to the original position.
- When the battery is connected, your low-level CO monitor will first display all the icons. The digital readout will then display a CAL for several (5 minutes), and the low-level CO monitor will shortly emit a single beep to indicate that the battery is properly connected. The red LED will also flash once per minute to indicate that the monitor is receiving power from the battery.
- Your advanced low-level CO monitor does not require a prolonged 'power-up' period. If you have followed all of the above steps correctly, your unit will begin monitoring for CO in 5 minutes. The circling line is your assurance that your unit is receiving power. If there are problems with your unit, the digital display will flash "Err" to indicate that there is a problem.
- Test the unit by pressing the Test/Reset button briefly to confirm that the low-level CO monitor is operating properly. The low-level CO monitor should sound as soon as the button is pressed, indicating that the horn is working and the battery is providing power to the unit. Release the test/reset button to silence the horn. The horn and battery should be tested on a weekly basis.

Warning: Prolonged exposure to the horn in close proximity will damage your hearing.

When there is no battery in place, a missing battery indicator will remind you to replace the battery. Under normal operating conditions, the battery should last 1 year. The battery life in full alarm is 7 days. The low-level CO monitor will not protect against the risk of CO poisoning when the battery has drained.

Warning: Constant exposure to extreme high or low temperatures may reduce battery life.

Maintaining/Testing your Low-level CO monitor

Maintenance

Your low-level CO monitor will alert you to potentially hazardous CO concentrations in your home when maintained properly. To maintain your low-level CO monitor in proper working order, and to ensure that your sensor will maintain its 6 year life, it is recommended that you:

- Test your low-level CO monitor at least once per week
- Keep the low-level CO monitor free of dust by gently vacuuming the case with a soft brush attachment once per month
- Never use cleaning solutions on your low-level CO monitor. Simply wipe with a slightly damp cloth.
- Do not paint the low-level CO monitor.
- Do not spray aerosols on or near the low-level CO monitor.
- Move the low-level CO monitor to a safe location and store in a plastic bag before painting, wall papering, using or performing any other activities that use materials that emit strong fumes. Remember to remove it from the bag and replace the low-level CO monitor when these activities are finished.

Testing The Sensor

CAUTION: All sensor testing should only be performed by a responsible adult. This test should only be performed once a month. Excessive testing will cause the battery life to be shortened. **NOTE:** CO test kits may be used in order to avoid having to burn cigarettes, incense sticks etc.

Step 1: Cover sounder vent with left thumb/finger

Step 2: Hold the Test/Reset button down for six seconds until the Spray Can Icon is visible.



This indicates that the low-level CO monitor is now monitoring continuously for CO and may be tested using a known source of CO.

Step 3: Light a cigarette or an incense stick using a match or lighter. Extinguish the lighter, or put out the match and place it into a dish of water.

Step 4: Hold the burning cigarette or incense stick 8-10 inches away from the low-level CO monitor, so that the smoke moves towards the holes in the sides of the low-level CO monitor. The display will instantaneously indicate the amount of CO in the smoke. An increase in the CO level on the digital display will indicate that the sensor and electronics are working properly. Placing the monitor in a plastic bag filled with smoke will produce a more immediate response.

Step 5: Put out the cigarette or incense stick by placing it into a dish of water. Ensure that all flames have been extinguished.

Step 6: The spray can icon will disappear after four minutes, and the low-level CO monitor will then be in normal monitoring mode and the memory will be reset to 0.

Note: If the spray can icon is flashing press the test/reset button once to return to 'sensor testing' mode.

What To Do In The Event Of An Alarm

WARNING: A loud alarm is a warning that high and potentially lethal levels of carbon monoxide are present. Never ignore this alarm, further exposure can be fatal. Immediately check residents for symptoms of carbon monoxide poisoning, and contact the proper authorities to resolve all CO problems.

NEVER IGNORE A LOW-LEVEL OR HIGH-LEVEL ALARM.

Please carefully review this owner's manual to ensure that you know what actions to take in the event of both high and low-level alarms.

What to Do During A Crisis Alarm - Above 70ppm

- Evacuate the building immediately.
- Do not take time to open windows or turn off equipment
- Phone your emergency response number from next door or your cell phone
- Phone your heating service contractor on their emergency number. - Keep this number in a prominent place
- Get medical help (Oxygen Therapy) immediately for anyone suffering from any symptoms or illnesses that can be attributed to carbon monoxide exposure (Do not drive to hospital yourself)
- Do not use any appliance until the source of the problem is identified and corrected

What To Do During A High-Level Alarm – 35– 69ppm

- Open the doors and windows to ventilate.
- Turn off appliances where possible.
- Recommend highly that you exit the property leaving the doors and windows open.
- Phone your heating service contractor on their emergency number; keep the number _____ in a prominent place.
- Do not re-enter the property until the monitor has stopped alarming.
- Get medical help immediately (Oxygen therapy for anyone suffering the effects of carbon monoxide poisoning (headache, nausea), and advise that carbon monoxide poisoning is suspected.
- Do not use any appliance until the source of the problem is identified and corrected

What To Do During A Low-Level Warning – 15- 35 ppm

- Open all doors and windows to ventilate.
- Turn off all vented appliances that are potential sources of CO when possible, and stop using the appliance. These may include gas and wood-burning fireplaces, all gas appliances, and barbecues.
- Any unvented appliances, such as ovens, gas logs, space heaters, etc., may need additional ventilation to continue safe use.
- Note the reading on the display.
- Silence the low-level CO monitor and turn off the low-level icon by pressing the Test/Reset button.
- Do not use any appliance, vented or unvented, again until it has been checked by a qualified and/or certified contractor and corrections are made.
- Get medical help (Oxygen therapy) immediately for anyone suffering the effects of carbon monoxide poisoning (headache, nausea), and advise that carbon monoxide poisoning is suspected.

Technical Information

Low-level CO monitor Specifications:

Model 3000

Sensor Type: Electrochemical

Sensor Life: 5-6 Years

Sensor Range: 5 – 999 ppm

Readout Accuracy: +/- 20 ppm at 100 PPM, 30% above 400PPM

Alarm Sound Level: 85 dB at 10 feet (3.5 meters)

Recommended Batteries: Duracell MN1604, Energizer 522, Gold Peak 1604A

Battery Life: Exceeds 1 year, replaceable

Temperature Range: 4.4 °C (40 °F) to 37.8 °C (100 °F)

Operating Humidity Range: 10-95% RH

Weight: 228 grams (10 oz), including battery

A CARBON MONOXIDE LOW-LEVEL MONITOR IS NOT A SUBSTITUTE FOR A UL LISTED CO ALARM OR DETECTOR, A SMOKE ALARM OR A COMBUSTIBLE GAS DETECTOR.

5 Year Limited Warranty Information

Warranty Coverage: National Safety Institute (NSI) warrants to the original purchaser that the enclosed low-level carbon monoxide monitor, excluding the battery, shall be free from defects in materials and workmanship under normal residential use and service for a period of five (5) years from the date of purchase. During the five (5) year period NSI's liability hereunder is limited to repair or replacement of the product. This warranty applies to the original purchaser from the date of original purchase and is not transferable. Proof of purchase is required.

Warranty Disclaimers: Any implied warranty arising from the sales, 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 NSI be liable for loss of use of this product or for any indirect, special, incidental or consequential damages or costs 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. NSI shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage or any kind resulting from gas leakage, fire or explosion. In no case shall NSI be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by NSI's negligence or fault.

NSI shall not be obligated to pay for any carbon monoxide investigation or service call conducted by a fire department, gas or utility company, or licensed investigator or repairman, arranged by the homeowner in response to an alarm.

Your low-level carbon monoxide monitor is not a substitute for a UL listed CO detector or alarm. To comply with local state or federal laws or requirements for CO detectors and alarms, it should be used only in addition to a UL listed alarm to detect carbon monoxide at levels that are lower than the thresholds of a UL listed alarm.

Your low-level carbon monoxide monitor is not a substitute for property, disability, life or other insurance of any kind. Consult with an insurance agent for appropriate insurance coverage.

END