



550-0727-000

GENTEX CORPORATION



S Series: Smoke Alarm

C Series: Carbon Monoxide (CO) Alarm

SC Series: Combination Smoke/Carbon Monoxide (CO) Alarm

H Series: Heat Alarm

PRODUCT INFORMATION MANUAL AND INSTALLATION INSTRUCTIONS

⚠ Prior to installation and use, read and follow all instructions and warnings in this manual. Keep this manual for the Owner's future reference. Do not discard or destroy.

Model Number (see back of unit): _____

Manufacture Date Code (see back of unit): _____

Date of Purchase: _____ Where Purchased: _____

PRODUCT SUPPORT

fireprotection.gentex.com | Phone: 616.392.7195 | Toll-free: 800.436.8391



LIMITED WARRANTY

For a period of 12 months from the date of purchase or a maximum of 18 months from the date of manufacture (or as long as required by applicable law), Gentex warrants to you the original purchaser that the appliance described in this product information booklet will be free from defects in workmanship and materials under normal use and service.

This warranty does not apply and is void if damage or failure is caused by: accident, abuse, misuse, abnormal use, faulty installation, liquid contact, fire, earthquake or other external cause; operating the appliance outside Gentex's published guidelines; or service, alteration, maintenance or repairs performed by anyone other than Gentex. This warranty does not transfer to subsequent owners or purchasers of this appliance. This warranty also does not apply to: consumable parts, such as batteries; cosmetic damage, including but not limited to scratches or dents; defects caused by normal wear and tear or otherwise due to the normal aging of the appliance, or if any serial number has been removed or defaced from the appliance.

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If a defect in workmanship or materials causes your appliance to become inoperable within the warranty period, you must return the appliance to Gentex postage prepaid to: Gentex Corporation, 9001 Riley Street, Building 10, Zeeland, MI 49464. You must prove to the satisfaction of Gentex the date of purchase of your appliance. You must also enclose a return address. Warranty service may only be performed by Gentex personnel at Gentex's facilities in Zeeland, Michigan. You must also pack the appliance to minimize the risk of it being damaged in transit. If we receive an appliance in a damaged condition as the result of shipping, we will notify you and you must seek a claim with the shipper.

If you submit a valid claim to Gentex during the warranty period, Gentex will, at its option, repair your appliance or furnish you with a new or rebuilt appliance without charge to you except for postage required to return the appliance to us. Gentex will not reimburse you for repairs or replacement parts provided by other parties. Your repaired or replacement appliance will be returned to you free of charge and it will be covered under the warranty for the balance of the warranty period, if any. When a product or part is replaced, any replacement item becomes your property and the replaced item becomes property of Gentex. For additional warranty and product information go to www.gentex.com.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR BY COUNTRY OR PROVINCE). BY THIS WARRANTY, GENTEX DOES NOT LIMIT OR EXCLUDE YOUR RIGHTS EXCEPT AS ALLOWED BY LAW. TO FULLY UNDERSTAND YOUR RIGHTS, YOU SHOULD CONSULT THE LAWS OF YOUR COUNTRY, PROVINCE OR STATE.

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GENTEX CORPORATION

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TO RETURN A DEVICE

Should you experience problems with your device, proceed as follows:


1. Turn off electrical power to the device.
2. Twist the device counter-clockwise to remove it from its mounting plate.
3. Unplug the connector from the back of the device. Do not remove the wire connection; leave the connector for your replacement device.
4. Remove battery from device. Do not ship device with battery still in battery drawer.
5. Carefully pack device (the manufacturer cannot be responsible for consequential damage) and return to the manufacturer. Include complete details as to exact nature of difficulties being experienced and date of installation.
6. Return to: Gentex Corporation, 9001 Riley Street, Building 10, Zeeland, Michigan 49464. Prior to returning, call Gentex at 800-436-8391 or e-mail FP_RMA@gentex.com to obtain a RMA Number from our return department.

INTRODUCTION

This device is listed for use as an evacuation device in all dwelling units. This device has a solid state piezo signal to warn and alert the occupants to the presence of threatening smoke and/or carbon monoxide or heat.

This device is designed to detect the smoke that results from an actual fire and/or carbon monoxide gas or heat from an actual fire. Consequently, it is uncommon for household smoke such as cigarette smoke or normal cooking smoke to cause an alarm.

IMPORTANT SAFETY INFORMATION

This safety alert symbol  and the terms DANGER, WARNING, CAUTION, and NOTICE in this manual alert you to potential serious injury hazards and other important safety information. Pay special attention to these items to injury or death.

WARNING

- This device listed for use in single-family and multi-family residences, along with hotels, motels and other commercial residential occupancies.
- This device must receive continuous pure sine wave electrical power (battery is meant for emergency back-up only). In order for the emergency battery back-up to work, a new battery must be properly installed (see BATTERY INSTALLATION section).
- NEVER ignore device if it sounds. Failure to do so can result in serious injury or death.
- Test device once a week. If device ever fails to test correctly, replace immediately! If device is not working properly, it cannot alert you to a problem.
- This device is intended for use in indoor locations.
- The CO alarm and smoke/CO alarm (models: C, CR, SC, SCR, SCRR) will only indicate the presence of increased levels of carbon monoxide gas at the sensor. Increased levels of carbon monoxide gas may be present in other areas. 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.
- Never disconnect device to silence a nuisance alarm. Device will automatically turn off when air in device chamber has returned to a normal state and presence of smoke, CO and/or heat is completely gone.
- Do not stand close to device. The sound produced by device is loud because it is designed to awaken you in an emergency. Prolonged exposure to horn at a close distance may be harmful to your hearing.
- This device is designed for use inside a single or multi-family dwelling. It is not meant to be used in common lobbies, hallways, or basements of multi-family buildings unless working alarms are also installed in each family living unit. Devices in common areas may not be heard from inside individual family living units.
- This device is not a suitable substitute for complete detection systems in places which house many people like hotels or dormitories, unless a device is also placed in each unit.
- DO NOT use this device in warehouses, industrial or commercial buildings, special-purpose non-residential buildings or airplanes. This device is specifically designed for residential use and may not provide adequate protection in non-residential applications.

MODELS

(SEE BACK OF DEVICE FOR EXACT MODEL)

S	120VAC, 60Hz , Multi-Criteria Photoelectric Smoke Alarm
SR	120VAC, 60Hz , Multi-Criteria Photoelectric Smoke Alarm, 1 Form A/1 Form C Auxiliary Relay
S220	220VAC, 50/60Hz, Multi-Criteria Photoelectric Smoke Alarm
SR220	220VAC, 50/60Hz , Multi-Criteria Photoelectric Smoke Alarm, 1 Form A/1 Form C Auxiliary Relay
STRR	120VAC, 60Hz , Multi-Criteria Photoelectric Smoke Alarm, Integral Heat Thermal, 2 Form A/2 Form C Auxiliary Relays
SHRR	120VAC, 60Hz , Multi-Criteria Photoelectric Smoke Alarm, Isolated Heat Thermal, 2 Form A/2 Form C Auxiliary Relays
H	120VAC, 60Hz , Heat Alarm
H220	220VAC, 50/60Hz, Heat Alarm
C	120VAC, 60Hz , Electrochemical Carbon Monoxide Alarm
CR	120VAC, 60Hz , Electrochemical Carbon Monoxide Alarm, 1 Form A/1 Form C Auxiliary Relay
SC	120VAC, 60Hz , Combination Multi-Criteria Photoelectric Smoke Alarm and Electrochemical Carbon Monoxide Alarm
SCR	120VAC, 60Hz , Combination Multi-Criteria Photoelectric Smoke Alarm and Electrochemical Carbon Monoxide Alarm, 1 Form A/1 Form C Auxiliary Relay
SCRR	120VAC, 60Hz , Combination Multi-Criteria Photoelectric Smoke Alarm and Electrochemical Carbon Monoxide Alarm, 2 Form A/2 Form C Auxiliary Relays

ELECTRICAL SPECIFICATIONS

120VAC Operating Current	0.055 amps
220VAC Operating Current	0.135 amps
Operating Ambient Temperature Range	40°F to 100°F
Alarm Horn Rating	meets or exceeds 85 dBA at 10 feet

NOTICE: IN THE EVENT AC POWER FAILS, A 9V BATTERY WILL PROVIDE PROPER DEVICE OPERATION FOR A MINIMUM OF 24 HOURS.

⚠ FIRE PROTECTION PLAN

Installing a smoke alarm (S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR) can alert occupants to the presence of smoke; but cannot prevent fire. Reducing the chance of fires starting on the premises will increase the chances of safely escaping if a fire does start. To have an effective fire safety program:

a. Install smoke alarms properly by following the instructions in this manual. Keep the devices clean. Test the devices weekly and have unit repaired or replace unit if it no longer functions. As with any electronic product, smoke alarms have a limited life, it is recommended that smoke alarms be replaced when end of life signal sounds or no longer functions. As with any electronic product, smoke alarms have a limited life and devices that don't work cannot protect the premise.

b. WARNING! Follow safety rules and prevent hazardous situations:

- Use smoking materials properly; never smoke in bed.
- Keep matches and cigarette lighters away from children.
- Store flammable materials in proper containers and never use them near open flames or sparks.
- Keep electrical appliances and cords in good working order and do not overload electrical circuits.
- Keep stoves, fireplaces, chimneys, and barbecue grills grease-free and make sure they are properly installed away from combustible materials.
- Keep portable heaters and open flames such as candles away from combustible materials.
- Do not allow rubbish to accumulate.
- Do not leave small children home alone.

c. Develop an escape plan and practice it with all occupants, especially small children.

- Draw and post a floor plan of your premises and find two ways to exit from each room. There should be one way to get out of each bedroom without opening the door.
- Teach all occupants what the alarm signal means, and that they must be prepared to leave the residence by themselves if necessary. Show all occupants how to check to see if doors are hot before opening them, how to stay close to the floor and crawl if necessary, and how to use the alternate exit if the door is hot and should not be opened.
- Determine a meeting place a safe distance from the premises and make sure that all occupants understand that they should go and wait at that location if there is a fire.
- Hold fire drills at least every 6 months to make sure that all occupants, even small children, know what to do to escape safely.
- Know where to go to call the fire department from outside the premises.
- Provide emergency equipment such as fire extinguishers and teach your family to use this equipment properly.

d. Bedroom doors should be closed while sleeping if a smoke alarm is installed in the bedroom. They act as a barrier against heat and smoke.

WHAT TO DO IF THERE IS A FIRE

If there is a prepared and practiced plan, chances have increased of escaping safely. Review the following rules when having fire drills. If device should sound:

- a. Don't panic; stay calm. A safe escape may depend on thinking clearly and remembering what has been practiced.
- b. Get out of the premises, following the planned escape route as quickly as possible. Do not stop to collect anything or to get dressed.
- c. Open doors carefully and only after feeling to see if they are hot. Do not open a door if it is hot; use an alternate escape route.
- d. Stay close to the floor; smoke and hot gases rise.
- e. Cover nose and mouth with a cloth, wet if possible, and take short, shallow breaths.
- f. Keep doors and windows closed unless they need to be opened to escape.
- g. Meet at prearranged meeting place after leaving the house.
- h. Call the Fire Department as soon as possible from outside the premises. Give the address and your name.
- i. Never re-enter a burning building.

Contact your local Fire Department for more information on making the premise safer from fires and about preparing an escape plan.

WARNING! SMOKE ALARMS, CO ALARMS AND/OR HEAT ALARMS MAY NOT AWAKEN ALL SLEEPING INDIVIDUALS, AND IT IS THE RESPONSIBILITY OF INDIVIDUALS WITHIN THE PREMISES WHO ARE CAPABLE OF ASSISTING OTHERS TO PROVIDE ASSISTANCE TO THOSE WHO MAY NOT BE AWAKENED BY THE ALARM SOUND, OR TO THOSE WHO MAY BE INCAPABLE OF SAFELY EVACUATING THE AREA UNASSISTED.

CARBON MONOXIDE PROTECTION PLAN

FOR USE WITH: C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

WARNING

IF DEVICE SOUNDS

Actuation of the device, sounding for CO, 4 short beeps (T4) at regular intervals indicates the presence of carbon monoxide (CO) which can kill you. If this device sounds, do not ignore!

Enclosed with the device are two labels to complete with the telephone number of the emergency service provider and a qualified technician. Once the device is installed, secure one label next to the device and the secure the other label near the fresh air source at your prearranged meeting place after evacuating the premise.

WARNING

"ALARM – MOVE TO FRESH AIR"

If you hear the device sounding for CO (T4) tone and the red light is flashing, move everyone to a source of fresh air. DO NOT unplug the alarm!

IF THE ALARM SIGNAL SOUNDS:

1. Operate the Test/Silence button (when the alarm has been reset, the device will continue to monitor the air for the presence of CO. If the alarm sounds again, there are CO levels that are potentially dangerous).
2. Call emergency services, fire department or 911. Write the number of your local emergency service here:
3. Immediately move to fresh air – outdoors or by an open door or window. Meet at prearranged meeting place after leaving the house. Verify all persons are accounted for. Do not re-enter premises or move away from the fresh air until the emergency responder has arrived, the premises has been aired out and the device remains in normal condition.
4. Following steps 1-3, if the device 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 as well as 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:

WARNING! ALARMS HAVE VARIOUS LIMITATIONS. SEE "GENERAL LIMITATIONS OF DEVICES" FOR DETAILS.

HOW THIS DEVICE FUNCTIONS

(SEE BACK OF DEVICE FOR EXACT MODEL)

NOTICE: MALFUNCTION WARNING: THIS UNIT PERFORMS A SELF-DIAGNOSTIC TEST. IF THE ALARM MALFUNCTIONS IT SHOULD BE REPLACED IMMEDIATELY. SEE TROUBLESHOOTING GUIDE (PAGE 11) FOR MORE INFORMATION.

GENERAL INFORMATION: SMOKE ALARM

S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

- The smoke alarms utilize a multi-criteria sensing system, comprised of dual wavelength photoelectric light scatter sensors and an air temperature sensor.
- For smoke detection, the darkened sensing chamber is exposed to the atmosphere and designed to permit optimum smoke entry from any direction while rejecting light from outside the smoke alarm. The photoelectric light scatter sensors are comprised of two LEDs with different wavelengths and photodiodes to convert the light to electrical signals. An air temperature sensor is mounted so the sensing element is outside the device in the ambient environment.
- Under normal conditions, the light generated by the pulsing LEDs is not seen by the photodiodes, as the LEDs are positioned out of the direct path of the light beam. When smoke enters the sensing chamber, light from the LEDs is reflected onto the photodiodes. At the first sighting of smoke, the device enters a pre-alarm mode, which is indicated by a flashing red LED on the face of the device at a rate of 1 flash/second.
- While in the pre-alarm mode, the photoelectric and air temperature signals are evaluated. If hazardous signals are observed, the alarm will activate the electronic horn. This device features permanently installed sensors, an indicator light and an 85 dBA alarm horn, which will sound 3 long beeps (T3) at regular intervals.

DEVICE CAPABILITIES: SMOKE ALARM

S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

- This smoke alarm is designed to sense smoke entering its sensing chamber. When properly located, installed, and maintained, this device is designed to provide early warning of developing fires at a reasonable cost. This device monitors the air and, when it senses smoke, activates its built-in alarm horn. It can provide precious time for occupants to escape the premises before a fire spreads. Such an early warning, however, is possible only if the device is located, installed, and maintained as specified in this User's Manual.

GENERAL INFORMATION: HEAT ALARM

H, H220 (SEE BACK OF DEVICE FOR EXACT MODEL)

- The heat alarms operate with heat sensors that sense heat produced by fire. NFPA 72 does not require heat alarms. However, it is recommended that the premise consider the use of additional heat alarms. The additional areas lending themselves to protection with heat alarms are the dining room, attic (finished or unfinished), furnace room, utility room, basement and integral or attached garage.
- This device features a permanently installed sensor, an indicator light and an 85 dBA (T3) alarm horn. This device will continue to alarm until the heat is no longer sensed by the heat sensors.

DEVICE CAPABILITIES: HEAT ALARM

H, H220 (SEE BACK OF DEVICE FOR EXACT MODEL)

- This heat alarm is designed to sense heat produced by a fire. It does not sense smoke, flames or carbon monoxide. When properly located, installed, and maintained, this device is designed to provide warning of developing fires at a reasonable cost. This device monitors the air and, when it senses heat, activates its built-in alarm horn. Such an early warning, however, is possible only if the device is located, installed, and maintained as specified in this User's Manual.

GENERAL INFORMATION: CARBON MONOXIDE ALARM

C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

NOTICE: CO PROBLEMS CAN OCCUR AT ANY TIME.

- The carbon monoxide alarms operate on the electrochemical principle for the carbon monoxide sensor. When fully powered, the device samples the air and takes a new reading about every 16 seconds. A microchip inside the unit stores each reading and remembers the levels of CO it has been exposed to over time. The device will sound when it has been exposed to a critical level of CO (measured in parts per million or ppm) within a specified time (measured in minutes). This device features a permanently installed sensor, an indicator light and an 85 dBA (T4) alarm horn.

DEVICE CAPABILITIES: CARBON MONOXIDE ALARM

C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

- This CO alarm is designed to sense carbon monoxide gas entering its sensing element. It does not sense smoke, heat or flames. When properly located, installed, and maintained, this device is designed to provide early warning of potential increased levels of carbon monoxide gas at a reasonable cost. This device monitors the air and when it senses CO, activates its built-in alarm horn. It can provide precious time for occupants to escape the premises before CO poisoning occurs. Such an early warning, however, is possible only if the device is located, installed, and maintained as specified in this User's Manual.

WARNING! THIS DEVICE IS DESIGNED FOR USE WITHIN SINGLE RESIDENTIAL LIVING UNITS ONLY; THAT IS, IT SHOULD BE USED INSIDE A SINGLE-FAMILY HOME OR ONE APARTMENT OF A MULTI-FAMILY BUILDING. IN A MULTI-FAMILY BUILDING, THE DEVICE MAY NOT PROVIDE EARLY WARNING FOR RESIDENTS IF IT IS PLACED OUTSIDE OF THE RESIDENTIAL UNITS, SUCH AS ON OUTSIDE PORCHES, IN CORRIDORS, LOBBIES, BASEMENTS, OR IN OTHER APARTMENTS. IN MULTI-FAMILY BUILDINGS, EACH RESIDENTIAL UNIT SHOULD HAVE DEVICES TO ALERT THE RESIDENTS OF THAT UNIT. DEVICES DESIGNED TO BE INTERCONNECTED SHOULD BE INTERCONNECTED WITHIN ONE FAMILY RESIDENCE ONLY; OTHERWISE, NUISANCE ALARMS WILL OCCUR WHEN A DEVICE IN ANOTHER LIVING UNIT IS TESTED.

⚠ GENERAL LIMITATIONS OF THIS DEVICE

- **This device will not work without power.** A battery must be connected to the device to maintain proper operation if AC power supply is cut off by an electrical fire, an open fuse or circuit breaker, or for any other reason. In the event of AC power failure, the battery will supply power to device for a minimum of 24 hours.
- **Device may not awaken all occupants.** If occupants do not readily awaken to the sound of the device or if there are infants or occupants with mobility limitations, make sure that someone is assigned to assist them in the event of an emergency.
- **Device for solar or wind energy users and battery back-up power systems:** AC powered device should only be operated with true or pure sine wave inverters. Operating this device with most battery powered UPS (uninterruptible power supply) products or square wave or “quasi sine wave” inverters will damage the device. If information about inverter or UPS type is unknown, please consult with the manufacturer to verify.
- **Device may not be heard.** The alarm decibel rating meets or exceeds current ANSI/UL Standards of 85 dBA at 10 feet (3 meters). However if the device is installed outside the sleeping area, it may not awaken a sound sleeper, one who has recently used drugs or has been drinking alcoholic beverages. This is especially true if the door is closed or only partially open. Even occupants who are awake may not hear the sounding device if the sound is blocked by distance or closed doors. Noise from traffic, stereo, radio, television, air conditioner, or other appliances may also prevent alert occupants from hearing the device horn. This device is not intended for people who are hearing impaired.
- **This device is not a substitute for life insurance.** Although this device warns against increasing smoke, heat or CO levels (depending on model number), Gentex Corporation does not warrant or imply in any way that they will protect lives. Homeowners and renters must still insure their lives.
- **This device has a limited life.** Although the device and all of its components have passed many stringent tests and are designed to be as reliable as possible, any of these parts could fail at any time. Therefore, you must test your device weekly.
- **This device is equipped with an internal end-of-life timer.** It periodically updates when the product is powered with 120/220V and/or 9V battery backup. When the internal timer reaches the end-of-life level, the device will emit 3 short chirps approximately every 45 seconds. The end-of-life notification can be silenced by a press of the test/reset button. The device will be silenced for a period of approximately 71 hours, after which the end-of-life audible notification will re-initialize. The end-of-life signal can be silenced for up to 30 days after the initial end-of-life notification. After the 30 days have expired, the end-of-life notification can longer be silenced. This device should be replaced immediately after the end-of-life notification is initiated.
- **This device is not foolproof.** Like all other electrical devices, this device has limitations. It can only detect what reaches the device sensors.

S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

- **Smoke alarm may not sense fire that starts where smoke cannot reach the device** such as in chimneys, walls, on roofs, or on the other side of closed doors. If bedroom doors are usually closed at night, smoke alarm should be placed in each bedroom as well as in the common hallway between them.
- **Smoke alarm also may not sense a fire on another level of a premises.** For example, a second-floor device may not sense a first-floor or basement fire. Therefore, smoke alarm should be placed on every level of a premises.

H, H220 (SEE BACK OF DEVICE FOR EXACT MODEL)

- **Heat alarms may not sense fire that starts where heat cannot reach the device** such as in chimneys, in walls, on roofs, or on the other side of closed doors.
- **Heat alarms also may not sense a fire on another level of a residence or building.** For example, a second-floor device may not sense a first-floor or basement fire. Therefore, devices should be placed on every level of a residence or building.

C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

- **This CO alarm is intended for all dwelling units.** It is not intended for use in industrial applications where Occupational Safety and Health Administration (OSHA) requirements for carbon monoxide detectors must be met.
- **This CO alarm will not sense carbon monoxide that does not reach the sensor.** This CO alarm will only sense CO at the sensor. CO may be present in other areas. Doors or other obstructions may affect the rate at which CO reaches the alarm. For this reason, if sleeping room doors are usually closed at night, it is recommend that an alarm is installed in each sleeping room and in the hallway of each sleeping area.
- **CO alarm may not sense CO on another level of the residence.** For example, an alarm on the second floor, near the bedrooms may not sense CO in the basement. For complete coverage, it is recommended that an alarm be installed on each level and tandem interconnected.

WARNING! CO alarms may not alarm when a large influx of CO is introduced into the house. An example of a possible source of a large in-rush of CO is a generator running in an attached, enclosed garage and the door to the connected residence is opened.

All types of smoke alarm, CO alarm and heat alarm sensors have limitations. No type of device can sense every kind of fire every time. These types of fires include:

1. Fires where the victim is intimate with a flaming initiated fire; for example, when a person's clothes catch on fire while cooking.
2. Fires where the smoke is prevented from reaching the device due to a closed door or other obstruction.
3. Incendiary fires where the fire grows so rapidly that an occupant's egress is blocked even with properly located devices. In general, devices may not always warn you about fires caused by violent explosions, escaping gas, improper storage of flammable materials, or arson.

WARNING! THIS DEVICE IS NOT DESIGNED TO REPLACE SPECIAL-PURPOSE FIRE DETECTION AND ALARM SYSTEMS NECESSARY TO PROTECT PERSONS AND PROPERTY IN NON-RESIDENTIAL BUILDINGS SUCH AS WAREHOUSES, OR OTHER LARGE INDUSTRIAL OR COMMERCIAL BUILDINGS. IT ALONE IS NOT A SUITABLE SUBSTITUTE FOR COMPLETE FIRE-DETECTION SYSTEMS DESIGNED TO PROTECT INDIVIDUALS IN HOTELS AND MOTELS, DORMITORIES, HOSPITALS, OR OTHER HEALTH AND SUPERVISORY CARE AND RETIREMENT HOMES. PLEASE REFER TO NFPA 101, THE LIFE SAFETY CODE, AND NFPA 72 FOR SMOKE ALARM REQUIREMENTS FOR FIRE PROTECTION IN BUILDINGS NOT DEFINED AS "HOUSEHOLDS."

IMPORTANT CONSIDERATION

NFPA 72, 2022, Chapter 14 states the following for replacement of alarms:

- 14.4.5.6 Smoke alarms shall not remain in service longer than 10 years from the date of manufacture, unless otherwise provided by the manufacturer's published instructions.
- 14.4.5.7 Carbon monoxide alarms shall be replaced when either the end-of-life signal is actuated or the manufacturer's replacement date is reached.
- 14.4.5.8 Combination smoke/carbon monoxide alarms shall be replaced when the end-of-life signal actuates or 10 years from the date of manufacture, whichever comes first, unless otherwise provided by the manufacturer's published instructions.

Devices shall also be replaced when they fail to respond to operability tests and devices must be replaced when end of life signal sounds, why:

- Dust, dirt, and other environmental contaminants can affect your device over a prolonged period.
- Fast changing industry consensus standards and codes on all devices make it advisable to periodically upgrade your device to maximize life safety.

DEVICE INSTALLATION

NOTICE:

- NEW CONSTRUCTION: DO NOT ATTACH DEVICE HEAD UNTIL AFTER SANDING, PAINTING, AND OTHER DUST CREATING SITUATIONS ARE FINISHED AND CLEANED UP.
- FOR USE WITH: C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL) NFPA 72, 2022 EDITION, CHAPTER 29, SECTION 29.7.2 CARBON MONOXIDE ALARM INTERCONNECTION. UNLESS EXEMPTED BY APPLICABLE LAWS, CODES OR STANDARDS, CARBON MONOXIDE ALARMS USED TO PROVIDE A WARNING FUNCTION, AND WHERE TWO OR MORE ALARMS ARE INSTALLED WITHIN A DWELLING UNIT, SUITE OF ROOMS, OR SIMILAR AREA, SHALL BE ARRANGED SO THAT THE OPERATION OF ANY CARBON MONOXIDE ALARM CAUSES ALL CARBON MONOXIDE ALARMS WITHIN THESE LOCATIONS TO SOUND.

WIRING/GENERAL

1. Use ANSI/UL Listed wire for Class 1 requirements.
2. Observe local code requirements. Use box connector to anchor cable to outlet box.
3. Metal outlet boxes must be grounded to earth ground.

DANGER! Turn off electricity to prevent ELECTRICAL SHOCK and damage to device. Be sure the AC power to the device is not controlled by any on/off switch, or other type of switch, other than a fuse or circuit breaker.

IMPORTANT: Ensure that all fluorescent lighting fixtures are properly grounded.

NOTICE: THE WIRING TO BE USED SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 300.3(B) 210 OF THE NATIONAL ELECTRICAL CODE, NFPA 70. WIRE INSTALLATION SHOULD BE PERFORMED ONLY BY A LICENSED ELECTRICIAN.

MOUNTING OUTLET BOX

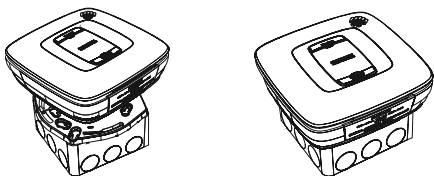
Use a 2" x 3" switch box or a 4" square or octagon junction box. Mount a box for each device. If wall mounting is desired, be sure the box screws are oriented to upper right and lower left corners. Be sure to use supplied mounting bracket.

MOUNTING BRACKET AND DEVICE

1. Lace the connector through the provided mounting plate and secure the plate to the junction box.
2. Plug the wire connector into the device base.
3. Place device up to mounting plate, rotating it clockwise until device firmly snap locks into place. Keep device parallel to the mounting bracket and tabs on mounting bracket are properly secured into device.
4. Remove dust cover after all construction is complete. Dust cover must be removed prior to power being supplied to the device. If the dust cover is not removed, operation of device will be inhibited.

WARNING! REMOVE DUST COVER BEFORE OPERATING DEVICE

FIGURE 10



WIRING TWO OR MORE DEVICES

Tandem Interconnect Installation

NOTICE: ALL DEVICES IN TANDEM INTERCONNECTED MUST BE CONTROLLED BY THE SAME FUSE OR CIRCUIT BREAKER. OTHERWISE TANDEM FEATURE WILL NOT OPERATE. TANDEM INTERCONNECTION WILL OPERATE IN THE EVENT OF AC POWER FAILURE IF BATTERY IS CONNECTED TO THE DEVICE.

LIMITATIONS:

- FOR USE WITH S, SR, STRR, SHRR, SC, SCR, SCRR, S220, S220R (SEE BACK OF DEVICE FOR EXACT MODEL): A maximum of 12 devices may be tandem interconnected together. Do not exceed 125 feet between each device. Do not exceed 1125 feet between first and last device.
- FOR USE WITH C, CR, H, H220 (SEE BACK OF DEVICE FOR EXACT MODEL): A maximum of 18 devices may be tandem interconnected together. Do not exceed 125 feet between each device. Do not exceed 1125 feet between first and last device.

Wire used for tandem interconnection shall be in accordance with article 760 of the latest edition of National Electrical Code (NFPA 70) and must not exceed a resistance of 10 ohms.

1. Run a minimum of 16 gauge, 3-conductor cable, plus ground (4 wires) to the first junction box from a dedicated branch circuit and between all smoke/CO alarms that are to be connected together. Use ANSI/UL Listed wire for Class 1 requirements. Power limited cable for multiple tandem connections are available at many commercial electrical retail stores.
2. Make wire connections to the supplied wire harness as follows: black to black, white to white, 3rd conductor to the brown/yellow wire. The brown/yellow wire should be stripped to make the connection. Connect ground wire between metal outlet boxes.

NOTES ON TANDEM INTERCONNECTING MODELS

- **DO NOT** connect Gentex devices to other manufacturers' devices.
- A maximum of 18 compatible smoke, heat, CO and/or combination smoke/CO alarms may be interconnected. No more than 12 of the 18 can be smoke alarms per NFPA 72.
- All devices tandem interconnected **MUST** get their power from the same dedicated branch circuit, all devices in tandem must be controlled by the same fuse or circuit breaker.
- After installation, to verify proper working conditions, all alarms must sound in this system. Test using the functional test button feature.

NOTICE: IF A C, CR, SC, SCR OR SCRR IS ANNUNCIATING FOR A CO EVENT, GENTEX LEGACY PRODUCTS (7100/7103, 9120/9123, GN-300/GN-303, 710CS/7103CS, 7109CS/ 7139CS SERIES) WILL NOT ACTIVATE AND WILL REMAIN SILENT.

NOTICE: Failure to observe any of the conditions set forth above may cause system malfunction and damage to the device.

NOTICE: BROWN/YELLOW wire to be capped when not in use. This wire is for tandem interconnection only. **DO NOT** connect to any other circuit. Use brown/yellow wire to tandem interconnect device to additional devices.

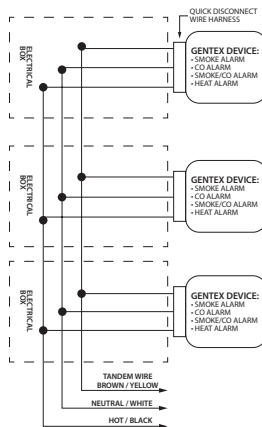
NOTICE: THIS DEVICE IS ONLY CAPABLE OF TANDEM INTERCONNECT WITH THE FOLLOWING PRODUCTS: S, SR, S220, SR220, STRR, SHRR, H, H220, C, CR, SC, SCR, SCRR AS WELL AS THE GENTEX GN-503 SERIES, CO1209 SERIES AND S1209 SERIES. IT IS NOT POSSIBLE TO TANDEM INTERCONNECT ANY OTHER GENTEX PRODUCT SERIES OTHER THAN WHAT IS LISTED ABOVE.

TANDEM INTERCONNECT WIRING DIAGRAM

WARNING! PRODUCT WIRE HARNESSES ARE NOT INTERCHANGEABLE. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.

NOTICE:

- When a S, SR, STRR, SHRR, SC, H, SCR and/or SCRR is tandem interconnected with Gentex CO and heat alarms or combination smoke/CO alarms and the CO devices go into alarm, CO and heat alarms, smoke alarm and/or combination smoke/CO alarms will sound the CO alarm warning (T4) horn pattern.
- When a C, CR, SC, H, SCR and/or SCRR is tandem interconnected with Gentex smoke alarms or combination smoke/CO alarms and smoke devices go into alarm, smoke alarms, CO and heat alarms and/or combination smoke/CO alarms will sound the smoke alarm warning (T3) horn pattern.
- All Smoke, CO and Heat Alarms or combinations thereof interconnected via the tandem line will replicate either a (T3) signal for smoke or heat, or a (T4) signal for Carbon Monoxide in accordance with the activated initiating alarm. A smoke or heat alarm (T3) will always take precedence when both a CO (T4) and smoke or heat alarm is activated.
- When both smoke/heat and CO conditions are present, the smoke or heat condition will have priority and alarm will sound smoke/heat alarm warning (T3) horn pattern.



PRODUCT INSTALLATION INFORMATION

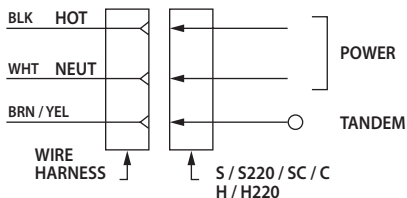
MODELS: S, S220, H, H220, SC, C

S	120VAC, 60Hz, Multi-Criteria Photoelectric Smoke Alarm
S220	220VAC, 50/60Hz, Multi-Criteria Photoelectric Smoke Alarm
H	120VAC, 60Hz, Heat Alarm
H220	220VAC, 50/60Hz, Heat Alarm
C	120VAC, 60Hz, Electrochemical Carbon Monoxide Alarm
SC	120VAC, 60Hz, Combination Multi-Criteria Photoelectric Smoke Alarm and Electrochemical Carbon Monoxide Alarm

NOTICE:

- USE ONLY DURACELL® MN 1604 BATTERY. AVAILABLE AT MANY RETAIL STORES.
- USE BROWN/YELLOW WIRE TO TANDEM INTERCONNECT THIS DEVICE TO S, SR, S220, SR220, STRR, SHRR, H, H220, C, CR, SC, SCR, SCRR AS WELL AS THE GENTEX GN-503 SERIES, CO1209 SERIES AND S1209 SERIES.
- THIS DEVICE WILL NOT CONNECT GENTEX LEGACY PRODUCTS: 7100/7103, 9120/9123, GN-300/GN-303, 710CS/7103CS, 7109CS/7139CS SERIES
- THE S, S220, H, H220, SC, C PRODUCT WIRING HARNESS IS NOT INTERCHANGEABLE WITH OTHER MODELS OF THE GN600 FAMILY. THE S, S220, H, H220, SC, C MUST USE PROPER WIRING HARNESS SUPPLIED WITH THESE PRODUCTS. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.

S, S220, H, H220, SC, C WIRING DIAGRAM



PRODUCT INSTALLATION INFORMATION

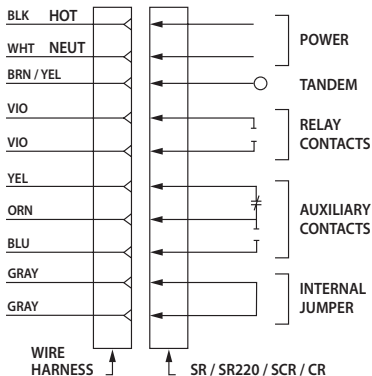
MODELS: SR, SR220, CR, SCR

SR	120VAC, 60Hz , Multi-Criteria Photoelectric Smoke Alarm, 1 Form A/1 Form C Auxiliary Relay
SR220	220VAC, 50/60Hz , Multi-Criteria Photoelectric Smoke Alarm, 1 Form A/1 Form C Auxiliary Relay
CR	120VAC, 60Hz , Electrochemical Carbon Monoxide Alarm, 1 Form A/1 Form C Auxiliary Relay
SCR	120VAC, 60Hz , Combination Multi-Criteria Photoelectric Smoke Alarm and Electrochemical Carbon Monoxide Alarm, 1 Form A/1 Form C Auxiliary Relay

NOTICE:

- USE ONLY DURACELL® MN 1604 BATTERY. AVAILABLE AT MANY RETAIL STORES.
- USE BROWN/YELLOW WIRE TO TANDEM INTERCONNECT THIS DEVICE TO S, SR, S220, SR220, STRR, SHRR, H, H220, C, CR, SC, SCR, SCRR AS WELL AS THE GENTEX GN-503 SERIES, CO1209 SERIES AND S1209 SERIES.
- THIS DEVICE WILL NOT CONNECT TO GENTEX LEGACY PRODUCTS: 7100/7103, 9120/9123, GN-300/GN-303, 710CS/7103CS, 7109CS/7139CS SERIES
- **THE SR, SR220, CR, SCR PRODUCT WIRING HARNESS IS NOT INTERCHANGEABLE WITH OTHER MODELS OF THE GN600 FAMILY. THE SR, SR220, CR, SCR MUST USE PROPER WIRING HARNESS SUPPLIED WITH THESE PRODUCTS. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.**

SR, SR220, CR, SCR WIRING DIAGRAM



RELAY CONTACTS
 RATED LOAD RESISTIVE
 1.0 AMP @ 30VDC MAX
 0.3 AMP @ 125VAC MAX

PRODUCT INSTALLATION INFORMATION

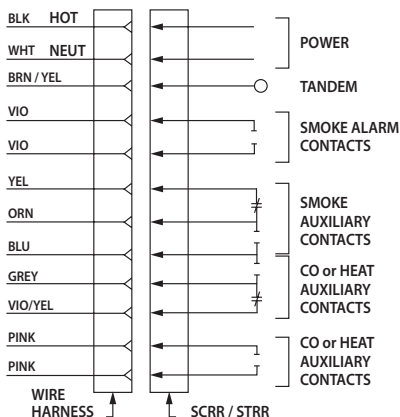
MODELS: STRR, SCRR

STRR	120VAC, 60Hz , Multi-Criteria Photoelectric Smoke Alarm, Integral Heat Thermal, 2 Form A/2 Form C Auxiliary Relays
SCRR	120VAC, 60Hz , Combination Multi-Criteria Photoelectric Smoke Alarm and Electrochemical Carbon Monoxide Alarm, 2 Form A/2 Form C Auxiliary Relays

NOTICE:

- USE ONLY DURACELL® MN 1604 BATTERY. AVAILABLE AT MANY RETAIL STORES.
- USE BROWN/YELLOW WIRE TO TANDEM INTERCONNECT THIS DEVICE TO S, SR, S220, SR220, STRR, SHRR, H, H220, C, CR, SC, SCR, SCRR AS WELL AS THE GENTEX GN-503 SERIES, CO1209 SERIES AND S1209 SERIES.
- THIS DEVICE WILL NOT CONNECT TO GENTEX LEGACY PRODUCTS: 7100/7103, 9120/9123, GN-300/GN-303, 710CS/7103CS, 7109CS/7139CS SERIES
- **THE STRR, SCRR PRODUCT WIRING HARNESS IS NOT INTERCHANGEABLE WITH OTHER MODELS OF THE GN600 FAMILY. THE STRR, SCRR MUST USE PROPER WIRING HARNESS SUPPLIED WITH THESE PRODUCTS. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.**

STRR, SCRR WIRING DIAGRAM



RELAY CONTACTS
 RATED LOAD RESISTIVE
 1.0 AMP @ 30VDC MAX
 0.3 AMP @ 125VAC MAX

IMPORTANT PRODUCT INSTALLATION INFORMATION

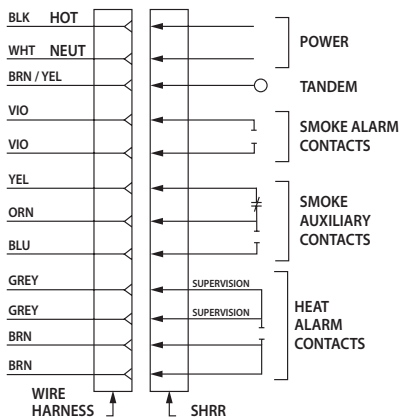
MODELS: SHRR

SHRR	120VAC, 60Hz, Multi-Criteria Photoelectric Smoke Alarm, Isolated Heat Thermal, 2 Form A/2 Form C Auxiliary Relays
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NOTICE:

- USE ONLY DURACELL® MN 1604 BATTERY. AVAILABLE AT MANY RETAIL STORES.
- USE BROWN/YELLOW WIRE TO TANDEM INTERCONNECT THIS DEVICE TO S, SR, S220, SR220, STRR, SHRR, H, H220, C, CR, SC, SCR, SCRR AS WELL AS THE GENTEX GN-503 SERIES, CO1209 SERIES AND S1209 SERIES.
- THIS DEVICE WILL NOT CONNECT TO GENTEX LEGACY PRODUCTS: 7100/7103, 9120/9123, GN-300/GN-303, 710CS/7103CS, 7109CS/7139CS SERIES
- **THE SHRR PRODUCT WIRING HARNESS IS NOT INTERCHANGEABLE WITH OTHER MODELS OF THE GN600 FAMILY. THE SHRR MUST USE PROPER WIRING HARNESS SUPPLIED WITH THESE PRODUCTS. PRODUCT WILL NOT FUNCTION IF INCORRECT HARNESS IS USED.**

SHRR WIRING DIAGRAM



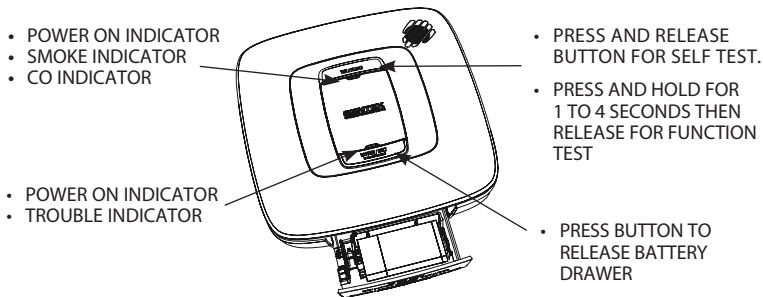
RELAY CONTACTS
 RATED LOAD RESISTIVE
 1.0 AMP @ 30VDC MAX
 0.3 AMP @ 125VAC MAX

BATTERY INSTALLATION

1. Press Battery/Eject button to release battery drawer.
2. Open battery drawer by firmly pulling on side lip, then sliding battery drawer open.
3. Insert battery into drawer, terminal end first. Proper polarity is being observed, (+) terminal on battery to (+) terminal on device metal contact and (-) terminal on battery to (-) terminal on the device metal contact. See FIGURE 11.
4. Insert battery into drawer and close drawer. Note: The battery drawer will not close if the battery is installed incorrectly.
5. Slide battery drawer shut until it is snapped into place.
6. Use only Duracell® MN 1604 battery with this device. Available at many retail stores.
7. Push test button to verify battery operation.

NOTICE: ALL BATTERY BACK-UP UNITS IN TANDEM WITH GOOD BATTERIES WILL OPERATE NORMALLY DURING AN AC POWER FAILURE A MINIMUM OF 24 HOURS.

FIGURE 11



HOW TO TELL IF THIS DEVICE IS WORKING PROPERLY

- This device is provided with an alarm horn and green AC power on LEDs, red flashing LED for smoke, heat, or CO event. Amber on LEDs are provide to indicate a trouble situation for this device. See CHECKOUT AND TROUBLESHOOTING for additional information.
- Test button function: when test button is pressed, the full operation of the light source, light sensor and sensor circuit are verified and will initiate an alarm. See CHECKOUT AND TROUBLESHOOTING for additional information.
- If the battery is low or missing, a chirp will be emitted. If the device is malfunctioning, two chirps will sound. If AC power fails, the green LED will turn off. See CHECKOUT AND TROUBLESHOOTING for additional information.

NOTE: TANDEM INTERCONNECTED DEVICES

- When testing one device, the device that is activated will flash the red indicator light and sound its alarm horn. All other devices will sound the alarm horn with their red indicator lights remaining off.

USING THE SILENCE FEATURE

FOR USE WITH: S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR, C, CR (SEE BACK OF DEVICE FOR EXACT MODEL)

- The silence feature is for your convenience only and will not correct a Smoke, Heat or CO problem. ALWAYS check the premise for potential problem after any alarm. Failure to do so can result in injury or death.
- NEVER remove the battery from the device to silence the alarm horn; use the silence feature. Removing the battery, removes the protection! See "IF DEVICE SOUNDS" for details on responding to an alarm.

The silence feature is intended to silence the device while the problem is corrected. **IT WILL NOT CORRECT A PROBLEM!** While the device has been silenced, the device will continue to monitor the air for the presence of Smoke, heat and CO. When CO reaches threshold levels, the alarm will sound a (T4) horn pattern - 4 beeps, a pause, 4 beeps, a pause, etc. Press the silence button until the horn becomes silent. The initial silence cycle will last approximately 6 minutes. When or heat reaches threshold levels, the alarm will sound a (T3) horn pattern - 3 beeps, a pause, 3 beeps, a pause, etc. Press the silence button until the horn becomes silent. During the silence cycle, the alarm will sound 2 chirps for approximately every 48 seconds up to 6 minutes. Within the 6 minute silence cycle, the device will sound if smoke reaches threshold levels indicating a continued presence of smoke.

NOTICE:

- AFTER INITIAL 6 MINUTE SILENCE CYCLE, THE ALARM WILL RE-EVALUATE PRESENT SMOKE, HEAT AND/OR CO LEVELS AND RESPOND ACCORDINGLY. IF SMOKE AND/OR CO LEVELS REMAIN POTENTIALLY DANGEROUS, OR INCREASE TO HIGHER LEVELS, THE ALARM HORN WILL SOUND AGAIN.
- WHEN SMOKE OR HEAT OBSCURATION REACHES ANSI/UL UPPER THRESHOLD, THE SMOKE OR SMOKE/CO ALARM WILL NOT SILENCE FOR SMOKE.

WHEN TWO OR MORE DEVICES ARE TANDEM INTERCONNECTED:

NOTICE:

- LOW OR MISSING BATTERY EVENT: TO DETERMINE WHICH DEVICE HAS A LOW OR MISSING BATTERY, MOMENTARILY PRESS THE TEST/SILENCE BUTTON FOR NO MORE THAN 1 SECOND AND THE DEVICE WITH A LOW OR MISSING BATTERY WILL HAVE THE GREEN LED ON, THE AMBER LED ON AND A SINGLE CHIRP WILL SOUND ONCE.
- TROUBLE EVENT: TO DETERMINE WHICH DEVICE HAS A TROUBLE CONDITION, MOMENTARILY PRESS THE TEST/SILENCE BUTTON FOR NO MORE THAN 1 SECOND AND THE DEVICE IN TROUBLE CONDITION WILL HAVE THE GREEN LED ON, THE AMBER LED WILL BE ON AND A DOUBLE CHIRP WILL SOUND ONCE.
- END OF LIFE EVENT: TO DETERMINE WHICH WHICH DEVICE HAS REACHED ITS END OF LIFE, MOMENTARILY PRESS THE TEST/SILENCE BUTTON FOR NO MORE THAN 1 SECOND AND THE DEVICE THAT IS END OF LIFE WILL HAVE THE GREEN LED ON, THE AMBER LED WILL BE ON AND A TRIPLE CHIRP WILL SOUND ONCE.

While the alarm is silenced:

If the CO alarm:	This means:
Is silent for 6 minutes, then alarm sounds again	CO levels are still potentially dangerous
Remains silent after test/silence button has been pressed	CO levels are dropping
If the smoke alarm:	This means:
Is silent for 6 minutes or less, alarm sounds again	Smoke levels are still potentially dangerous
Remains silent after the test/silence button has been pressed	Smoke levels are dropping

SELECTING THE RELAY MODE

FOR USE WITH: SR, SR220, STRR, SHRR, SCR, SCRR, CR (SEE BACK OF DEVICE FOR EXACT MODEL)

The device's relay has two modes of operation, tandem and local. To set the relay mode to local, the test/silence button must be pressed and held for at least ten seconds. When the red status LED blinks twice, release the test/silence button to set the relay mode. When in local mode, only an alarm condition detected by this device will change the relay state. To set the device to tandem mode, the test/silence button must be pressed and held between 6 and 10 seconds. When the red status LED blinks once, release the test/silence button to set the relay mode. When in tandem mode, the device's relay will change state when an alarm condition signal is received from a different device over the tandem interconnect line or when an alarm condition is detected by this device. The device's default relay mode is tandem.

CHECKOUT & TROUBLESHOOTING

- For self test feature, momentarily press the test/silence button for no more than 1 second and release button. Results of test:
 - Device is silent — device is in good working condition
 - 1 Chirp with amber LED flash — Low battery. Replace battery following instructions in BATTERY INSTALLATION Section
 - 2 Chirps with red LED flash and amber LED illuminated — device has been silenced for smoke or device is reporting a trouble condition.
 - 3 Chirps with amber LED illuminated — device is at end of life and must be replaced. To find device with low battery (1 chirp) or device that is in a trouble condition (2 chirps) perform the self test and the faulty alarm will continue to chirp as long as fault is present.
 - 4 shorts beeps (T4). The product has been in alarm for CO sometime in the past 8 hours
 - 3 long beeps (T3). The product has been in alarm for smoke or heat in the past 8 hours.
- Press and hold the test/silence button for 1 to 4 seconds then release the button until all alarms annunciate for functional test
- Supply house power to the device, green indicator will be on. The red indicator light should flash approximately every 16 seconds, showing that unit is operating properly.
- If red light is not flashing or the green LED is not on:
 - Check that AC power is working.
 - Check that the battery is installed.
 - Push test button. Device will go into self test mode.
 - Check the connector plug and wire connections.
NOTICE: BE SURE YOU TURN OFF POWER BEFORE CHECKING WIRE CONNECTIONS.
 - If the power supply and wiring check out, but the green LEDs are still off, return the unit to the manufacturer. See TO RETURN A DEVICE.
- When powering up devices in a tandem installation, inspect all devices for a solid green LED and all devices sound when each device is tested. If problem exists, verify wiring of devices. If wiring is correct and problem remains, the device(s) with flashing amber LED is the trouble device(s) and should be replaced.
- If device becomes contaminated, such as excessive dust, and cannot be cleaned, avoid nuisance alarms by replacing device.

TROUBLESHOOTING GUIDE

PROBLEM:	THIS MEANS:	ACTION TAKEN:
Smoke or Smoke/CO alarm goes back into alarm 6 minutes or less after the test/silence button was pressed.	Smoke or Heat levels indicate a potentially dangerous situation.	Call 911 or the Fire Department.
Smoke alarm does not silence after the test/silence button was pressed.	Smoke obscuration reached upper threshold indicating a potentially dangerous situation.	Call 911 or the Fire Department.
CO alarm goes back into alarm 6 minutes after the test/silence button was pressed.	CO levels indicate a potentially dangerous situation.	IF YOU ARE FEELING SYMPTOMS OF CO POISONING, EVACUATE and call 911 or the Fire Department.
Green LED is OFF. Amber LED is OFF. Red LED is not flashing. Unit will not go into test mode when test/silence button is pressed.	Device may not be receiving AC power and no battery in device	Contact licensed electrical technician for equipment inspection service, immediately.
Red LED is flashing, amber LED is on, alarm sounds 2 quick chirps every 48 seconds.	Device is in reset mode or is reporting a trouble condition	Wait 6 minutes for reset cycle to complete. If 2 chirps continue after 6 minutes, disconnect power, wait 6 minutes, reconnect power sources, test device.
Green LED on, amber LED flashing, alarm sounds 3 quick chirps every 48 seconds.	END OF LIFE SIGNAL. Replace device.	Contact Gentex Corporation for replacement information.
Green LED on, amber LED flashing and alarm chirps 1 quick chirp every 48 seconds	Low or no battery in device. AC is powering device	Replace battery (refer to Battery Installation Section) or contact licensed electrical technician for equipment inspection service, immediately.
Green LED on, amber LED flashing and alarm chirps 2 quick chirps every 48 seconds	Device is reporting a trouble condition	Contact Gentex Corporation for replacement information or see TO RETURN AN ALARM Section.
Test/silence button is pressed. LED's do not flash and device does not go into test mode.	Device is not operating properly.	Contact Gentex Corporation for replacement information or see TO RETURN AN ALARM Section.

Any questions that are not answered within this manual, call Gentex Corporation at 1-800-436-8391

MAINTENANCE

NOTICE:

- DO NOT OPEN DEVICE FOR CLEANING. IF DEVICE IS OPENED, PRODUCT WARRANTY BECOMES VOID.
- IF THE DEVICE DOES NOT WORK PROPERLY, DO NOT ATTEMPT TO FIX IT YOURSELF. THIS WILL VOID THE PRODUCT WARRANTY. SEE TO RETURN A DEVICE SECTION FOR INSTRUCTIONS TO RETURN DEVICES THAT DO NOT OPERATE PROPERLY. Gentex recommends devices be tested a minimum of once a week. The test feature of your device accurately simulates conditions and tests the device's functions as required by ANSI/UL 217, ANSI/UL 539, and ANSI/UL 2034.

WARNING!

- NEVER USE AN OPEN FLAME OF ANY KIND TO TEST YOUR DEVICE. YOU MAY IGNITE AND DAMAGE THE DEVICE AS WELL AS THE PREMISE. THE TEST FEATURE OF YOUR DEVICE ACCURATELY SIMULATES DEVICE CONDITIONS AND TESTS THE DEVICE'S FUNCTIONS AS REQUIRED BY UNDERWRITERS LABORATORIES.
- DO NOT COVER, TAPE, OR OTHERWISE BLOCK THE OPENINGS OF YOUR DEVICE. THESE OPENINGS ARE DESIGNED TO ALLOW AIR TO PASS THROUGH YOUR DEVICE, THUS SAMPLING THE AIR AROUND THE DEVICE.
- THIS DEVICE IS NOT TO BE USED WITH DETECTOR GUARDS UNLESS THE COMBINATION HAS BEEN EVALUATED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND FOUND SUITABLE FOR THAT PURPOSE.
- FAILURE TO REGULARLY CLEAN THIS DEVICE WILL RESULT IN FALSE ALARMS.

WEEKLY TESTING

Press and hold the test/silence button for 1 to 4 seconds then release the button on the device until the alarm sounds. During testing the device will simulate the device's condition. LED's will flash to indicate testing. This sequence should last 10-20 seconds.

WARNING

- If the device ever fails to test properly, replace it immediately. Products under warranty may be returned to the manufacturer for replacement, see LIMITED WARRANTY.
- DO NOT stand close to the device when the alarm is sounding. Exposure at close range could result in hearing damage.
- FOR USE WITH: C, CR, SC, SCR, SCRR: CARBON MONOXIDE DETECTION (SEE BACK OF DEVICE FOR EXACT MODEL) Never use exhaust from vehicle to test CO portion of alarm. Exhaust may cause permanent damage to alarm and voids the warranty.

TO KEEP THE DEVICE WORKING PROPERLY:

- Test weekly as described in WEEKLY TESTING.
- Keep device cover clean using soft cloth. DO NOT vacuum or use compressed air, water, cleaners or solvents to clean alarm.
- Replace battery immediately if low battery warning is heard. See BATTERY INSTALLATION section.

NOTICE: DO NOT SPRAY CLEANING CHEMICALS OR INSECT SPRAYS DIRECTLY ON OR NEAR THE DEVICE. DO NOT PAINT OVER THE DEVICE. DOING SO MAY CAUSE PERMANENT DAMAGE.

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

NOTICE: THIS DEVICE IS NOT WASHABLE. DO NOT SUBMERGE THE DEVICE IN WATER. WATER CAN AFFECT THE SENSOR, CAUSING PERMANENT DAMAGE.

- If the premise is being fumigated, disconnect device temporarily from wire harness and store where it will not be exposed to chemicals or fumes. When fumigation is complete and all traces of fumes clear, re-connect unit back to wire harness and push the reset button.

PLACEMENT OF DEVICE

THIS EQUIPMENT SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION'S STANDARD 72 (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269).

FOR USE WITH: C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

NFPA 72, 2022 Edition, Chapter 29, Section 29.7.1.1 Where required by other governing laws, codes, or standards for a specific type of occupancy, listed carbon monoxide alarms or detectors shall be installed as follows:

1. Outside of each separate dwelling unit sleeping area, within 21 ft. (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel.
2. On every occupiable level of a dwelling unit, including basements, excluding attics and crawl spaces.
3. In all sleeping rooms and guest rooms containing installed fuel-burning appliances
4. Other locations where required by applicable laws, codes or standards

FOR USE WITH: S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

NFPA 72, 2022 Edition, Chapter 29, Section 29.8.1 Required Smoke Detection, states the following:

29.8.1.1 Where required by other governing laws, codes, or standards for a specific type of occupancy, listed single- and multiple-station smoke alarms shall be installed as follows:

1. In all sleeping rooms and guest rooms
2. Outside of each separate dwelling unit sleeping area, within 21 ft (6.4 m) of any door to a sleeping room with the distance measured along a path of travel
3. On every level of a dwelling unit, including basements
4. On every level of a residential board and care occupancy (small facility), including basements and excluding crawl spaces and unfinished attics
5. In the living area(s) of a guest suite
6. In the living area(s) of a residential board and care occupancy (small facility)

FIGURE 2

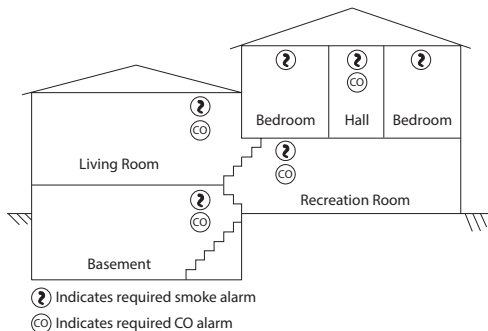


FIGURE 2: A SMOKE ALARM MUST BE LOCATED ON EVERY LEVEL OF DWELLING UNIT, INCLUDING BASEMENT, WITHIN EACH SLEEPING ROOM AND OUTSIDE SLEEPING AREAS. A CO ALARM MUST BE LOCATED ON EVERY LEVEL OF DWELLING UNIT, INCLUDING BASEMENT AND OUTSIDE SLEEPING AREAS.

Where to Locate the Required Smoke Alarms. The major threat from fire in a dwelling unit occurs at night when everyone is asleep. Persons in sleeping areas can be threatened by fires in the remainder of the unit; therefore, smoke alarms are best located in each bedroom and between the bedroom areas and the rest of the unit as shown in Figure 3.

FIGURE 3

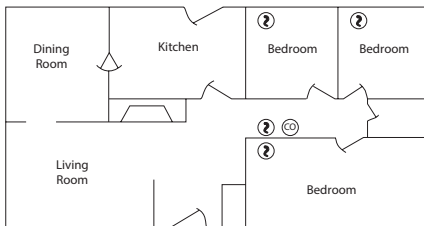


FIGURE 3: A SMOKE ALARM MUST BE LOCATED BETWEEN THE SLEEPING AREA AND THE REST OF THE DWELLING UNIT AS WELL AS IN EACH BEDROOM. A CO ALARM MUST BE LOCATED BETWEEN THE SLEEPING AREA AND THE REST OF THE DWELLING UNIT.

In dwelling units with more than one bedroom area or with bedrooms on more than one floor, more than one smoke alarm is required, as shown in Figure 4.

FIGURE 4

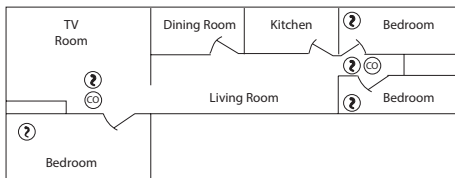


FIGURE 4: IN DWELLING UNITS WITH MORE THAN ONE SLEEPING AREA, A SMOKE ALARM MUST BE PROVIDED TO PROTECT EACH SLEEPING AREA IN ADDITION TO SMOKE ALARMS REQUIRED IN BEDROOMS. A CO ALARM MUST BE PROVIDED TO PROTECT EACH SLEEPING AREA.

In addition to smoke alarms outside of the sleeping areas and in each bedroom, NFPA 72 requires the installation of a smoke alarm on each additional level of the dwelling unit, including the basement. These installations are shown in Figure 5. The living area smoke alarm should be installed in the living room or near the stairway to the upper level, or in both locations. The basement smoke alarm should be installed in close proximity to the stairway leading to the floor above. Where installed on an open-joisted ceiling, the smoke alarm should be placed on the bottom of the joists. The smoke alarm should be positioned relative to the stairway so as to intercept smoke coming from a fire in the basement before the smoke enters the stairway.

FIGURE 5

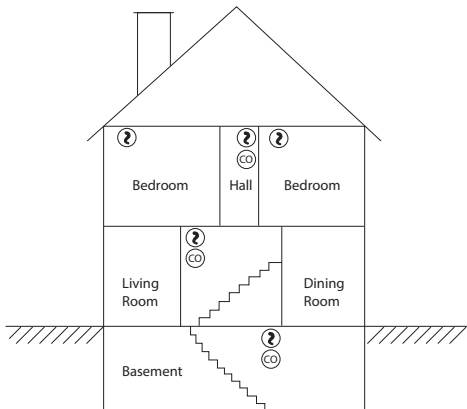


FIGURE 5: A SMOKE ALARM MUST BE LOCATED ON EACH LEVEL IN ADDITION TO EACH BEDROOM. A CO ALARM MUST BE LOCATED ON EACH LEVEL.

MOUNTING LOCATION

FOR USE WITH: S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR, C, CR (SEE BACK OF DEVICE FOR EXACT MODEL)

This device can be mounted on a ceiling or wall with equal efficiency in either location.

- Ceiling location: device should be mounted as close as possible to the center of a hallway or room.
- Wall location: locate the top of the device not more than 12 inches from the ceiling. The placement of the device is critical if maximum speed of detection is desired. Thus, a logical location for a device is the center of the ceiling. At this location, the device is closest to all areas of the room.

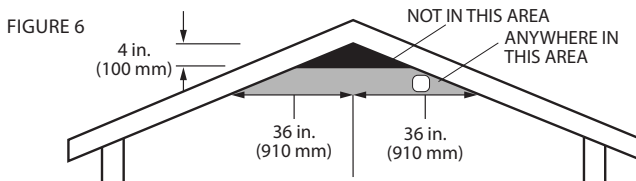


FIGURE 6: FOR USE WITH MODELS: S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL) RECOMMENDED DEVICE LOCATION IN ROOMS WITH SLOPED, GABLED, OR PEAKED CEILINGS.

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HEAT ALARM PLACEMENT

THIS EQUIPMENT SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION'S STANDARD 72 (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269).

FOR USE WITH: H, H220 (SEE BACK OF DEVICE FOR EXACT MODEL)

NFPA 72, 2022 Edition, Chapter 29, Section 29.11.4 Heat Detectors and Heat Alarms, states the following:

29.11.4.1 On smooth ceilings, detectors or heat alarms shall be installed within the strict limitations of their listed spacing.

29.11.4.2 For sloped ceilings having a rise greater than 1 ft. in 8 ft. (1 m in 8m) horizontally, the detectors or alarm shall be located within 36 in (910 mm) of the peak.

29.11.4.4 Heat detectors or alarms shall be mounted on the ceiling at least 4 inches (100 mm) from a wall or on a wall with the top of the detector or alarm not less than 4 inches (100 mm), no more than 12 inches (300 mm), below the ceiling.

29.11.4.6 In rooms with open joists or beams, all ceiling mounted detectors or alarms shall be located on the bottom of such joists or beams.

FIGURE 7

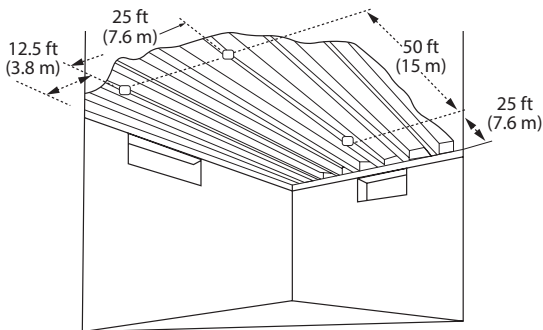


FIGURE 7: OPEN JOISTS, ATTICS AND EXTRA HIGH CEILINGS ARE SOME OF THE AREAS THAT REQUIRE SPECIAL KNOWLEDGE FOR HEAT ALARM INSTALLATION

WHERE DEVICES SHOULD BE INSTALLED IN MOBILE HOMES

FOR USE WITH: S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

In mobile homes built after about 1978 that were designed and insulated to be energy-efficient, devices should be installed as described in the section above.

In older mobile homes that have little or no insulation compared to today's standards, uninsulated metal outside walls and roofs can transfer heat and cold from outdoors, making the air right next to them hotter or colder than the rest of the inside air. These layers of hotter or colder air can prevent smoke from reaching a device. Therefore, install devices in such premises only on inside walls, not more than 12 inches (30 cm) from the ceiling. If you are not sure about the insulation level in a mobile home, or if the walls or ceiling are unusually hot or cold, install the device on an inside wall.

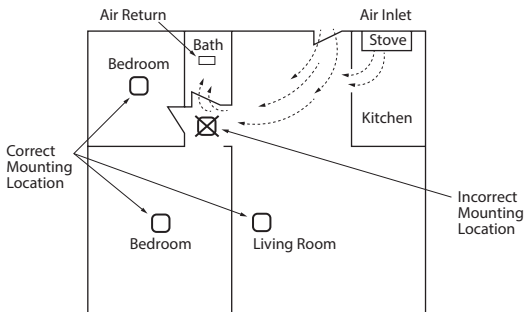
Minimum protection requires one smoke alarm or smoke/CO alarm as close to the sleeping area as possible. For better protection, install one device in each room, but first read the LOCATIONS TO AVOID.

LOCATIONS TO AVOID

S, SR, S220, SR220, STRR, SHRR, SC, SCR, SCRR: SMOKE DETECTION
(SEE BACK OF DEVICE FOR EXACT MODEL)

- Nuisance alarms are caused by placing smoke alarms where they will not operate properly. To avoid nuisance alarms, **do not place smoke alarms:**
 - In or near areas where combustion particles are normally present** such as **kitchens**; in **garages** where there are particles of combustion in vehicle exhausts; **near furnaces, hot water heaters, or gas space heaters**. Install smoke alarms at least 20 feet (6 meters) away from kitchens and other areas where combustion particles are normally present.
 - In air streams passing by kitchens.** FIGURE 8 shows how a smoke alarm can be exposed to combustion particles in normal air movement paths, and how to correct this situation.

FIGURE 8



- **In damp or very humid areas**, or next to bathrooms with showers. The moisture in humid air can enter the sensing chamber as water vapor, then cool and condense into droplets that cause a nuisance alarm. **Install smoke alarms at least 10 feet (3 meters) away from bathrooms.**
- **In very cold or very hot environments, or in unheated buildings or outdoor rooms**, where the temperature can go below or above the operating range of the smoke alarm. Temperature limits for proper operation are 40° to 100°F (4.4° to 37.8°C).
- **In very dusty or dirty areas.** Dust and dirt can build up on the smoke alarm's sensing chamber and can make it overly sensitive, or block openings to the sensing chamber and keep the smoke alarm from sensing smoke.
- **Near fresh air inlets, returns or excessively drafty areas.** Air conditioners, heaters, fans, fresh air intakes and returns can drive smoke away from smoke alarms, making the devices less effective.
- **In dead air spaces at the top of a peaked roof or in the corners between ceilings and walls.** Dead air may prevent smoke from reaching a smoke alarm.
- **In insect-infested areas.** If insects enter a smoke alarm's sensing chamber, they may cause a nuisance alarm. **Get rid of the bugs before installing smoke alarms where bugs are a problem.**
- **Near fluorescent light fixtures.** Electrical "noise" from nearby fluorescent light fixtures may cause a nuisance alarm. **Install smoke alarms and fluorescent lights on separate electrical circuits.**

H, H220: HEAT DETECTION

(SEE BACK OF DEVICE FOR EXACT MODEL)

- Placing heat alarms where they will not operate properly causes nuisance alarms.
- Where temperatures are regularly below 40°F (4.44°C) or above 100°F (37.78°C).
- In air streams passing by kitchens. It is possible normal air currents can draw cooking heat into the sensor of a unit near the kitchen. If you experience frequent unwanted alarms from a unit near your kitchen, try relocating it. Do not install your heat alarm over a stove or a range.
- In dead air spaces at the top of a peaked roof or in the corners between ceilings and walls. Dead air may prevent heat from reaching a alarm. See FIGURES 1 and 6 for recommended mounting locations.
- Near fluorescent light fixtures. Electrical "noise" from nearby fluorescent light fixtures may cause a nuisance alarm. Install alarms and fluorescent light on separate electrical circuits

WHAT YOU NEED TO KNOW ABOUT CO

FOR USE WITH: C, CR, SC, SCR, SCRR (SEE BACK OF DEVICE FOR EXACT MODEL)

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

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

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

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

EXPOSURE	SYMPTOMS OF CO POISONING
Mild	Slight headache, nausea, vomiting, fatigue (flu-like symptoms)
Medium	Throbbing headache, drowsiness, confusion, rapid heart rate
Extreme	Convulsions, unconsciousness, heart and lung failure. Exposure to carbon monoxide (CO) can cause brain damage and death

⚠ WARNING

Some individuals are more sensitive to CO than others, including people with cardiac, respiratory or other health problems. Infants, young children, pregnant women and elderly people can be more quickly and severely affected by CO. People sensitive to CO should consult their doctors for advice on taking additional precautions.

FINDING THE SOURCE OF CO AFTER AN ALARM

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

- 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. **Gentex Corporation shall not be obligated to pay for any carbon monoxide (CO) investigation or service call.**

HOW CAN I PROTECT MY FAMILY?

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

WARNING! A CO DEVICE 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 or oil companies and HVAC companies offer appliance inspections for a nominal fee.
- Make regular visual inspections of all fuel-burning appliances. Check appliances for excessive rust and scaling. Also check the flame on the burner and pilot lights. The flame should be blue. A yellow flame means fuel is not being burned completely and CO may be present. Keep the blower door on the furnace closed. Use vents or fans when they are available on all fuel-burning appliances. Make sure appliances are vented to the outside. Do not grill or barbecue indoors, 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 door. Opening windows or doors can significantly reduce CO levels.

POTENTIAL SOURCES OF CO IN RESIDENTIAL DWELLINGS

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

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

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

FIGURE 1

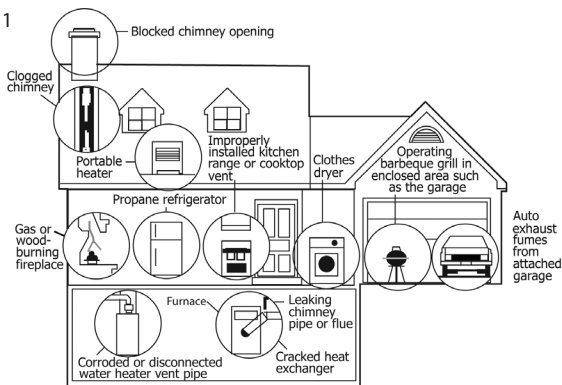


FIGURE 1: POTENTIAL SOURCES OF CO IN HOME