

AMERICAN SENSORS™
SMOKE ALARM MANUAL
Photoelectronic Type

- **Model SA388** -Multi-Location
-Ideal for all rooms including Kitchen Area

Photoelectronic Smoke Chamber:

Unique photoelectronic smoke chamber design virtually eliminates stray light interference in a normal home environment, but allows access of smoke particles from all sides resulting in an extremely sensitive and stable smoke alarms.

Important information about your smoke alarm

- Install alarms outside of every bedroom area and on every floor of your home. Please refer to Section 3 “Where to Locate Smoke Alarms” for details.
- Install the alarm as close as possible to the center of the ceiling.
- Your Smoke Alarm is packaged with the battery disconnected. Connect it before mounting the unit. Ensure proper polarity of the battery. Alarm may be damaged if the battery is reversed.
- Replace the battery if the smoke alarm beeps approximately once every 45 seconds (low battery warning).
- Test the alarm weekly by pressing and holding the test button for up to 20 seconds until the alarm sounds.
- The model described in this manual is designed for single family residences, including homes and apartments.
- Contains no radioactive material

Smoke Alarm Safety Features

- **Operating Light (LED)** - Light flashes approximately every 45 seconds to let you know that the unit is powered.
- **Low Battery Warning Beep** - Approximately every 45 seconds for up to 30 days to alert you when the battery needs replacing.
- **Battery Removal Indicator** - Cover resists closing if battery is removed.

CONTENTS OF THIS MANUAL

1. CAPABILITIES AND LIMITATIONS OF SMOKE ALARMS
2. SAFETY TIPS
3. WHERE TO LOCATE SMOKE ALARMS
4. NFPA RECOMMENDATIONS
5. LOCATIONS TO AVOID
6. INSTALLATION AND TESTING
7. BATTERY REPLACEMENT
8. MAINTENANCE AND TROUBLESHOOTING
9. LIMITED WARRANTY
10. OTHER AMERICAN SENSORS PRODUCTS

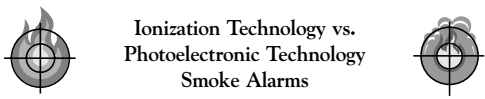
1. CAPABILITIES AND LIMITATIONS OF SMOKE ALARMS

American Sensors smoke alarms are designed to provide early warning of fire and smoke at reasonable cost. Early warning can mean the difference between a safe escape and no escape at all. While smoke alarms can provide invaluable protection for you and your family, they do have limitations.

- **Smoke alarms cannot work without power.** Battery operated alarms will not work without proper batteries, with dead batteries or if batteries are not properly installed. AC powered alarms will not work if their AC power supply is cut off by an electrical fire, an open fuse, a circuit breaker or any other reason.
- If you are concerned about the reliability of either battery or your AC power supply for any of the above reasons, you should install in your home both AC and battery powered smoke alarms for added security. American Sensors also offers the SA379 model which is AC powered with battery back-up.
- **Smoke alarms are incapable of sounding the alarm until smoke reaches the sensing chamber.** Anything preventing smoke from reaching the alarm may delay or prevent an alarm. A smoke alarm cannot detect fire in the walls, chimney or roof unless and until a significant amount of smoke reaches the alarm. A closed door may prevent smoke from reaching an alarm on the other side of the door. A smoke alarm may not sense a fire on another floor of a home. For example, a basement smoke alarm may not detect a fire which started on the first or second floor.
- **Smoke alarms may not be heard.** The loudness of the horn in your alarm meets current standards. However, the sound may be blocked by distance, closed doors, or ambient noise such as traffic or a stereo. Smoke alarms may not be heard by persons who are hard of hearing.

For these reasons, a **smoke alarm should be installed in every room or at least on every level of your home.** American Sensors recommends that hardwire AC Powered smoke alarms be interconnected, so that one alarm will trigger all other alarms to sound their alarms.

- **Smoke alarms are not fool-proof.** Smoke alarms may not always sense every kind of fire. They cannot be expected to sense fires caused by carelessness or by safety hazards. They may not give early warning of fast growing fires caused by smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, natural causes such as lightning, children playing with matches, or arson.
- **Smoke alarms are not substitutes for property, disability, life or other insurance of any kind.** Home owners and renters should continue to insure their lives and property. Consult your insurance agent.
- **Smoke alarms have limited lives.** One or more of the many components could fail at any time. Therefore, test your smoke alarm weekly. Clean and take care of it as described in this manual. Repair or replace the smoke alarm when it fails to test properly. **Your smoke alarm should be replaced if it is ten years old.**



Ionization Technology vs. Photoelectronic Technology Smoke Alarms

There are two different types of smoke alarm technology currently in general use: ionization and photoelectronic. While both types of technology are suitable for general residential use, an ionization alarm will normally respond faster to fast flaming fires, while a photoelectronic alarm may be more sensitive to detecting slow smoldering fires. Because home fires develop in different ways and are often unpredictable in their growth, it is impossible to predict which type of alarm will provide the earliest warning. For best home protection install at least one photoelectronic and one ionization smoke alarm on each level of your home. Model SA700 is a 2 in 1 smoke alarm utilizing both ionization and photoelectronic technology. Model SA388 is a photoelectronic type smoke alarm.

The American Sensors SA388 photoelectronic smoke alarm uses a proven concept, the scattered light principle, to “see” smoke within the alarm chamber.

The regulated pulse of infrared light from a light emitting diode (LED) is introduced into a darkened chamber every five to ten seconds to form a precise beam. When smoke enters this chamber, it interferes with the beam to scatter the light. The amount of light scattered within the chamber is monitored by a strategically placed photodiode. When a predetermined level of light strikes the photodiode, the alarm is activated.

With some designs, stray light from sources such as light fixtures significantly alters the level of light within a smoke chamber. The American Sensors’ SA388 unique smoke chamber design virtually eliminates this problem in a normal home environment, but still allows easy access for smoke particles from all sides and results in an extremely sensitive and stable smoke alarms.

American Sensors also offers a full line of ionization type smoke alarms (see Section 10).

2. SAFETY TIPS

- Properly installed and maintained smoke alarms are an essential part of a good home fire safety program. **Your fire safety program should also include a review of fire hazards and the elimination of dangerous conditions** whenever possible. Consider the following tips:
- Use smoking materials properly. Never smoke in bed.
 - Keep matches and cigarette lighters away from children.
 - Store flammable materials in proper containers. Never use them near an open flame or sparks.
 - Keep electrical appliances in good condition. Do not overload electrical circuits.
 - Keep stoves, fireplaces, chimneys, and barbecue grills grease free. Make sure they are properly installed and away from any combustible materials.
 - Keep portable heaters and open flames such as candles away from combustible material.
 - Do not allow rubbish to accumulate.
 - Keep a supply of extra batteries on hand for your battery powered smoke alarms.
 - Do not stand too close to the alarm when the unit is in alarm as the loud horn could damage your hearing.

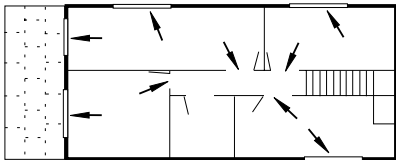
⚠ WARNING Never disconnect the battery or the AC power on any type of smoke alarm to silence a nuisance alarm. Clear the area of smoke by opening doors or windows or fanning the smoke away.

Most important, when fire strikes, a prepared and practiced escape plan can make the difference between life and death. Develop an escape plan and practice it with the entire family, including small children.

- Ensure all family members are familiarized with the alarm signal.
- Prepare an escape plan. Draw a Floor Plan of Your Home and determine two exits from each room. There should be a way to get out of each bedroom without opening the door.
- Have Fire Drills Often. Practice your Escape and BE PREPARED.
- Decide on a meeting place at a safe distance from your home.

IN CASE OF FIRE

- Don’t waste time collecting possessions after a fire starts.
- Arouse all occupants and leave the building. Your most valuable possession is your life.
- Doors can mean escape or death. Never open doors without first checking for heat. Test them with your hands, if they feel warm, fire may be walled up behind them - leave closed and find another escape route.
- Call the fire department from OUTSIDE the building.
- If trapped inside, stay close to the floor, cover mouth with cloth, conserve breath as you crawl to safety.
- Keep all doors and windows closed except for escape purposes.
- NEVER re-enter a burning building.
- Keep your family in a pre-arranged meeting place after your escape.



Your local fire department may be able to offer you additional ideas for safety and escape plans in the home.

3a. WHERE TO LOCATE SMOKE ALARMS

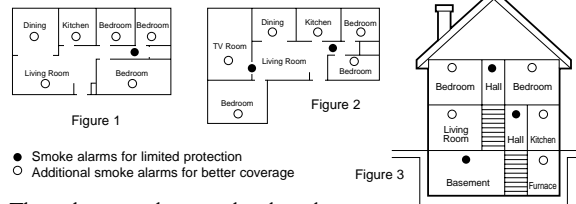
- As a **minimum**, smoke alarms should be located between sleeping areas and potential sources of fire such as a kitchen, heated garage or basement. In single story homes with one sleeping area, an alarm should be installed in the hallway outside the bedrooms (see Figure 1). In single story homes with two separate sleeping areas, a minimum of two alarms are required, one outside each sleeping area (see Figure 2). In multi-level or split-level homes, as a minimum, an alarm should be installed outside each sleeping area, in the basement and at every level of the home (see Figure 3).
- In every room of your home (except the bathroom): Research indicates that substantial increases in warning time can be obtained with each properly installed, additional alarm.
 - In bedrooms: In anticipation of fires originating within these rooms, caused by faulty wiring, lamps, appliances, smoking or other hazards.

- In hallways: At a distance no greater than 13 feet (4 meters) from the farthest wall and no greater than 26 feet (8 meters) from the next alarm.
- In the center of a room or hallway: As it is impossible to predict the source of a fire. If it is necessary to place the alarm on a wall, always locate the top of the smoke alarm 4-6 inches (10-15 cm) from the ceiling.
- As needed: To compensate for closed doors and other obstacles that may interfere with the path of smoke to an alarm. They may also prevent occupants on one side of a closed door from hearing an alarm on the other side of the door.

Model SA388 - Multi-location model can be located in all rooms including the kitchen area. Photoelectronic type alarms may tend to be less prone to sounding nuisance alarms in the kitchen area than ionization type alarms.

READ “CAPABILITIES AND LIMITATIONS OF SMOKE ALARMS” in Section 1 of this manual.

Your local fire department or insurance company may be able to give you further advice on the best smoke alarm locations in your home. Call them and ask.



These diagrams show smoke alarm locations as recommended as above in 3a.

3b. WHERE TO LOCATE SMOKE ALARMS IN MOBILE HOMES AND RECREATIONAL VEHICLES (RV’S)

In mobile homes and RV’s built after 1978 locate the smoke alarm as described above.

Older mobile homes and RV’s may have little or no insulation compared to the ones built post 1978. These uninsulated exteriors can disrupt airflow around the smoke alarm in hotter or colder weather. **Locate the alarm only on interior walls 4” to 6” (10 to 15 cm) from ceiling 1.** if you own an older mobile home or RV, or 2. if you notice the exterior walls and/or ceiling are noticeably cold or warm or 3. if you are uncertain about the quality of insulation.

Regardless of the age of the mobile home or RV, locate alarms throughout to ensure maximum protection. Follow the location instructions in this manual.

4. NFPA RECOMMENDATIONS

For your information, the National Fire Protection Association’s Standard 72, Section 2-2.1.1.1, reads as follows:

2-2.1.1.1. Smoke alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit, including basements and excluding crawl spaces and unfinished attics. In new construction a smoke alarm shall also be installed in each sleeping area.

A-2.5.2.1 Smoke Detection - Are More Smoke Alarms Desirable? The required number of smoke alarms might not provide reliable early warning protection for those areas separated by a door from the areas protected by the required smoke alarms. For this reason, it is recommended that the household consider the use of additional smoke alarms for those areas for increased protection. The additional areas include the basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required smoke alarms. The installation of smoke alarms in kitchens, attics (finished or unfinished), or garages is not normally recommended, as these locations occasionally experience conditions that can result in improper operation.

5. LOCATIONS TO AVOID

Avoid locations where smoke may not reach the alarm in time to provide early warning, or where the alarm may not be effective.

DO NOT PLACE SMOKE ALARMS:

- **In turbulent air** areas of your home such as fans, doors, windows, etc. The rapid air movement may prevent combustion particles from entering the alarm.
 - **In dead air spaces** such as at the peak of an “A” frame ceiling. “Dead air” at the top may prevent smoke from reaching the alarm in time to provide early warning. In rooms with simple sloped, peaked or gabled ceilings, install smoke alarms on the ceiling 3 feet (90 cm) from the highest point of the ceiling. Note: For complex ceiling structures, consult a safety expert for the number of alarms required and the best locations.
 - **In very hot or cold areas** where the temperature exceeds 100°F (38°C) or falls below 40°F (5°C).
 - Less than 6 inches (15 cm) from the wall when mounted on the ceiling.
- Nuisance alarms could result when smoke alarms are located where interference may occur with the sensing chamber. **To avoid nuisance alarms, DO NOT place smoke alarms:**
- **In high humidity areas** such as bathrooms and attics. Place smoke alarms at least 10 feet (3 meters) away from bathrooms.
 - **In insect-infested areas.**
 - **In poorly ventilated kitchens or garages.**
 - **In very dusty and dirty areas.**
 - **Near fluorescent lights.** Place smoke alarms at least 5 feet (1.5 meters) from fluorescent lights.

⚠ WARNING Do not connect this smoke alarm to any other alarm or auxiliary device.

Connecting the alarm to any other device may be detrimental to its proper operation.

6. INSTALLATION AND TESTING

A. Testing Before Installation

- **Connect battery.** Storage in low humidity, and certain transportation conditions, may cause electrostatic charges to build up in the alarm system housing. Although harmless, these charges may increase the length of time during which the horn sounds upon battery insertion or test button operation. The condition may be cleared by gently wiping the outside of the plastic cover with a clean, damp cloth.
- Check the operating light. It should flash approximately every 45 seconds.
- Press and hold test button until alarm sounds. Note: It may be necessary to press the test button for up to 20 seconds for alarm to sound. An alarm is indicated by a loud pulsating sound. Alarm may continue to sound for up to 10 seconds after button is released.

Regarding Testing and Nuisance Alarms

IF THERE IS ANY QUESTION AS TO THE CAUSE OF AN ALARM, ALWAYS ASSUME THAT IT IS DUE TO AN ACTUAL FIRE AND FOLLOW YOUR FIRE EMERGENCY PLANS. Do not assume it is a nuisance or false alarm. Valuable time for escape could be lost.

Installation

- Obtain a screwdriver and drill with 3/16” (5mm) bit.
- Open the cover and handle unit with care to avoid damage.
- **IF MOUNTING SMOKE ALARM ON WALL** - Place alarm on wall so that the hinge for the cover faces the floor, and the arrow indicating where to open, faces the ceiling. This mounting position ensures that the cover hangs open as a visual reminder that the battery is missing. This position also provides good visibility of screw holes for easy installation.
- Mark and then drill two 3/16” (5mm) holes to line up with mounting holes in the alarm base. Keep smoke alarm out of reach from plaster dust while drilling.
- Insert the plastic anchors. Screw alarm base onto ceiling support.
- Properly install batteries.
- Close cover and test as recommended in this section.

Note: This equipment should be installed in accordance with the National Fire Protection Association Standard 72. (National Fire Protection Association, Batterymarch Park, Quincy, MA02269).

B. Testing After Installation

- At least once a week, press the test button until the alarm sounds, then release.

7. BATTERY REPLACEMENT

The Eveready 522, 1222, Duracell MN1604 and Gold Peak 1604A, 1604AP are the only acceptable batteries for use in this smoke alarm. The battery will power the smoke alarm for at least one year under normal use. When the battery reaches the end of its normal life, a low battery warning (intermittent beeping) for up to 30 days, will indicate the need for battery replacement. When replacing batteries, ensure that positive and negative terminals on battery line up with matching terminals in the smoke alarm.

⚠ WARNING Use of non-recommended batteries may be detrimental to the proper functioning of the alarm.

8. MAINTENANCE & TROUBLESHOOTING

VACUUM EVERY SIX MONTHS

Your Smoke Alarm should be cleaned every six months to help keep it working efficiently. Open cover and gently vacuum interior of alarm. Keep vacuum nozzle from touching unit.

Do not paint the unit.
TEST WEEKLY BY PRESSING TEST BUTTON
PROBLEMS MAY BE INDICATED BY THE FOLLOWING:

- The alarm does not sound upon pressing the test button.
- The operating light remains steadily on or off (i.e. does not flash once every 45 seconds, when the unit is not in alarm).

TRY THE FOLLOWING:

- Inspect for obvious damage.
- Gently vacuum as recommended above.
- Check that unit contains recommended battery type.
- Check that batteries are properly connected.
- Replace battery.

If these procedures do not correct the problem, do NOT attempt repairs. If the smoke alarm is within warranty period and terms, indicate the nature of the problem and return the unit with proof of purchase to the **point of purchase**, distributor or manufacturer. See below for instructions. Units beyond warranty cannot be economically repaired.

FALSE ALARMS:

Abnormal air conditions may cause the highly sensitive smoke alarm to give a “false” alarm. If no fire is apparent, ventilate the room and/or blow fresh air into the unit until the alarm stops. Once cleared, the smoke alarm will automatically reset.

DO NOT DISCONNECT THE BATTERY.

Dust can lead to excess sensitivity. Vacuum as recommended above.

9. LIMITED WARRANTY

Your American Sensors SA388 Smoke Alarm, excluding the battery are warranted for ten years from date of purchase against defect in material and workmanship. Units returned to Dicon Global Inc. with proof of purchase date during this period as a result of such defects will be repaired, or replaced at Dicon Global Inc.’s option. This warranty only covers defects in material or workmanship in normal residential use and does not cover the battery, nor does this warranty cover damage resulting from negligent handling, misuse, or lack of reasonable care. This warranty is in lieu of any other warranty either expressed or implied.

DICON GLOBAL INC. SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE, OR ANY SPECIAL INCIDENTAL, CONTINGENT OR CONSEQUENTIAL DAMAGE OF ANY KIND RESULTING FROM A FIRE. THE EXCLUSIVE REMEDY FOR BREACH OF THE LIMITED WARRANTY CONTAINED HEREIN IS THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT AT DICON GLOBAL INC.’S OPTION. IN NO CASE SHALL DICON GLOBAL NC.’S LIABILITY UNDER ANY OTHER REMEDY PRESCRIBED BY LAW EXCEED THE PURCHASE PRICE. YOUR SMOKE ALARM IS NOT A SUBSTITUTE FOR PROPERTY, DISABILITY, LIFE OR OTHER INSURANCE OF ANY KIND. APPROPRIATE COVERAGE IS YOUR RESPONSIBILITY. CONSULT YOUR INSURANCE AGENT.

This warranty gives you specific legal rights and you may also have other rights which may vary from State to State.

Units may be returned to point of purchase according to retailers exchange / return policy. Or call 1-800-387-4219, for shipping instructions and a returned goods authorization number “RGA” number, to return to Dicon Global Inc.. Returned goods must be shipped prepaid. A cheque for \$5.00 is also required for return postage. Please mark the “RGA” number on the exterior of your package. Date code located on back of smoke alarm.

Dicon Global Inc.
20 Steelcase Road West, Unit 3
Markham, Ontario,
Canada L3R 1B2
email: info@diconglobal.com

10. AMERICAN SENSORS PRODUCTS

AMERICAN SENSORS SMOKE ALARMS

American Sensors offers a complete line of smoke alarms. Select from this group of quality products to ensure your home is fully protected in case of fire.

Model	Description	Power Source	Smoke Alarm Technology
SA310	Basic Model	9V Battery	Ionization
SA320	General Purpose Model with Alarm-Pause® Feature	9V Battery	Ionization
SA358	Hall and Stairways Model with Emergency Light	2-9V Batteries	Ionization
SA388	Photoelectronic Multi-Location Model	9V Battery	Photoelectronic
SA500	Extended Life Multi-Location with Alarm-Pause® Model	Extended Life Battery with 3 Year Warranty	Ionization
SA700	Multi-Location Ionization & Photoelectronic Model	9V Battery	Ionization & Photoelectronic
SA900	Long Life Multi-Location with Alarm-Pause® Model	Long Life Lithium battery with 10 year warranty	Ionization
SA360	Professional Hardwire Multi-Location Model	120 Volt AC	Ionization
SA379	Professional Hardwire with Battery Back-Up and Alarm-Pause® Model	120 Volt AC with 9 Volt Back-Up Battery	Ionization

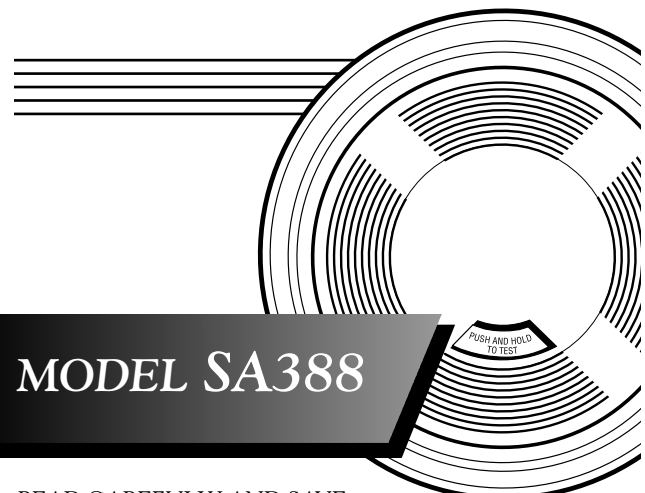
AMERICAN SENSORS CARBON MONOXIDE ALARMS

American Sensors also offers a complete line of Carbon Monoxide Alarms including :

- CO800 - Plug-In Carbon Monoxide Alarm
- CO810 - 120 Volt AC Hardwire Carbon Monoxide Alarm
- CO900 - Plug-In Carbon Monoxide Alarm with Battery Back-Up
- CO910 - Plug-In Carbon Monoxide Alarm with Digital LED Display
- CO920 - Plug-In Carbon Monoxide Alarm with Digital LED and Back-Up Power Source
- CO1100 - Battery Powered Carbon Monoxide Alarm for Table Top, Travel or Wall Mount

AMERICAN SENSORS™

PHOTOELECTRONIC Smoke Alarm



READ CAREFULLY AND SAVE.
This manual contains important information. A copy of this manual must be left with the end user.

