

# RentalOwner Magazine

the voice of the rental housing industry

## HOME PROTECTION ALARMS

By: SDCAA Staff

*Much of the information for this article was provided by Jim Narva with the Residential Fire Safety Institute (RFSI). If you would like additional information on this topic or the RFSI, go to [www.firesafehome.org](http://www.firesafehome.org).*

**M**ore than 93 percent of homes in the U.S. now have at least one smoke alarm. As the number of smoke alarms in homes has increased over the years, the residential fire death rate has dropped nearly 50 percent.

This success story is tempered by the fact that the number of inoperable smoke alarms is growing.

Experts estimate that one in three homes have an inoperable smoke alarm. Some fire departments have found units in one half of homes to be disabled.

### THE TWO MOST COMMON REASONS FOR INOPERABLE SMOKE ALARMS ARE:

- Disabling them to prevent nuisance alarms.
- Neglecting to replace units that are past their 10-year service lives.

Both problems are easily solved; this article will highlight how to reduce nuisance alarms and give several tips on how to keep your smoke alarms working.

Generally, smoke alarms that are 10 years old are near the end of their service life and should be replaced. Some people think that their smoke alarm sits idle until smoke is present, but it is working every minute, constantly monitoring the air 24 hours a day. For example, after 10 years the typical alarm has gone through 3.5 million monitoring cycles! After 10 years of use the potential of an alarm failing to detect a fire increases substantially. This is the same for battery operated as well as hardwired alarms.

Replacing an older or malfunctioning alarm reduces the likelihood of failure in an emergency situation. Consult the guidelines provided by the alarm manufacturer for any specifics on the useful lifecycle of your alarm.

### NOT ALL ALARMS ARE ALIKE

There are two types of smoke alarms designed for residential use. One type is called an ionization alarm because it uses ions (electrically charged particles,) to detect smoke in the air. The other type of alarm is called photoelectric because its sensing chamber uses a beam of light and a light sensor.

The ionization alarms are typically more sensitive and are often the type that are disabled by residents because they will sound off when they are cooking.

Happily, many newer smoke alarms are equipped with both types of sensors. These dual mode units allow the manufacturers to produce an alarm that is less likely to signal nuisance alarms from cooking or other causes.

### PLACING A SMOKE ALARM

Smoke alarms are not designed to work in extreme heat or cold, or in areas where smoke and dust are

common. Consult the manufacturer's instructions, which will include information on operable temperature range and environments in which the unit is designed to operate. Some local fire agencies may require alarms to be installed in all sleeping rooms, however generally alarms are installed in the hallways leading to the bedrooms.

According to the information issued by the California State Fire Marshal's office, smoke alarms "mounted on the ceiling should be four inches from the wall; wall-mounted alarms should be four to 12 inches from the ceiling. Do not install near draft areas such as windows or vents."

A smoke alarm that is installed too close to cooking appliances may result in nuisance alarms. The National Fire Protection Association recommends that when installing a smoke alarm within 20 feet of a cooking area, you use an alarm with a silencing button. Typically



silencing buttons will deactivate the unit for up to 15 minutes.

## TESTING AND CLEANING OF ALARMS

All smoke alarms come with a test button. Manufacturers recommend that you regularly test the unit and replace the battery (if your unit has a battery).

In addition to testing the alarm, you should also consider cleaning the unit. Smoke alarms have small screens around the sensing chamber to keep small bugs and dust particles out. But dust can accumulate on the screen and slow air movement through it. Cleaning is easy, just vacuum around the outside of the alarm when testing the unit or replacing the battery.

## TROUBLE SHOOTING ALARM PROBLEMS

### Alarms Due To Cooking

There are two basic solutions: 1) either move the unit or 2) replace it with another type of smoke alarm that is less sensitive to cooking.

Moving the smoke alarm farther away from the cooking area can allow the cooking vapors to thin out before reaching the alarm unit. But this doesn't always work, especially if the air current through the kitchen goes toward the smoke alarm. If the air current flows from the kitchen down the hall to the bathroom and out through the bathroom vent or window, placing the smoke alarm farther down the hall may not solve your problem.

The second solution is to replace the smoke alarm with one that has a "hush" button or to get one of the new dual mode alarms mentioned

earlier in this article. The dual mode alarms are typically balanced in such a way as to reduce the number of false alarms associated with cooking.

**Smoke Alarm Sounds Continuously**  
If the alarm sounds continuously, it is too dirty, too old or is faulty. The sensor in a smoke alarm can become more sensitive as it gets older. As time goes by, it will need fewer smoke particles to make it respond and it may start to sound continuously.

### Intermittent Alarms

If the alarm sounds intermittently when there is no fire, the battery may be getting low. Smoke alarms are designed to "chirp" every minute or so while the battery still has enough power to warn you that it is about to stop working. If you replace the battery and the problem continues you will need to replace the unit.

### Alarm Sounds when You Take a Shower

Steam or humid air can condense on the sensor and circuit board, and enough condensation will cause it to sound. Moving the unit farther away from sources of steam and humidity (e. g. bathroom doorways) can solve the problem. However, if the smoke alarm did fine in its location but is now reacting to steam or humidity, the problem can be age-related due to increased sensitivity and will need to be replaced.

### Cigarette Smoke

Normally, a smoke alarm will not respond to cigarette smoke unless it is very concentrated. Older smoke alarms that have become more sensitive may begin to respond to lower smoke concentrations. Again,

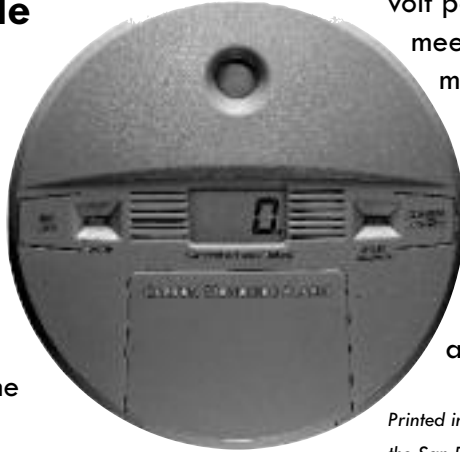
if the unit was fine in a normal smoking environment but is now beginning to respond, it is probably a sign of old age.

#### Loose Battery Connection

There is no practical way to repair a loose battery connection. This is more likely to happen as the unit gets older. It too is a sign that it is time to replace the unit.

## Carbon Monoxide Detectors

In addition to smoke alarms, you should consider installing carbon monoxide alarms if the rental unit has electric or gas appliances, an attached garage, a fire place, if portable kerosene heaters are used, etc.



In the case of attached garages, the home may be under negative pressure from time to time (more air flowing out through vents than is coming in). When this is the case, air from the garage can be sucked into the home to make up the difference. When you start your car, just delaying for a few seconds before you pull out of the garage can leave enough carbon monoxide gas in the garage to cause a problem.

Carbon monoxide alarms are the only realistic way to detect the presence of the gas since it has no odor, no color and no smell. Additionally, the low level symptoms of carbon monoxide poisoning, which include mild headaches, drowsiness, shortness of breath, dizzy spells, and nausea can easily be confused with the flu or other ailments. More serious exposure will result in disorientation. The alarms are designed to sound before symptoms of poisoning appear, this way people can react while they are still clear-headed.

The National Fire Prevention Association recommends that a carbon monoxide alarm be placed near the bedrooms; close enough to hear it when the bedroom doors are closed. If the bedrooms are not together,

additional alarms could be needed. The alarms can be placed on the ceiling or near the floor because the gas is very close to the same density as air. Installation locations vary by manufacturer. Manufacturers' recommendations differ to a certain degree based on research conducted with each one's specific detector. Therefore, make sure to read the provided installation manual for each detector before installing.

Battery-operated carbon monoxide alarms and 110 volt power plug-in alarms are available. Both types meet the same Underwriters Laboratory requirements.

When first introduced, carbon monoxide alarms had a useful life of two years, but the newer models can last up to seven years. Before installing a carbon monoxide alarm you should consult the manufacturer's specifications and note the lifespan of the unit.

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