

Smoke Detectors Fire Alarms for Your Home

- Smoke detectors provide inexpensive protection for you and your family.
- If a fire starts, smoke detectors give early warning of the danger so you can get out of the house safely.
- You should install smoke detectors on every level of your home to quickly alert occupants, day or night.
- To keep your detectors working, test them every week. Use real smoke. Be sure to replace worn-out batteries and bulbs immediately.

How fires kill

Fires develop in three stages:

- **First stage.** Invisible particles of combustion are produced without significant amounts of heat, flame, or smoke.
- **Second stage.** Primarily smoke is produced. Little heat or flame is present and fire can be relatively easily extinguished, if detected.
- **Third stage.** Flames become clearly visible, heat increases, fire grows rapidly, and extinguishing becomes difficult.

The Oregon Fire Service reports that most people die in home fires from noxious gases, smoke, and lack of oxygen—often before they wake up. Many synthetic materials used in carpeting and home furnishings give off deadly gases when they smolder. For these reasons, the Oregon Fire Service recommends that you install at least one smoke detector on every level of your home.

Provide early warning

Smoke detectors sense fumes and smoke in early stages and warn you with an 82 to 90 decibel audible alarm signal (about as intense as an automobile horn or loud alarm clock). There are two basic types—ionization and photoelectric.

Ionization detectors offer the earliest warning because they sense gases in the air before smoke builds up. They use a radioactive source to produce a small amount of electric current in the detector chamber. When fumes or smoke enter the chamber, the flow of electric current changes and triggers the alarm.

Photoelectric detectors use a light source and electric eye. When smoke enters the chamber, the electronic eye senses a reduced amount of light and triggers the alarm.

In general, the photoelectric detector responds faster to small amounts of visible smoke from a smoldering fire. The ionization detector responds faster to flaming fires and to invisible gaseous products of combustion such as carbon monoxide.

Both type of detectors are effective for home fires. Their sensitivity makes them undesirable for use in kitchens, garages, or furnace rooms, but makes them desirable for use near bedrooms where the earliest possible warning of fire is necessary.

Battery or plug-in type

Each has its own advantages and disadvantages. Battery-type alarms are easy to install in areas without electric outlets. Independent of home current, they work in case of power outage.

Some authorities suggest the installation of both types of smoke detectors—one plug-in photoelectric and one battery-operated ionization unit. The differing sensitivities of the two types supplement each other, providing backup protection and an additional alarm.

Periodically check batteries; they usually need replacing once a year. Some detectors give off a warning signal when batteries get weak. It is a good idea to keep new batteries on hand.

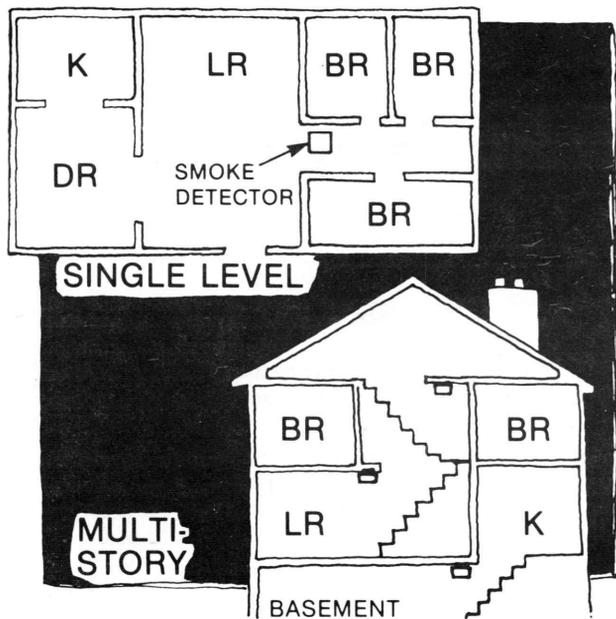
House-powered models are the least difficult to maintain. They must have an unswitched outlet, preferably on a separate circuit. Photoelectric detectors always run on house current since they require more power than the ionization type. A photoelectric lamp bulb needs periodic checking and must be replaced every 2 to 3 years.

Buying tips

- Buy detectors approved by Underwriters' Laboratories (UL), Factory Mutual System (FM), or International Conference of Building Officials (ICBO).
- Buy only those models that have replacement batteries or bulbs readily available.
- Purchase detectors from a reputable firm.
- Obtain—and study—instruction booklet on installation, testing, and maintenance.



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Home fire safety

- Minimize fire hazards. Keep stoves and furnace rooms clean. Remove trash and garbage daily. Keep heating and electrical equipment properly maintained. Use properly sized wiring and fuses. Never smoke in bed. Do not leave children at home alone. Exercise caution when using flammable liquids. Never store or use gasoline inside the house.

- Develop and practice an escape plan. There is little time between detection of a fire and the time it becomes deadly—this interval may be as little as one or two minutes. Planning and practicing for fire conditions with emphasis on rapid exit from the home is important. Hold drills every six months so all family members will know exactly what to do. Everyone should have two escape routes—one through doors, hallways, or stairs; the other through windows. Teach everyone not to open bedroom doors if the door is hot, indicating fire on other side. Establish a meeting place outside, away from the house so family members can be quickly located.

- Provide a fire warning system. Smoke detectors warn occupants of a fire and give them a chance to escape—and live.

Location and installation

The purpose of smoke detectors is to wake you from a deep sleep if a fire should start. Always install at least one detector per floor near the bedroom area. Install the detectors in a centrally located hall of small, one-story homes. Use more units for a large, sprawling home, especially if the bedrooms are in separate parts of the house.

Install detectors on the ceiling for early, accurate fire detection. As an alternative to the ceiling location, install the detector on the wall as recommended by the manufacturer. In multi-story homes, install a unit near the top of the stairs.

Testing and maintenance

The Oregon Fire Service urges owners to check the operation of their detectors once a week.

Test each unit after installation as suggested by the manufacturer. Familiarize all family members with the alarm sound. Once a week check the battery and light bulb; if either is defective, replace. Always keep a spare replacement battery and light bulb. Vacuum detectors yearly to remove dust, insects, and spiders that can cause false alarms.

Once a month test your detector with real smoke. Use a smoldering cotton cord in an ashtray, a match, or other safe procedure to blow smoke into it. By using smoke you can be sure your detector will sound the alarm when it detects smoke during a real emergency. Pushing the test button is not enough!

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