



Fire and Carbon Monoxide

***Achieving the Highest
Level of Protection***

***Not all detectors are created equal and
building codes are only a start when
protecting your family and home.***



American Alarm[®]
AND COMMUNICATIONS, INC
New England's Trusted Security Company™

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Evaluating the Options for Smoke and Carbon Monoxide Detection

The threat of fire and carbon monoxide is as real as the latest tragic headline. In spite of advances in technology that makes fire and carbon monoxide detection available to any homeowner, regardless of their economic status, too often families and homes suffer from inadequate or a complete lack of life-safety protection.



All of the New England states (and most in the country) require smoke detectors and carbon monoxide detectors to be installed in buildings where people live or sleep. Several types of detectors are allowed under most codes and regulations, but the differing technologies do not have the same capabilities nor do they all provide the same level of protection.



According to the National Fire Protection Association (NFPA) code, which is the leading authority on the issue and is incorporated by reference into most state building codes, the technology that provides the highest level of safety for both smoke and carbon monoxide detection is monitored hardwired system detectors. These are low-voltage devices that can operate independently of a home's electrical system and are monitored 24-7 by an off-site center.



American Alarm and Communications Inc. (AACI) has developed this brief white paper to explain the key distinctions between the various technologies now available and to help consumers decide which is right for their needs and risk profile.

Highest level of protection

Based on the National Fire Alarm and Signaling (NFPA) Code 72 A.29.4.3 2010 (a copy of which is included in the appendix to this paper) and more than 40 years of field experience and regular consultations with municipal fire chiefs and fire protection officers, American Alarm’s engineering team has established eight key features that we believe represent the best-practices for design and installation of residential life-safety systems to deliver the highest level of protection available today.

In the grid below, the most common types of fire and carbon monoxide detectors currently available are evaluated by these eight features.

Key Features	AACI System Smoke	AACI System CO	AACI System CO + Smoke	110 Volt Smoke	Wireless System Smoke or CO	Stand-alone Plug /Battery Smoke or CO
24-7 Alarm Monitoring	Yes	Yes	Yes	No	In Some Cases	No
Devices Linked To Control Unit	Yes	Yes	Yes	No	Yes	No
Hardwired System	Yes	Yes	Yes	Yes	No	No
Regular Testing Maintenance	Yes	Yes	Yes	In Some Cases	In Some Cases	In Some Cases
Two Power Sources	Yes	Yes	Yes	Yes	No	In Some Cases
Monitored Fault Alerts	Yes	Yes	Yes	In Some Cases	In Some Cases	In Some Cases
Interconnected Devices	Yes	Yes	Yes	Yes	No	No
Each Device is Addressable	Yes	Yes	No	No	In Some Cases	No

Color Code Yes In Some Cases No

How these features deliver highest level of protection

Many homes in New England are equipped with so-called “hardwired” smoke detectors, which run off the home’s standard electric current (110v). Other homeowners use stand-alone battery operated or plug-in smoke and carbon monoxide detectors. While those devices are allowed by code, and if properly placed and maintained can offer baseline protection, they do not provide the highest level of functionality and protection because they are not monitored system detectors and do not have the other key benefits noted in green in the preceding chart.



American Alarm’s 24-7 Security Command Center team is always ready to respond to alarms from customers’ homes or businesses.

Monitoring

Monitoring means there is always someone ready to react. A monitored system detector not only sounds an audible alarm in the house if it detects smoke or carbon monoxide, it also sends an alarm to our 24-hour Security Command Center where trained professionals are ready to react. So if there is a fire when no one is home to hear the alarm, our Command Center staff will react in seconds and alert the fire department and other first responders. If residents are asleep and overcome by smoke or carbon monoxide or are otherwise unable to respond and evacuate, then help will still be on the way because our monitoring staff will swing into action and dispatch first responders.

Independent studies have shown conclusively that in case of fire, seconds matter. Having first-responders on the way as soon as possible is an essential benefit of a monitored system supported by a Command Center team that reacts in seconds.

Proactive Maintenance

Smoke and carbon monoxide detectors can become disabled by age, dust, build-up of insects, or other technical issues. If a non-monitored detector develops trouble, the homeowner may not know. If a monitored system detector develops a technical problem or “fault” it will send a trouble signal to our Command Center so we can

arrange a service call. Should power to the home or neighborhood be cut, or if someone purposely disconnects a detector from the system, a signal will be sent so we can alert the homeowner.

Added protection comes from American Alarm's Free Annual Wellness Inspection program for all monitored residential customers. In these inspections, every life-safety device is checked for status, cleaned and the system's back-up battery changed as needed.

Hardwired and Interconnected

American Alarm's standard practice, which is viewed as the best practice by our engineering team and independent experts, is to use dedicated smoke and carbon monoxide detectors, with each unit wired directly to the alarm panel. Think of the hub and spokes on a bicycle wheel, with the hub being the alarm panel and each detector connected by its own spoke.

With this configuration every detector is addressable through the panel. If one detector senses smoke or carbon monoxide, the system will sound the alarm on all devices in the house. Furthermore, our Command Center team can see which device was the first to trigger the alarm and provide that important information to the homeowner and first responders.

The hardwired hub and spoke configuration is not susceptible to the kind of interference, either coincidental or malicious, that can disable some wireless alarm systems. The hub and spoke configuration also allows a homeowner or a service technician to test and control each device independently from the panel for maximum flexibility and ease of troubleshooting. If there is a power failure in the home or neighborhood, the system will send an alarm reporting the power loss and the central back-up battery in the panel keeps the system functional for several hours to allow time for inspection and repairs.

Our team is ready to help

Choosing the right technology to protect your home and family is a serious decision. For more information about residential life safety systems call American Alarm and Communications at 781-859-2400 for a no cost, no obligation discussion about your security needs.

For a look inside our 24-7 Security Command Center see the video at <http://youtu.be/rLwqo62zYTA> or use this QR code



Appendix

The National Fire Protection Association's National Fire Alarm and Signaling Code 72 A.29.4.3 (2010) specifically address the reliability of various technologies available for home fire alarm systems. The principles of the code are applicable to the use of smoke and carbon monoxide detectors. The section of the code noted above reads as follows:

- 1) **Maintenance.** Good fire protection requires that the equipment be maintained periodically. If the system owner or responsible party is unable to perform the required maintenance, a maintenance agreement should be considered.
- 2) **Reliability of fire alarm systems.** Fire alarm systems located in dwelling units and having all of the following features are considered to have a functional reliability of 95 percent:
 - a. Utilizes a control unit
 - b. Has at least two independent sources of operating power
 - c. Monitors all initiating and notification circuits for integrity
 - d. Transmits alarm signals to a constantly attended remote monitoring location
 - e. Is tested regularly by the homeowner and at least every three years by a qualified service technician
- 3) **Reliability of fire alarm systems without remote monitoring or with wireless transmission.** Fire alarm systems for dwelling units with all of the preceding features except (d) or that use low-power wireless transmission from initiating devices within the dwelling units are considered to have a functional reliability of 90 percent.
- 4) **Reliability of other systems.** Fire alarm systems for dwelling units comprised of interconnected smoke alarms where the interconnecting means is monitored for integrity are considered to have a functional reliability of 88 percent. If the interconnecting means is not supervised or the alarms are not interconnected, such systems are considered to have a functional reliability of 85 percent.

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