



5806
Smoke Detector With Built-In
Wireless Transmitter

INSTALLATION INSTRUCTIONS

General Information

The Ademco No. 5806 Photoelectric Smoke Detector/Transmitter is intended for use with wireless alarm systems that support 5800 series devices, and contains a built-in transmitter which can send alarm, supervisory and battery condition messages to the system's receiver/control unit. Refer to the wireless system's instructions for the maximum number of transmitters that can be supported.

Alarms: The smoke detector is powered by two 9-volt batteries and will sound its built-in horn when smoke reaches the detector (the LED indicator will also flash rapidly). A message will also be sent to the wireless control and the smoke detector's ID number will be displayed at the console. The alarm message will be transmitted every 4 seconds, until the smoke condition has cleared and the detector has reset. About 1 second after the horn has stopped, a Restore message will be transmitted to the control and it will then be possible to clear the ID number from the display. During normal or low battery conditions, the LED indicator will flash about once every 40 seconds.

Low Battery: The detector indicates a low battery condition by emitting a "chirp" about once every 40 seconds. A low battery message will be sent to the control unit upon any transmission following the

first battery chirp (with the detector's ID number displayed at the console). The battery should be replaced within 30 days following the low battery signals.

False Alarm Protection: In order to reduce the possibility of false alarms due to cigarette smoke, dust, steam, insects, etc., the detector will not transmit an alarm signal until its horn has sounded continuously for about 6 seconds. A delay also occurs when testing the detector. Therefore, the test button must be held down for about 20 seconds before the horn will sound. The first alarm signal will be transmitted within 6 seconds after the horn sounds.

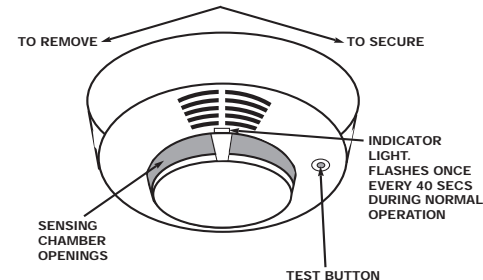
Programming: Note that the control system must "learn" the smoke detector's ID during installation of the system. The control should be programmed to "learn" the 5806 as an "RF" type unit (i.e., supervised RF). See the *PROGRAMMING* section in this instruction book and the control unit's Installation Instructions for further details.

Tamper Protection: The detector has provision for a tamper function if desired. When the tamper function is enabled, the detector will cause a CHECK to be displayed if it is removed from its installed location. See *TAMPER PROTECTION* for detailed instructions.

Battery Installation And Replacement

The 5806 is equipped with two 9-volt batteries, which can double the time between battery replacement (compared to a single 9-volt alkaline battery). Refer to *Specifications* for acceptable batteries. The batteries should be changed within 30 days following the low battery beeps (about once every 40 seconds). There will also be a low battery display on the system's console. Be sure to replace BOTH batteries with fresh ones.

Important: Do not mix battery types.
(Continued on next page)



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1. Remove the smoke detector from its mounting plate by twisting the detector counterclockwise. If batteries are being replaced, remove the existing batteries from their compartments and disconnect the battery clips.
2. Install the new 9-volt alkaline batteries in their respective compartments as follows: Snap the battery contacts onto the terminals of the first battery (be sure to observe correct polarity and do not force battery clips). Holding the contacts on the battery, install the battery into its compartment. Make sure the battery is fully seated (see Figure 1),
3. Momentarily press the **Battery Reset** switch on the detector (see Figure 1 for location).
4. Re-install the smoke detector onto the mounting plate by turning it clockwise, and test its operation as described in the TEST section.
5. The LED indicator should flash about once every 40 seconds, indicating normal operation. If the batteries are not installed correctly, the smoke detector will not function. If the unit appears not to be sending a signal during any of the tests, check for correct battery installation.

Connect the second 9-volt alkaline battery in a similar manner and install it in the second compartment.

Note: If the detector's ID has not been programmed into the system (i.e., this is an initial detector installation), refer to the *PROGRAMMING* section below and perform the ID "learning" procedure before mounting or testing the detector.

Programming

The control system must "learn" the smoke detector's ID during installation of the system. The control should be programmed to "learn" the 5806 as an "RF" type unit* (i.e., supervised RF). With the control in the programming mode, use a small screwdriver to push the "Learn" button (see Figure 1) to send a FAULT, then release it to send a RESTORE. During "learning", wait one or two seconds for the keypad's confirming short beep before pushing the button a second time. See the control unit's installation instructions for further details.

* MUST be programmed as "supervised RF" type for UL installations.

Tamper Protection

For tamper protection, cut the wire jumper indicated in Figure 1. After the detector has been mounted, a magnet must then be installed on the wall or ceiling next to the detector.

To ensure proper positioning of the magnet after the detector has been mounted, place a light pencil mark on the side of the detector near the center of the reed switch (see Fig. 1).

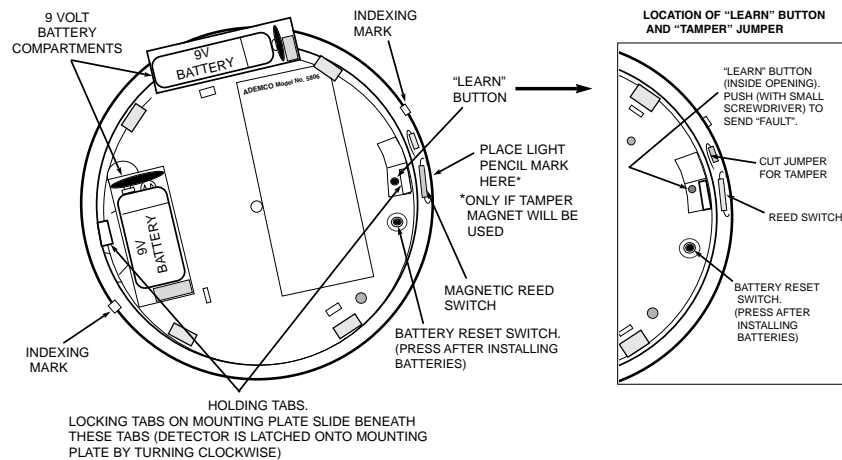


Figure 1. Bottom View of Smoke Detector (without mounting plate)

Mounting The Smoke Detector

First, determine the best location for the smoke detector (one that provides strong wireless transmission paths AND proper smoke detector protection). See *NFPA RECOMMENDATIONS REGARDING SMOKE DETECTOR INSTALLATION* and *RECOMMENDED LOCATIONS FOR SMOKE DETECTORS* (on next page). A good RF transmission path must be established from the proposed mounting location before permanently installing the detector. To check, perform the test in *TESTING THE SMOKE DETECTOR*.

Mounting Locations

Detectors should be located as close to the center of the ceiling as possible. If this is not practical, detectors may be located on the ceiling up to 4 inches (10cm) from the ceiling-wall junction. Do not install near forced air heating or air conditioning ducts (outlets or returns). For sloped, gabled or high-peaked ceilings, detectors must be mounted between 4 and 6 inches (10 and 15cm) from the highest point in the ceiling.

Detectors may also be wall-mounted if permitted by local and state codes. Check with your local Fire Department about code requirements. Wall-mounted detectors should be located 4-6 inches (10-15 cm) from the ceiling. In mobile homes, battery-operated detectors are not generally installed by the manufacturer. Mount detectors **ONLY** on an interior wall.

1. Once a suitable location has been determined, install the mounting plate on the ceiling or (if local ordinances permit) on the wall. Use the two screws and anchors provided.

2. Latch the detector onto the mounting plate as follows: Position the detector onto the plate, mating the small center post on the detector with the "dimple" at the center of the mounting plate, and aligning the index marks on the sides of the plate and the detector. Then turn the detector in a clockwise direction so that the holding tabs on the detector engage the locking tabs on the mounting plate.
3. If the tamper has been enabled (as indicated previously), a magnet (No. 39WH-M) should be mounted on the wall or ceiling surface next to the detector (1/4" max) in the specified location (see Fig. 2).
4. Test the detector immediately after completing the installation and refer to the Control System's instructions for additional information concerning the use of wireless smoke detectors.

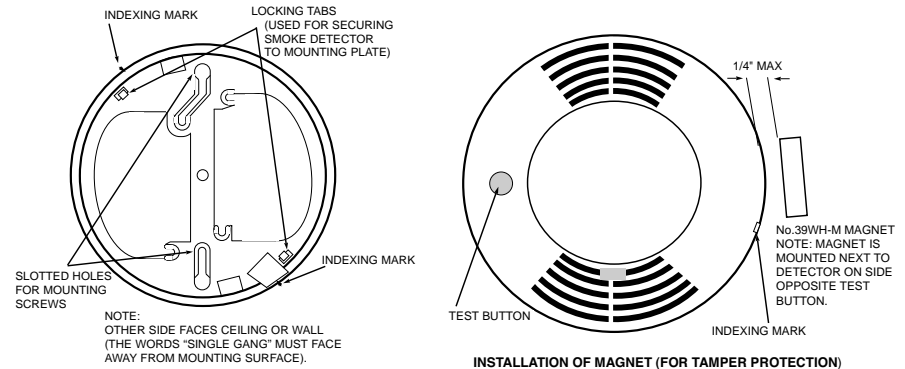
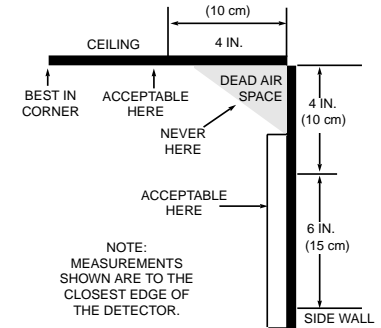


Figure 2. Mounting Details

NFPA RECOMMENDATIONS REGARDING SMOKE DETECTOR INSTALLATION

For your information, the National Fire Protection Association's Standard 74, Section 204 reads as follows: "2-4.1.1; Smoke detectors shall be installed outside of each separate sleeping area and 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. The provisions of 2-4.1.1 represent the minimum number of detectors required by this standard. It is recommended that the householder consider the use of additional smoke or heat detectors for increased protection for those areas separated by a door from the areas protected by the required smoke detectors under 2-4.1.1 above. The recommended additional areas are: living room, dining room, bedrooms(s), kitchen, attic (finished or unfinished), furnace room, utility room, basement, integral or attached garage, and hallways not covered under 2-4.1.1 above. However, the use of additional detectors remains the option of the householder." This equipment should be installed in accordance with this standard (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269). State and local codes and ordinances may conflict with the above standard. We suggest you contact your local fire authority for local requirements regarding smoke detectors.

RECOMMENDED LOCATIONS FOR SMOKE DETECTORS

To minimize the risk of fire causing injury, loss of life or loss of property, detectors should be located on every level of a residence – basements, first floor, second floor and attic if it is furnished – and in every separate sleeping area. More specifically, detectors should be located:

1. Between sleeping areas and potential sources of fire such as kitchen, garage, basement or utility room. In homes with only one sleeping area on one floor, a detector should be put in the hallway outside the bedrooms as shown below. In single floor homes with two separate sleeping areas, **two** detectors are required, one outside each bedroom area as shown below. In multi-level homes, detectors should be located **in bedroom areas and at every finished level of the home** as shown below. Basement level detector should be located in the **bottom** of basement stairwells. Second floor detectors should be located at the **top** of the first-to-second floor stairwell so long as no door or other obstruction blocks the path of smoke.
2. Inside every bedroom where a smoker sleeps or an electrical appliance is operated. This detector should be **in addition to** the hallway detectors as described above.
3. Inside all bedrooms where people sleep with the door closed. Smoke and poisonous combustion gases are significantly blocked by a closed door. This detector should be **in addition to** the hallway detectors described above.
4. At each end of a hallway serving the bedrooms if the hallway is in excess of 40 feet (12m) in length.

In addition to the above, we also strongly recommend the following:

Install smoke detectors in any room where an alarm control is located, or in any room where alarm control connections to an AC source or phone lines are made. If detectors are not so located, a fire within the room could prevent the control from reporting a fire or an intrusion.

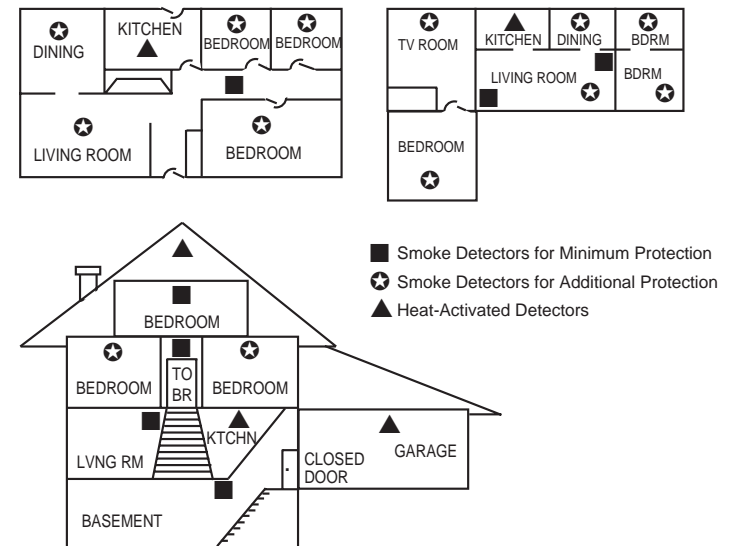
Where Not To Locate Detectors

To avoid false alarms and/or improper operation, avoid installation of smoke detectors in the following areas:

- KITCHENS - smoke from cooking may cause a nuisance alarm. LOCATE DETECTORS AT LEAST 20 FEET (6m) FROM KITCHENS IF POSSIBLE.

- IN AIRSTREAMS PASSING BY KITCHENS - smoke from cooking may enter normal air movement paths between outlets and returns if these paths run by kitchens, causing a nuisance alarm. LOCATE DETECTORS AWAY FROM SUCH AIRSTREAMS IF POSSIBLE.
- BATHROOMS - excessive steam from a shower may cause a nuisance alarm. LOCATE DETECTORS AT LEAST 10 FEET (3m) FROM BATHROOMS IF POSSIBLE.
- NEAR FORCED AIR DUCTS used for heating or air conditioning - air movement may prevent smoke from reaching the detector.
- NEAR FLUORESCENT LIGHT FIXTURES - "noise" generated by these fixtures may cause a nuisance alarm.
- NEAR FURNACES OF ANY TYPE - air and dust movement and normal combustion products may cause a nuisance alarm.
- THE PEAK OF AN "A" FRAME TYPE OF CEILING - "Dead Air" at the top may prevent smoke from reaching the detector.
- GARAGES - products of combustion are present from running automobile engines and may cause a nuisance alarm.
- UNHEATED BUILDINGS - temperature limits are 40°F - 100°F (5 - 38°C). The detector will not function properly in locations where the normal ambient temperature exceeds these limits.
- INSECT INFESTED AREAS - insects entering the sensing chamber may cause a nuisance alarm.

IF YOU EXPERIENCE NUISANCE ALARMS, CAREFULLY CHECK YOUR DETECTOR'S LOCATION FOR POSSIBLE CAUSES AS LISTED ABOVE. RELOCATE AND CLEAN YOUR DETECTOR IF NECESSARY. REMEMBER THAT THE MAJOR CAUSES OF NUISANCE ALARMS ARE DIRTY OR IMPROPERLY LOCATED DETECTORS.



Testing The Smoke Detector

The following procedure should be performed to determine strong radio path communication with the control, and again after installation is completed. THIS TEST SHOULD ALSO BE PERFORMED ON A REGULAR BASIS (AT LEAST WEEKLY) BY THE USER.

1. Activate the wireless system's TEST mode via the console.
2. Depress and hold the smoke detector's TEST button. Within 20 seconds, the detector's horn will start to sound. The detector will begin to transmit alarm signals (about once every 4 seconds) within 6 seconds of the horn sounding.
3. The wireless system's console should emit at least 3 audible sounds when the alarm transmission is received, and will display the transmitting detector's ID number.
4. When satisfied that the console has received the test signal, release the TEST button. Within 10 seconds the detector's horn will stop. A few seconds later, the smoke detector's ID number will be cleared from the console display.
5. If the console does not respond as noted, check battery connections and be sure batteries are fresh. If this is an initial installation, try moving the detector to another location that provides proper reception. Repeat test.
Note: Be sure that the detector's ID has been "learned" by the control during programming (see *Programming* on pages 1 and 2).
6. Turn off the system's TEST mode via the console (security code + OFF).

Testing the Tamper Function (if used) after Mounting the Detector:

With the system in the normal disarmed mode, temporarily detach the smoke detector from its mounting plate. The system's console should display a CHECK message. If it does not, check that the magnet has been installed in the correct location next to the detector. Also, check that the wire tamper jumper in the detector has been cut.

SUMMARY OF DETECTOR FUNCTIONS

LED	HORN	STATUS
Pulses every 40 seconds	Silent	Normal, functioning properly
Pulses every 40 seconds	Beeps once every 40 seconds	Low battery or detector malfunction
Rapid flashing	On continuously	Alarm, detecting smoke

Specifications

Power Source: Two 9-volt alkaline batteries. Use Ademco 464, Eveready 522, Duracell MN1604, or equivalent.

Power/Alarm LED: Standby = flashing once every 40 seconds.
Alarm = rapid flashing.

Low Battery Signal: One horn "chirp" every 40 seconds.

Size: 5-5/8" inch (14cm) diameter,
2-1/2" inch (6.4cm) high.

TO THE INSTALLER

Regular maintenance and inspection (at least annually) by the installer and frequent testing by the user are vital to continuous satisfactory operation of any alarm system.

The installer should assume the responsibility of developing and offering a regular maintenance program to the user as well as acquainting the user with the proper operation and limitations of the alarm system and its component parts. Recommendations must be included for a specific program of frequent testing (at least weekly) to insure the system's proper operation at all times.

THE LIMITATIONS OF THIS SMOKE DETECTOR/TRANSMITTER

While this smoke detector/transmitter is a highly reliable device that is part of an advanced wireless security system, it does not offer guaranteed protection against fire. While smoke detectors have played a key role in reducing residential fire deaths in the United States, they may not activate or provide early warning for a variety of reasons in as many as 35% of all fires, according to data published by the Federal Emergency Management Agency. Some of the reasons smoke detectors used in alarm systems may not work are as follows:

- Smoke detectors will not work without power. Battery operated devices will not work without batteries, or if the batteries are not put in properly.
- Smoke detectors may have been improperly installed and positioned. Smoke detectors may not sense fires that start where smoke cannot reach the detectors, such as in chimneys, in walls, or roof, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level of a residence or building. A second floor detector, for example may not sense a first floor fire or basement fire. In addition, smoke detectors have sensing limitations. No smoke detector can sense every kind of fire every time. In general, detectors may not always provide adequate warning about rapidly spreading fires caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, children playing with matches, or arson. Depending on the nature of the fire and/or location of the smoke detectors, the detector, even if it operates as anticipated, may not provide sufficient warning to allow all occupants to escape in time to prevent injury or death.
- Alarm signal sent by the wireless transmitter in this device may be blocked or reflected by metal before they reach the alarm receiver. Even if the signal path has been recently checked during a weekly test, blockage can occur if a metal object is moved into the path.
- Alarm warning devices such as sirens, bells or horns may not alert people or wake up sleepers if they are located on the other side of closed or partly open doors. If warning devices are located on a different level of the residence from the bedrooms, then they are less likely to waken or alert people inside the bedrooms. Even persons who are awake may not hear the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliances, or by passing traffic. Finally, alarm warning devices, however loud, may not warn hearing impaired people or waken deep sleepers.
- This smoke detector/transmitter, like other electrical devices, is subject to component failure. Even though this device is designed to last as long as 20 years, the electronic components in it could fail at any time. We recommend that smoke detectors be replaced every 10 years as a precautionary measure against component failure.

The most common cause of an alarm system not functioning when a fire occurs is inadequate maintenance. The alarm system should be tested weekly to make sure all smoke detectors and their transmitters are working properly. Detectors must be repaired or replaced when they do not function properly.

Installing an alarm system may make the owner eligible for lower insurance rates, but an alarm system is not a substitute for insurance. Homeowners, property owners and renters should continue to act prudently in protecting themselves and continue to insure their lives and property.

We continue to develop new and improved protection devices. Users of alarm systems owe it to themselves and their loved ones to learn about these developments.