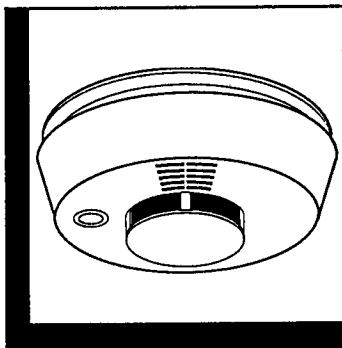# NX-490 Wireless Smoke Sensor

Document Number: 466-1476 Rev. A
August 1997

Installation Instructions

Product Summary·

The NX-490 Wireless Smoke Sensor is a photoelectric smoke detector with a built-in transmitter, a self-contained piezo siren, and a status light that indicates normal operation and alarm conditions.

The status light flashes about once every 15 seconds during normal (non-alarm) conditions and the built-in transmitter sends a supervisory signal to the control panel every 64 minutes to inform the system of its current status. When enough smoke fills the detector's chamber, the status light flashes rapidly to indicate an alarm condition and the internal piezo sounds a constant tone. The built-in transmitter sends an alarm signal to the control panel, which in turn activates system sirens.

The smoke sensor is powered by two 9-volt batteries, either alkaline or lithium type. When the battery voltage becomes low, the internal piezo sounds one beep each minute, indicating the batteries need replacing. The built-in transmitter also sends a trouble signal to the control panel.

Installation Guidelines

Determine the best mounting location for the smoke sensor using the following guidelines:

UL Note: DO NOT mount a smoke sensor to a suspended ceiling tile. Mount the smoke sensor to the metal runner (grid).

- Try to mount smoke sensors within 100 feet of the control panel. Although the sensor has an open-air range of at least 1,000 feet, indoor installation environments vary and will determine the actual transmitting distance.

- Install the sensor in accordance with the National Fire Protection Association, Standard 74. Information on Household Fire Warning and Standard 74 is available at nominal cost from the National Fire Protection Association, Batterymark Park, Quincy, MA 02269

- Install a minimum of two smoke sensors in any household, no matter how small it is.

- Put a smoke sensor in the hallway outside of every bedroom area. A minimum of two sensors are required in homes with two bedroom areas (Figure 1).
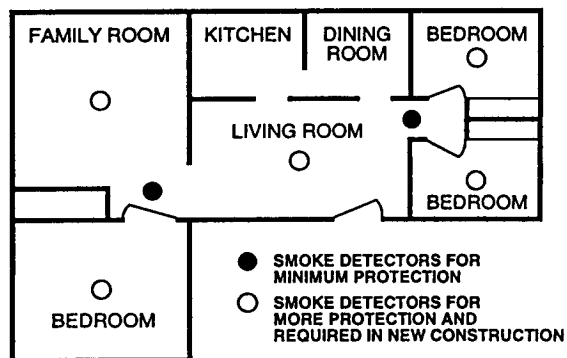
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Figure 1. Residence with multiple sleeping areas.

- Put a smoke sensor on every level of a multi-level residence (Figure 2).

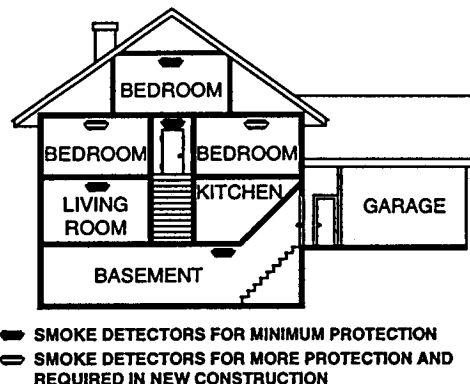- Install basement sensors on the ceiling at the bottom of the basement stairwell.

Figure 2. Multi-level residence.

- Install sensors on the ceiling as close to the center of the room as possible. If this is not practical, install it on the ceiling no closer than 4 inches (10 cm) from any wall or corner (Figure 3).

- If ceiling mounting is not practical, install sensors on an inside wall between 4 and 6 inches (10 and 15 cm) from the ceiling (Figure 3).
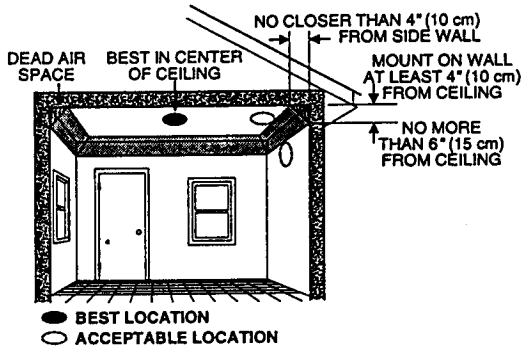

Figure 3. Smoke sensor mounting locations.

- Put sensors at both ends of a bedroom hallway if the hallway is more than 30 feet (9 meters) long. Large rooms over 900 square feet require more than a single sensor.

- Areas with rough ceilings or short, transom-type walls coming down from the ceiling require additional sensors.

- Install second-floor sensors on the ceiling at the top of the first-to-second floor stairwell. Be sure no door or other obstruction blocks the path of smoke to the sensor.

- In rooms with sloped, peaked, or gabled ceilings, install sensors 3 feet (0.9 meter) measured down on the slant from the highest point of the ceiling (Figure 4).
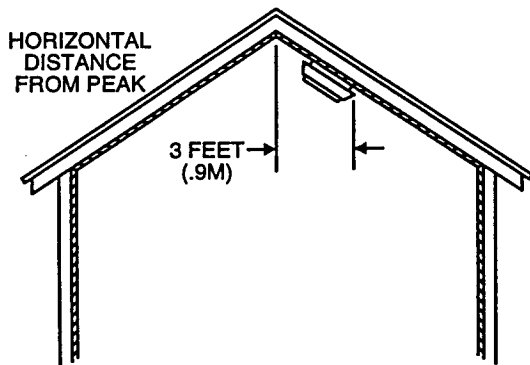

Figure 4. Sloped, peaked, or gabled ceilings.

Do not install smoke sensors in the following locations:

- In or near areas where combustion particles are normally present such as kitchens; in garages where there are particles of combustion in vehicle exhausts; near furnaces, hot water heaters, or gas space heaters.

- On the ceiling in rooms next to kitchens where there is no transom between the kitchen and these rooms.

- In damp or very humid areas, or next to bathrooms with showers. Install sensors at least 5 feet (1.5 meters) away from bathrooms.

- In very cold or very hot areas.

- In dusty, dirty, or insect-infested areas.

- Near fresh air inlets or returns or excessively drafty areas. Air conditioners, heaters, fans, and fresh air intakes and returns can drive smoke away from smoke sensors.

- In dead air spaces at the top of a peaked ceiling or wall/ceiling intersect. Dead air may prevent smoke from reaching a sensor.

- Near fluorescent light fixtures. Install sensors at least 10 feet (3 meters) away from fluorescent light fixtures.

Tools Needed

- Phillips and/or slotted screwdrivers

Mounting the Smoke Sensor

The mounting bracket must be separated from the sensor before you begin.

To mount the smoke sensor:

1. Remove the mounting bracket from the sensor by grasping the bracket firmly and turn the sensor to the left.
2. Mount the bracket (see Figure 5) directly on wood surfaces using two 8x1-1/2-inch wood screws. If mounting on plaster or drywall, use appropriate anchors and screws.
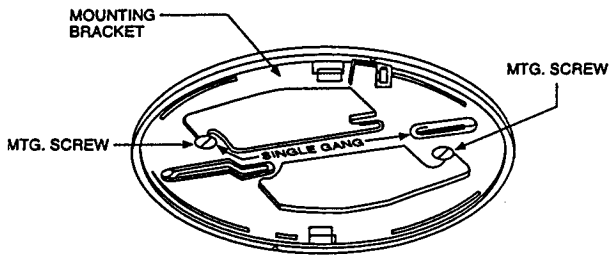
Figure 5. Installing the Mounting Bracket

3. Install the batteries, observing polarity.
4. Attach the sensor to the mounting bracket by aligning the arrows on the mounting bracket with the raised alignment mark on the smoke sensor and turn the sensor clockwise until it locks in place (see Figure 6).
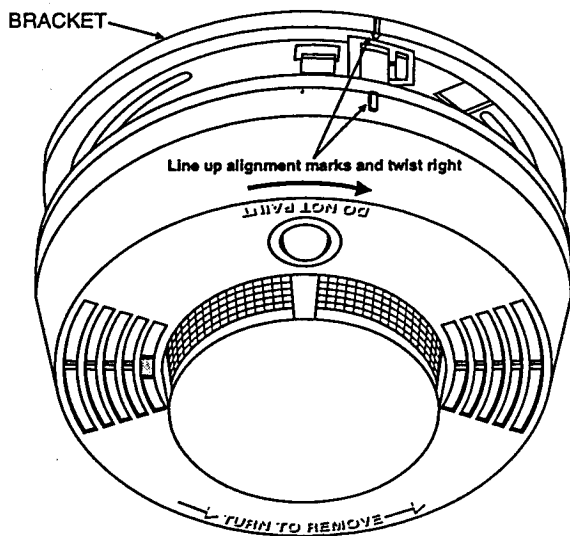

Figure 6. Attaching the Sensor to the Bracket

Programming

For detailed programming information, refer to the *NX Series Receiver Module Installation Instructions*.

Testing the Smoke Sensor

Test each smoke sensor every week to verify that its siren and signal integrity are adequate.

To test the smoke sensor:

1. Contact the central monitoring station and inform them you are testing the system and *not* to dispatch authorities.
2. Press and hold the test button for about 20 seconds until the sensor's piezo activates and the indicator light flashes rapidly. System sirens should also activate.
3. Reset the system and contact the central monitoring station when you are finished testing.

Smoke Sensor Maintenance

The sensor requires maintenance, including replacing batteries and cleaning.

Replacing Batteries

The sensor's piezo sounds one beep each minute when battery voltage is low, indicating the batteries should be replaced.

To replace sensor batteries:

1. Gently twist the smoke sensor cover counterclockwise to separate it from the mounting bracket.
2. Remove the batteries from the battery compartments.
3. Insert new (and matching) batteries into the battery compartment. Observe proper polarity.
4. Reattach the sensor to the bracket and test the sensor.

Sensor Cleaning

Clean the sensor's screen mesh at least once each year.

To clean the smoke detector chamber:

1. Place the system in test mode.
2. Vacuum the screen mesh on the sensor.
3. Take the panel out of test mode.
4. Test the sensor.

Specifications

Dimensions: 5.5 in (14 cm) × 2.5 in (12.7 cm).

Operating Temperature Range: 40°F to 100°F.

Power Source: Two 9-volt alkaline or lithium batteries of the same type. UL-approved types: Eveready #522 (alkaline), Duracell #MN1604 (alkaline), or 9V UltraLife® (lithium).

Notices

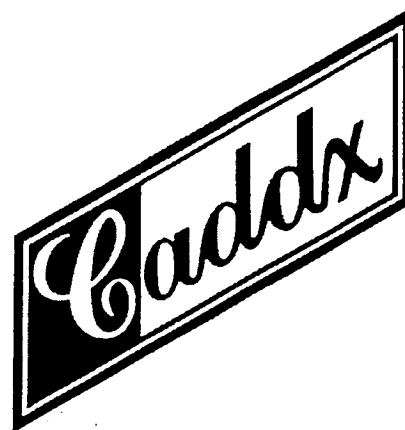Agency Listings: UL 268—Residential Installations

NFPA 72, Chapter 2, Section 2-2.1.1.1 states as follows: "Smoke sensors 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 sensor also shall be installed in each sleeping room."

The above NFPA standard is a minimum requirement for smoke sensor installation. For better protection, we also require the installation of a smoke sensor inside every bedroom in existing construction.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference.
2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Caddx Controls, Inc. can void the user's authority to operate the equipment.