



## 4192CPM Addressable Ionization Smoke Detector Installation and Maintenance Instructions

Before installing detectors, please thoroughly read the supporting Ademco control panel installation instructions, which provide detailed information on detector spacing, placement, zones, and special applications. Copies of the installation instructions are available from Ademco. NFPA 72 and NEMA guidelines should also be observed.

### CAUTION

Use this smoke detector only with panels that support the detector's maintenance feature:  
ADEMCO VISTA 150, First Alert FA1600C.

### GENERAL DESCRIPTION

The Model 4192CPM dual-chamber ionization smoke detector uses a state-of-the-art unipolar sensing chamber. This detector is designed to provide open area protection and to be used with compatible UL-listed Ademco control panels. An LED on each detector flashes every ten seconds. This LED can be latched on by code command from certain control panels to indicate an alarm. It can also be unlatched to the normal blinking condition by the same control panels. The 4192CPM detector is intended for use in an Ademco 2-wire polling loop system. It uses two screw terminals for connection to the system. Both detector power and communication between detector and control panel are accomplished over the same two wires.

### SPECIFICATIONS

Base Diameter:	5.0 inches (127 mm)
Cover Height:	3.0 inches (76 mm)
Cover Diameter:	3.15 inches (80 mm)
Loop Voltage Range:	7 to 14 VDC
Standby Current (max.):	1.56 mA (LED off); 3.56 mA (LED on)
Operating Temperature Range:	5° to 131°F (-15° to 55°C)
	NOTE: Do not install in locations where normal temperature exceeds 120°F (49°C)
Loop Unit Load:	2

### MOUNTING INSTRUCTIONS

Each 4192CPM detector is supplied with a mounting bracket kit that permits the detector to be mounted using several techniques.

1. Units may be mounted directly to a 3-inch or 4-inch, 1-1/2-inch deep octagonal electrical box using the supplied mounting bracket (See Figures 1 and 2).
2. Units may be mounted to a 4-inch square electrical box by using a plaster ring with the supplied mounting bracket.

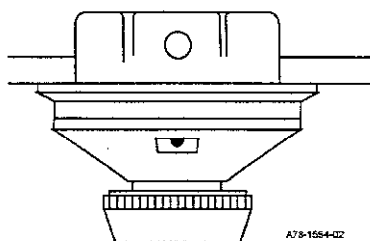


Figure 1. Flush Mounting of Detector on Octagon Box.

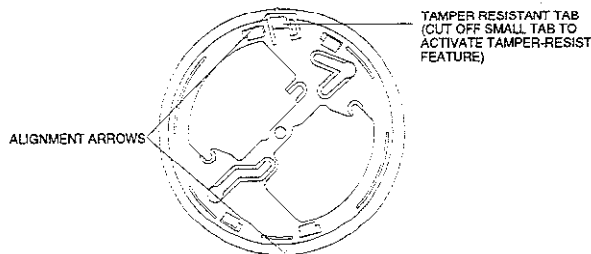


Figure 2. Detector Mounting Bracket.

3. Units may be mounted directly to the ceiling using the plastic screw anchors packed with the bracket. For direct mounting, the bracket is used as a template and 3/16-inch holes are drilled for the screw anchors.

### **TAMPER RESISTANCE**

This detector includes a tamper-resistant feature that prevents its removal from the base without the use of a tool. To enable this feature, remove the smaller tab by breaking it at the scribed line on the tamper resistant tab before installing the detector. The tamper resistant tab is on the detector mounting base.

To remove a tamper-resistant detector from the base, use a pocket screwdriver, or similar tool, to depress the tamper-resistant tab and turn the detector counterclockwise. The tab is accessible through the slot on the mounting base.

### **WIRING INSTALLATION GUIDELINES**

All wiring must be installed in compliance with local electrical codes and the requirements of the authority having jurisdiction. The conductors used to connect the smoke detectors to the control panel should be color to reduce the likelihood of wiring errors. Improper connections can prevent a system from responding properly in the event of a fire.

For signal wiring (the wiring between interconnected detectors), it is recommended that the wire be no smaller than 18 gauge (1.0 mm ) in cross sectional area. However, the screws and clamping plate in the base can accommodate wire sizes up to 12 gauge (2.5 square mm). The use of twisted pair wiring or shielded cable for the power (+ and -) loop is recommended to minimize the effects of electrical interference.

If shielded cable is used, the shield connection to and from the detector must be continuous by using wire nuts, crimping,

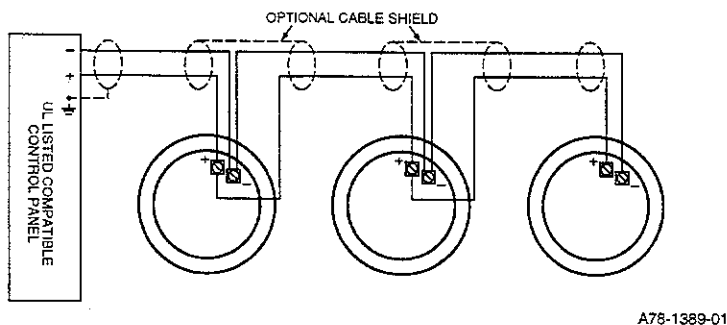


Figure 3. Typical Wiring Diagram for a 2-Wire Loop.

or soldering, as appropriate, for a reliable connection.

Make connections by stripping about 3/8" (10 mm) of insulation from the end of the wire. Then, slide the wire under the clamping plate and tighten the clamping plate screw. Do NOT loop wires around the terminal.

Check the zone wiring of all bases in the system before installing detectors in them. This includes checking the wiring for continuity, correct polarity, and performing a dielectric test.

### **DETECTOR ID NO.**

The detector is addressed via a unique internal serial number sequentially stored in the detector's special circuits. Refer to the supporting Ademco control panel installation instructions for the appropriate information.

### **TESTING THE 4192CPM SENSITIVITY**

Note: Before testing, notify the proper authorities that the smoke detector system is undergoing maintenance and, therefore, will be temporarily out of service. Disable the system undergoing maintenance to prevent unwanted alarms.

Note: Before testing the detector, check for the presence of the blinking LED. If it does not blink, power has been lost to the detector (check the wiring) or it is defective (return for repair).

Detectors must be tested after installation and periodic maintenance. Test the sensitivity of the 4192CPM in the following two ways:

#### **A. Test Switch**

1. Press and hold the test switch for 10 seconds.
2. An alarm should be annunciated at the system's control or console within 10 seconds. Some systems also cause the detector's LED to latch on during the alarm. Otherwise, the LED continues to blink every 10 seconds.

## B. Test Sensitivity from the Control Panel

(Refer to control panel test procedure because some panels do not have this feature).

## C. Calibrated Field Sensitivity Test

Use the MOD400R with a digital voltmeter to check the sensor sensitivity as described in the MOD400R manual. Measured voltages should correspond to sensitivities labeled on the rear of the sensor. If the sensor's sensitivity limits or the MOD400R limits do not appear on the back of the sensor, the MOD400R is not suitable for field sensitivity testing of that unit.

## D. Smoke Entry Test

The recommended field test tool is the GEMINI model 501 aerosol generator set to represent 4%/ft. to 5%/ft. obscuration as described in the Gemini manual. Using the bowl-shaped applicator, apply aerosol until detector alarms.

Detectors that fail to alarm should be returned for repair.

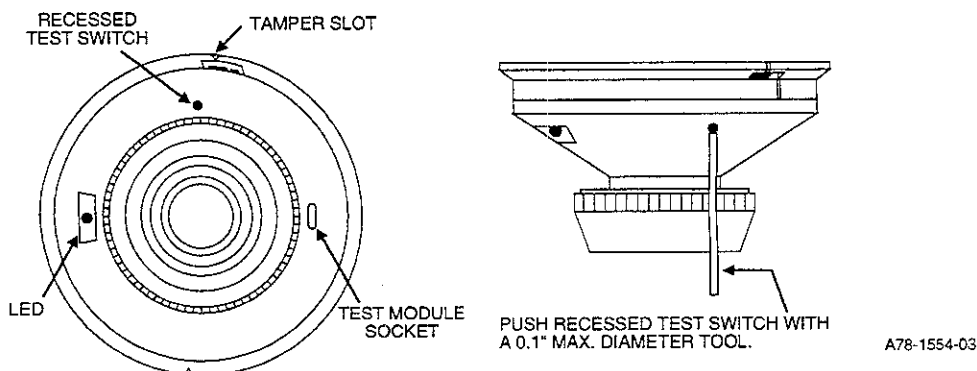


Figure 4. Views Showing Location of Recessed Test Switch.

## DUAL-LEVEL MAINTENANCE FEATURE

This detector provides two levels in addition to the basic normal and alarm levels. The first is a **HIGH SENSITIVITY** level that, when exceeded, is communicated to the control panel meaning the detector may cause false alarms. The second is a **LOW SENSITIVITY** level, also communicated to the control panel, meaning the detector may not be able to detect smoke. Supporting control panels use these maintenance signals to effect prompt cleaning or replacement of the malfunctioning detector, which is uniquely identified at the control panel by the detector's polling address.

## MAINTENANCE

**Note:** Before starting, notify the proper authorities that the smoke detector system is undergoing maintenance and, therefore, will be temporarily out of service. Disable the system undergoing maintenance to prevent unwanted alarms.

Clean the 4192CPM as follows:

1. Remove the detector screen and cover assembly by depressing the three lock prongs on the top cover. Rotate the counterclockwise and separate the screen and cover assembly from the detector.
2. Remove the screen from the cover.
3. Use a vacuum cleaner to remove dust from the screen, cover, and sensing chamber.
4. After cleaning, snap the screen into the cover. Then, place the cover and screen assembly on the detector and rotate it clockwise until it is locked in place.
5. Test the detector as described in **TESTING THE 4192CPM SENSITIVITY**.
6. Notify the proper authorities that the system is back in operation.

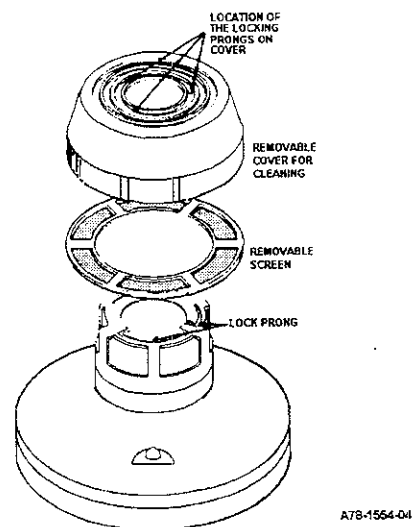


Figure 5. Cover and Screen Removal.

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## WARNING

### LIMITATIONS OF SMOKE DETECTORS

This smoke detector is designed to activate and initiate emergency action, but will do so only when used in conjunction with other equipment. This detector is designed for installation in accordance with NFPA standard 72, National Fire Alarm Code.

**Smoke detectors will not work without power.** AC or DC powered smoke detectors will not work if the power supply is cut off for any reason.

**Smoke detectors will not sense fires which start where smoke does not reach the detectors.** Smoke from fires in chimneys, in walls, on roofs, or on the other side of closed doors may not reach the smoke detector and alarm it.

**A detector may not detect a fire developing on another level of a building.** For this reason, detectors should be located on every level of a building.

**Smoke detectors have sensing limitations, too.** Ionization detectors offer broad range fire-sensing capability, but they are better at detecting fast, flaming fires than slow, smoldering fires. Photoelectronic detectors sense smoldering fires better than flaming fires. Because fires develop in different ways, and are often unpredictable in their growth, neither type of detector is always best, and a given detector may not always provide warning of a fire. In general, detectors cannot be expected to provide warnings for fires resulting from inadequate fire protection practices, violent explosions, escaping gas, improper storage of flammable liquids like cleaning solvents, other safety hazards, or arson. Smoke detectors used in high air velocity conditions may fail to alarm due to dilution of smoke densities created by such frequent and rapid air exchanges. Additionally, high air velocity environments may create increased dust contamination, demanding more frequent maintenance.

**Smoke detectors cannot last forever.** Smoke detectors contain electronic parts. Even though detectors are made to last over 10 years, any of these parts could fail at any time. Therefore, test your smoke detector system according to NFPA 72 at least semiannually. Clean and take care of your smoke detectors regularly. Taking care of the fire detection system you have installed will measurably reduce your product liability risks.

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## ADEMCO

### ONE YEAR LIMITED WARRANTY

Alarm Device Manufacturing Company, a Division of Pittway Corporation ("Seller"), 165 Eileen Way, Syosset, NY 11791, warrants its security equipment (the "product") to be free from defects in materials and workmanship for one year from date of original purchase, under normal use and service. Seller's obligation is limited to repairing or replacing, at its option, free of charge for parts, labor, or transportation, any part proven to be defective in materials or workmanship under normal use and service. Seller shall have no obligation under this warranty otherwise if the product is altered or improperly repaired or serviced by anyone other than the seller. In case of defect, contact the security professional who installed and maintains your security system or the Seller for product repair.

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Seller does not represent that the product may not be compromised or circumvented; that the product will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery, or fire occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THAT THE PRODUCT FAILED TO GIVE WARNING. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising under this Limited Warranty or otherwise, regardless of cause or origin. Seller's maximum liability shall be complete and remedy against Seller. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. No increase or alteration, written or verbal, to this warranty is authorized.