

# INSTALLATION AND MAINTENANCE INSTRUCTION FOR MODEL 4192SD/T ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR

Before installing detectors, please thoroughly read the Vector system installation instructions, and the Manual I56-407-00 (Guide for Proper Use of System Smoke Detectors) which provide detailed information on detector spacing, placement, zones, and special applications. Copies of these manuals are available from ADEMCO. The 4192SDT features a built-in fixed temperature (135°F) thermal.

## GENERAL DESCRIPTION

The model 4192SD photoelectric smoke detectors utilize a state of the art, optical sensing chamber. These detectors are designed to provide open area protection, and to be used with compatible UL-listed Ademco control panels only. Suitable for use with No. 4152 Point Protection Control Communicator, compatibility ID: A; maximum number of detectors per system is 29. See N2014V1.

An LED on each detector will flash every ten seconds, indicating that power is applied and the detector is working properly. The LED can be latched ON by code command from certain control panels for an alarm indication. The LED can also be unlatched to the normal blinking condition by code command from the same control panels.

The 4192SD detector is intended for use in a 2-wire system, with screw terminals provided for power (+) and power (-). Communication between the control panel and the detector(s) also takes place over these power (+) and power (-) wires.

## PHYSICAL AND ELECTRICAL SPECIFICATIONS

Diameter:	5.5 inches	(14 cm)
Height:	3.19 inches	(8.1 cm)
	Add 0.5 inches (1.3 cm) for thermal units.	
Weight:	0.7 lb	(310 gm)
Voltage Range:	7-11 VDC (with 1 KHZ of modulation)	
Standby Current (max):	320 microamps	
Alarm Current Range:	230 microamps min., 400 microamps max.	
Operating Temperature Range:	0° to 49°C (32° - 120°F)	
Maximum Air Velocity :	3000 ft/min (15 m/S)	

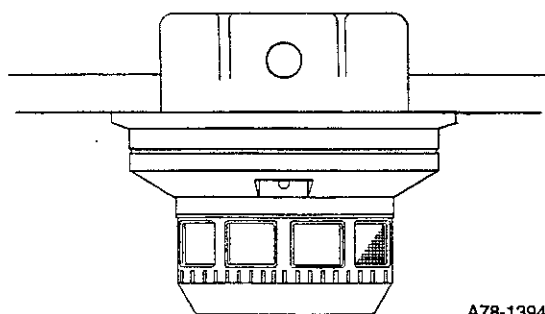
## MOUNTING INSTRUCTIONS

Each 4192SD series detector unit is supplied with a mounting bracket that permits the detector to be mounted using several different techniques:

1. Units may be mounted directly to a 3-inch or 4-inch octagonal, 1-1/2 inch deep 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.
3. Units may be mounted directly to the ceiling with the mounting bracket. For direct mounting, the bracket is used as a template for screw anchors.

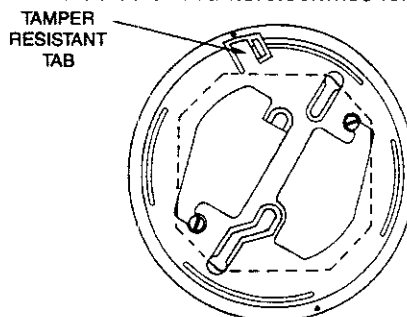
## TAMPER PROOF FEATURE

This detector includes a tamper proof feature that when activated prevents removal of the detector without the use of a tool. To activate this feature, simply break off the smaller tab at the scribed line on the tamper proof tab, located on the detector mounting bracket (See Figure 2), then install the detector. To remove the detector from the bracket once the tamper proof feature has been activated, depress the tamper proof tab located in the slot on the mounting bracket and turn the detector counterclockwise for removal.



A78-1394

**Figure 1: FLUSH MOUNTING OF  
DETECTOR ON 4-INCH OCTAGON BOX**



TO MAKE DETECTOR TAMPER RESISTANT,  
BREAK OFF TAB EXTENSION  
AT SCRIBED LINE A78-534-00

**Figure 2: DETECTOR  
MOUNTING BRACKET**

## WIRING INSTALLATION GUIDELINES

All wiring must be installed in compliance with the National Electrical Code and the local codes having jurisdiction. Proper wire gauges should be used. The conductors used to connect smoke detectors to the control panel should be color-coded to prevent wiring mistakes. Improper connections can prevent a system from responding properly in the event of a fire.

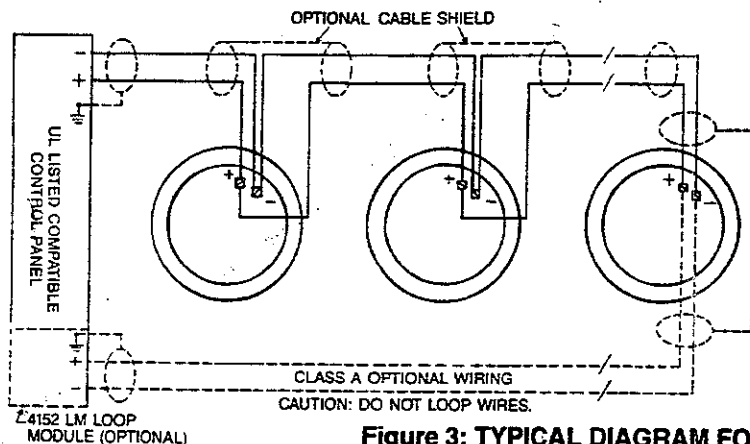
For signal wiring (the wiring between interconnected detectors), it is recommended that the wire be no smaller than 18 gauge (1.0 square mm). Wire sizes up to 12 gauge wire (2.5 square mm) may be used.

For the best system performance, the power (+) and power (-) loop wires should be twisted pair and installed in separate grounded conduit or shielded cable to protect the loop from extraneous electrical interference. If a cable shield is provided, the shield connection to and from the base must be continuous by using wire nuts, crimping, or soldering as appropriate for a reliable connection.

Locate installations where normal ambient temperatures do not exceed 100°F.

Wire connections are made by simply stripping about 3/8" of insulation from the end of the wire, sliding the bare end of the wire under the clamping plate, and tightening the clamping plate screw. Do not loop the wire under the clamping plate.

The zone wiring of the detector should be checked for continuity, polarity, and dielectric tests.



**NOTE:**  
BEFORE ATTACHING DETECTOR  
TO MOUNTING BRACKET, SET  
ADDRESS DIP SWITCH TO THE  
SELECTED ADDRESS TO BE  
USED FOR ITS LOCATION.

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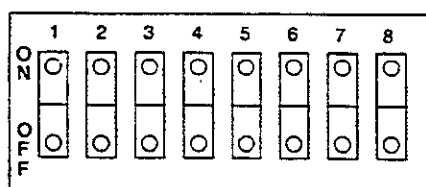
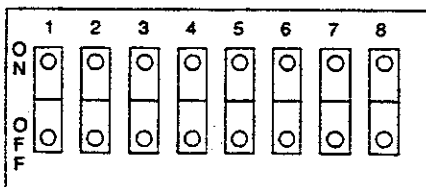
Figure 3: TYPICAL DIAGRAM FOR 2-WIRE LOOP

## SETTING I.D. NO.

Before installing the Model 4192SD, it must be assigned an identification number by arranging the DIP switches on the bottom of the unit. Assign the number (allocated in the control's system programming worksheet) according to the chart below.



Side view of single switch  
in "ON" position



								ON	ON	= 1
								ON	ON	= 2
								ON	ON	= 3
								ON	ON	= 4
								ON	ON	= 5
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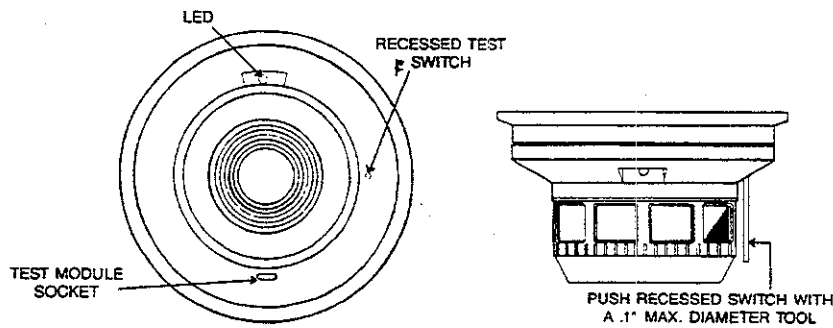
								ON	ON	= 49
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								ON	ON	= 95
								ON	ON	= 96

## TESTING

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

Detectors must be tested after installation and periodic maintenance. The 4192SD may be tested in the 6 following ways:

**NOTE:** Before testing the detector look for the presence of the flashing LED. If it does not flash, power has been lost to the detector (check the wiring) or it is defective (return for repair).



A78-1393

**Figure 4: VIEWS SHOWING POSITION OF RECESSED TEST SWITCH**

### A. Test Switch

1. Push and hold test switch for 5 seconds.
2. An alarm should be annunciated at the system's control or console within 5 seconds. Some systems will also use the detector's LED to latch on during the alarm. Otherwise the LED will continue to flash every 10 seconds.

### B. Calibrated Test Card (Model no. R58-18-00)

1. Remove the detector cover by placing a small-bladed screwdriver in the side slot of the detector cover, twisting it slightly until the cover can be turned counterclockwise for removal.
2. Insert the NO ALARM end of the test card fully into the test slot (See Figure 5), then slide it counterclockwise until it stops.
3. The detector should not alarm. Wait at least 30 seconds.
4. Units that alarm with the NO ALARM test card should be cleaned, then tested again before being returned to service.
5. Remove the test card by sliding it clockwise before removing, then insert the ALARM end of the card and slide fully counterclockwise.
6. An alarm should be annunciated at the system's control or console within 30 seconds. Some systems will also use the detector's LED to latch on during the alarm, otherwise the LED will continue to flash every 10 seconds.
7. Replace the cover by sliding it carefully over the insect screen and gently rotating it clockwise until it locks in place.

### C. Test sensitivity from control panel. (See control panel test procedure for detailed instructions on test procedure since some panels do not have this feature.)

Detectors that fail to alarm should be returned for repair.

### D. Test Module (System Sensor Model No. MOD400)

The MOD400 is used with your DMM or voltmeter to check the detector sensitivity as described in the MOD400's manual.

### E. Aerosol Generator (Gemini 501)

Set the generator to represent 4%/Ft. to 5%/Ft. obscuration as described in the Gemini 501 manual. Using the bowl shaped applicator, apply aerosol until unit alarms.

### F. Direct Heat Method for Model 4192SDT only (Hair dryer of 1000-1500 watts)

1. From the side of the detector, direct the heat toward the sensor. (Hold the heat source about 6 inches away to prevent damage to the cover during testing.)

**NOTE:** If a detector goes into alarm, it will reset only if the detector has cooled and if its power is momentarily interrupted. Check the control panel being used to determine whether the RESET switch (or some other auxiliary device or control) momentarily cuts off power to the detector loop.

Notify the proper authorities that the system is back on line.

Detectors that fail these tests should be cleaned as described under MAINTENANCE and retested. If the detectors still fail these tests they should be returned for repair.

## CAUTION

Dust covers can be used to help limit dust entry to the detector, but they are not a substitute for removing the detector during building construction. Remove any dust covers before placing system in service.

## MAINTENANCE

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

1. Remove the detector cover by placing a small bladed screwdriver in the side slot of the detector cover, twisting it slightly until the cover can be turned counterclockwise for removal.
2. Vacuum the screen carefully without removing it. If further cleaning is required, continue with Step 3, otherwise skip to Step 6.
3. Remove the screen by pulling it straight out. Vacuum the inside.
4. Clean the vaned chamber piece by vacuuming or blowing out dust and particles.
5. To replace the screen, orient it so that the arrow on top aligns with the field test slot on the base of the detector. Carefully push the screen onto the base making sure it fits tightly to the chamber.
6. Replace the cover by sliding it carefully over the insect screen and gently rotating it clockwise until it locks in place.

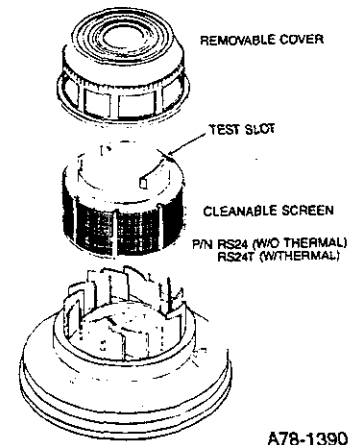


Figure 5

## 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 standards 71, 72A, 72B, 72C, 72D, and 72E.

If the smoke detector utilized is installed in a residential living unit, express conformance to NFPA 74 Standards for the Installation of Residential Household Smoke Detectors is required in addition to the applicable requirements of NFPA 72E.

**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 a 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 per NFPA 72E 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.

## LIMITED WARRANTY

Seller warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for 18 months from the date stamp control on the product or for products not having an Ademco date stamp, for 12 months from the date of original purchase unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. This warranty is void if the product is altered or improperly repaired or serviced by anyone other than Ademco factory service. For warranty service, return product transportation prepaid, to Ademco Factory Service, 165 Eileen Way, Syosset, New York 11791.

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