

ESL

TECHNICAL INFORMATION BULLETIN

ESL 429/449 Series Circuit Board Field Replacement

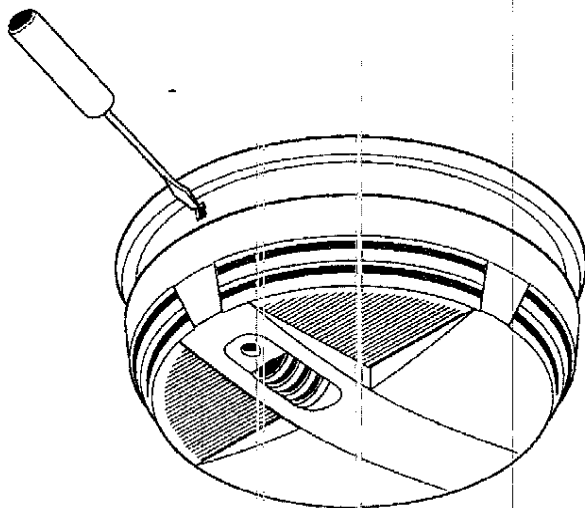
Caution:
Electro Static Discharge (ESD) Issue
Do not remove circuit board from ESD protective wrap until at detector for installation. After installation, put used circuit board into protective wrap and return to box.

Step #1: Power Down

Power down all circuits to the detector before beginning this procedure.

Step #2: To Open Cover

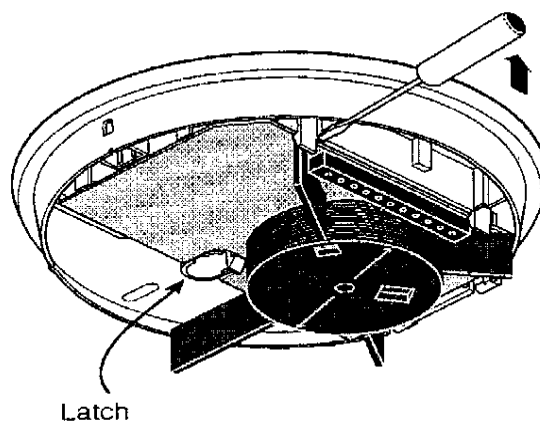
Press screwdriver or ballpoint pen into opening.



Note: Number of pins vary from 4-11 depending on model

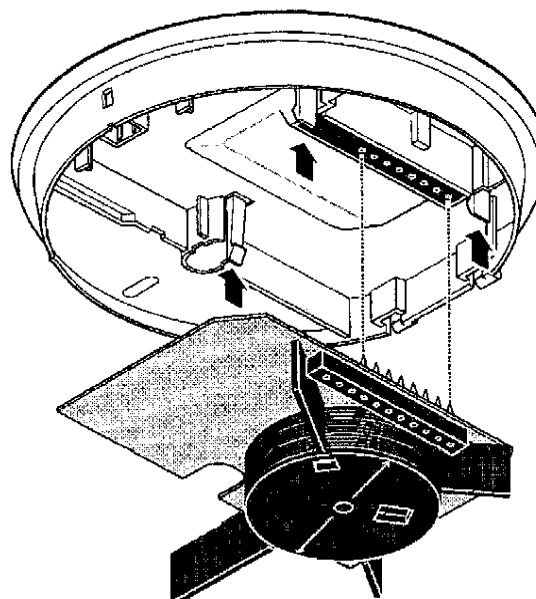
Step #3: To Remove Circuit Board

Undo latch with finger, then pry up board with screwdriver to the right of terminal pins as shown.



Step #4: To Install Replacement Circuit Board

Line up circuit board pins with the holes in terminal block. Press to fit. Board will lock in housing tabs.



Step #5: Testing Procedure

Testing the Installation

After all connections are complete and the wiring is checked for errors, apply power to the system. There should be no alarm. If an alarm is reported, determine if a detector is latched in alarm or if there is a problem with the wiring.

All smoke detectors shall be tested at least annually in accordance with NFPA 72. The preferred method for functional testing is with Smoke in a can®, available from ESL. Follow the instructions on the can carefully to ensure proper testing. Other brands of canned smoke are not recommended due to potential for contamination. Other acceptable testing methods are: a smoldering punk stick or a cotton wick.

The detector samples for smoke about every 9 seconds, while flashing its LED. If smoke is detected, the sampling increases to every 4.5 seconds. Excessive smoke must be detected in three consecutive samples for the alarm to activate. Therefore, when testing the detector with smoldering punks or cotton wicks, hold the smoke source near the smoke entry and gently direct smoke into the detector for 20 seconds or until alarm is indicated. **BE SURE TO PROPERLY EXTINGUISH THE SMOKE SOURCE AFTER TESTING!**

This is a go/no-go test and is not a reliable indication of detector sensitivity. If it is successful, the LED will remain lit. To reset the detector, operate the system reset switch to remove power from the detectors. Control unit alarm and all auxiliary functions should be verified for a complete test of each detector.

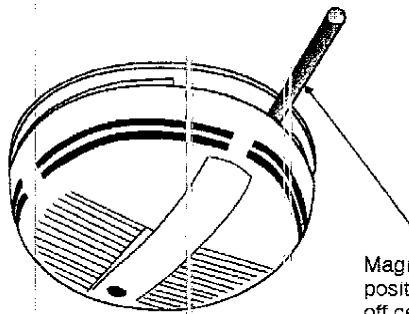
Models with heat sensors sample for heat every 3 seconds. Test heat sensors by using a hot air gun. Aim at heat sensor from 6-10" away. Detector should go into alarm in less than 30 seconds. Be careful not to melt plastics.

Sensitivity Level Test Mode

Each detector includes a sensitivity test mode that is activated by holding a magnet near the integral reed switch for more than one second (see Diagram A). This initiates the self-diagnostic routine and provides visual indication if service is required. The alarm LED provides the indication listed in Diagram B.

After the sequence of blinks, if the sensitivity is found to be within limits and if all other tests pass, the detector will go into alarm until reset by the panel. If the sensitivity is not within limits, or an unserviceable hardware fault has been detected, the alarm LED will continue to flash once per second until the detector is reset by the panel. If sensitivity test indicates an unacceptable level, take action recommended above. If action does not result in acceptable sensitivity, replace unit.

Diagram A To activate sensitivity level test mode, hold magnet on hinge side of detector for more than 1 second.



Magnet (for best results position magnet slightly off center)

Diagram B

Approximate obscuration (%/ft.)	Blinks	Indication	Action
429/449	1	Unserviceable hardware fault is detected	Reset unit and re-run sensitivity test, if indication remains the same, replace unit.
4.35		The detector is not sensitive enough	Clean per instructions. Reset unit and re-run sensitivity test, if indication remains the same, replace unit.
3.85			
3.60	4	Detector is within sensitivity limits	None
3.10	5	Detector is too sensitive	Check to be sure optical block cover is snapped down completely. Clean per instructions.
2.60	6		
2.10	7		
1.85	8		
1.35	9		

ESL 

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