INSTALLATION AND MAINTENANCE INSTRUCTIONS

2151A/2151TA Low Profile Photoelectronic Plug-in Smoke Detectors

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SPECIFICATIONS

Size	
Height:	2.0 inches (51 mm) installed in B401 Base
Diameter:	4.1 inches (104 mm) installed in B401 Base
	6.1 inches (155 mm) installed in B110LPA Base
Weight:	3.1 oz. (88 g)
Operating Temperature Range:	0°C to 49°C (32°F to 120°F); 2151,0°C to 38°C (32°F to 100°F); 2151T
Operating Humidity Range:	10% to 93% Relative Humidity noncondensing
Heat Sensor (2151TA only):	135°F Fixed Temperature Electronic Thermistor
Operating Voltage:	8.5 to 35VDC
Standby Current:	120µA
Latching Alarm:	Reset by momentary power interruption.

BEFORE INSTALLING

Please thoroughly read the System Sensor manual A05-1003, Applications Guide for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications. Copies of this manual are available from System Sensor.

NOTICE: This manual should be left with the owner/user of this equipment.
IMPORTANT: The detector must be tested and maintained regularly following CAN/ULC-S536 requirements. The detector should be cleaned at least once a year.

GENERAL DESCRIPTION

The 2151A low-profile photoelectronic detector uses a state-of-the-art optical sensing chamber. This detector is designed to provide open area protection and to be used with compatible ULC listed control panels only. The capability of plugging this detector into a variety of special bases makes it more versatile than equivalent direct-wired models.

Two LEDs on each detector provide local 360° visible alarm indication. They flash every five seconds indicating that power is applied and the detector is working properly. The LEDs latch on in alarm. LEDs will be off when a trouble condition exists indicating that the detector sensitivity is outside the listed limit. Remote LED annunciator capability is standard and may be implemented through an optional accessory RA400ZA/RA100ZA. The alarm can be reset only by a momentary power interruption. This detector may be tested by activating the internal reed switch with a magnet.

BASE SELECTION AND WIRING GUIDE

Refer to the installation instructions for the Plug-in Detector Bases for base selection and wiring instructions. System Sensor has a variety of detector bases available for this smoke detector, including 2-wire applications with and without relays and/or current limiting resistors, 4-wire and 120VAC applications.

All bases are provided with screw terminals for power, ground, remote annunciator connections and relay contact connections, if applicable. The electrical ratings for each detector-base combination are also included in the base installation instructions.

INSTALLATION

NOTE: All wiring must conform to applicable local codes, ordinances, and regulations.
NOTE: Verify that all detector bases are installed, that the initiating-device circuits have been tested, and that the wiring is correct. (Refer to detector base manual for testing procedure.)

⚠WARNING

Remove power from initiating-device circuits before installing detectors.

1. Install detectors:
   a. Place the detector into the detector base.
   b. Turn the detector clockwise until the detector drops into place.
   c. Continue turning detector clockwise to lock it in place.
2. Tamper Resistance: The detector bases can be made tamper resistant. When capability is enabled, detectors cannot be removed from the base without the use of a tool. See the detector base installation manual of the detector base for details in using this capability.
3. After all detectors have been installed, apply power to the control unit.
4. Test the detector using the magnet as described under TESTING.
5. Reset the detector at the system control panel.
6. Notify the proper authorities that the system is back on line.

TESTING

Before testing, notify the proper authorities that the smoke detector system is undergoing maintenance and will temporarily be out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms. Detectors must be tested after installation and as part of periodic maintenance. Test 2151A and 2151TA as follows:

NOTE: Before testing the detector, check to ensure the LEDs blink. If they do not, the detector has lost power (check the wiring), it is defective (return it for repair), or the detector sensitivity is outside the listed limits.

A. Test Magnet (p/n M02-04-01 or M02-09-00)

1. Place the magnet against the cover in the location designated by the raised mark to activate the test feature (see Figure 1).
2. The LEDs should latch ON within 5 seconds indicating alarm and annunciating the panel.

B. Test Module (CSENS-RDRA)

Use the CSENS-RDRA Sensitivity Reader to measure the sensitivity of the detectors. Please refer to the CSENS-RDRA instruction manual for operating details.

C. Smoke Entry

The GEMINI model 501 aerosol generator can be used for smoke entry testing. 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 the panel alarms.

Additionally, canned aerosol simulated smoke (canned smoke agent) may be used for smoke entry testing of the smoke detector. Tested and approved aerosol smoke products are:

MANUFACTURER	MODEL
Home Safeguard Industries	25S
SDi	SOLOA4
SDi	SMOKESABRE-01

When used properly, the canned smoke agent will cause the smoke detector to go into alarm. Refer to the manufacturer's published instructions for proper use of the canned smoke agent.

⚠CAUTION

Canned aerosol simulated smoke (canned smoke agent) formulas will vary by manufacturer. Misuse or overuse of these products may have long term

adverse effects on the smoke detector. Consult the canned smoke agent manufacturer's published instructions for any further warnings or caution statements.

D. Direct Heat Method (Hair Dryer of 1000-1500 watts) 2151TA only

A hair dryer of 1000-1500 watts should be used to test the thermistors. Direct the heat toward either of the two thermistors, holding the heat source approximately 12 inches from the detector in order to avoid damaging the plastic housing. The detector will reset only after it has had sufficient time to cool. Make sure both thermistors are tested individually.

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.

CLEANING

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

1. Remove the sensor to be cleaned from the system.
2. Remove the sensor cover by pressing firmly on each of the four removal tabs that hold the cover in place.
3. Vacuum the screen carefully without removing it.

   If further cleaning is required continue with Step 4, otherwise skip to Step 7.
4. Remove the chamber cover/screen assembly by pulling it straight out.
5. Use a vacuum cleaner or compressed air to remove dust and debris from the sensing chamber.
6. Reinstall the chamber cover/screen assembly by sliding the edge over the sensing chamber. Turn until it is firmly in place.
7. Replace the cover using the LEDs to align the cover and then gently pushing it until it locks into place. Make sure that the thermistors do not become bent under the cover on 2151TA.
8. Reinstall the detector.
9. Test the detector as described in TESTING.
10. Reconnect disabled circuits.
11. Notify the proper authorities that the system is back on line.

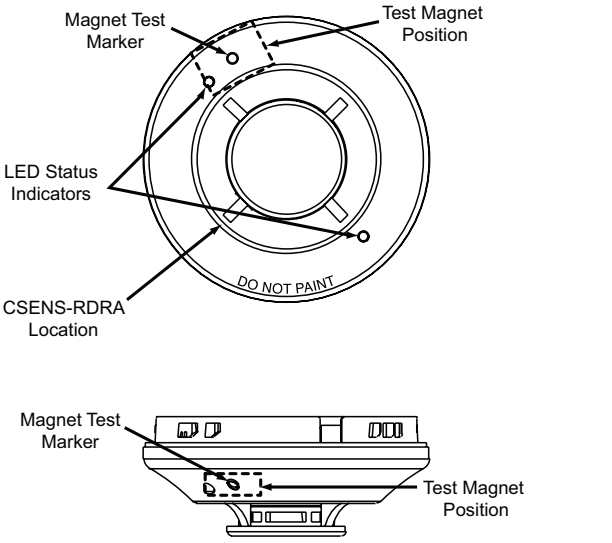
⚠CAUTION

Dust covers are an effective way to limit the entry of dust into smoke detector sensing chambers. However, they may not completely prevent airborne dust particles from entering the detector. Therefore, System Sensor recommends the removal of detectors before beginning construction or other dust producing activity. Be sure to remove the dust covers from any sensors that were left in place during construction as part of returning the system to service.

⚠CAUTION

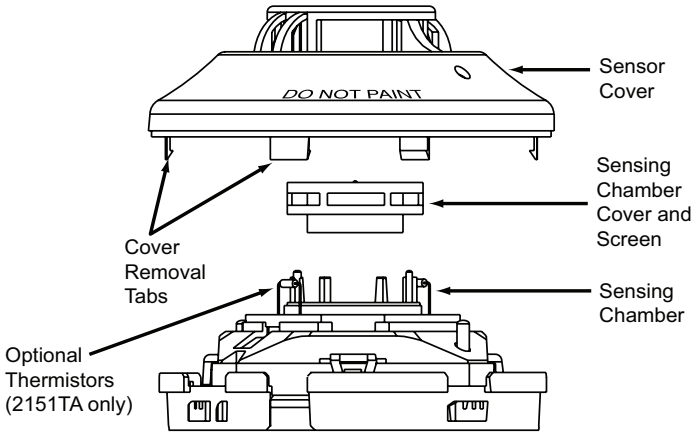
Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

FIGURE 1. BOTTOM AND SIDE VIEWS SHOWING POSITION OF TEST MAGNET:



C0145-01

FIGURE 2:



C0892-00

SPECIAL NOTE REGARDING SMOKE DETECTOR GUARDS

Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

Please refer to insert for the Limitations of Fire Alarm Systems

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed smoke detector to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for this smoke detector. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the repair or replacement of any part of the smoke detector which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Repair Department, RA #_____, 6581 Kitimat Road, Unit 6, Mississauga, Ontario L5N-3T5. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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