Honeywell

TC846A1005
Intelligent Laser Smoke Sensor
Installation Instructions

Before installing sensors, please thoroughly read the *Guide For Proper Use of System Smoke Detectors*, which provides detailed information on sensor spacing, placement, zoning, and special applications. Copies of this manual are available from Honeywell.

NOTICE: This manual should be left with the owner/user of this equipment.

IMPORTANT: This sensor must be tested and maintained regularly following NFPA requirements. It should be cleaned at least once a year.

GENERAL DESCRIPTION

Model TC846A1005 is a plug-in type smoke sensor that uses a laser based sensing chamber. The sensor uses analog-addressable communications to transmit smoke density and other information to the control panel. Rotary-decade switches are provided for setting the sensor's address. Two LEDs on the sensor are controlled by the panel to indicate sensor status. An output is provided for connection to an optional remote LED annunciator (P/N SSDRA400Z).

The TC846A1005 requires compatible addressable communications to function properly. Connect these sensors to listed-compatible control panels only.

SPECIFICATIONS

Operating Voltage Range:	15 to 32 VDC
Standby Current:	330μA @ 24 VDC (one communication every 5 sec. with LED blink enabled)
Max. Alarm Current (LED on:)	6.5 mA @ 24 VDC
Operating Humidity Range:	10% to 93% Relative Humidity, noncondensing
Operating Temperature Range:	0° to 38°C (32° to 100°F); U.S.
	-10° to 50°C (14° to 122°F); Europe
Height:	1.7 inches (43 mm) installed in 14507371-001 Base
Diameter:	6.1 inches (155 mm) installed in 14507371-001 Base
	4.1 inches (104 mm) installed in 14506414-002 Base
Weight:	5.0 oz. (142 g)

SPACING

Honeywell recommends spacing sensors in compliance with NFPA 72. In low air flow applications with smooth ceilings, space sensors 30 feet apart. For specific information regarding sensor spacing, placement, and special applications, refer to NFPA 72.

WIRING INSTRUCTIONS

All wiring must be installed in compliance with the National Electrical Code, applicable local codes, and any special requirements of the Authority Having Jurisdiction. Proper wire gauges should be used. The installation wires should be color-coded to limit wiring mistakes and ease system troubleshooting. Improper connections will prevent a system from responding properly in the event of a fire.

Remove power from the communication line before installing sensors.

All wiring must conform to applicable local codes, ordinances, and regulations.

1. Wire the sensor base (supplied separately) per the wiring diagram, see Figure 1.
2. Set the desired address on the sensor address switches, see Figure 2.
3. Install the sensor into the sensor base. Push the sensor into the base while turning it clockwise to secure it in place.
4. After all sensors have been installed, apply power to the control unit and activate the communication line.
5. Test the sensor(s) as described in the **TESTING** section of this manual.

⚠CAUTION

Dust covers provide limited protection against airborne dust particles during shipping. Dust covers must be removed

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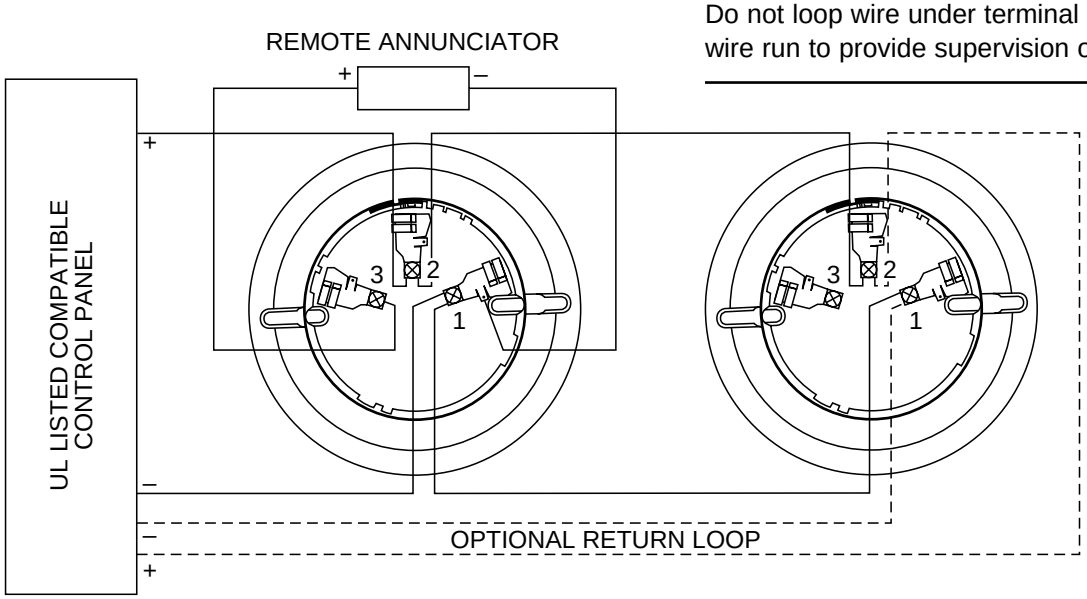
⚠CAUTION

Do not loop wire under terminal 1 or 2. Break wire run to provide supervision of connection.



before the sensors can sense smoke. Remove sensors prior to heavy remodeling or construction.

TESTING

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

All sensors must be tested after installation and periodically thereafter. Testing methods must satisfy the Authority Having Jurisdiction (AHJ). Sensors offer maximum performance when tested and maintained in compliance with NFPA 72.

The sensor can be tested in the following ways:

A. Functional: Magnet Test (P/N M02-04-01 or M02-09-00)

This sensor can be functionally tested with a test magnet. The test magnet electronically simulates smoke in the sensing chamber, testing the sensor electronics and connections to the control panel.

1. Hold the test magnet in the magnet test area as shown in Figure 3.
2. The sensor should alarm the panel.

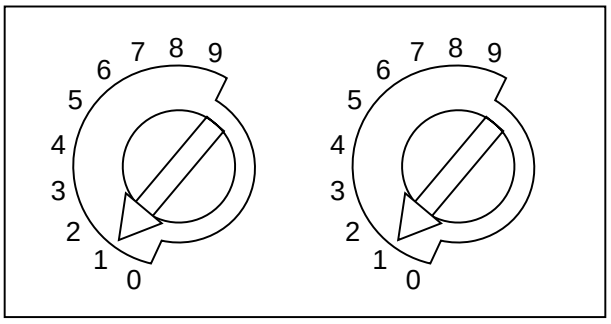
   Two LEDs on the sensor are controlled by the panel to indicate sensor status. Coded signals, transmitted from the panel, can cause the LEDs to blink, latch on, or latch off. Refer to the control panel technical documentation for sensor LED status operation and expected delay to alarm.

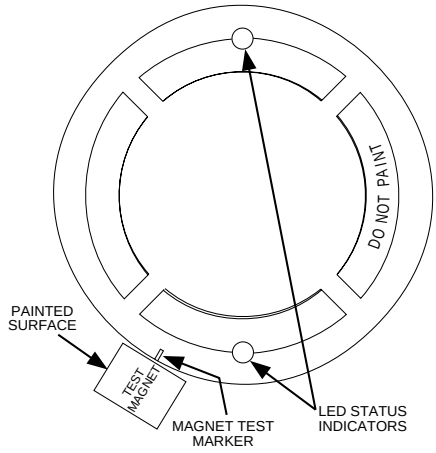
B. Smoke Entry: Aerosol Generator (Gemini 501)

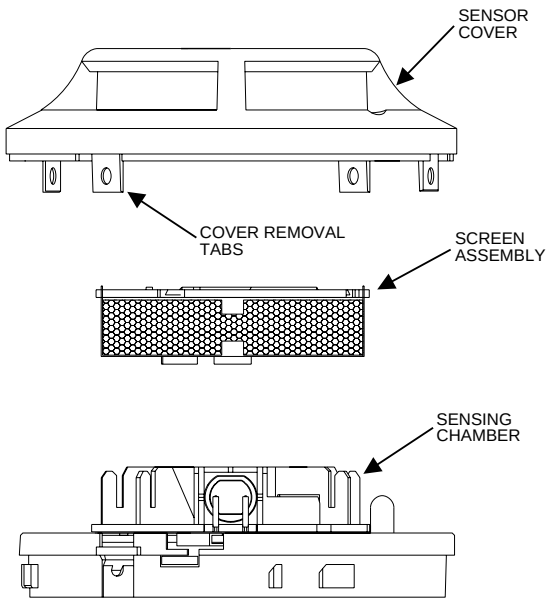
The GEMINI model 501 aerosol generator can be used for smoke entry testing. Set the generator to represent 4%/ft. to 5%/ft. obstruction as described in the GEMINI 501 manual. Using the bowl shaped applicator, apply aerosol until the panel alarms.

A sensor that fails any of these tests should be cleaned as described under **CLEANING**, and retested. If the sensor fails after cleaning, it must be replaced and returned for repair.

When testing is complete, restore the system to normal operation and notify the proper authorities that the system is back in operation.







CLEANING

It is recommended that the detector be removed from its mounting base to facilitate cleaning. The detector is cleaned as follows:

NOTE: 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 detector cover by prying away the four side tabs with a small-bladed screwdriver, and then pulling the cover from the base.
2. Vacuum the screen carefully without removing it. If further cleaning is required continue with Step 3, otherwise skip to Step 7.
3. Remove the screen/chamber cover assembly by pulling it straight out (see Figure 4).
4. Clean the chamber by vacuuming or blowing out dust and particles.
5. Replace the sensing chamber cover, aligning the arrow on the top with arrow on the printed circuit board.
6. To replace the screen, place it over the chamber assembly, turning it until it snaps into place.
7. Replace the cover using the LEDs to align the cover and then gently pushing it until it locks into place.
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.

LASER SAFETY INFORMATION

This smoke detector does not produce any hazardous laser radiation and is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968.

Any radiation emitted inside the smoke detector is completely within the protective housings and external covers. The laser beam cannot escape from the detector during any phase of operation.

The Center of Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured after August 1, 1976. Compliance is mandatory for products marketed in the United States.

⚠CAUTION

Use of controls, adjustments, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

Please refer to insert for the Limitations of Fire Alarm Systems

FCC Statement

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.