

HFS-T Intelligent Plug-In Temperature Sensor with Plug-In Detector Base

SPECIFICATIONS

Operating Voltage Range:	15 to 32 Volts DC Peak
Standby Current:	300 μ A @ 24 VDC (one communication every 5 seconds with LED blink enabled)
Maximum Alarm Current (LED on):	6.5 mA @ 24 VDC
Operating Humidity Range:	10% to 93% Relative Humidity, Non-condensing
Fixed Temperature Rating:	135°F (57°C)
Installation Temperature:	-4°F to 100°F (-20°C to 38°C)
Height:	2.0" (51 mm)
Diameter:	6.1" (155 mm)
Weight:	4.8 ounces (137 gm)
Mounting:	4-inch (102 mm) square box with or without plaster ring; Minimum Depth - 1.5 inches (38 mm) 4-inch Octagon Box; Minimum Depth - 1.5 inches (38 mm) 3½-inch Octagon Box; Minimum Depth - 1.5 inches (38 mm) Single Gang Box; Minimum Depth - 1.5 inches (38 mm)

This sensor must be installed in compliance with the control panel system installation manual. The installation must meet the requirements of the Authority Having Jurisdiction (AHJ). Sensors offer maximum performance when installed in compliance with the National Fire Protection Association (NFPA); see NFPA 72.

GENERAL DESCRIPTION

Model HFS-T is an intelligent sensor with a plug-in detector base that utilizes a state-of-the-art thermistor sensing circuit for fast response. These sensors are designed to provide open area protection with 50 foot spacing capability as approved by UL 521. Model HFS-T is a fixed temperature sensor with 135°F fixed temperature alarm. The sensor transmits an analog representation of temperature over a communication line to a control panel. Rotary decade switches are provided for setting the sensor's address. The detector is intended for use in a 2-wire intelligent system, with screw terminals provided for power (+ and -).

The HFS-T detector requires compatible addressable communications to function properly. Connect this sensor to listed-compatible control panels only.

Communication takes place over the power (+ and -) lines.

BASE TERMINALS (SEE FIGURE 1)

NO.	FUNCTION
1	Power (-)
2	Power (+)

SPACING

Space 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 or the System Smoke Detector Application Guide.

NOTE: These products are not listed for use inside duct smoke detectors.

MOUNTING

This detector base mounts directly to 3½- and 4-inch octagon boxes, 4-inch square boxes (with or without plaster rings, see Figure 2), and single gang boxes. Install the base on the box using the screws supplied with the junction box and the appropriate mounting slots in the base.

FIGURE 1. TERMINAL LAYOUT:

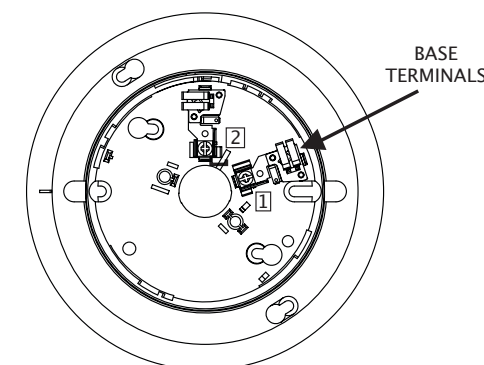
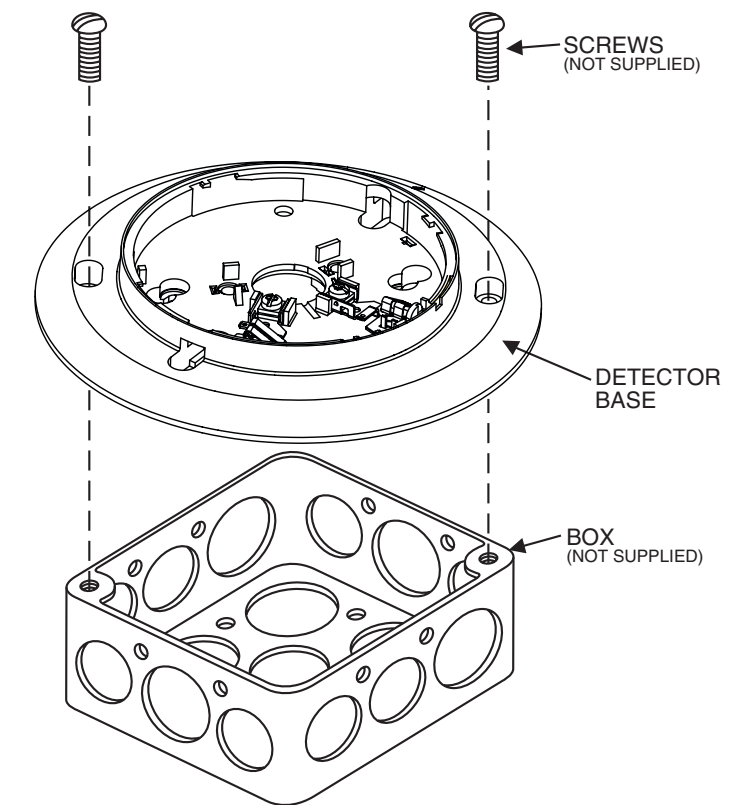


FIGURE 2. MOUNTING DETECTOR TO BOX:



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WIRING GUIDE

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 conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to reduce the likelihood of wiring errors. Improper connections will 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 AWG 18. However, the screws and clamping plate in the base can accommodate wire sizes up to AWG 12. 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, or soldering, as appropriate for a reliable connection.

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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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Make electrical connections by stripping about 3/8 inch (10 mm) of insulation from the end of the wire (use strip gauge molded in base), 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 base should be checked before the detector heads are installed in them. The wiring should be checked for continuity and polarity in the base, and dielectric tests should be performed.

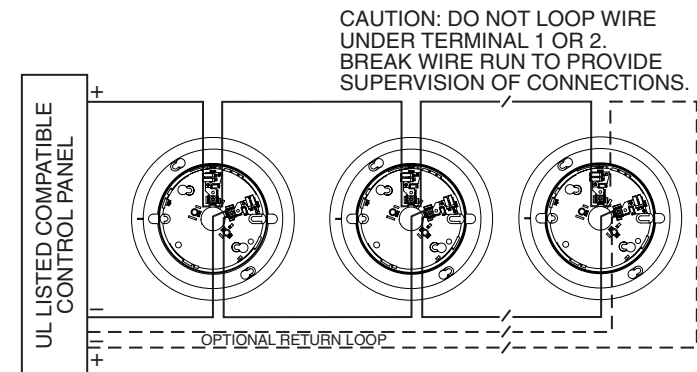
The base includes a label for recording the zone, address, and type of detector being installed. This information is important to set the address of the detector head that will later be plugged into the base and to verify the type required for that location.

Remove power from the communication line before installing sensors.

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

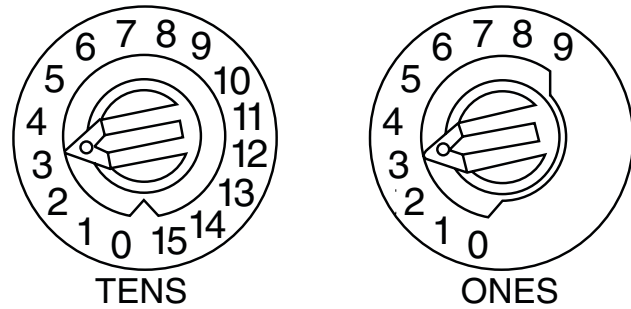
CAUTION

Dust covers provide limited protection against airborne dust particles during shipping. Dust covers must be removed before the sensors can sense smoke. Remove sensors prior to heavy remodeling or construction. Figure 3. WIRING DIAGRAM:



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FIGURE 4. ROTARY ADDRESS SWITCHES:



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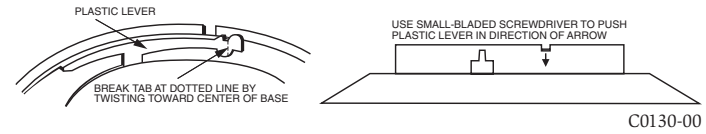
TAMPER RESISTANCE

The Tamper Resistant Tab, in the Detector Mounting Base, can make the detector tamper-resistant by making it necessary to use a small screwdriver or similar tool to detach the detector from the base.

To make the detector tamper-resistant, use needle-nose pliers to break the smaller tab at the scribed line on the tamper resistant tab. Figures 5 and 6 show the location of this tab on the detector mounting bracket.

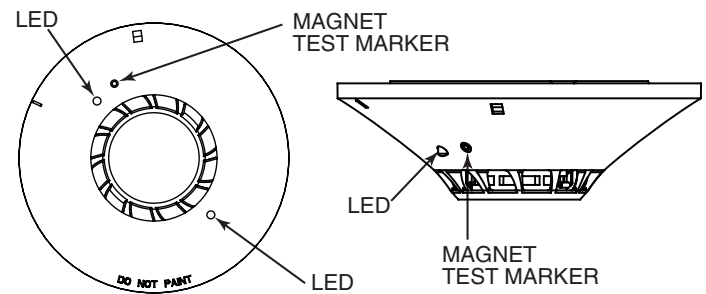
To remove the detector from the base after it has been made tamper resistant, insert a small screwdriver into the notch, as indicated in Figure 1, and press the plastic lever toward the mounting surface before rotating the detector counterclockwise for removal.

FIGURE 5: ENABLING THE TAMPER-RESISTANT CAPABILITY



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FIGURE 6. VIEWS SHOWING POSITION OF TEST MAGNET:



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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.

A. Test Magnet (Model No. M02-04 – optional)

1. Place the optional test magnet against the cover in the magnet test area, as shown in Figure 6, to activate the test feature.
2. The LEDs should latch on within 10 seconds, indicating alarm and annunciating the panel.
3. Reset the detector at the system control panel.

B. Direct Heat Method (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 (15 cm) away to prevent damage to the cover during testing.
2. The LEDs on the detector should light when the temperature at the detector reaches the alarm setpoint. If the LEDs fail to light, check the power to the detector and the wiring in the detector base.
3. Reset the detector at the system control panel.

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.

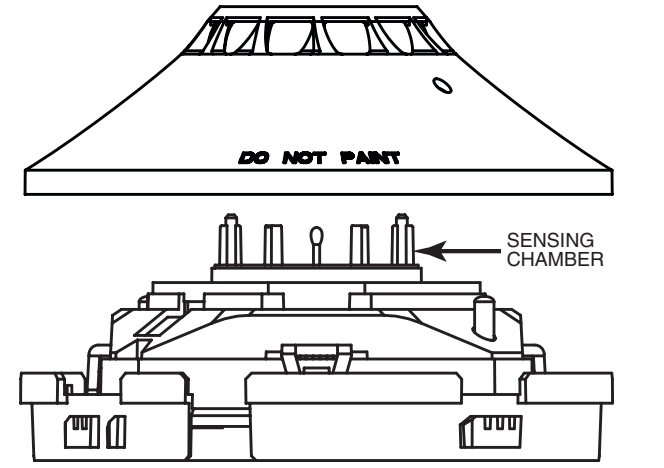
When testing is complete, restore the system to normal operation and notify the proper authorities that the system is back in operation.

MAINTENANCE: (SEE FIGURE 7)

NOTE: Before cleaning notify the proper authorities that the 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.

It is recommended that the sensor be removed from its mounting base for easier cleaning and that sensors be cleaned at least once a year. Use a vacuum cleaner to remove dust from the sensing chamber.

FIGURE 7:



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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.