I56-6783-000

NOTIFIER® by Honeywell

FSP-951T-SELFT
Intelligent Photoelectric and Temperature Self-Test Smoke Sensor

12 Clintonville Road
Northford, CT 06472-1653
Phone: 203.484.7161

SPECIFICATIONS

Operating Voltage Range:	15 to 32 VDC
Operating Current @ 24 VDC:	200 uA (one communication every 5 seconds with green LED blink on communication)
Maximum Alarm Current:	2 mA @ 24 VDC (one communication every 5 seconds with red LED solid on)
Maximum Self-Test Alarm Current:	300 mA (Not be used for battery standby calculation as Self-Test will not work in auxiliary power mode)
Maximum Current:	4.5 mA @ 24 VDC (one communication every 5 seconds with amber LED solid on)
Operating Humidity Range:	10% to 93% Relative Humidity, Non-condensing
Operating Temperature Range:	32°F to 115°F (0°C to 47°C)
Storage Temperature Range:	-4°F to 140°F (-20°C to 60°C)
Air Velocity:	0 to 4000 ft./min. (0 to 1219.2 m/min.)
Air Velocity using Self-Test:	0 to 300 ft./min. (0 to 304.8 m/min.)
Height:	2.0″ (51 mm) installed in B300-6 Base
Diameter:	6.2″ (156 mm) installed in B300-6 Base; 4.1″ (104 mm) installed in B501 Series Base
Weight:	3.5 oz. (100 g)
Isolator Load Rating:	0.0063*

*Please refer to your isolator base/module manual for isolator calculation instructions.

UL 268 listed for Open Air Protection
UL 521 listed for Heat Detectors

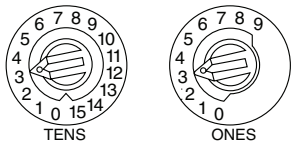
This sensor must be installed in compliance with the control panel system installation manual. The installation must meet the requirements of the Authority Having Jurisdiction (AHJ). Sensors offer maximum performance when installed in compliance with the National Fire Protection Association (NFPA); see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

GENERAL DESCRIPTION

Model FSP-951T-SELFT is a plug-in type multi-sensor smoke sensor that combines a photoelectronic sensing chamber and 135°F (57.2°C) fixed temperature heat detector across addressable-analog communications. The sensor transmits an analog representation of smoke density over a communication line to a control panel. Its internal Self-Test unit and beaconing capability can test the detector to relevant requirements of NFPA 72.

Rotary dial switches are provided for setting the sensor's address. (See Figure 1.) The intelligent photoelectric and temperature sensors also transmit an alarm signal due to heat at 135°F (57.2°C) per UL 521.

FIGURE 1. ROTARY ADDRESS SWITCHES



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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 RA100Z).

Notifier panels offer different features sets across different models. As a result, certain features of the photoelectric and temperature sensors may be available on some control panels, but not on others. FSP-951T-SELFT will support only FlashScan® protocol mode. The possible features available if supported by the control panel are:

1. The sensor's LEDs can operate in three ways—on, off, and blinking–and they can be set to red, green, or amber. This is controlled by the panel.
2. The remote output may be synchronized to the LED operation or controlled independent of the LEDs.
3. Devices are point addressable up to 159 addresses.
5. Yearly maintenance, in accordance to NFPA 72, can use the built in Self-Test functionality.

Please refer to the operation manual for the UL listed control panel for specific operation. The photoelectric and temperature sensors require compatible addressable communications to function properly. Connect these sensors to listed-compatible control panels only.

SPACING & MOUNTING

Notifier recommends spacing sensors in compliance with NFPA 72. In low air flow applications with smooth ceilings, space sensors 30 feet apart (9.1 m). When using the photoelectric and temperature sensors as a heat detector in FM3210 compliant applications, space sensors 20 feet apart (6 m). For specific information regarding sensor spacing, placement, and special applications, refer to NFPA 72 or the System Smoke Detector Application Guide, available from Notifier. Duct Applications: FSP-951T-SELFT is not listed for use in ducts.

Mounting Note: Units installed on ceilings must remain in ceiling-oriented position; those mounted on walls must remain in the wall orientation.

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 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. Please note that installation distances, wiring styles and wire gauge requirements may vary for Self-Test sensors in comparison to standard sensors, please refer to the panel's SLC Wiring documentation for further information.

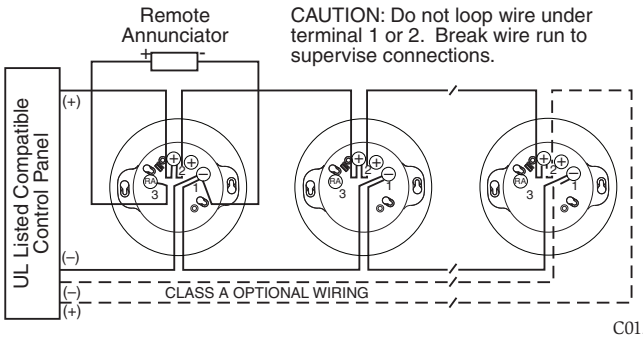
Remove power from the communication line before installing sensors.

1. Wire the sensor base (supplied separately) per the wiring diagram, Figure 2.
2. Set the desired address on the sensor address switches, see Figure 1.
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 panel 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 before the sensors can sense smoke. Remove sensors prior to heavy remodeling or construction. The Self-Test function of your Notifier system can determine that all dust covers on the SLC have been removed when you run the Self-Test process in order to prove that there isn't anything causing a potential obstruction for smoke entry.

FIGURE 2. WIRING DIAGRAM



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TAMPER-RESISTANCE

Photoelectric and temperature sensors include a tamper-resistant capability that prevents their removal from the base without the use of a tool. Refer to the base manual for details on making use of this capability.

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 self-tested or manually tested as described below.

SELF-TEST TESTING

A. Functional and Smoke-Entry Tests

The Notifier system with Self-Test sensors can carry out both functional tests and smoke entry tests using the Self-Test function. The Self-Test sensor generates a controlled amount of smoke which is directed into the sensing chamber, testing the optical chambers response to real smoke. It also measures the amount of time it takes to evacuate smoke from the chamber to determine if there is anything masking smoke entry points on the sensor.

1. Use the associated app and gateway (see Connected Life Safety Services guides).
2. Initiate self-test from app. Wait at least 30 seconds before communicating with the device; wait at least 90 seconds before moving or re-cycling.
3. Take appropriate action based on the outcome of the testing results. If it has failed, the device should be considered for cleaning or replacement.

NOTE: For safer testing the fire system can remain active while Self-Test is in progress. The process will delay any alarm input signal from the SLC including pull stations, input modules and other sensors (not undergoing Self-Test) by a maximum of 30 seconds. Multiple loops and panels may be tested simultaneously.

B. Heat Test

The sensor places enough energy into the thermistor to allow it to register heat and then measures the time it takes to cool down after this heating cycle has been completed.

1. Use the same process as described in FUNCTIONAL AND SMOKE ENTRY TEST. The process will automatically note that the FSP-951T-SELFT has a heating element.
2. Take appropriate action based on the outcome of the testing results. If it has failed there may be an issue with the thermistor and the device should be considered for cleaning or replacement

C. Visual Inspection

This sensor contains a wireless beacon (only active during Self-Test process) which is designed to communicate with the Honeywell Connected Life Safety Services app in order to prove the successful completion of the visual inspection of any Self-Test sensor.

1. A range of Self-Test sensors can be placed into a beaconing mode from the supporting app.
2. The App will display all selected Self-Test devices in range of your smart phone and will place the device with the strongest signal at the top your App display. The App will also provide details on the device address, location and label. (For further details on the associated app and gateway see Connected Life Safety Services guides).
3. Once the sensor is in beaconing range of your smart phone, you must verify the completion of the visual inspection of the sensor via the App (recording any remedial action required if necessary). Criteria for successfully passing the visual inspections is available to review in the relevant section of NFPA 72 guidance.
4. If the label of the self-test sensor is incorrect, you can update this on the App (subject to holding the relevant user licence), which will upload it to the system when you pair the device with the Connected Life Safety Services gateway on completion of the visual inspection.

SELF-TEST TOKENS

If your license requires Self-Test tokens in order to activate the Self-Test process, please refer to your Connected Life Safety Services guides in order to purchase the required volume of tokens to complete testing on your project.

MANUAL TESTING

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

Sensitivity readings are available through the FACP. Refer to the manufacturer's published instructions for proper use.

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 include:

Manufacturer	Model
HSI Fire & Safety	25S, 30S (PURCHECK)
SDi	SMOKE CENTURIAN, SOLO A10, SMOKESABRE, TRUTEST
No Climb	TESTIFIRE 2000

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.

C. Direct Heat Method (Hair dryer of 1000-1500 watts).

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 (30 cm) 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.

D. Multi-Criteria Method.

A Testifire® by SDi provides testing of the smoke and heat sensors. Consult the manufacturer's published instructions for complete instructions.

A sensor that fails any of these tests may need to be cleaned as described under CLEANING, and retested.

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

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. (See Figure 4.)

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.
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.

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.

FIGURE 3. FEATURES OF THE PHOTO/HEAT DETECTOR

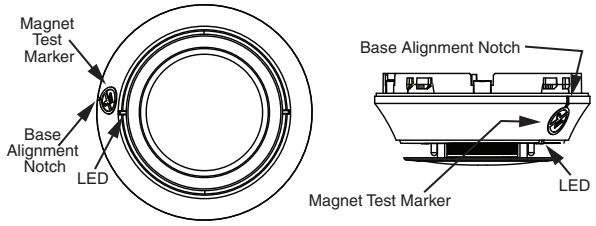

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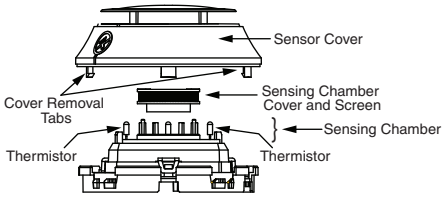
FIGURE 4. CLEANING THE PHOTO/HEAT DETECTOR



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SPECIAL APPLICATION

When configured at the fire alarm control panel, this detector is capable of operating in a special application mode such that it has a higher sensitivity than is normally allowed by UL 268 for areas where early warning is important. In this mode, the detector does not comply with the Cooking Nuisance Smoke Test. Detectors (Sampling ports) set to the special application mode are not suitable for use in areas where cooking appliances may be used. If cooking appliances are used within the protected space, a normal application detector or normal application mode must be used for that area.

Special application mode is not for general use and the detector may be more prone to false alarms if used in unsuitable environments. While no list is all-inclusive, some examples of unsuitable environments for special application mode are areas with airborne particulate or aerosols including sawing, drilling, and grinding operations, textile or agricultural processing, or areas with engines that are not vented to the outside. A complete list of aerosol and particulate sources is available in the Annex of NFPA 72.

Suitable environments for special application mode could include early warning for hospitals, museums, assisted living and other areas that do not have airborne particulate or aerosols.

Refer to the fire alarm control panel documentation for information on how to configure the detector for special application mode.

SUPPLEMENTAL INFORMATION

For Limitations of Fire Alarm Systems, please go to:
http://www.systemsensor.com/en-us/Documents/I56-1558.pdf

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.

WARNING: Do not make changes to the equipment. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

DEVICE AND SYSTEM SECURITY

Before installing this product ensure that the tamper seal on the packaging is present and unbroken and the product has not been tampered with since leaving the factory. Do not install this product if there are any indications of tampering. If there are any signs of tampering the product should be returned to the point of purchase.

It is the responsibility of the system owner to ensure that all system components, i.e. devices, panels, wiring etc., are adequately protected to avoid tampering of the system that could result in information disclosure, spoofing, and integrity violation.