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 SD355, SD355T and AD355 are addressable sensors that combine a state-of-the-art photoelectric sensing chamber with communications. The sensors transmit an analog representation of smoke density over a communication line to a 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 RA400Z). Models AD355 and SD355T combine a photoelectric sensing chamber and 135°F (57.2°C) fixed temperature heat detector.

**SPACING**

Fire-Lite 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 or the System Smoke Detector Application Guide available from Fire-Lite.

**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.

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

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**SPECIFICATIONS**

- **Operating Voltage Range:** 15 to 32 VDC
- **Standby Current:** 300µA @ 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
- **Operating Temperature Range:** 32°F to 120°F (0°C to 49°C); SD355
- **Operating Temperature Range:** 32°F to 100°F (0°C to 38°C); SD355T and AD355
- **Height:** 2.0” (51 mm) installed in B350LP Base
- **Diameter:** 6.2” (155 mm) installed in B350LP Base
- **Weight:** 5.2 oz. (147 g)

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**FIGURE 1. WIRING DIAGRAM:**

REMOTE ANNUNCIATOR

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**FIGURE 2. ROTARY ADDRESS SWITCHES:**

TENS

ONES

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**TAMPER-RESISTANCE**

Models SD355, SD355T and AD355 include a tamper-resistant capability that prevents its removal from the bracket 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 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.
2. The sensor should alarm the panel.
3. 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 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% to 10% obscuration as described in the GEMINI 501 manual. When used properly, the aerosol smoke agent will cause the smoke detector to go into alarm. Refer to the manufacturer’s published instructions for proper use of the aerosol smoke agent.

Canned aerosol simulated smoke (canned smoke agent) formulas will vary by manufacturer. Misuse or overdose 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.

For AD355, smoke entry testing should be performed immediately following the magnet test. Magnet test initiates an approximately 10 minute period when the detector’s signal processing software routines are not active. Failure to first perform the magnet test will introduce a time delay before the detector alarms.

C. Direct Heat Method (Hair dryer of 1000-1500 watts). SD355T and AD355 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 sufficient time to cool. Make sure both thermistors are tested individually.

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.

FIGURE 3:

C0145-00

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.