

# i<sup>3</sup> Series

## Photoelectric Smoke Detectors



### Conventional Initiating Devices

#### General

System Sensor's i<sup>3</sup>™ Series photoelectric and photoelectric/thermal smoke detectors represent a significant advancement in conventional detection, incorporating three key features: installation ease, intelligence, and instant inspection.

**Installation ease.** The i<sup>3</sup> Series redefines installation ease with its plug-in design. This allows an installer to pre-wire the bases included with the heads. The large wire-entry port and in-line terminals provide ample room for neatly routing the wiring inside the base. The base accommodates a variety of backbox mounting methods, as well as direct mounting with drywall anchors. To complete the installation, i<sup>3</sup> Series heads plug into the base with a simple Stop-Drop 'N Lock™ action.

**Intelligence.** i<sup>3</sup> Series detectors offer a number of intelligent features to simplify testing and maintenance. Drift compensation and smoothing algorithms, to minimize nuisance alarms, are standard in the i<sup>3</sup> Series. When connected to the 2W-MOD loop test/maintenance module, two-wire i<sup>3</sup> detectors are capable of generating a remote maintenance signal when they need cleaning. This signal is indicated by LEDs located at the module and at the panel. To read the sensitivity of i<sup>3</sup> detectors, the SENS-RDR is a wireless device that displays sensitivity in terms of percent-per-foot obscuration.

**Instant inspection.** The i<sup>3</sup> Series provides wide-angle red and green LED indicators for instant inspection of detector condition. The LEDs indicate: normal standby, out-of-sensitivity, alarm, or freeze trouble conditions. The "EZ Walk" loop test feature is available on two-wire i<sup>3</sup> Series detectors when connected to the 2W-MOD loop test/maintenance module. The "EZ Walk" feature verifies the initiating loop wiring by providing LED status indication at each detector.

#### Features

- Plug-in detector line — mounting base included.
- Large wire-entry port.
- In-line terminals with SEMS screws.
- Mounts to octagonal and single-gang backboxes, 4" (101.6 mm) square backboxes, or directly to ceiling.
- Stop-Drop 'N Lock attachment to base.
- Removable detector cover and chamber for easy cleaning.
- Built-in remote maintenance signaling.
- Drift compensation and smoothing algorithms.
- Simplified sensitivity measurement.
- Wide-angle, dual-color LED indication.
- Loop testing via "EZ Walk" feature.
- Built-in test switch.

#### Specifications

##### PHYSICAL SPECIFICATIONS

**Operating Temperature Range:** For models 2W-B and 4W-B: 32°F to 120°F (0°C to 49°C); for thermal models 2WT-B and 4WT-B: 32°F to 100°F (0°C to 37.8°C).

**Operating Humidity Range:** 0% – 95% RH, non-condensing.

**Thermal Sensor:** 135°F (57.2°C) fixed (models 2WT-B, 4WT-B).



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**Freeze Trouble:** 41°F (5°C) (models 2WT-B and 4WT-B).

**Sensitivity:** 2.5%/foot (0.762%/meter) nominal.

**Input Terminals:** Utilize 14 to 22 AWG wire.

**Dimensions (including base):** 5.3" (134.62 mm) diameter, 2.0" inches (50.8 mm) high.

**Weight:** 6.3 oz. (178.6 grams).

**Mounting Options:** 3.5" (88.9 mm) octagonal backbox; 4" (101.6 mm) octagonal backbox; single-gang backbox; 4" (101.6 mm) square backbox with a plaster ring; or direct mount to ceiling.

##### ELECTRICAL SPECIFICATIONS

**Operating Voltage:** 12/24 V non-polarized nominal; 8.5 V minimum; 35 V maximum.

**Maximum Alarm Current\*** For two-wire models: 130 mA limited by control panel; For four-wire models: 20 mA @ 12 V, 23 mA @ 24 V.

**Alarm Contact Ratings:** For four-wire models: 0.5 A @ 30 VAC/VDC; not applicable for two-wire models.

LED Modes	Green LED	Red LED
Power Up	Blink every 10 seconds	Blink every 10 seconds
Normal (Standby)	Blink every 5 seconds	OFF
Out of Sensitivity	OFF	Blink every 5 seconds
Freeze Trouble	OFF	Blink every 10 seconds
Alarm	OFF	Solid ON

##### Power Up Sequence for LED Indication

Condition	Duration
Initial LED Status Indication	80 Seconds

## Architectural/Engineering Specifications

Smoke detector shall be a System Sensor i<sup>3</sup> Series model number \_\_\_\_\_, Listed to Underwriters Laboratories UL 268 Fire Protection Signaling Systems. The detector shall be a photoelectric type (models 2W-B, 4W-B) or a combination photoelectric/thermal (models 2WT-B, 4WT-B) with thermal sensor rated at 135°F (57.2°C). The detector shall include a mounting base for mounting to 3.5" (88.9 mm) and 4" (101.6 mm) octagonal, single-gang, and 4" (101.6 mm) square backboxes with a plaster ring, or directly mount to the ceiling using drywall anchors. Wiring connections shall be made by means of SEMS screws. The detector shall allow pre-wiring of the base and the head shall be a plug-in type. The detector shall have a nominal sensitivity of 2.5%/foot (0.762%/meter) as measured in the UL smoke box. The detector shall be capable of automatically adjusting its sensitivity by means of drift compensation and smoothing algorithms. The detector shall provide dual-color LED indication which blinks to indicate power-up, normal standby, out-of-sensitivity, alarm, and freeze trouble (models 2WT-B, 4WT-B) conditions. When used in conjunction with the 2W-MOD module, two-wire models shall include a maintenance signal to indicate the need for maintenance at the alarm control panel, and shall provide a loop testing capability to verify the circuit without testing each detector individually.

## Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. *Consult factory for latest listing status.*

- **UL/ULC Listed:** S911
- **FM Approved**
- **CSFM:** 7272-1653:152
- **MEA:** 290-01-E
- **Maryland State Fire Marshal:** Permit # 2093

## Product Line Information

**2W-B:** Two-wire photoelectric smoke detector.

**C2W-BA:** Same as 2W-B, ULC listing.

**2WT-B:** Two-wire photoelectric smoke detector with 135°F (57.2°C) fixed thermal sensor.

**C2WT-BA:** Same as 2WT-B, ULC listing.

**4W-B:** Four-wire photoelectric smoke detector.

**C4W-BA:** Same as 4W-B, ULC listing.

**4WT-B:** Four-wire photoelectric smoke detector with 135°F (57.2°C) fixed thermal sensor.

**C4WT-BA:** Same as 4WT-B, ULC listing.

### ACCESSORIES:

**2W-MOD2:** Two-wire loop test/maintenance module.

**SENS-RDR:** Sensitivity reader.

**A77-AB2:** Retrofit adapter bracket, 6.6" (167.7cm) diameter.

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