



November 7, 2002

DN-6885 • I-80

# i<sup>3</sup>™ Series Photoelectric Smoke Detectors

for use with the SFP-2402 and SFP-2404  
Section: 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, or an SFP-2402/-2404 panel, 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 or an SFP-2402/-2404 panel. 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).

**Storage temperature range:** -4°F to +158°F (-20°C to +70°C).



**MEA**  
290-01-E



California  
State Fire  
Marshal  
7272-1209:210

**MARYLAND**  
State Fire Marshal  
Permit # 2093



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**Operating humidity range:** 10% – 95% RH, non-condensing.

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

**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 ripple voltage:** 30% of nominal (peak to peak).

**Standby current:** 50 µA maximum average. **Peak standby current:** for two-wire models: 100 µA; not applicable for four-wire models.

**Maximum start-up capacitance:** for two-wire models: 0.1 µF; not applicable for four-wire models.

**Latching alarm:** reset by momentary power interruption.

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This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472



**Maximum initial start-up time:** *for two-wire models:* 45 seconds; *for four-wire models:* 15 seconds.

**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.

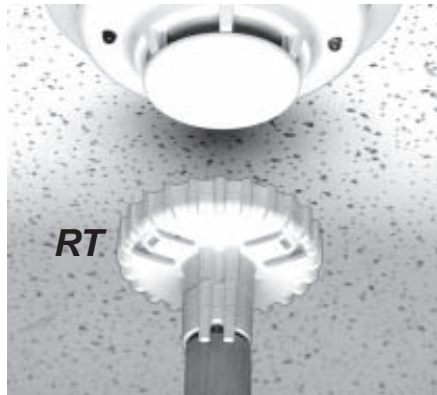
**Alarm contact ratings:** *for four-wire models:* 0.5 A @ 30 VAC/VDC; not applicable for two-wire models.

**Alarm reset voltage:** 2.5 V.

**Alarm reset time:** 0.3 seconds.

## ARCHITECTURAL/ENGINEERING SPECIFICATIONS

Smoke detector shall be a System Sensor i3™ 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.



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## LED MODES

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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.
" " " (if excessive electrical noise is present)	4 minutes.

## PRODUCT LINE INFORMATION

- 2W-B** Two-wire photoelectric smoke detector.
- 2WT-B** Two-wire photoelectric smoke detector with 135°F (57.2°C) fixed thermal sensor.
- 4W-B** Four-wire photoelectric smoke detector.
- 4WT-B** Four-wire photoelectric smoke detector with 135°F (57.2°C) fixed thermal sensor.

### Accessories:

- 2W-MOD** Two-wire loop test/maintenance module.
- SENS-RDR** Sensitivity reader.
- RT** Removal/replacement tool.
- A77-AB2** Retrofit adapter bracket.



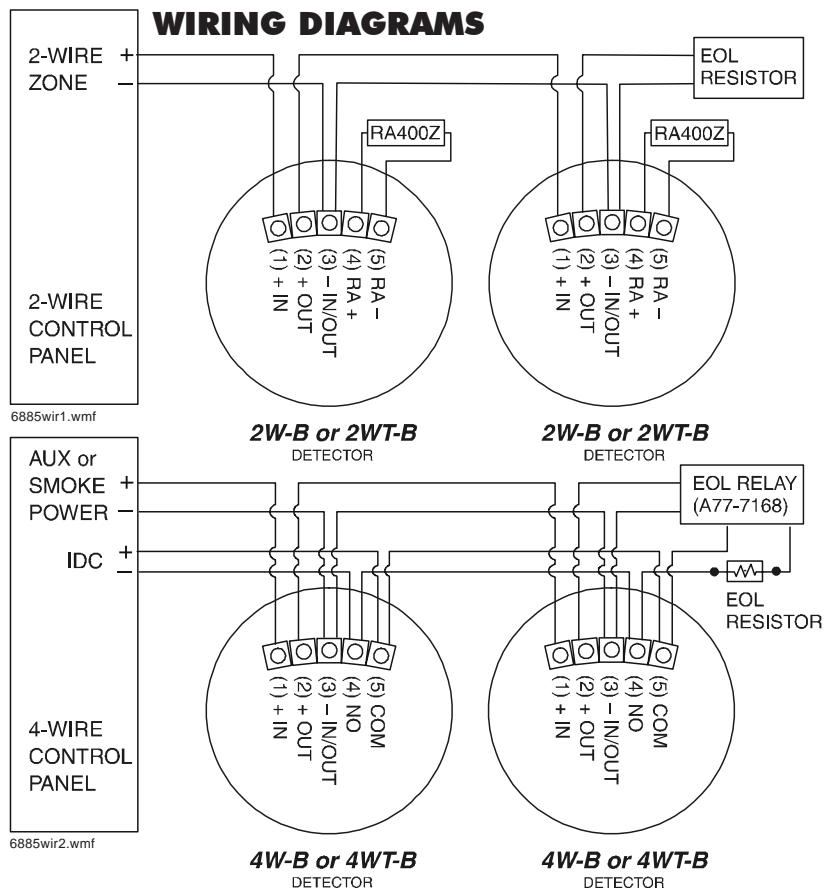
**SENS-RDR**  
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### 2W-MOD



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## WIRING DIAGRAMS



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