



## Photoelectric Smoke Detectors

*System Sensor i<sup>3</sup>™ series smoke detectors represent significant advancement in conventional detection. The i<sup>3</sup> family is founded on three principles: installation ease, intelligence, and instant inspection.*



### Features

- Plug-in detector line, mounting base included
- Large wire entry port
- In-line terminals with SEMS screws
- Mounts to octagonal and single-gang back boxes, 4-square back boxes, or direct to ceiling
- Stop-Drop 'N Lock attachment to base
- Removable detector cover and chamber
- 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

**Installation ease.** The i<sup>3</sup> line redefines installation ease with its plug-in design. This allows an installer to pre-wire bases (included with 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 back box mounting methods as well as direct mounting with drywall anchors. To complete the installation, i<sup>3</sup> heads plug into the base with a simple Stop-Drop 'N Lock™ action.

**Intelligence.** i<sup>3</sup> detectors offer a number of intelligent features to simplify testing and maintenance. Drift compensation and smoothing algorithms are standard with the i<sup>3</sup> line to minimize nuisance alarms. 2-wire i<sup>3</sup> detectors can generate a remote LED-indicated maintenance signal when connected to the 2W-MOD2 loop test/maintenance module or a panel equipped with the i<sup>3</sup> protocol. The SENS-RDR, a wireless device, displays the sensitivity of i<sup>3</sup> detectors 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 the detector's condition: normal standby, out-of-sensitivity, alarm, or freeze trouble. When connected to the 2W-MOD2 loop test/maintenance module or a panel with the i<sup>3</sup> protocol, the EZ Walk loop test feature is available on 2-wire i<sup>3</sup> detectors. This feature verifies the initiating loop wiring by providing LED status indication at each detector.

### Agency Listings



# Smoke Detector Specifications

## Architectural/Engineering Specifications

Smoke detector shall be a System Sensor i<sup>3</sup> Series model number \_\_\_\_\_, listed to Underwriters Laboratories UL 268 for Fire Protection Signaling Systems. The detector shall be a photoelectric type (Model 2W-B, 4W-B) or a combination photoelectric/thermal (Model 2WT-B, 4WT-B) with thermal sensor rated at 135°F (57.2°C). The detector shall include a mounting base for mounting to 3½-inch and 4-inch octagonal, single-gang, and 4-inch square back boxes with a plaster ring, or direct 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 percent-per-foot nominal 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 that blinks to indicate power up, normal standby, out of sensitivity, alarm, and freeze trouble (Model 2WT-B, 4WT-B) conditions. When used in conjunction with the 2W-MOD2 module, 2-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.

## Electrical Specifications

|                               |                                                                             |
|-------------------------------|-----------------------------------------------------------------------------|
| <b>Operating Voltage</b>      | Nominal: 12/24 V non-polarized<br>Minimum: 8.5 V<br>Maximum: 35 V           |
| <b>Maximum Ripple Voltage</b> | 30% peak to peak of applied voltage                                         |
| <b>Standby Current</b>        | 2-wire: 50 µA maximum average; 4-wire: 50 µA maximum average                |
| <b>Maximum Alarm Current</b>  | 2-wire: 130 mA limited by control panel; 4-wire: 20 mA @ 12 V, 23 mA @ 24 V |
| <b>Peak Standby Current</b>   | 2-wire: 100 µA; 4-wire: n/a                                                 |
| <b>Alarm Contact Ratings</b>  | 2-wire: n/a; 4-wire: 0.5 A @ 30 V AC/DC                                     |

## Physical Specifications

|                                    |                                                                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dimensions (including base)</b> | 5.3 inches (127 mm) diameter; 2.0 inches (51 mm) height                                                                                                  |
| <b>Weight</b>                      | 6.3 oz (178 g)                                                                                                                                           |
| <b>Operating Temperature Range</b> | 2W-B and 4W-B: 32°F to 120°F (0°C to 49°C); 2WT-B and 4WT-B: 32°F to 100°F (0°C to 37.8°C)                                                               |
| <b>Operating Humidity Range</b>    | 0 to 95% RH non-condensing                                                                                                                               |
| <b>Thermal Sensor</b>              | 135°F (57.2°C) fixed                                                                                                                                     |
| <b>Freeze Trouble</b>              | 2WT-B and 4WT-B only: 41°F (5°C)                                                                                                                         |
| <b>Sensitivity</b>                 | 2.5%/ft nominal                                                                                                                                          |
| <b>Input Terminals</b>             | 14 to 22 AWG                                                                                                                                             |
| <b>Mounting</b>                    | 3½-inch octagonal back box<br>4-inch octagonal back box<br>Single-gang back box<br>4-inch square back box with a plaster ring<br>Direct mount to ceiling |

| LED Modes          |                        |                        | Power-Up Sequence for LED Indication |            |
|--------------------|------------------------|------------------------|--------------------------------------|------------|
| LED Mode           | Green LED              | Red LED                | Condition                            | Duration   |
| Power up           | Blink every 10 seconds | Blink every 10 seconds | Initial LED status indication        | 80 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                  |                                      |            |

## Ordering Information

| Model       | Thermal                               | Wiring | Alarm Current                        |                                                        |
|-------------|---------------------------------------|--------|--------------------------------------|--------------------------------------------------------|
| 2W-B        | No                                    | 2-wire | 130 mA max. limited by control panel |                                                        |
| 2WT-B       | Yes                                   | 2-wire | 130 mA max. limited by control panel |                                                        |
| 4W-B        | No                                    | 4-wire | 20 mA @ 12 V, 23 mA @ 24 V           |                                                        |
| 4WT-B       | Yes                                   | 4-wire | 20 mA @ 12 V, 23 mA @ 24 V           |                                                        |
| Accessories |                                       |        |                                      |                                                        |
| 2W-MOD2     | 2-wire loop test / maintenance module |        | RT                                   | Removal / replacement tool                             |
| SENS-RDR    | Sensitivity reader                    |        | A77-AB2                              | Retrofit adapter bracket, 6.6 inch (16.76 cm) diameter |



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