

Series Photoelectric Smoke Detectors



Models Available

Two-Wire Models

2W-B	2-wire standard
2WT-B	2-wire standard with thermal

Four-Wire Models

4W-B	4-wire standard
4WT-B	4-wire standard with thermal

Accessories

2W-MOD2	2-wire loop test/maintenance module
SENS-RDR	Sensitivity reader
RT	Removal/replacement tool
A77-AB2	Retrofit adapter bracket



Product Overview

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-square backboxes, or direct 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

System Sensor's i³™ series smoke detectors represent a significant advancement in conventional detection. The i³ family is founded on three principles: Installation ease, Intelligence, and Instant inspection.

Installation ease. The i³ line 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 back box mounting methods as well as direct mounting with drywall anchors. To complete the installation, i³ heads plug-in to the base with a simple Stop-Drop 'N Lock action.

Intelligence. i³ detectors offer a number of intelligent features to simplify testing and maintenance. Drift compensation and smoothing algorithms are standard with the i³ line, to minimize nuisance alarms. When connected to the 2W-MOD2 loop test/maintenance module, or a panel equipped with the i³ protocol, 2-wire i³ detectors are capable of generating a remote maintenance signal when they are in need of cleaning. This signal is indicated via an LED located at the module and the panel. To read the sensitivity of i³ detectors, the SENS-RDR is a wireless device that displays the sensitivity in terms of percent per foot obscuration.

Instant inspection. The i³ series provides wide angle red and green LED indicators for instant inspection of the detector condition, indicating: normal standby, out-of-sensitivity, alarm, or freeze trouble conditions. When connected to the 2W-MOD2 loop test/maintenance module or a panel with the i³ protocol, the EZ Walk loop test feature is available on 2-wire i³ detectors. This feature verifies the initiating loop wiring by providing LED status indication at each detector.



S911

3011446

7272-1209:210

290-01-E

2093

Architect/Engineer Specifications

Smoke detector shall be a System Sensor i³ 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% 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 which 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

Operating Voltage

Nominal: 12/24V non-polarized
Min.: 8.5V
Max.: 35V

Standby Current

2-wire: 50 µA maximum average
4-wire: 50 µA maximum average

Peak Standby Current

2-wire: 100 µA
4-wire: n/a

Maximum Ripple Voltage

30% peak to peak of applied voltage

Maximum Alarm Current

2-wire: 130 mA limited by control panel
4-wire: 20 mA @12V, 23mA @ 24V

Alarm Contact Ratings

2-wire: n/a
4-wire: 0.5 A @ 30V AC/DC

LED Modes

LED Mode

Power up
Normal (standby)
Out of sensitivity
Freeze trouble
Alarm

Green LED

Blink every 10 seconds
Blink every 5 seconds
off
off
off

Red LED

Blink every 10 seconds
off
Blink every 5 seconds
Blink every 10 seconds
Solid

Power Up Sequence for LED Indication

Condition

Initial LED status indication

Duration

80 seconds

Physical Specifications

Operating Temperature Range

2W-B and 4W-B: 32°F–120°F (0°C–49°C)
2WT-B and 4WT-B: 32°F–100°F (0°C–37.8°C)

Sensitivity

2.5%/ft. nominal

Operating Humidity Range

0 to 95% RH non-condensing

Input Terminals

14–22 AWG

Thermal Sensor

135°F (57.2°C) fixed

Dimensions (including base)

5.3 inches (127 mm) diameter
2.0 inches (51 mm) height

Freeze Trouble

2WT-B and 4WT-B only: 41°F (5°C)

Weight

6.3 oz. (178 grams)

Mounting

3½-inch octagonal back box
4-inch octagonal back box
Single gang back box
4-inch square back box with a plaster ring
Direct mount to ceiling

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 @ 12V, 23mA @ 24V
4WT-B	Yes	4-wire	20 mA @ 12V, 23mA @ 24V
Model	Description		
2W-MOD2	2-wire loop test / maintenance module		
SENS-RDR	Sensitivity reader		
RT	Removal / replacement tool		
A77-AB2	Retrofit adapter bracket, 6.6 in. (16.76cm) diameter		

System Sensor Sales and Service

System Sensor Headquarters

3825 Ohio Avenue
St. Charles, IL 60174
Ph: 800/SENSOR2
Fx: 630/377-6495
www.systemsensor.com

System Sensor Canada

Ph: 905.812.0767
Fx: 905.812.0771

System Sensor Europe

Ph: 44.1403.891920
Fx: 44.1403.891921

System Sensor in China

Ph: 86.29.8832.0119
Fx: 86.29.8832.5110

System Sensor in Singapore

Ph: 65.6273.2230
Fx: 65.6273.2610

System Sensor – Far East

Ph: 85.22.191.9003
Fx: 85.22.736.6580

System Sensor – Australia

Ph: 613.54.281.142
Fx: 613.54.281.172

System Sensor – India

Ph: 91.124.637.1770 x.2700
Fx: 91.124.637.3118

System Sensor – Russia

Ph: 70.95.937.7982
Fx: 70.95.937.7983