SYSTEM SENSOR®

Photoelectric Smoke Detectors

System Sensor's i³™ series smoke detectors represent significant advancement in conventional detection. The i³ 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 backboxes, 4-square backboxes, 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

Agency Listings

ULC

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. Two-wire i³ detectors needing cleaning can generate a remote maintenance signal, when connected to the C2W-MOD2A loop test/maintenance module, or to a panel equipped with the i³ protocol. This signal is indicated by LEDs located at the module and the panel. The CSENS-RDRA, a wireless device, displays the sensitivity of i³ detectors 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's condition: normal standby, out-of-sensitivity, alarm, or freeze trouble. When connected to the C2W-MOD2A loop test/maintenance module or a panel with the i³ protocol, the EZ Walk loop test feature is available on two-wire i³ detectors. This feature verifies the initiating loop wiring by providing LED status indication at each detector.

i^3 Smoke Detector Specifications

Architectural/Engineering Specifications

Smoke detector shall be a System Sensor i³ Series model number_____, listed to ULC. The detector shall be a photoelectric type (Model C2W-BA, C4W-BA) or a combination photoelectric/thermal (Model C2WT-BA, C4WT-BA) 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 ULC 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 C2WT-BA, C4WT-BA) conditions. When used in conjunction with the C2W-MOD2A 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 Minimum: 8.5V Maximum: 35V
Maximum Ripple Voltage	30% peak to peak of applied voltage
Standby Current	2-wire: 50 μA maximum average; 4-wire: 50 μA maximum average
Maximum Alarm Current	2-wire: 130 mA limited by control panel; 4-wire: 20 mA @12V, 23mA @ 24V
Peak Standby Current	2-wire: 100 μA; 4-wire: n/a
Alarm Contact Ratings	2-wire: n/a; 4-wire: 0.5 A @ 30V AC/DC

Physical Specifications

Dimensions (including base)	5.3 inches (127 mm) diameter; 2.0 inches (51 mm) height
Weight	6.3 oz. (178 grams)
Operating Temperature Range	C2W-BA and C4W-BA: 32°F–120°F (0°C–49°C); C2WT-BA and C4WT-BA: 32°F–100°F (0°C–37.8°C)
Operating Humidity Range	0 to 95% RH non-condensing
Thermal Sensor	135°F (57.2°C) fixed
Freeze Trouble	C2WT-BA and C4WT-BA only: 41°F (5°C)
Sensitivity	2.5%/ft. nominal
Input Terminals	14–22 AWG
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

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
C2W-BA	No	2-wire	130 mA max. limited by control panel
C2WT-BA	Yes	2-wire	130 mA max. limited by control panel
C4W-BA	No	4-wire	20 mA @ 12V, 23mA @ 24V
C4WT-BA	Yes	4-wire	20 mA @ 12V, 23mA @ 24V

Accessories			
C2W-MOD2A	2-wire loop test / maintenance module	RT	Removal / replacement tool
CSENS-RDRA	Sensitivity reader	A77-AB2	Retrofit adapter bracket, 6.6 in. (16.76cm) diameter

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