



Frequently Asked Questions and Answers

Q. Why is the product called the i³™ series?

A. The i³™ series represents a breakthrough in detection solutions, based upon three “I” principles: Installation ease, Intelligence, and Instant Inspection. Installation ease is the result of the plug-in design, featuring the Stop-Drop 'N Lock™ attachment, efficient wire management, and in-line terminals, all intended to reduce installation time. Intelligence refers to intelligent features provided such as a remote maintenance signal, drift compensation, and smoothing algorithms. These features minimize the likelihood of nuisance alarms. Instant inspection refers to the way in which the i³ detectors' sensitivity can be measured, as well as the red and green LED's that readily indicate the status of the smoke detector.

Q. What models are included in the i³ series?

A. The i³ series now offers a full-line of detectors and accessories to address a broader range of applications. They include:

<u>Detector Type</u>	<u>Model Number</u>
Two-wire standard	2W-B
Two-wire standard with 135° F thermal	2WT-B
Two-wire sounder with 135° F thermal	2WTA-B
Two-wire Form C relay with 135° F thermal	2WTR-B
Four-wire standard	4W-B
Four-wire standard with 135° F thermal	4WT-B
Four-wire sounder with 135° F thermal	4WTA-B
Four-wire Form C relay with 135° F thermal	4WTR-B
Four-wire sounder, with Form C relay, 135° F thermal	4WTAR-B
Four-wire isolated thermal, with sounder, Form C relay	4WITAR-B

<u>Accessories</u>	<u>Model Number</u>
Loop test/maintenance module	2W-MOD2
Reversing relay/synchronization module	RRS-MOD
Sensitivity reader	SENS-RDR
Removal/replacement tool	RT
Retrofit adapter bracket	A77-AB2

Q. How does the new isolated thermal model operate?

A. The i³ isolated thermal detector, model number 4WITAR-B, operates similarly to the 2112/24AITR. Specifically, when the detector's photoelectric chamber detects smoke, only a local alarm indication is provided. Conversely, should the detector's thermal sensor be activated, a general alarm condition will result.

Q. Is the 2W-MOD no longer available?

A. The 2W-MOD was replaced by the 2W-MOD2. This new accessory accommodates all 2-wire standard, sounder, and relay i³ detectors.

Q. Can the original 2W-MOD be used with the new i³ sounder or Form C relay models?

A. No. The 2W-MOD cannot be used with the new i³ sounder and Form C relay models. However, the new 2W-MOD2 can be used on all i³ detectors, both old and new.

Q. Can the other i³ accessories be used with the new i³ sounder or Form C relay models?

A. All other i³ accessories may be used with the new i³ sounder and Form C relay models. This includes the sensitivity reader, removal/replacement tool, and the retrofit adapter bracket.

Q. What is the RRS-MOD and what are its functions?

A. The RRS-MOD serves two purposes. First, it activates all i³ sounders on a loop when one goes into alarm, by reversing the polarity of the power circuit. This allows the capability of installing multiple i³ sounder models on a loop. Second, the RRS-MOD synchronizes the output of all i³ detectors on the loop, to ensure a clear audible signal.

Q. Can the RR2 be used with i³ sounder models?

A. No. Due to design differences between the i³ series and the 2100 series sounder models, only the RRS-MOD should be used with i³ sounder models.

Q. Is the i³ smoke detector shipped complete with its base?

A. Yes. The head and base are shipped as one item, to reduce the number of ordering and inventory line items.

Q. Can 2-wire i³ smoke detectors be interchanged with 4-wire i³ bases or vice-versa?

A. No. The units are keyed so only the correct head and base combination will fit together. The bases are clearly marked with a "two-wire" or "four-wire" designation to eliminate any confusion and improve installation ease.

Q. Can i³ detectors be directly mounted to the wall or ceiling?

A. Yes. If allowed by the AHJ or local codes, i³ detectors may be directly mounted to the wall or ceiling, to eliminate the need for back boxes.

Q. To which back boxes can the i³ mounting base be attached?

A. The i³ detectors can be mounted on a wide range of boxes including single-gang, 3½" or 4" octagonal junction boxes, and 4" square boxes with a plaster ring.

Q. How does the i³ series address retrofit applications?

A. An optional adapter bracket, model number A77-AB2, is available for installations that require cover-ups from previous installations, to eliminate unsightly "rings".

Q. What is meant by i³'s Stop-Drop 'N Lock attachment?

A. Stop-Drop 'N Lock attachment refers to the simplified mounting of the i³ head onto its base. Whereas most plug-in detectors require keying the head onto a base, the Stop-Drop 'N Lock feature ensures the i³ head is secured in less than one rotation, even in low-light conditions.

Q. How many detectors may be placed on a loop?

A. The two-wire compatibility listing indicates the number of two-wire detectors that may be placed on a loop. If using the loop test/maintenance module, model number 2W-MOD2, a maximum of 25 two-wire detectors may be connected to the 2W-MOD2. The number of four-wire detectors is based on the line impedance and power supply of the control panel.

Q. How are i³ detectors tested?

A. i³ detectors include a mechanical test switch located on the head, between the red and green LEDs, to eliminate the need for magnets and counting LED's. Additional testing methods, such as the smoke entry or direct heat method on thermal models (hair dryer) may also be utilized.

Q. Can i³ detectors be field-cleaned? How?

A. All i³ detectors feature a removable detector cover and screen for cleaning. No tools are required. Replacement of the screen is not required if it is vacuumed or blown with canned air.

Q. How is the i³ head removed?

A. Being a plug-in design, i³ detectors allow removal from the base with a counter-clockwise motion. This may be done by hand, or with the optional i³ removal tool, model number RT. The removal tool may be connected to an extender pole or broom handle for easy removal while standing at floor level, to eliminate the need for a ladder.

Q. What intelligent features are provided with the i³ detector line?

A. The i³ series provides intelligent capabilities that most conventional smoke detectors do not. They include remote maintenance signaling, drift compensation, and smoothing algorithms.

Q. What is meant by the i³ remote maintenance signal and what benefits does it offer?

A. The i³ remote maintenance signal refers to the ability of indicating at the panel or maintenance module when a 2-wire i³ detector on a loop requires cleaning, or is in a freeze trouble condition. This is intended to provide earlier warning when a detector has either become dirty, or is in an environment where the temperature is below 41°F. The remote maintenance signal is standard on 2-wire i³ detectors, and is enabled through the connection to the i³ loop test/maintenance module, or i³ Ready™ control panels.

Q. Do i³ detectors provide a local status indication when they are in need of cleaning, or are in a freeze trouble condition?

A. The i³ remote maintenance signal is in addition to local LED status indications provided on all i³ series detectors.

Q. What other functions are included in the 2W-MOD2 loop test/maintenance module?

A. In addition to receiving the i³ remote maintenance signal, the 2W-MOD2 performs the following functions:

- Transmits the remote maintenance signal to the panel
- Allows 2-wire i³ detectors to be used on a 4-wire loop
- Initiates the EZ Walk loop test
- Provides any panel with a Style D initiating circuit

Q. Is the 2W-MOD2 module required for all installations?

A. No. Standard detection functions, including drift compensation and smoothing algorithms do not require the 2W-MOD2. The 2W-MOD2 is only required when the installation requires any of the enhanced functions provided by the 2W-MOD2. Additionally, should the control panel be i³ Ready, the 2W-MOD2 is automatically built into the panel.

Q. Which control panels are i³ Ready?

A. Currently, the i³ protocol is included in the Fire-lite MS-2 and MS-4 panels. System Sensor is actively working with additional panel manufacturers to incorporate the i³ protocol into their panels.

Q. What is drift compensation and what benefit does it offer?

A. Drift compensation refers to a detector's automatic adjusting of its alarm sensitivity. This compensates for any changes over time in the factory settings for smoke and/or fire detection. It is this compensation that reduces the occurrence of nuisance alarms and increases the length of time between required maintenance.

Q. What are smoothing algorithms and what benefits do they offer?

A. Smoothing algorithms smooth out a detector's interpretation of quick, short duration "spikes" within the sensing chamber. These spikes may be caused by airborne dust particles or insects inside the photoelectric sensing chamber, or electric noise in the raw signal. Much like alarm verification on a control panel, the i³'s smoothing algorithms compare these signals with smoke profiles typical in an actual fire condition, to reduce the likelihood of nuisance alarms.

Q. What color LED's are provided?

A. A red and green LED are provided, which will begin blinking within two minutes after power-up or reset. The status of the detector will be clearly indicated as follows:

- Normal standby: Green LED blinks every 5 seconds
- Out of sensitivity: Red LED blinks every 5 seconds
- Freeze trouble: Red LED blinks every 10 seconds
- Alarm: Red LED is solid

Q. How can the i³ detector's precise sensitivity reading be determined?

A. An optional sensitivity reader, model number SENS-RDR, can be used to determine precise sensitivity readings. The SENS-RDR interprets an infrared signal from the i³ detector and displays the sensitivity reading in percentage per foot obscuration. The reader can be hand held at the detector or at floor level (with an extension pole). This unique design eliminates the need for additional meters, magnets, counting LED's or connecting to the detector. An LED and audible (chirp) indication demonstrate the reading is received. A text message then indicates whether or not cleaning is recommended.

Q. What is the EZ walk test and how does it work?

A. The EZ walk test is a system test initiated at the 2W-MOD2 that places all compatible detectors in test mode, allowing installers to verify the loop without pressing the test switch at each head. A button is provided on the 2W-MOD2 which, when pressed, activates the EZ walk test.

Q. What additional features are included in the i³ series of detectors?

A. The i³ thermal model smoke detectors, 2WT-B, 2WTA-B, 2WTR-B, 4WTB, 4WTA-B, 4WTR-B, 4WTAR-B, and 4WITAR-B are currently the only standard conventional smoke detectors with the capability of sensing a freeze condition below 41°F.

Two-wire models, 2W-B, 2WT-B, 2WTA-B, and 2WTR-B, include outputs for an optional sounder annunciator, such as System Sensor's RA400Z, in applications where codes dictate.

All i³ mounting bases include a tamper-resistant feature to prevent unwanted and costly tampering of the smoke detector.

Q. How does one determine 2-wire compatibility listings?

A. An extensive list of 2-wire compatibility listings can be secured on the System Sensor website at www.systemsensor.com; by requesting Documents on Demand at 1-800-SENSOR2, extension 3; or in the Product Information section of this CD. If wired in conjunction with the 2W-MOD2 loop test/maintenance module, 2-wire i³ detectors can be used on any compatible 2-wire or 4-wire fire alarm control panel.