



July 11, 2001

DN-5473 • H-112

## IPX-751

### Advanced Multi-Sensor Low-Profile Intelligent Detector

Section: Intelligent/Addressable Devices

## GENERAL

The NOTIFIER IPX-751 is an intelligent addressable, multi-sensing, low-profile (height measures only 1.66") detector designed for use on the NOTIFIER AFP-400, AFP-300, AFC-600, AFP1010, and AM2020 systems.

Advanced Multi-Sensor (AMS), model IPX-751, is a micro-processor-based smoke detector which uses a combination of photoelectric, ionization, and thermal sensing technologies. The AMS utilizes advanced algorithms with time-based analysis to provide early warning and an accurate analysis of alarm situations. These state-of-the-art algorithms also provide a high immunity to nuisance alarms. Dual bi-color LEDs are visible from 360°. Both LEDs flash green in standby and glow steady red for alarm.

Ionization detectors are designed for detecting fast flaming fires, and photoelectric detectors are designed for detecting slow smoldering fires. The two technologies are merged to create a detector designed for both types of fires. By including a shared volume chamber designed for both technologies, the IPX-751 can be used in a variety of applications. A thermal element is included for fires that generate a generous amount of heat, without smoke particulates.

Because the IPX-751 is intelligent and addressable, the control panel can provide the firefighter with a pinpoint description of the fire's location. The control panel has the capability of not only determining the detector's location but also the amount of smoke in the chamber. The detector may be set for different sensitivity settings dependent on the environment.

Intelligent devices continually send obscuration values to the control panel. These values allow the control panel to determine if a detector has accumulated an excessive amount of dirt or dust. A "maintenance" required indication allows the installer to clean the smoke detector before an unwanted false alarm occurs.

## FEATURES

- Sleek, low-profile design (height measures only 1.66 inches).
- Intelligent addressable communication.
- Ideal in environments prone to nuisance alarms.
- Combination (ION, PHOTO, and THERMAL) design.
- Stable communication technique with noise immunity.
- Low standby current.
- Rotary Decade 01 to 99 address switches.
- Up to 99 detectors per Signaling Line Circuit (SLC).
- Built-in functional test switch activated by external magnet.
- Microprocessor-based technology.
- Mechanically integrated photoelectronic and ionization shared volume smoke chamber.
- Digital pulsewidth encoded communications with noise immunity.



**LISTED**  
S1115



CS915

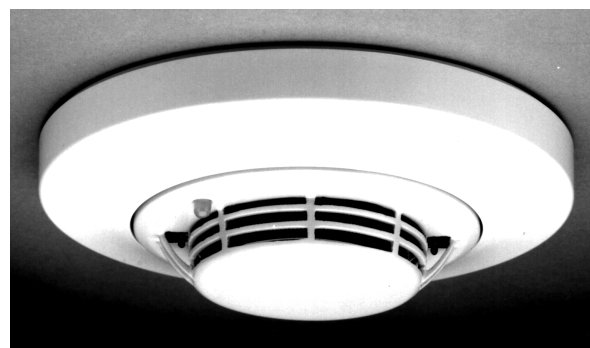
**Approved****MEA**

16-97-E

**MARYLAND**  
State Fire Marshal  
Permit # 2008



California  
State Fire  
Marshal  
7258-0028:186



**IPX-751 with B710LP base**



**IPX-751 with RMK400 recessed mounting kit**

- Dual bi-color LED design provides 360° viewing angle.
  - LEDs flash GREEN in Standby - normal condition.
  - LEDs glow RED when in Alarm.
- LED blink is optional on NOTIFIER intelligent control panels.
- Visible LEDs blink every time the detector is addressed, and illuminate steady on alarm (LED blink is optional).
- Optional remote, single-gang, LED (RA400Z).
- Optional relay, isolator, or sounder bases.
- Listed to UL 268.

## SPECIFICATIONS

**Voltage range:** 15 – 28 volts DC peak.

**Standby current:** 310  $\mu$ A @ 24 VDC.

**with B224RB:** 430  $\mu$ A @ 24 VDC (includes detector).

**with B224BI:** 560  $\mu$ A @ 24 VDC (includes detector).

**LED current:** 10 mA @ 24 VDC ("ON").

**Loop resistance:** 40 ohms maximum.

**Diameter:** 4.1 inches (10.4 cm).

**Height:** 1.66 inches (4.22 cm).

**Weight:** 3.6 oz. (104 g).

**Temperature:** 0° to 38°C (32° to 100°F).

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

**NOTIFIER**

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**ISO 9001**  
**CERTIFIED**  
ENGINEERING & MANUFACTURING

**Air velocity rating:** 0 to 4,000 ft/min (20.32 m/sec).

**Relative humidity:** 10% – 93% non-condensing.

**Thermal sensor:** 135°F (57°C) fixed.

#### AVAILABLE BASES:

**B710LP** 6.2 inches (157 mm) diameter.

**B501** 4.1 inches (104 mm) diameter.

**B501BH** Sounder base assembly.

Includes B501 base.

**B224RB Relay Base:** Screw terminals: Up to 14 AWG (2.0 mm<sup>2</sup>).

Relay type: Form-C.

Rating: 2.0 A @ 30 VDC resistive.  
0.3 A @ 110 VDC inductive.  
1.0 A @ 30 VDC inductive.

Dimensions: 6.2" x 1.2" (157 x 36 mm).

**B224BI Isolator Base:** Dimensions: 6.2" x 1.2" (157 x 6 mm). Maximum 25 devices (but only 2 if IPX-751\*) between isolator bases.

**\*NOTE ON MAXIMUM NUMBER OF DEVICES:** When **NO relay bases** are used, a maximum load of 25 addressable devices can be connected to an isolator, or between a pair of isolators and/or isolator bases to ensure that the isolators power up correctly. **IPX-751 detectors are an exception to this;** only **TWO** IPX-751 devices, not 25, are the maximum load. **When using relay bases,** consult data sheet DN-2243 (ISO-X) for device limitations between isolator modules and isolator bases.

## INSTALLATION

The IPX-751 plug-in detector uses a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove detectors without using a ladder. Mount base on a box at least 1.5" (38.1 mm) deep. Suitable mounting base boxes include:

- 4" (101.6 mm) square box.
- 3-1/2" (88.9 mm) or 4" (101.6 mm) octagonal box.
- Single-gang box (except relay or isolator base).

## ORDERING INFORMATION

**IPX-751** Low-profile intelligent combination sensor. Must be mounted to one of the bases listed below.

**B710LPBP** Standard U.S. Low Profile base, package of ten (10).

**B501BP** Standard European flangeless base, package of ten (10).

**B501BH** Sounder base, includes B501.

**B224RB** Intelligent relay base.

**B224BI** Intelligent isolator base. Isolates the SLC from Loop Shorts.

#### Accessories:

**F110** Retrofit replacement flange for BX-501 base.

**RA400Z** \*Remote LED annunciator. Fits U.S. single-gang electrical box.

**MOD400R** Detector sensitivity test tool. Use with most analog or digital multimeters. Satisfies requirement of NFPA 72 for sensitivity testing.

**SMK400** Surface mounting kit provides for entry of surface wiring conduit. *For use with B501 base only.*

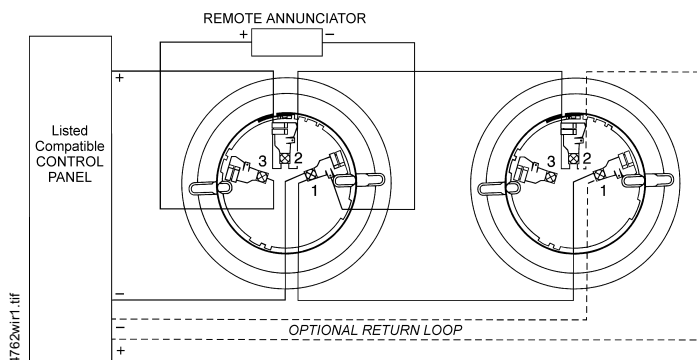
**RMK400** Recessed mounting kit. *For use with B501 base only.*

**M02-04-01** Test magnet.

**XR-2** Detector removal tool. Allows installation and/or removal of 700 Series detector heads from base in high ceiling installations.

**XP-4** Extension pole for XR-2. Comes in three 5 ft. sections.

\* Supported by B710LP and B501 bases only.

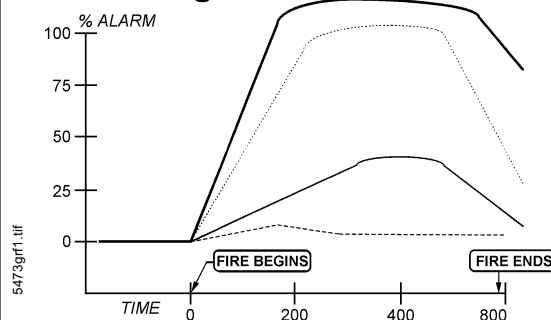


Wiring Diagram (standard base)

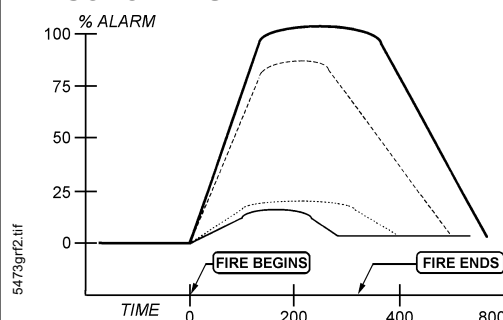
## FIRE TEST COMPARISON

### Multi-Sensing Detector vs. Individual Sensors

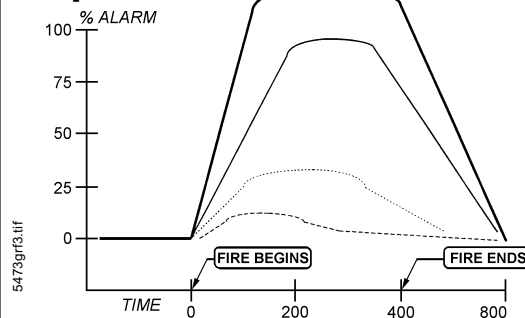
#### Smoldering Fire



#### Alcohol Fire



#### Paper Fire



Multi-Sensing Detector

Ion Sensor

Photo Sensor  
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Thermal Sensor  
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