



Fire-Lite® Alarms
INCORPORATED

June 19, 1998

F-555

1451
2-Wire and 4-Wire
Ionization Smoke Detector
Section: Conventional Initiating Devices

GENERAL

The System Sensor 400 Series plug-in ionization smoke detectors respond quickly to both fast flaming and slow smoldering fires as required by UL 268. Unipolar dual chamber sensor has the sensitivity needed to quickly detect smoke, and the stability needed to avoid false alarms.

FEATURES

- Unique dual unipolar sensor:
 - Provides exceptional stability.
 - Factory preset at 1.9% nominal sensitivity.
 - Stable operation up to 1,200 feet per minute (6 meters per second) air velocities.
- Removable cover for field cleaning.
- Two visible LEDs "blink" in standby.
- Sealed against dirt, insects, and back pressure.
- Three-year limited warranty.
- Field metering of detector sensitivity.
- Built-in test switch.
- Low standby current.
- Built-in tamper-resistant feature.
- Designed for direct surface or electrical box mounting.
- 360° field viewing angle of the visual alarm LEDs.
- Insect-resistant screening (0.020"/0.508 mm openings).
- Easy plug-in of the head to base.
- SEMS screws for easy wiring.
- Optional recess mounting.
- Field-adjustable sensitivity.

APPLICATIONS

Use to contribute to life safety, fire protection, and property conservation. Superior to photoelectric detectors in detecting fast-flaming fires. Superior to bipolar detectors in avoiding false alarms.

CONSTRUCTION & OPERATION

All 400 Series plug-in ionization smoke detectors contain a unique dual-source, dual unipolar chamber detection design which will sense the presence of smoke particles produced by fast combustion as well as slow smoldering fires. Additional key features include a blinking LED standby status indicator, an easily visible alarm indication, and provision for convenient field test and metering.

The back of the detector is sealed to block back-pressure air flow. The chamber is protected by a fine mesh (0.020"/0.508 mm) screen to minimize problems with dust, dirt, and insects. If cleaning is required, it is easy to remove the cover (with a special tool) and obtain access to the screen and chamber to perform a thorough cleaning.

INSTALLATION

Model 1451 detectors are intended for use with Fire-Lite UL-listed control panels. Maximum number of detectors per zone



S911



CS308



California
State Fire
Marshal
7271-1209:126



0Q1A0.AY

BSA

1202-88-SA



1451

is listed in the installation manual for each control panel. Easy to install and maintain, this detector is designed for direct surface mounting (using one of the B400 Series bases listed below. Easy-to-wire screw terminals allow fast and simple field wiring of IN, OUT, and remote annunciator connections.

Consult Fire-Lite control panel specifications for the maximum allowable loop resistance for the particular control panel to be used.

To prevent wiring mistakes, observe polarities and make certain that each conductor is identifiable. A copy of Installation and Maintenance Instructions is packaged with each detector. For further information, refer to NFPA 72 "Standard on Automatic Fire Detectors."

A **MOUNTING BASE SELECTION GUIDE** is included on page 2 of this document.

JUNCTION BOX SELECTION GUIDE: Box depth is contingent on base and wire size. Refer to National Electrical Code or local applicable codes for appropriate recommendations. **Bases B401 and B401B** can utilize a single-gang, 3-1/2" (88.9 mm) octagonal, 4" (101.6 mm) octagonal, or 4" square junction box. **Bases B402B and B406B** can utilize a single-gang, 3-1/2" octagonal, 4" octagonal, 4" square, 50 mm, 60 mm, or 75 mm junction box. **Base B404B** can utilize a 4" octagonal or 4" square junction box.

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 **Fire-Lite**. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472

ISO-9001
Engineering and Manufacturing
Quality System Certified to
International Standard ISO-9001



Made in the U.S.A.

GENERAL SPECIFICATIONS

Operating voltage: mounting base dependent (see chart below).

Standby current: 120 micro amps.

Sensitivity: 1.9% nominal.

Weight: 0.6 pounds (272 grams).

Size: 3.2" (81.28 mm) high; 4.0" (101.6 mm) diameter with unflanged bases, or 6.2" (157.48 mm) diameter with flanged bases.

Construction: Flame-retardant white Noryl® plastic.

Temperature: 32°F to 120°F (0°C to 49°C).

Humidity range: 10 to 93% R.H. (non-condensing).

Maximum air velocity: 1,200 feet per minute (6 meters per second).

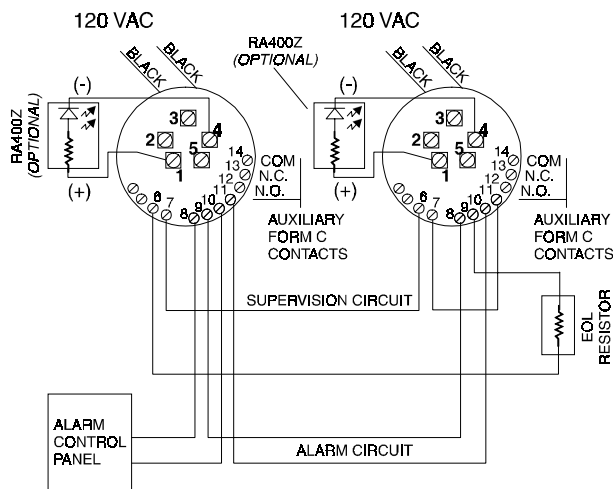
PRODUCT LINE INFORMATION

Model Description

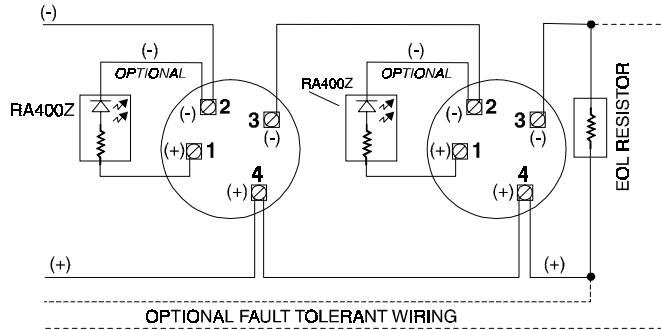
1451 Ionization Detector. Must be mounted to one of the B400 Series Bases listed below.

RA400Z Remote Annunciator for 2- or 4-wire applications. Use with any System Sensor 400 Series plug-in detector. Fits standard U.S. single-gang electrical box.

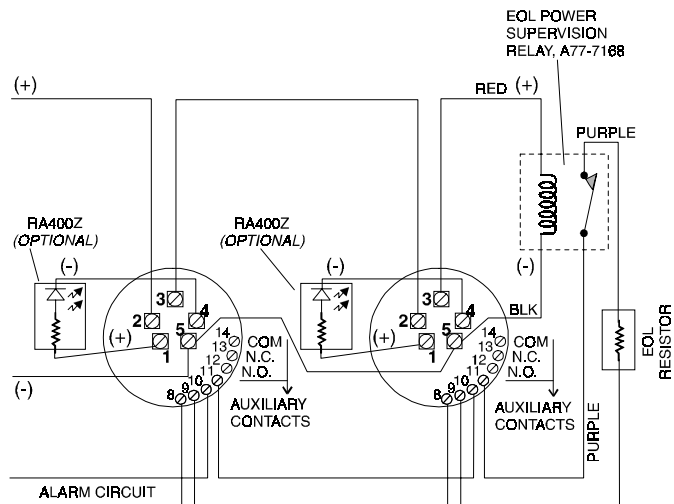
MOD400R Field Test module for all of the System Sensor 400 Series Smoke Detectors.



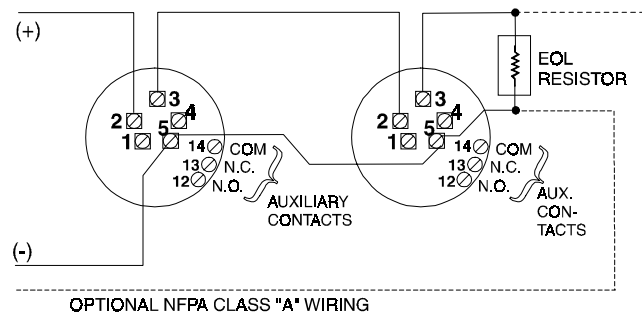
▲ B404B Wiring Diagram



▲ B401B/B401 Wiring Diagram



▲ B402B Wiring Diagram



▲ B406B Wiring Diagram

MOUNTING BASE SELECTION GUIDE

Base Model Number	Version	Loop Type	Current Limit Resistor	Alarm Contact Type	Nominal Voltage	Standby Voltage	Current Draw on Alarm
B401 & B401B	UL/ULC/EN-54	2-wire*	No	—	12/24 VDC	8.5 to 35 VDC	10 to 100 mA**
B402B	UL & ULC	4-wire	Yes	Form-A & -C	24 VDC	17 to 32 VDC	14 to 39 mA
B404B	UL & ULC	4-wire	Yes	Form-A & -C/A Supervisory	120 VAC	120 VAC	75 mA AC maximum
B406B	UL/ULC/EN-54	2-wire*	No	Form-C	24 VDC	15 to 32 VDC	12 to 100 mA**

*Functionality contingent on panel compatibility. **Must be limited by control panel.

RELAY CONTACT RATINGS: Resistive or Inductive (60% power factor load). **Form-A:** 2.0 A at 30 VAC/DC. **Form-C:** 0.6 A at 110 VDC, 2.0 A at 30 VDC, 1.0 A at 125 VAC, 2.0 A at 30 VAC.

