

1151 and 2151

Low-Profile Plug-In Photoelectric and Ionization Smoke Detectors

Section: Conventional Initiating Devices

GENERAL

The System Sensor 1151 and 2151 are low-profile ionization and photoelectric, plug-in type smoke detector heads. They offer superb performance and reliability, meeting the stringent performance criteria designated by UL 268 and ULC, in a profile of just 1.66" (42 mm). Aesthetically pleasing to engineers, architects, building owners and homeowners, the 1151 and 2151 can be used with four different adapter bases in a variety of wiring configurations and voltages. Model 1151 (ionization sensor) and 2151 (photoelectric sensor) share the same sleek low-profile design.

FEATURES

- Sleek, low-profile design — only 1.66" (42 mm).
- Same aesthetically pleasing housing design for ion and photo models.
- Two LEDs blink in standby mode, providing 360° visibility.
- Low standby current.
- Field sensitivity metering of detector to meet NFPA 72 requirement.
- Broad range of adapter bases available — four different voltages/wiring configurations.
- Removable cover for field cleaning.
- Sealed against back pressure air flow, dirt and insects.
- Built-in tamper resistant feature.
- Built-in magnetic test switch.
- Head easily plugs into adapter mounting base.
- Remote LED option.
- Listed to UL 268.
- Auxiliary relay contacts (optional).

CONSTRUCTION AND OPERATION

The **1151 Ionization** smoke detector contains a unique single-source dual-chamber design which will sense the presence of smoke particles produced by fast combustion as well as slow smoldering fires. This chamber exhibits increased stability, significantly reduces nuisance alarms, and provides better performance at higher velocities.

The **2151 Photoelectric** smoke detector contains a unique optical sensing chamber designed to sense the presence of smoke particles produced by a wide range of combustion sources. A custom integrated circuit incorporates signal processing to help reduce false alarms.

The sensing chambers of both models are sealed from back pressure air flow, dirt, and insects. The chambers are protected by a fine mesh screen which can be cleaned or replaced. Additional key features include interchangeable ion and photo heads, a variety of mounting bases, and a full line of accessories.

GENERAL SPECIFICATIONS

Operating voltage/alarm current: mounting base dependent (see chart on page 2).



California
State Fire
Marshal

7271-1209:157 (1151)
7272-1209:159 (2151)



▲ **1151 shown with flange-style base.**

◀ **2151 shown with flangeless base.**

Standby current: *Ion (1151):* 40 µA. *Photo (2151):* 85 µA.

Sensitivity: *1151:* 1.9% ± 0.62%/ft. *2151:* 3% ± 0.7%/ft.

Weight: 3.6 oz. (102 g).

Size: 1.66" (42.164 mm) high; 4.1" (104.14 mm) diameter for **unflanged base**; 6.1" (154.94 mm) diameter for **flanged base**.

Construction: Flame-retardant thermoplastic.

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

Humidity range: 10 - 93% RH non-condensing.

Air velocity: *1151 Ion:* 0 – 1,200 ft. (365.76 m)/min. *2151 Photo:* 0 – 3,000 ft. (914.4 m)/min.

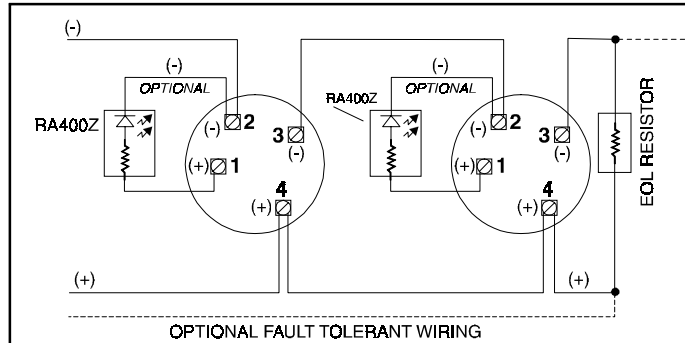
A **MOUNTING BASE SELECTION GUIDE** is included on page 2 of this document.

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. **Base B401** can utilize a 50 mm or 60 mm junction box. **Bases B110LP/RLP** can utilize a single-gang, 3-1/2" (88.9 mm) octagonal, 4" (101.6 mm) octagonal, or 4" square junction box. **Bases B112LP and B116LP** can utilize a single-gang, 3-1/2" octagonal, 4" octagonal, 4" square, 50 mm, 60 mm, or 75 mm junction box. **Base B114LP** can utilize a 4" octagonal or 4" square junction box.

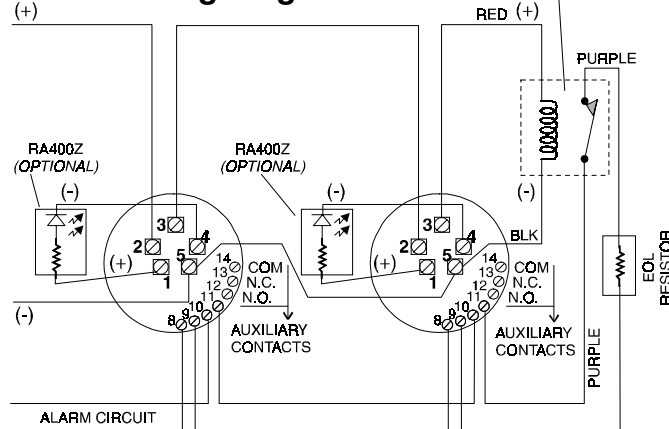
PRODUCT LINE INFORMATION

Model	Description
1151	Low-profile ionization detector (requires B100LP Series base).
2151	Low-profile photoelectronic detector (requires B100LP Series base).
B110LP	Base, 2-wire, low-profile flangeless, 12/24 VDC.
B112LP	Base, 4-wire, low-profile, Form-A & -C, 24 VDC.
B114LP	Base, 4-wire, low-profile, Form-A & -C + A Supervisory, 120 VAC.
B116LP	Base, 2-wire, low-profile, Form-C, 24 VDC.
RA400Z	Remote annunciator for two- or four-wire systems, 3 - 32 V. Use with ion and photo plug-in detectors. Fits standard single-gang electrical box.
B401BH	Sounder base. Requires an external 24 VDC power supply. Mounts to a 4" (101.6 mm) square electrical box (1-1/2" [38.1 mm] minimum depth, 2-1/8" [53.975 mm] recommended).
MOD400R	Detector sensitivity test tool. Use with most analog or digital multimeters. Satisfies NFPA 72 requirement for sensitivity testing.
SMK400	Surface-mounting kit provides for entry of surface wiring conduit. Use with B401 or B401R mounting bases only.
A77-716B	End-of-line relay for power supervision, 12/24 VDC systems.
M02-04-01	Test magnet.

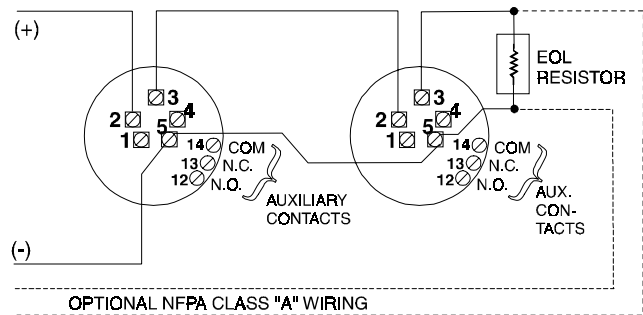
- XR-2** Detector removal tool. Allows installation and/or removal of 100 Series detector heads from base in high ceiling installations when used with the XP-4.
- XP-4** Extension pole for XR-2. Comes in three five-foot sections.



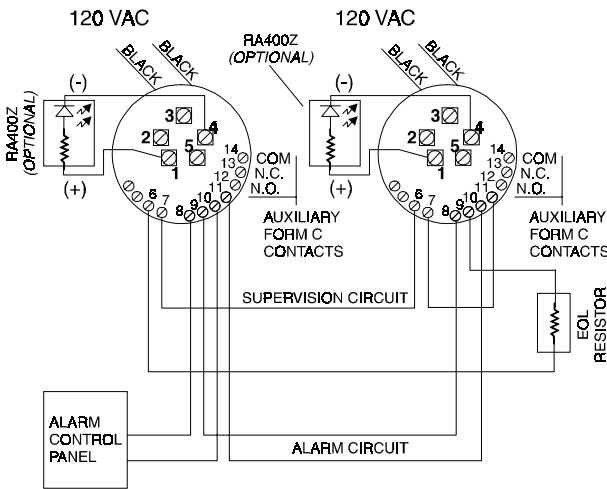
▲ B110LP/RLP or B401 Wiring Diagram



▲ B112LP Wiring Diagram



▲ B116LP Wiring Diagram



▲ B114LP Wiring Diagram

MOUNTING BASE SELECTION GUIDE

*Functionality contingent on panel compatibility.

**Must be limited by control panel.

***Flangeless base.

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.

Base Model Number	Loop Type	Current Limit Resistor	Alarm Contact Type	Nominal Voltage	Current Draw on Alarm (mA)
B110LP	2-wire*	No	—	12/24 VDC	10 to 100**
B110RLP	2-wire*	Yes	—	24 VDC	22 to 62
B112LP	4-wire	Yes	Form-A & -C	24 VDC	14 to 39
B114LP	4-wire	Yes	Form-A & -C + A Supervisory	120 VAC	75 mA AC maximum
B116LP	2-wire*	No	Form-C	24 VDC	12 to 100**
B401***	2-wire*	No	—	12/24 VDC	10 to 100**