

# Duct Smoke Detector for Special Applications



## Models Available

### Smoke Detectors

2151

### Base

B114LP

B114LPBT

### Accessory

RTC100

2151 with B114LP and RTC100



## Product Overview

**Low-profile smoke detector design**

**Low standby current**

**Two LEDs “blink” in standby**

**Detector head plugs easily into base**

**Built-in test switch**

**Built-in tamper-resistant feature**

**Field sensitivity metering of detector to meet the requirements of NFPA 72**

**120VAC and 24VAC/DC bases with built-in shorting spring**

**Designed for mounting on standard electrical box**

**SEMS screws for easy wiring and positive wire retention**

**Removable cover and insect screen for field cleaning**

The System Sensor 2151 low-profile photoelectronic smoke detector is UL listed to UL 268A specifically for use in no-flow/low-flow air-handling systems. It's designed for installations where a standard Venturi principle duct smoke detector is unsuitable. This is the perfect combination for installation in ducts where the air velocity is below 500 fpm or for duct sizes as small as 8 inches in diameter.

Pendant mounted in a standard electrical box within the duct, the twist-in/twist-out head allows easy removal from the base for quick cleaning and maintenance. The detector can be combined with the System Sensor B114LP 120VAC base or the B114LPBT 24VAC/DC base.

Remote testing is accomplished using our RTC100 Remote Test Coil with Low Profile ring accessory that includes the RTS451.

The APA451, Remote Annunciator with Piezo Alarm, can also be connected to provide an audible and visible indication of smoke detector status.



## 2151 Photoelectric Detector Specifications

Operating Voltage/Alarm current	Sensitivity
See Base Specifications	3%±.7% / ft.
Standby current	Weight
85 µA maximum	3.6 oz. (104 g)

Size
1.66 (4.22cm) H
6.1 (155mm) dia. flanged base

Construction
Flame retardant thermoplastic
Operating Temperature
32°F to 120°F (0°C to 49°C)

Humidity Range
10 to 93% RH non-condensing
Air Velocity Rating
0 to 3000 fpm

## B114LP/B114LPBT Adapter Base Specifications

Loop Type	Alarm Contact Type
4-wire	Form A&C + A supply
Current Limit Resistor	Nominal Voltage
Yes	B114LP: 120 VAC
	B114LPBT: 24VAC/DC

Alarm Current (mA)
75 mA AC Max.

Relay Contact Ratings	Form C:
Resistive or Inductive (60% power factor) load.	0.6A at 110VDC, 2.0A at 30VDC
Form A: 2.0A at 30 VAC/DC	1.0A at 125VAC, 2.0A at 30VAC

## B114LP/B114LPBT Junction Box Specifications

Box depth contingent on base and wire size. Refer to National Electric Code or local applicable codes for appropriate recommendations.

Single Gang	3 1/2" Octagon	4" Octagon	4" Square	50mm	60mm	75mm
No	No	Yes	Yes	No	No	No

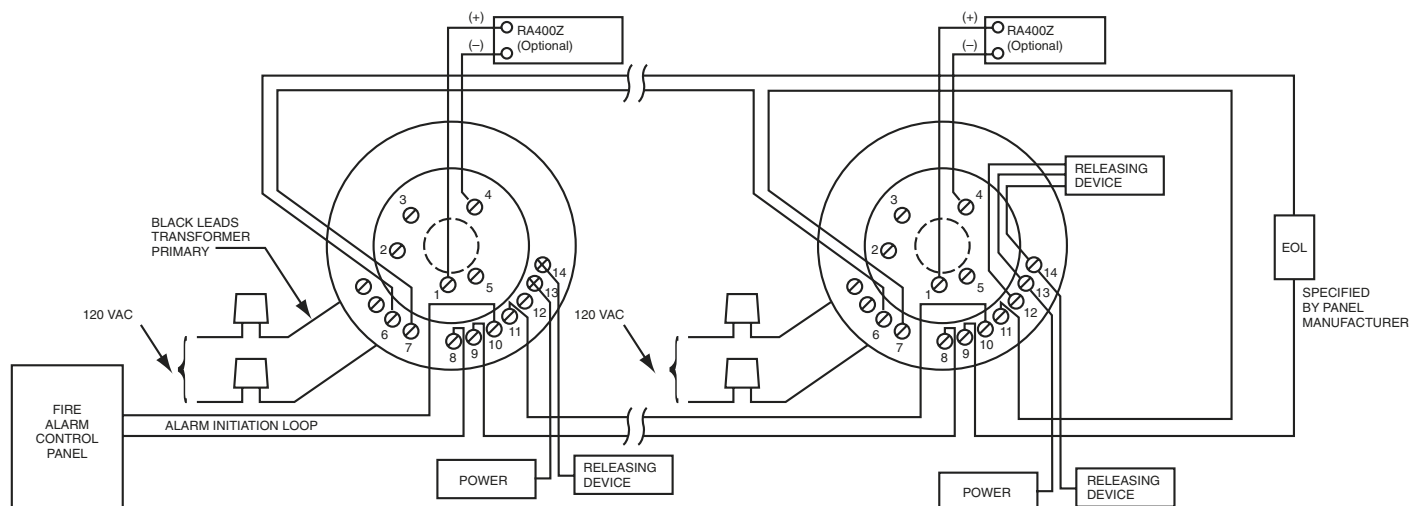
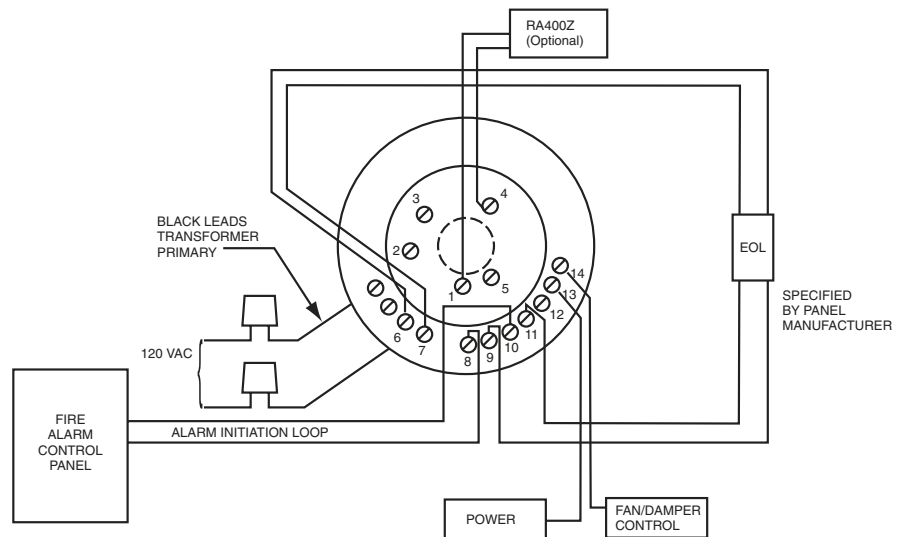
## Engineering Specifications

The air duct smoke detector shall be a System Sensor model 2151 Series Smoke detector UL listed to UL 268A specifically for use in air handling systems when used in conjunction with the B114LP (120 VAC) base or the B114LPBT (24VAC/DC) base. The detector shall operate at air velocities up to 3000 feet per minute. It shall be capable of local testing via magnetic switch or remote testing using the UL listed RTC100 Remote Test Coil accessory with the RTS451 Remote Test Station. It shall be capable of providing duct smoke detector status via the UL listed model APA451 Piezo Annunciator.

## B114LP Typical Wiring Diagrams

### B114LP Base Terminals

No.	Function
1	Remote Annunciator (+)
2	Not Used
3	Not Used
4	Remote Annunciator (-)
5	Not used
6	N.O. } Supervisory Relay
7	N.O. } Form A Contacts
8	N.O. } Alarm Relay
9	N.O. } Form A
10	C. } Initiation
11	C. } Contacts
12	N.O. } Alarm Relay
13	N.C. } Form C
14	C. } Auxiliary Contacts

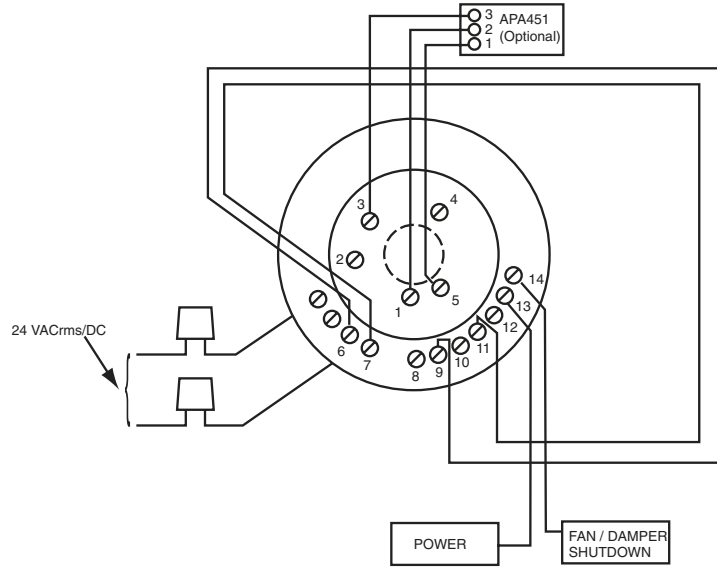


## B114LPBT Typical Wiring Diagrams

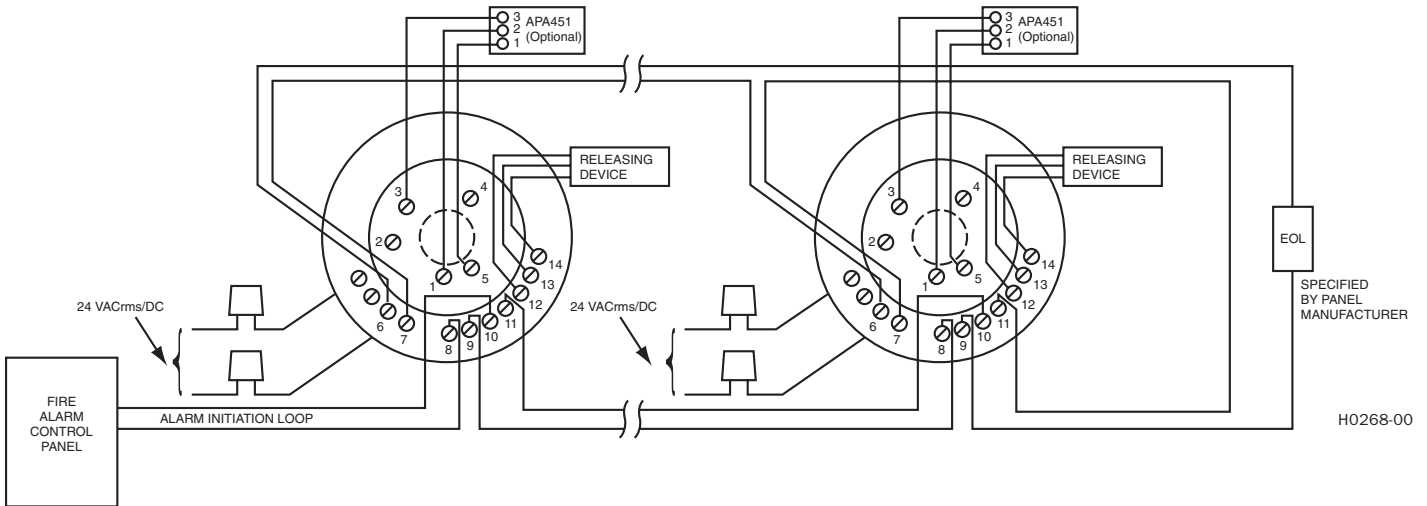
### B114LPBT Base Terminals

#### No. Function

- 1 Remote Annunciator (+)
- 2 Test Coil (+)
- 3 Not Used
- 4 Remote Annunciator (-)
- 5 RTC (-)
- 6 N.O. } Supervisory Relay
- 7 N.O. } Form A Contacts
- 8 N.O. } Alarm Relay
- 9 N.O. } Form A
- 10 C. } Initiation
- 11 C. } Contacts
- 12 N.O. } Alarm Relay
- 13 N.C. } Form C
- 14 C. } Auxiliary Contacts

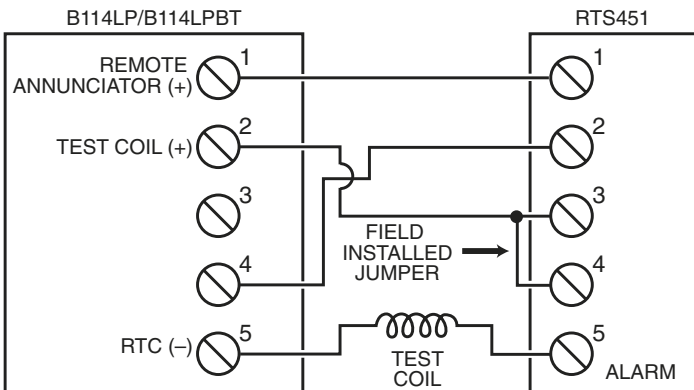


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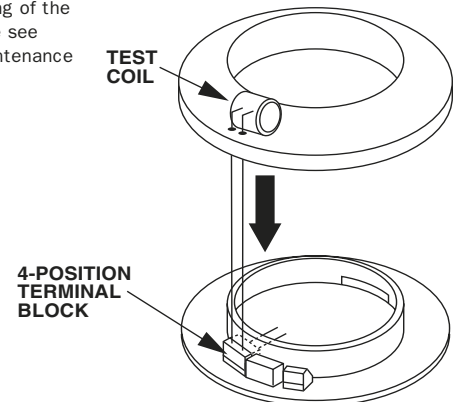
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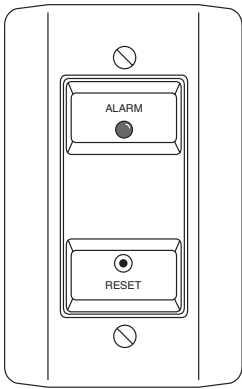
### RTC100 Wiring Diagram



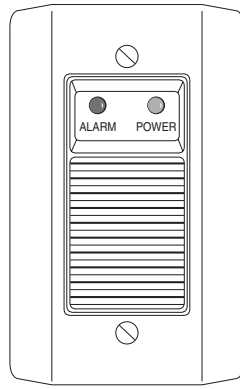
### Ring Replacement on B114LP/B114LPBT

NOTE: Installation and wiring of the test coil is required. Please see RTC100 Installation & Maintenance Instructions.

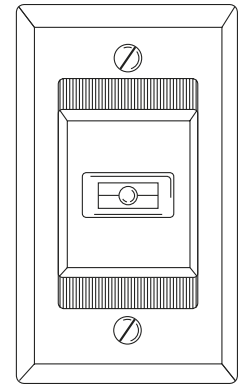




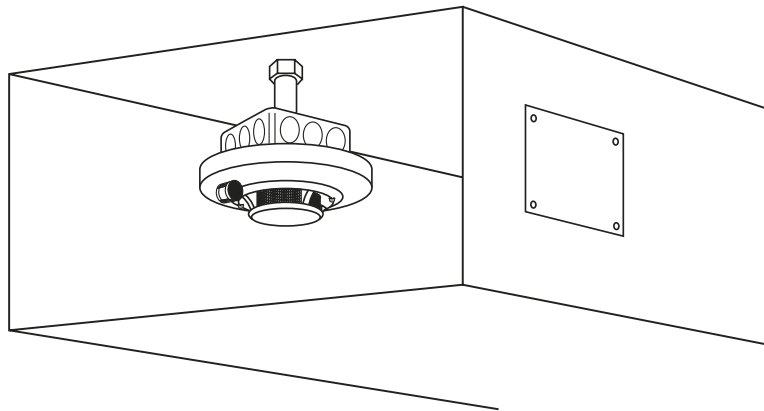
**RTS451**  
**Remote Test Station**  
 (provided with  
**RTC100 Remote**  
**Test Coil Kit)**



**APA451**  
**Piezo Annunciator**



**RA400Z**  
**Remote Annunciator**



**Top Mount in Ventilation Shaft**

### Ordering Information

Model	Description	Accessories	Description
2151	Low-profile photoelectric plug-in detector (order one of the bases listed below and RTC100)	APA451	Remote annunciator with piezo alarm
B114LP	120VAC detector base	RA400Z	Remote annunciator
B114LPBT	24VAC/DC detector base		
RTC100	Remote test coil kit with low profile ring (Incl. RTS451 remote test station)		

### System Sensor Sales and Service

**System Sensor Headquarters**  
 3825 Ohio Avenue  
 St. Charles, IL 60174  
 Ph: 800/SENSOR2  
 Fx: 630/377-6495  
 www.systemsensor.com

**System Sensor Canada**  
 Ph: 905.812.0767  
 Fx: 905.812.0771  
  
**System Sensor Europe**  
 Ph: 44.1403.891920  
 Fx: 44.1403.891921

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 Fx: 86.29.8832.5110  
  
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 Ph: 91.124.637.1770 x.2700  
 Fx: 91.124.637.3118  
  
**System Sensor – Russia**  
 Ph: 70.95.937.7982  
 Fx: 70.95.937.7983