Duct Smoke Detector for Special Applications

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.

The 2151 is 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.

Features

- 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

Agency Listings

UL LISTED

2151 Photoelectronic Detector Specifications

Architectural/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.

Physical Specifications		Electrical/Operating Specifications	
Size	1.66″ (4.22cm) H, 6.1″ (155mm) dia. flanged base	Operating Voltage/Alarm Current	See Base Specifications
Weight	3.6 oz. (104 g)	Standby current	85 µA maximum
Operating Temperature Range	32˚F to 120˚F (0˚C to 49˚C)	Sensitivity	3%±.7% / ft.
Operating Humidity Range	10 to 93% RH non-condensing	Air Velocity Rating	0 to 3000 fpm
Construction	Flame retardant thermoplastic		

B114LP/B114LPBT Adapter Base Specifications

Electrical Specifications	
Loop Type	4-wire
Current Limit Resistor	Yes
Alarm Contact Type	Form A&C + A supply
Nominal Voltage	B114LP: 120 VAC; B114LPBT: 24VAC/DC
Alarm Current (mA)	75 mA AC Max.
Relay Contact Ratings	Resistive or Inductive (60% power factor) load. Form A: 2.0A at 30 VAC/DC; Form C: 0.6A at 110VDC, 2.0A at 30VDC; 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	3½″ Octagon	4″ Octagon	4″ Square	50mm	60mm	75mm
No	No	Yes	Yes	No	No	No

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

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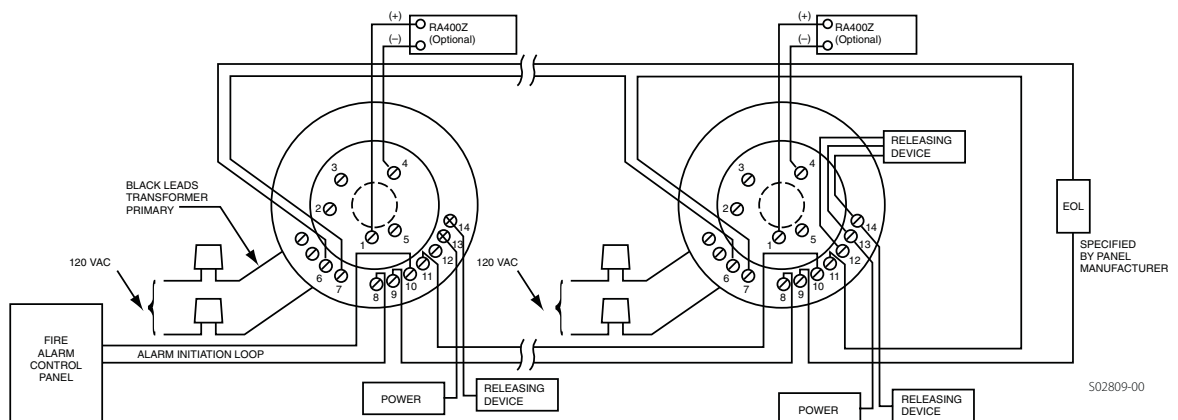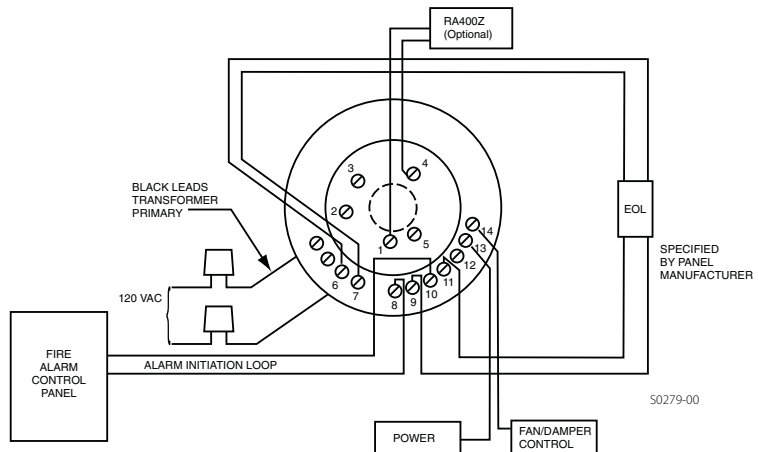
B114LPBT Typical Wiring Diagrams

B114LPBT Base Terminals

| No.	Function	
1	Remote Annunciator (+)	
2	Test Coil (+)	
3	Not Used	
4	Remote Annunciator (−)	
5	RTC (−)	
6	C.	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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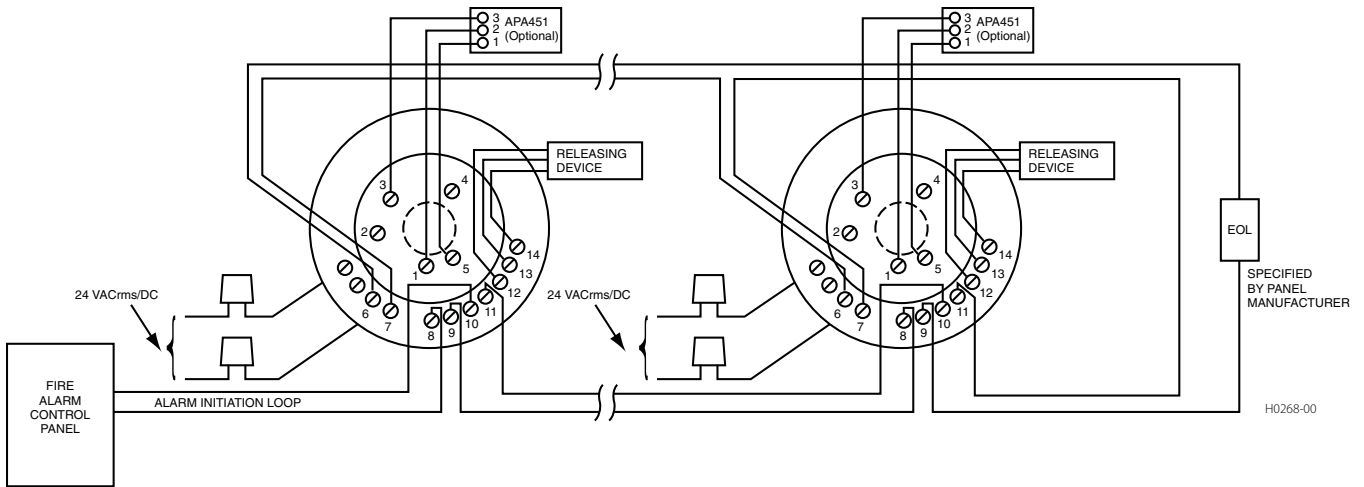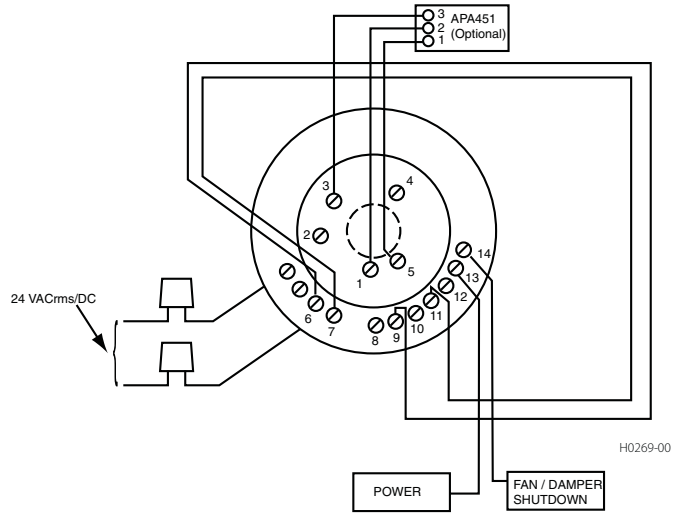
RTC100 Wiring Diagram

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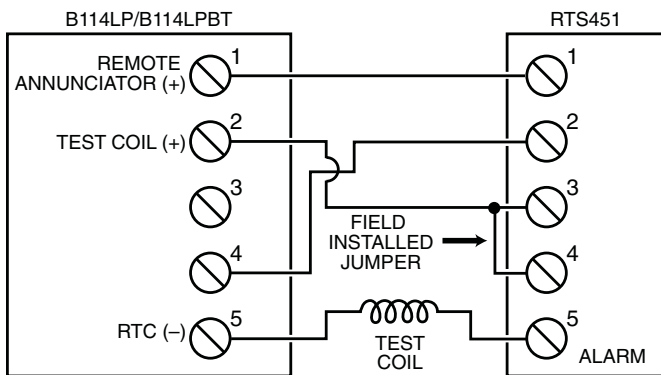
Ring Replacement on B114LP/B114LPBT

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

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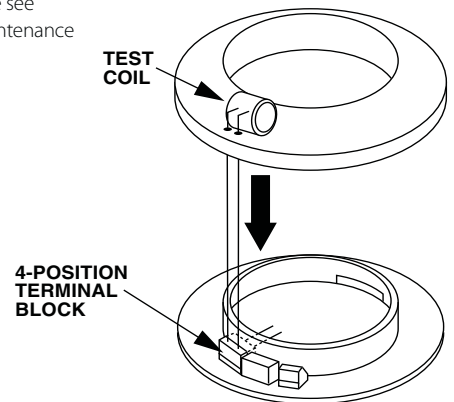
Accessories

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

APA451
Piezo Annunciator

RA400Z
Remote Annunciator

Top Mount in Ventilation Shaft

Ordering Information

Part No.	Description
2151	Low-profile photoelectric plug-in detector (order one of the bases listed below and RTC100)
B114LP	120VAC detector base
B114LPBT	24VAC/DC detector base
RTC100	Remote test coil kit with low profile ring (Incl. RTS451 remote test station)
Accessories	
APA451	Remote annunciator with piezo alarm
RA400Z	Remote annunciator