

Duct Smoke Detector for Special Applications



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<http://www.systemsensor.com>



2451 with B404BT and RTC



(Includes the RTS451)

The System Sensor 2451 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 B404B 120VAC base or the B404BT 24VAC/DC base. Remote testing is accomplished using our Remote Test Coil 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 standby current
- Two LEDs "blink" in standby
- Detector head plugs easily into base
- Field adjustable sensitivity
- Built-in test switch
- Field sensitivity metering of detector to meet the requirements of NFPA 72
- 120VAC and 24VAC/DC bases with built-in shorting spring
- Built-in tamper-resistant feature
- Designed for mounting on standard electrical box
- SEMS screws for easy wiring and positive wire retention
- Removable cover and insect screen for field cleaning

Specifications

Operating Voltage/Alarm current	Mounting base dependent (see chart)
Standby current:	120 mA maximum
Sensitivity:	3%± .7% / ft.
Weight:	0.5 lb. (277 g)
Size:	3.2"/8.1 cm height 6.2"/15.8 cm diameter
Construction:	Flame retardant Noryl plastic
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 maximum

Agency Listings

- 2451 with B404B/B404BT and RTC Remote Test Kit
- UL 268A (Requires RTC accessory)
 - RR 8281 (City of Los Angeles)



Base Chart

Base Model	Version	Loop Type	Current Limit Resistor	Alarm Contact Type	Nominal Voltage	Alarm Current (mA)
B404B	UL/ULC	4-wire	Yes	Form A&C + A supy.	120VAC	20.4
B404BT	UL	4-wire	Yes	Form A&C + A supy.	24VAC/DC rms	94

Junction Box Selection

	Single Gang	3 1/2" Oct.	4" Oct.	4" Sq.	50mm	60mm	75mm
B404B	No	No	Yes	Yes	No	No	No
B404BT	No	No	Yes	Yes	No	No	No

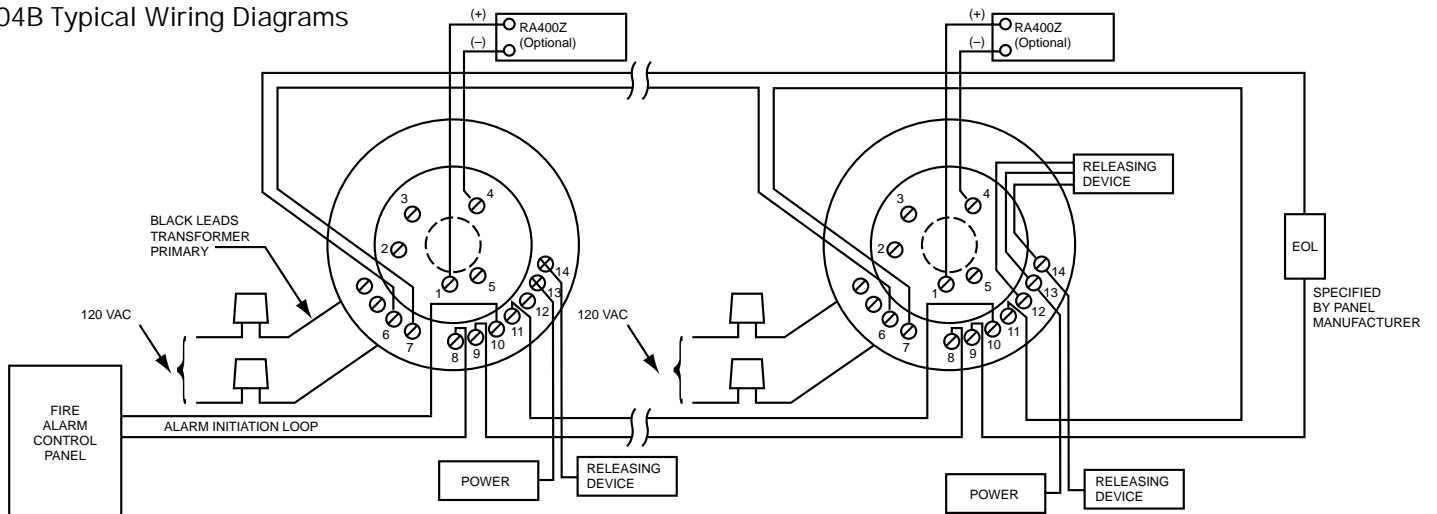
Architectural/Engineering Specifications

The air duct detector shall be a System Sensor model 2451 Series Smoke detector UL listed to UL 268A specifically for use in air handling systems when used in conjunction with the B404B (120VAC) or the B404BT (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 RTC 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.

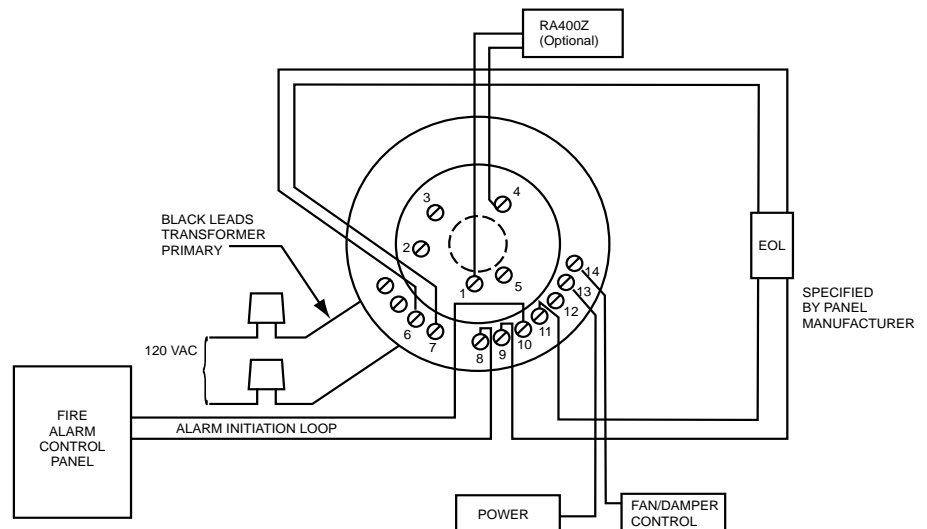
Diagrams

B404B Typical Wiring Diagrams

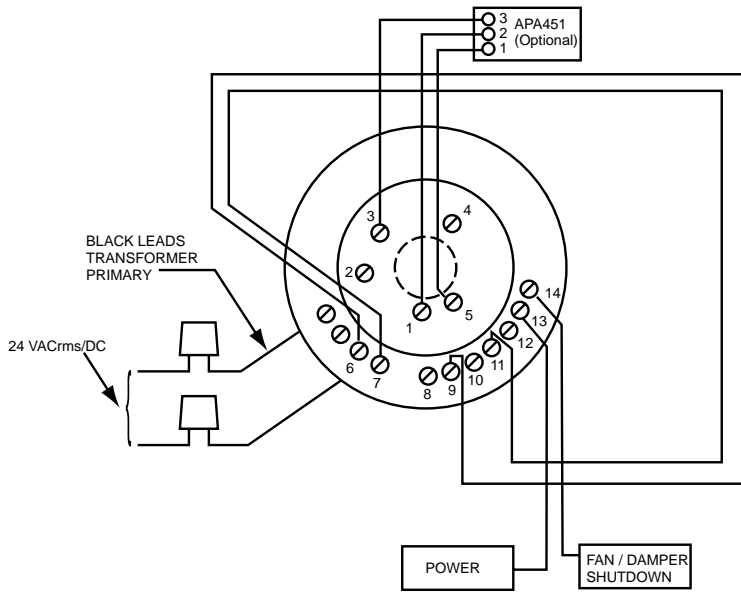
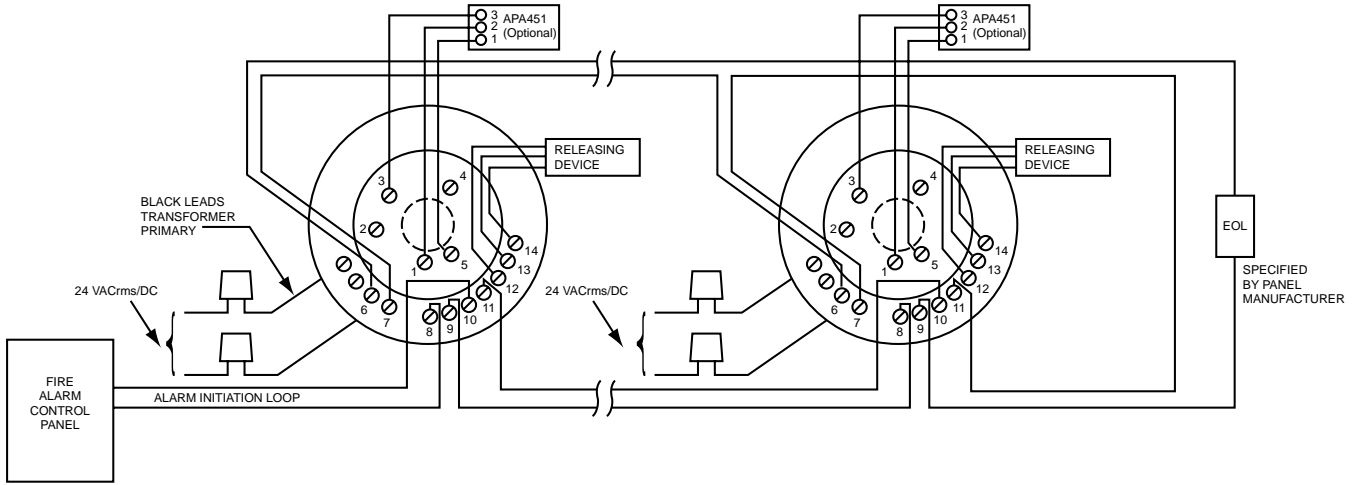


B404B Base Terminals

- | 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 |



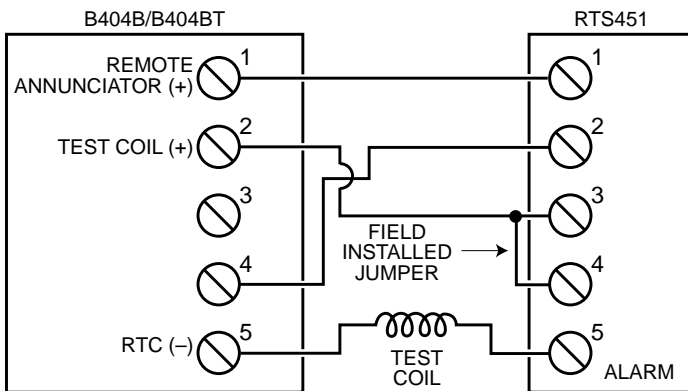
B404BT Typical Wiring Diagrams



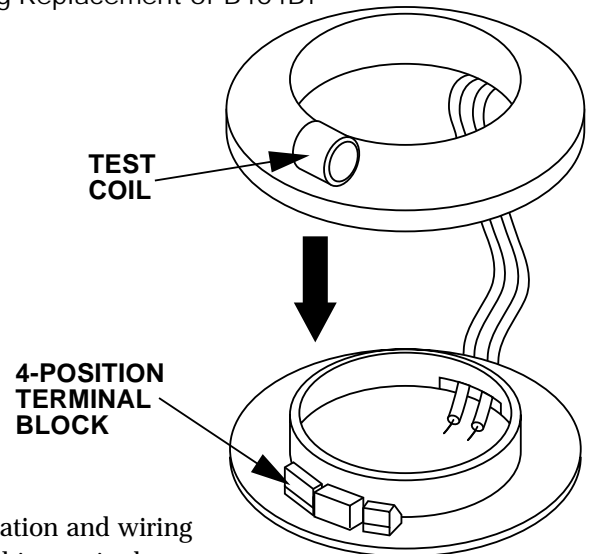
B404BT Base Terminals

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

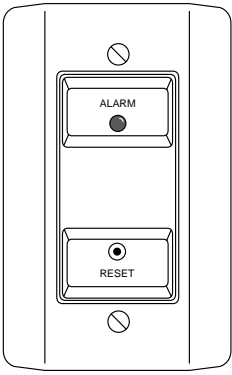
RTC Wiring Diagram



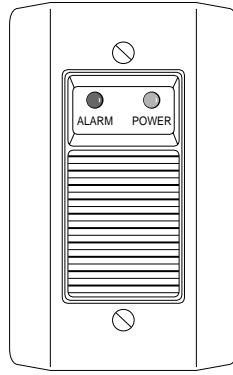
RTC Ring Replacement of B404BT



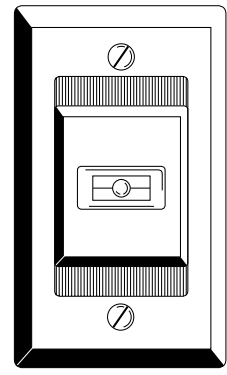
NOTE: Installation and wiring of the test coil is required.



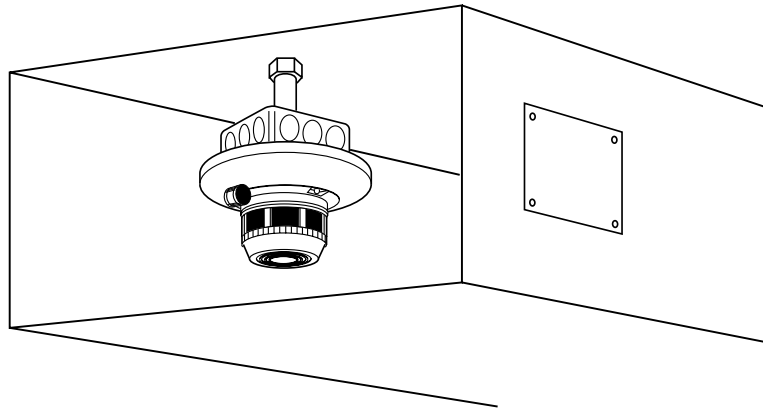
RTS451
Remote Test Station
(provided with Remote
Test Coil)



APA451
Piezo Annunciator



RA400Z
Remote Annunciator



Top Mount in Ventilation Shaft

Ordering Information

Part No.	Description	Accessories	
2451	Photoelectronic plug-in detector (order one of the bases listed below and the RTC)	APA451	Remote annunciator with piezo alarm
		RA400Z	Remote annunciator
B404B	120VAC detector base		
B404BT	24VAC/DC detector base		
RTC	Remote test coil kit (Includes RTS451 remote test station)		

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