

Duct Smoke Detector for Special Applications



Model

2451 with B404B/B404BT and RTC Remote Test Kit UL 268A (Requires RTC accessory)

Product Overview

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



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.

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° to 120°F (0° to 49°C)

Humidity Range
10 to 93% RH non-condensing

Air Velocity Rating
0 to 3000 fpm maximum



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.

Base Chart

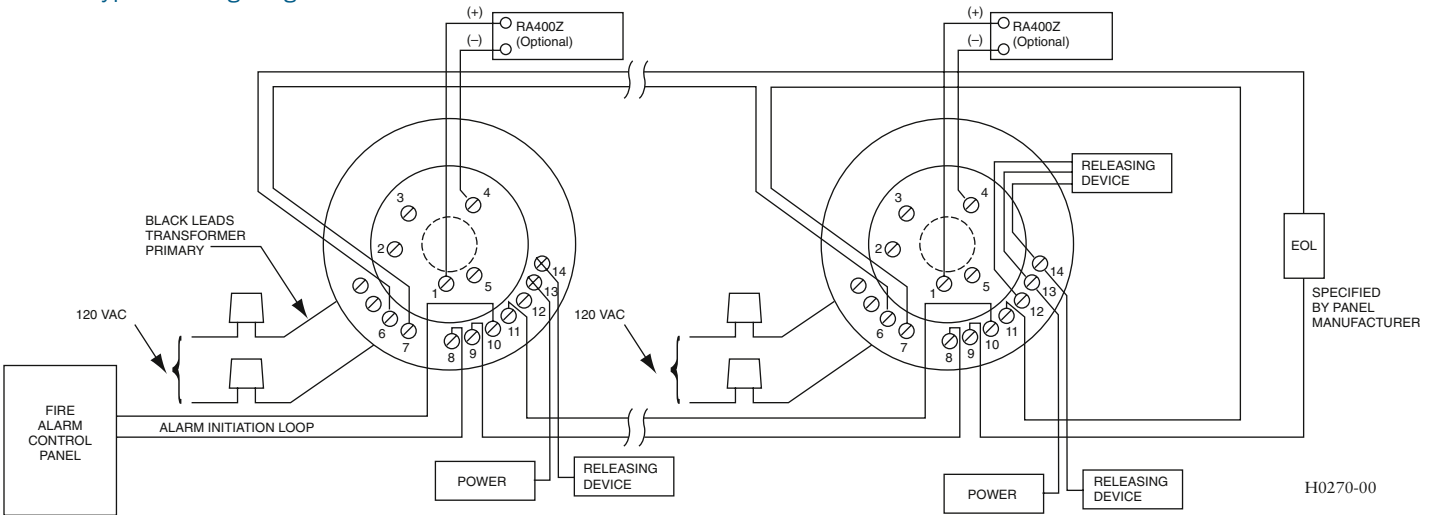
Base Model	Version	Loop Type	Current Limit resistor	Alarm Contact Type	Nominal Voltage	Alarm Current (mA)
B404B	UL/ULC	4-wire	Yes	Form A&C + A supy.	120VAC	20.4
B404BT	UL	4-wire	Yes	Form A&C + A supy.	24VAC/DC rms	94

Junction Box Selection

Base Model	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

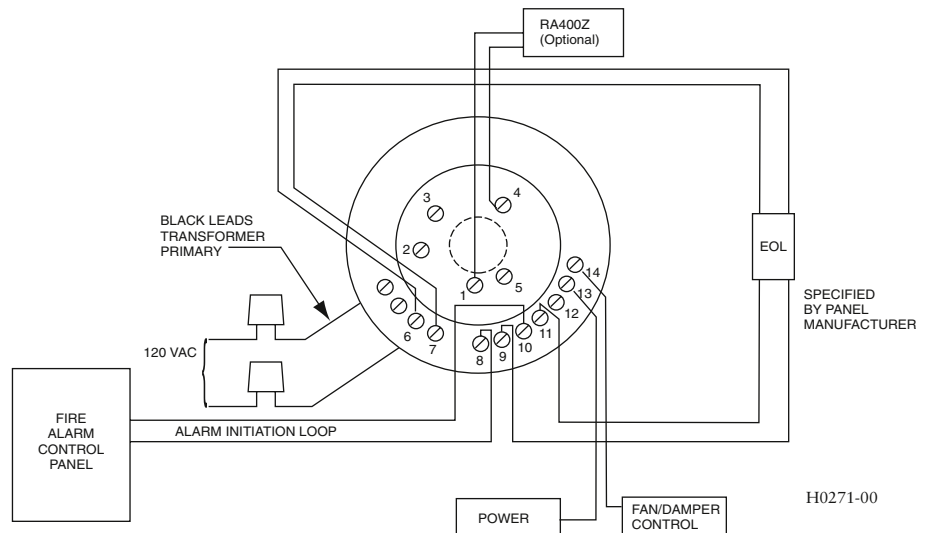
Wiring Guide

B404B Typical Wiring Diagrams:

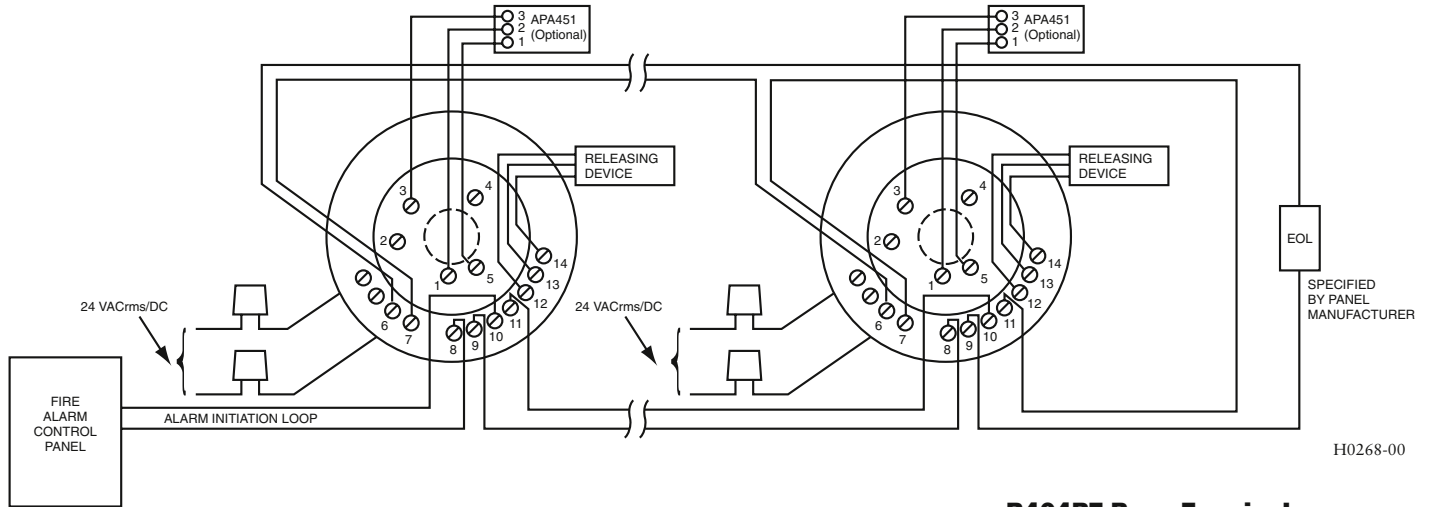


B404B Base Terminals

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



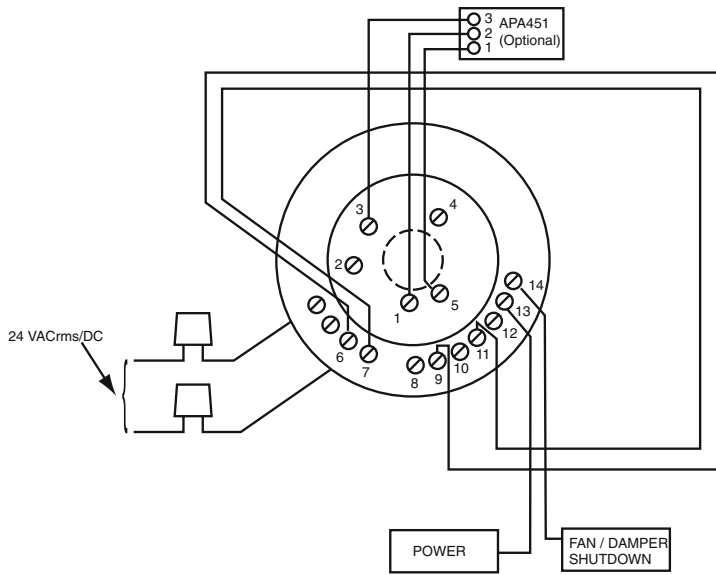
B404BT Typical Wiring Diagrams:



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B404BT Base Terminals

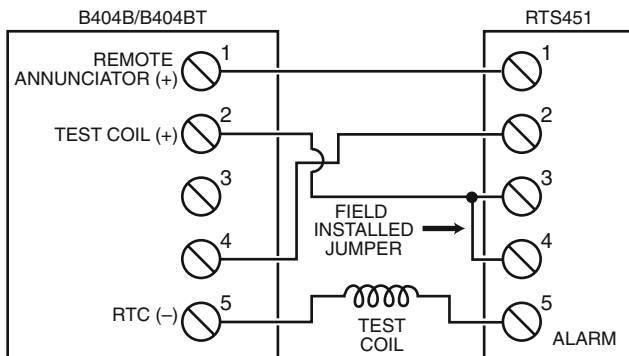
No.	Function	
1	Remote Annunciator (+)	
2	Test Coil (+)	
3	Not Used	
4	Remote Annunciator (-)	
5	RTC (-)	
6	N.O.	Supervisory Relay Form A Contacts
7	N.O.	
8	N.O.	
9	N.O.	Alarm Relay Form A Initiation Contacts
10	C.	
11	C.	Alarm Relay Form C Auxiliary Contacts
12	N.O.	
13	N.C.	
14	C.	



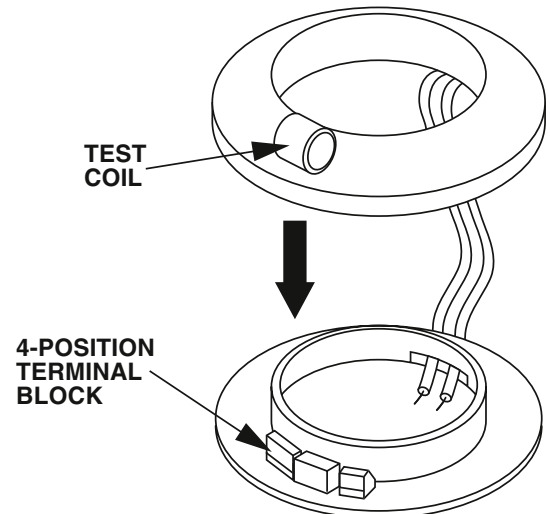
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RTC Ring Replacement of B404BT:

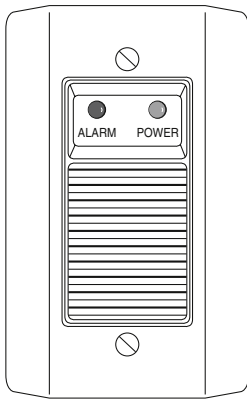
RTC Wiring Diagram:



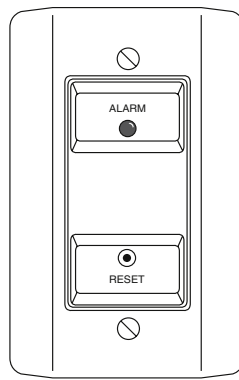
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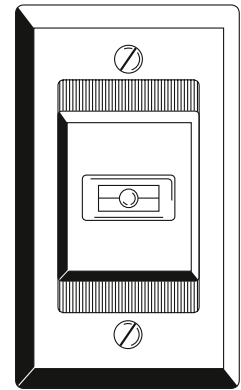
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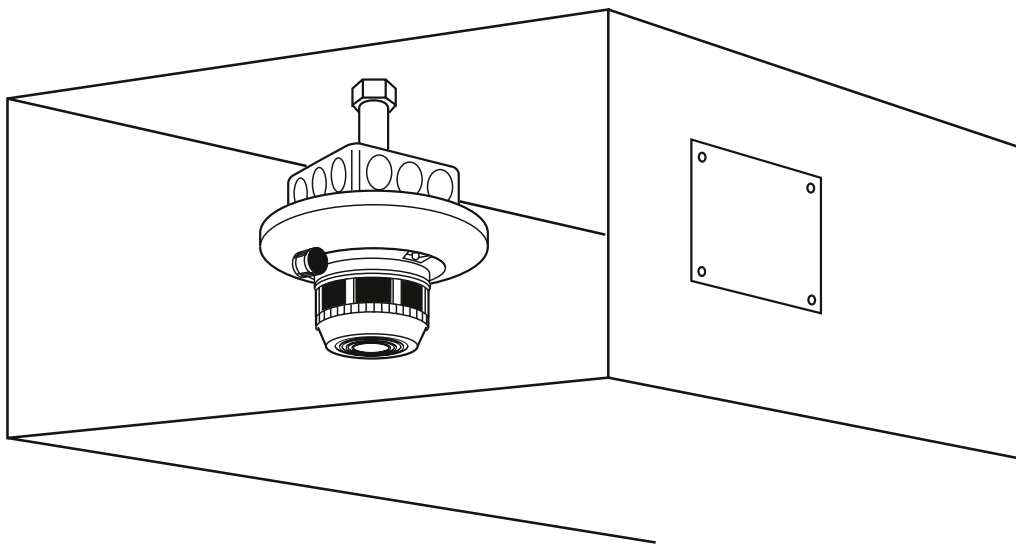
RTS451KEY
Remote Test Station
(provided with Remote
Test Coil)



APA451
Piezo Annunciator



RA400Z
Remote Annunciator



Top Mount in Ventilation Shaft

Ordering Information

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

System Sensor Sales and Service

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	System Sensor Europe Ph: 44.1403.891920 Fx: 44.1403.891921	System Sensor in Singapore Ph: 65.6273.2230 Fx: 65.6273.2610	System Sensor – Australia Ph: 613.54.281.142 Fx: 613.54.281.172	System Sensor – Russia Ph: 70.95.937.7982 Fx: 70.95.937.7983