



400 Series Plug-In Thermal Detectors

System Sensor 400 Series plug-in thermal detectors provide maximum performance and rapid response for rate-of-rise and fixed-temperature applications.



Features

- Low standby current
- Two visible LEDs “blink” in standby and provide a 360° field viewing angle
- Wide variety of mounting bases with built-in shorting spring
- Detector head plugs easily into base
- Built-in test switch
- Field sensitivity metering of detector to meet the requirements of NFPA 72
- Built-in tamper-resistant feature
- SEMS screws for easy wiring
- Optional recessed mounting
- Removable cover for field cleaning

The 5451 thermal detector meets the needs for applications where rapid response is vital and rapid temperature increases would only be caused by a fire emergency.

This detector contains a unique dual thermistor heat sensing circuit that provides maximum performance and solid-state reliability. It initiates an alarm in response to rapid rate-of-rise (increases in excess of 15°F per minute) and fixed heat (135°F) conditions. This enables the detector to communicate an alarm to the central control panel prior to reaching its fixed set point for high rates of rise, providing a timely response to both rapid and slow temperature increases.

The detector also provides other key features, including a recessed mounting option, a variety of mounting bases, and a full line of optional accessories.

Agency Listings



S2101



OB3AO.AY



7270-1653:104



167-93-E

400 Series Plug-In Smoke Detector Specifications

Physical/Operating Specifications						
Size	2.25" (5.7 cm) H; 4.0" (10.2 cm) Dia., unflanged base; 6.2" (15.7 cm) Dia., flanged base					
Weight	0.3 lb (136 g)					
Operating Temperature Range	32°F to 100°F (0°C to 38°C)					
Humidity Range	10% to 93% RH non-condensing					
Construction	Flame retardant Noryl® plastic					
Alarm Point	135°F (57.2°C) or 15°F per minute rate of rise					
Smoke Detector Spacing	On smooth ceilings (as defined in NFPA 72), spacing of 50 feet (2,500 sq. ft.) may be used. Other spacing may be used depending on ceiling height, high air movements, and other conditions or response requirements.					
Standby Current	100 µA maximum					
Operating Voltage/Alarm Current	Mounting base dependent (see Mounting Base Selection Guide below)					
Mounting Base Selection Guide						
Base Model Number	Version	Loop Type	Current Limit Resistor	Alarm Contact Type	Nominal Voltage	Current Draw on Alarm (mA)
B401B	UL/ULC	2-wire*	No	—	12/24 VDC ^{††}	10 to 100**
B401BR	UL/ULC	2-wire*	Yes	—	24 VDC	10 to 62
B402B	UL/ULC	4-wire	Yes	Form A&C	24 VDC	14 to 39
B404B	UL/ULC	4-wire	Yes	Form A&C+A Supervisory	120 VAC	75 mA AC max.
B406B	UL/ULC/EN-54	2-wire*	No	Form C	24 VDC	12 to 100**
B401 [†]	UL/EN-54	2-wire*	No	—	12/24 VDC ^{††}	10 to 100**
B401R [†]	EN-54	2-wire*	Yes	—	24 VDC	10 to 62

*Functionality contingent on panel compatibility.

**Must be limited by control panel.

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

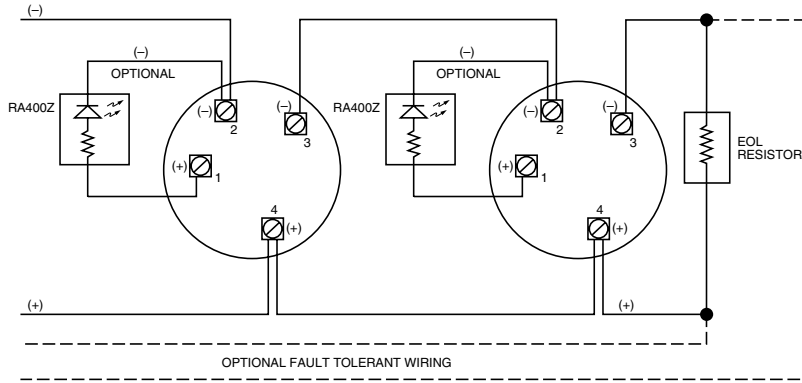
[†] Flangeless base

^{††} Although B401B and B401 bases are capable of operating at 12 and 24 VDC, they cannot be used with the 5451 in 12 V applications.

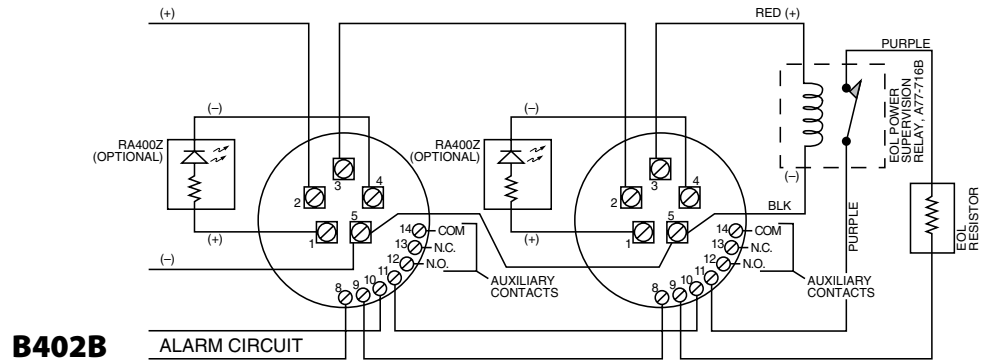
Junction Box Selection Guide*							
	Single Gang	3.5" Octagon	4" Octagon	4" Square	50 mm	60 mm	75 mm
B401/B401R	No	No	No	No	Yes	Yes	No
B401B/BR	Yes	Yes	Yes	Yes	No	No	No
B402B/B406B	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B404B	No	No	Yes	Yes	No	No	No

*Box depth contingent on base and wire size. Refer to National Electrical Code of local applicable codes for appropriate recommendations.

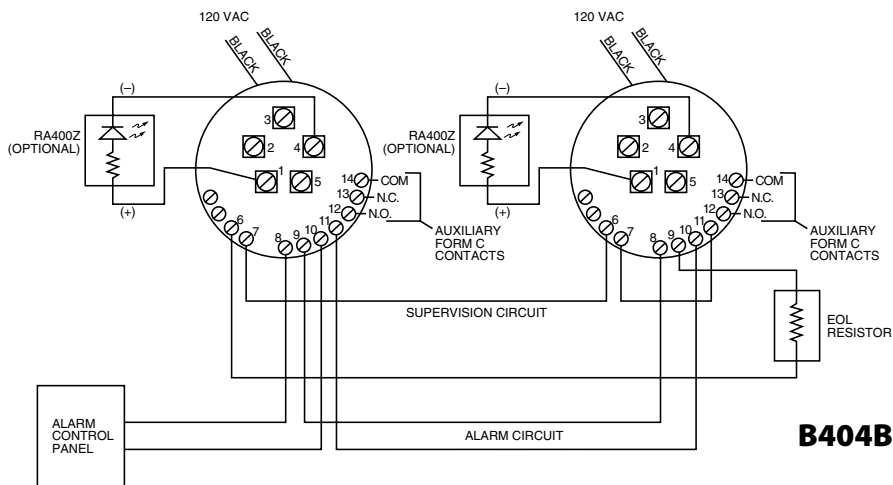
Wiring



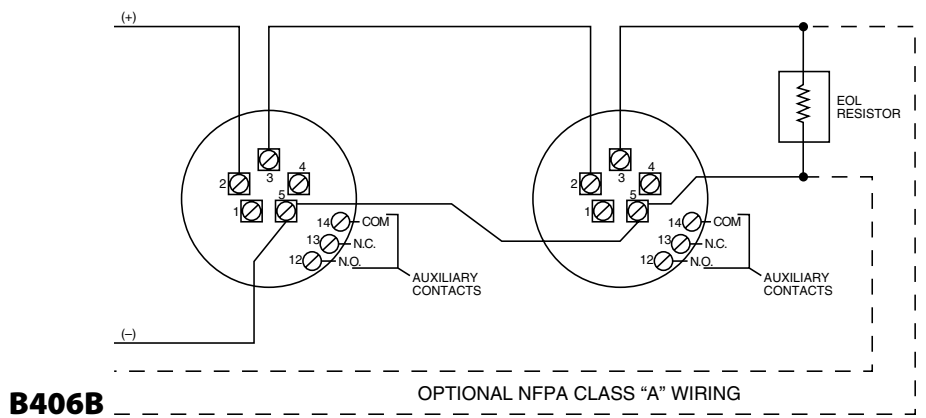
B401 Series



B402B



B404B



B406B

Accessories



The MOD400R Field Sensitivity Test Module can be used with any standard DC voltmeter or multimeter to check the sensitivity range of System Sensor detectors (satisfies NFPA 72 requirement for sensitivity testing).



The System Sensor Recessed Mounting Kit, RMK400, provides a simple installation solution where applications demand a lower profile smoke detector by reducing the depth of any 400 Series plug-in detector by almost an inch. A special metal mounting bracket secures the kit and the base to the junction box and ceiling panel. For use with B401 and B401R bases only.

Ordering Information

Part No.	Description
5451	Fixed heat detector with rate of rise. Alarm point at 57.2°C (135°F). Must be mounted to one of the 400 Series Bases listed in Mounting Base Guide.
Accessories	
RA100Z	Remote annunciator for 2- or 4-wire systems, 3 to 32 V. Fits standard U.S. single-gang electrical box.
B401BH	Sounder base with B401. Requires an external 24 VDC power supply. Mounts to 4-inch square electrical box (1½-inch minimum depth).
MOD400R	Detector sensitivity test tool. Use with most analog or digital multimeters. Satisfies requirement of NFPA 72 for sensitivity testing. (See above.)
RMK400	Recessed mounting kit for use with B401 or B401R mounting bases only. (See above.)
SMK400	Surface mounting kit provides for entry of surface wiring conduit. For use with B401 or B401R mounting bases only.
EOLR-1	End-of-line relay for power supervision, 12/24 VDC, 4-wire only.
DUST45	Replacement protective dust cover for plug-in 400 Series.
M02-04-01	Test magnet.
M02-09-00	Test magnet with 32-inch telescoping handle.
XR5	Detector removal tool. Allows installation and/or removal of detector heads from base in high-ceiling installations.
XP-4	Extension pole for XR5. Comes in three 5 ft. sections.



3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

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