

PHOTOELECTRONIC
SMOKE DETECTORS FOR
SYSTEMS/RESIDENTIAL
APPLICATIONS

MODELS

2851B/2851BTH



BRK ELECTRONICS *First in Fire Warning*



2851B Series 2/4/6-Wire Systems Detectors

- Compact, Stylish Design
- Geometrically Optimized Photo-electronic Sensing Chamber
- 3-Year Warranty
- Directly Interchangeable with Model 1851B Ionization Detector
- Field Proven Performance
- Unique optical sensing chamber
 - Superior signal-to-noise ratio (2.0)
 - Stable photoelectronic operation
 - 2.3% Nominal sensitivity
 - Built-in signal processing
- Built-in test switch
- Compatible with a wide range of Adapter Bases for both 2 and 4/6-wire low voltage installations and 120VAC applications
- Visual alarm indication (LED)
- Designed for Direct Surface or Electrical Box Mounting
- Version with built-in thermal
- Remote LED option (B101B Base only)
- Low standby current
- Listed to UL 268
- Built-in tamper-resistant feature
- Insect resistant screen
- Shielded electronics

Proven — under the worst conditions! Humidity — Condensation — Insects — Dust — Dirt — RF Interference and Electrical Transients.

BRK's 2851B Series Photoelectronic Smoke Detectors represent the state of the art in smoke detector technology. They feature fully coated circuit boards, special bug and dirt protection and superior RF/transient protection. This, coupled with signal processing for alarm verification, makes the 2851B Series the most stable photoelectronic detector on the market today. A version with a built-in heat sensor is also available.

The 2851B Detectors are simple to install, service and maintain. Using a specially designed tool, maintenance personnel can remove and replace snap-in detectors without requiring a ladder. If one type of plug-in unit needs to be replaced or is unsuitable in a given location, it can easily be unplugged and replaced by a compatible unit of a different type. These detectors incorporate a built-in magnetic reed test switch. The 2851B Detectors are designed to commercial quality standards and appearance and are backed by an exclusive 3-Year Warranty. BRK's Plug-In Series — covering all the bases.

ADAPTER BASE SELECTION GUIDE

The 2851B Series or 1851B head mounts to any of the special Adapter Bases listed below. The B10X Series of Adapter Bases is designed for maximum ease of installation. The Detector heads plug in and out with one twist of the hand.

BASE	APPLICATION				MOUNTING			OUTPUT CONTACTS			ELECTRICAL RATINGS ¹			REMOTE ANNUNCIATORS
MODEL NUMBER	USED ON 2-WIRE LOOPS	HAS CURRENT-LIMITING RESISTOR	USED ON 4-WIRED LOOPS (CLASS A OR CLASS B)	OPERATES ON 120VAC	4" SQ. BOX WITH PLASTER RING OR BRK ADAPTER NO. A10-14-01 (Supplied) MIN. DEPTH: 1 1/2 INCHES	4" OCTAGON BOX MIN. DEPTH 1 1/2 INCHES	3" OCTAGON BOX MIN. DEPTH 1 1/2 INCHES	FORM A ALARM/AUXILIARY ALARM (SPST)	FORM C AUXILIARY ALARM (SPDT)	FORM A SUPERVISORY (Contact is closed when power is applied)	OPERATING VOLTAGE RANGE (MAX. RIPPLE 4V P-P)	CURRENT DRAW IN ALARM Normal Standby Current is 100 microA, typical at 24VDC	POWER-UP SURGE AT MAXIMUM RATED VOLTAGE	NOMINAL VOLTAGE See note 4
B101B	X				X	X	X				10-29 VDC	7-300 ² mA	10µA sec	3V P/N 669-00
B101BR	X	X			X	X	X				10-29 VDC	21-132 mA	5µA sec	N/A
B102B		X	X		X	X	X	X	X		20-29 VDC	21-42 mA	N/A	N/A
B104B				X	See note 3	X		X	X	X	120 VAC 50-60Hz	—	N/A	N/A
B106B	X				X	X	X	X	X		10-29 VDC	22-300 ² mA	5µA sec	N/A
B106BR	X	X			X	X	X		X		20-29 VDC	21-42 mA	5µA sec	N/A

NOTES:

1. Includes Bases and Detector.
2. Current MUST be limited to this range by the control panel.
3. Mount to 4-inch square junction box only with BRK Adapter Bracket (A10-14-01).
4. Allow an additional 20mA for remote annunciator when specifying 2-wire system requirements.



Unique new Photo Optic Chamber features high signal-to-noise ratio for remarkable stability.

GENERAL SPECIFICATIONS

Operating Voltage/Current Range — See Chart above

Standby Current — 100µA Nominal

Sensitivity — 2.3% Nominal

Sensor — Photoelectric

Temperature Range — 0°C to 38°C, 32°F to 100°F (Detectors tested to 120°F)

Humidity Range — 10% to 85%

Weight — 16 oz. (454 gm)

Diameter — 7" (178 mm)

Relay Contacts* —

Max. Switched Power: 30W (DC) or 50VA (AC)

Max. Switched Current: 1.25A Resistive Load (AC or DC)

Max. Switched Voltage:

Form A: 30V (AC or DC)

Form C: 100V (DC) or 125V (AC RMS)

*Not available on B101B and B101BR Bases

HOW TO ORDER

Model 2851B — Photoelectric Detector. Must be mounted to one of the B10X Series Bases listed below.

Model 2851BTH — Same as Model 2851B above, but with a 135° fixed temp. heat sensor.

Model 1851B — Ionization Detector. Must be mounted to one of the B10X Series Bases listed below.

B101B — 2-wire Adapter Base used with current sensing initiating device circuits, screw terminals. Current must be limited by control panel.

B101BR — Same as B101B Adapter Base, but with current limiting resistor.

B102B — 4 or 6-wire 24VDC Adapter Base with screw terminals. Listed as an Independent Releasing Device. (See Chart above for relay contacts available.)

B104B — Independent Releasing Device Adapter Base powered directly from 120VAC, screw terminals. (See Chart above for relay contacts available.)

B106B — 2-wire Adapter Base with screw terminals. (See Chart above for relay contacts available.)

B106BR — 2-wire Adapter Base with screw terminals and current limiting resistor. (See Chart above for relay contacts available.)

A77-716-02 — End of Line Relay Module, 24VDC. For use with B102B Base only.

I56-210-XX — Applications Manual for System Smoke Detectors.

MO2-04-00 — Test Magnet for both the 2851B and 1851B Detectors.

TM80 — Test Meter for the 2851B and 1851B Detectors.

TM90 — Digital Diagnostic Smoke Detector Analyzer for 2851B and 1851B Detectors.

XP-4 — Three 6-foot Extension Poles to be used with the XR-4 below.

XR-4 — Removal and Replacing Tool for 2851B and 1851B Detectors.

669-00 — Rectangular Remote Alarm Lamp (LED) Assembly, annunciates alarms from 2851B and 1851B Detectors. (B101B Base only.)

Distributed by:

BRK ELECTRONICS System Sensor Division

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