

# 2591J and 2951TJ

## Intelligent Plug-In Photoelectric Smoke Detectors with FlashScan®

JOHNSON  
CONTROLS

### General

Johnson Controls intelligent plug-in smoke detectors with integral communication provide features that surpass conventional detectors. Detector sensitivity can be programmed in the control panel software. Sensitivity is continuously monitored and reported to the panel. Point ID capability allows each detector's address to be set with decade address switches, providing exact detector location for selective maintenance when chamber contamination reaches an unacceptable level. The 2951J photoelectric detector's unique optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources. Dual electronic thermistors add 135°F (57°C) fixed-temperature thermal sensing on the 2951TJ. 2951J and 2951TJ detectors are compatible with the IFC-200, IFC-400, IFC-640, IFC-1010, IFC-2020, IFC-3030, and IFC2-3030.

**FlashScan®** (U.S. Patent 5,539,389) is a communication protocol that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices in the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed **greater than five times** that of earlier designs.

### Features

- Sleek, low-profile design.
- Addressable-analog communication.
- Stable communication technique with noise immunity.
- Low standby current.
- Two-wire SLC connection.
- FlashScan (IFC-640, IFC-3030) and classic CLIP systems (IFC-200, IFC-400, IFC-640, IFC-1010, IFC-2020, IFC-3030) compatible.
- Rotary, decimal addressing (1-99 on current classic systems, 1-159 on FlashScan systems).
- Optional remote, single-gang LED accessory (RA400Z).
- Dual LED design provides 360° viewing angle.
- Visible bi-color LEDs blink green every time the detector is addressed, and illuminate steady red on alarm.
- Remote test feature from the panel.
- Walk test with address display (an address on 121 will blink the detector LED: 12-[pause]-1 (*FlashScan systems only*)).
- Built-in functional test switch activated by external magnet.
- Built-in tamper-resistant feature.
- Sealed against back pressure.
- Constructed of off-white Bayblend®, designed to commercial standards, and offers an attractive appearance.
- 94-5V plastic flammability rating.
- SEMS screws for wiring of the separate base.
- Optional relay, isolator, and sounder bases.
- Backward compatible.



2951J with B210LPJ base



2951TJ with B210LPJ base

### Specification

**Size:** 2.1" (5.3cm) high x 4.1" (10.4cm) diameter installed in B501 base, 6.1" (15.5cm) diameter installed in B210LPJ base.

**Shipping Weight:** 5.2oz. (147g).

**Operating Temperature:** 2951J, 0°C to 49°C (32°F to 120°F); 2951TJ, 0°C to 38°C (32°F to 100°F). Low temperature signal for 2951TJ at 45°F +/- 10°F (7.22°C +/- 5.54°C).

**UL Listed Velocity Range:** 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts.

**Relative Humidity:** 10%-93% noncondensing.

**Thermal Ratings:** Fixed-temperature setpoint 135°F (57°C).

### DETECTOR SPACING AND APPLICATIONS

Johnson Controls recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.144m) for ceiling heights 10 feet (3.148m) and higher. For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. *System Smoke Detector Application Guide*, document A05-1003, is available at [systemsensor.com](http://systemsensor.com)

2951J and 2951TJ are listed for use in ducts, but they are *NOT* listed for use inside duct smoke detector housings. See Duct Application Smoke Detectors Guide, document A05-1004, available at [systemsensor.com](http://systemsensor.com), for details on pendant-mount applications.

## ELECTRICAL SPECIFICATIONS

**Voltage Range:** 15-32 volts DC peak.

**Standby Current (max. avg.):** 250µA @ 24VDC (with no communication enabled); 360µA @ 24VDC (one communication every five minutes with LED enabled).

**LED Current (max.):** 6.5mA @ 24VDC ('ON').

## BASES AVAILABLE

**B210LPJ:** 6.1" (15.5cm) diameter.

**B501J:** 4.1" (10.4cm) diameter.

**B501BH or B501BHT:** Sounder base assembly. Includes B501 base.

**B224RB Relay Base:** *Screw Terminals*, up to 14AWG (2.0mm<sup>2</sup>); *Relay Type*, Form-C; *Rating*, 2.0A @ 30VDC resistive, 0.3A @ 110VDC inductive, 1.0A @ 30VDC inductive; *Dimensions*, 6.2" (15.748cm) x 1.2" (3.048cm) x 1.2" (3.048cm).

**B224BI Isolator Base:** *Dimensions*, 6.2" (15.748cm) x 1.2" (3.048cm) x 1.2" (3.048cm); *Maximum*, 25 devices between isolator bases.

## Installation

2951J plug-in detectors use a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder.

Mount base on an electrical backbox which is at least 1.5" (3.81cm) deep. Suitable mounting base boxes include:

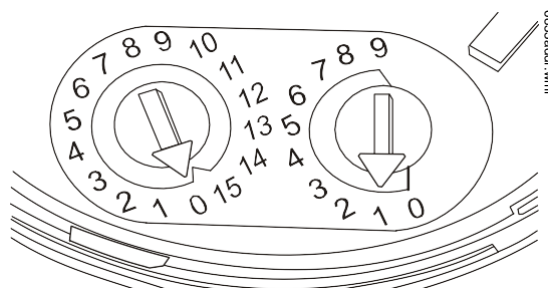
- 4.0" (10.16cm) square box.
- 3.5" (8.89cm) or 4.0" (10.16cm) octagonal box.
- Single-gang box (except relay or isolator base).
- With B501BH or B501BHT base, use a 4.0" (10.16cm) square box.
- With B224RB or B224BI base, use a 3.5" (8.89cm) octagonal box, or a 4.0" (10.16cm) octagonal or square box.

**NOTE:** 1) Because of inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for style 4 (Class "B") wiring. 2) When using relay or sounder bases, consult data sheet (M500XJ) for device limitations between isolator modules and isolator bases.

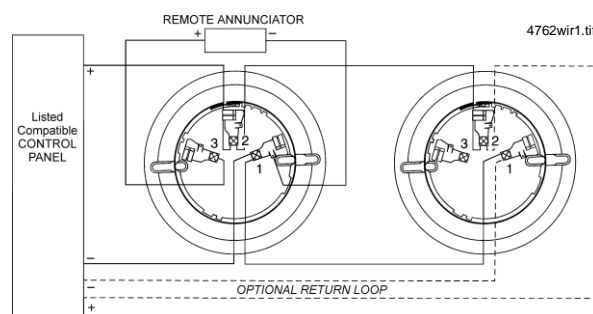
## Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S1115
- **MEA Listed:** 225-02-E Vol. VIII
- **FM Approved**
- **CSFM:** 7272-0554:145
- **Maryland State Fire Marshal:** Permit # 2136



Address Dial on back of Detector



Wiring Diagram

## Product Line Information

**NOTE:** "A" suffix indicates ULC listed model.

**2951J:**Low-profile intelligent photoelectric sensor. Must be mounted to one of the bases listed below.

**2951TJ:**Same as but includes a built-in 135°F (57°C) fixed-temperature thermal device.

### BASES

**B210LPJ:**Standard U.S. low-profile base, pkg. of 10.

**B210LPJA:**Standard U.S. low-profile base, ULC listing.

**B501J:**Standard European flangeless base, pkg. of 10.

**B501JA:**Standard European flangeless base, ULC listing.

**B501BH(A):**Sounder base, includes B501(A) base.

**B501BHT(A):**Same as B501BH(A), but includes temporal sounder.

**B224RB(A):**Intelligent relay base.

**B224BI(A):**Intelligent isolator base. Isolates SLC from loop shorts.

### ACCESSORIES

**F110:**Retrofit replacement flange for older style bases. Converts old high profile base for use with FlashScan detectors.

**RA400Z:**Remote LED annunciator. 3-32VDC. Fits U.S. single-gang electrical box. *Supported by B210LPJ(A) and B501J(A) bases only.*

**SMK400:**Surface mounting kit provides for entry of surface wiring conduit. *For use with B501J(A) base only.*

**RMK400:**Recessed mounting kit. *For use with B501J(A) base only.*

**SMB600:**Surface mounting kit for use with B210LPJ(A).

**BCK-200B:**Black detector covers, box of 10. For use with 2951J only.

**M02-04-01:**Test magnet.

**M02-09-00:**Test magnet with telescope stick.

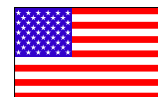
**XR2B:**Detector removal tool. Allows installation and/or removal of FlashScan Series detector heads from base in high ceiling installations.

**T55-127-000:**Detector removal tool without pole.

**XP-4:**Extension pole for XR2B. Comes in three 5-ft. sections.

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