NOTIFIER®

Division of Pittway Corporation

MODEL BX-501 PLUG-IN DETECTOR BASE FOR USE WITH UL LISTED MODELS CPX-551 AND SDX-551

Before installing base, please thoroughly read the system wiring and installation manual, and manual I56-407, *Guide for Proper Use of System Smoke Detectors*, which provides detailed information on detector spacing, placement, zoning, and special applications. Copies of these manuals are available from the manufacturer or through the Notifier distributor. (For installation in Canada, refer to CAN/ULC-S22524-M86, Standard for the Installation of Fire Alarm Systems and CEC part 1, Section 32.)

GENERAL DESCRIPTION

This plug-in detector base is used with NOTIFIER model CPX-551 ionization and SDX-551 photoelectronic.

The BX-501 base is intended for use in a 2-wire intelligent system, with screw terminals provided for power (+) and (-), and remote annunciator connections. Communication takes place over the power (+) and (-) lines. (See note on page 4).

BASE TERMINALS

NO.	FUNCTION
1	POWER (–), REMOTE ANNUNCIATOR (–)
2	POWER (+)
3	REMOTE ANNUNCIATOR (+)

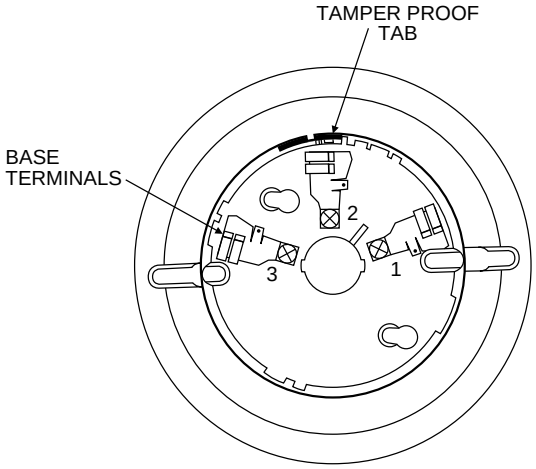


Figure 1. Terminal Layout

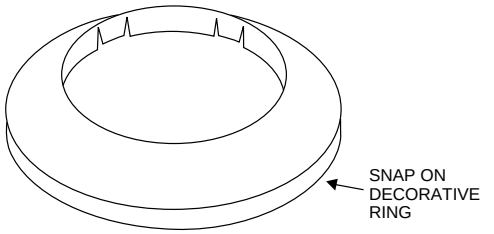
SPECIFICATIONS

Diameter:	6.1 inches (15.5 cm)
Mounting:	4-inch square box with or without plaster ring, Min. Depth: 1.5 inches. 4-inch Octagon Box, Min. Depth: 1.5 inches. 31/2 inch Octagon Box, Min. Depth: 1.5 inches. Single Gang Box, Min. Depth: 1.5 inches.

Notifier, 12 Clintonville Rd., Northford, CT 06472, (203) 484-7161

ELECTRICAL RATINGS

Voltage Range:	14.5 to 28 VDC peak
Standby Current (nominal):	150 µA at 24 VDC
Power-up Surge at Maximum Rated Voltage:	1.5 mA-second
LED Current (nominal):	6 mA at 24 VDC



MOUNTING

This detector base mounts directly to 3-1/2 inch and 4 inch octagon boxes, 4 inch square boxes (with or without plaster rings) and single gang boxes. To mount, remove decorative ring by turning it in either direction to unhook the snaps, then separate the ring from the base. Install the base to the box using the screws supplied with the junction box and the appropriate mounting slots in the base. Place decorative ring onto base, then turn in either direction until the ring snaps in place (see Figure 2).

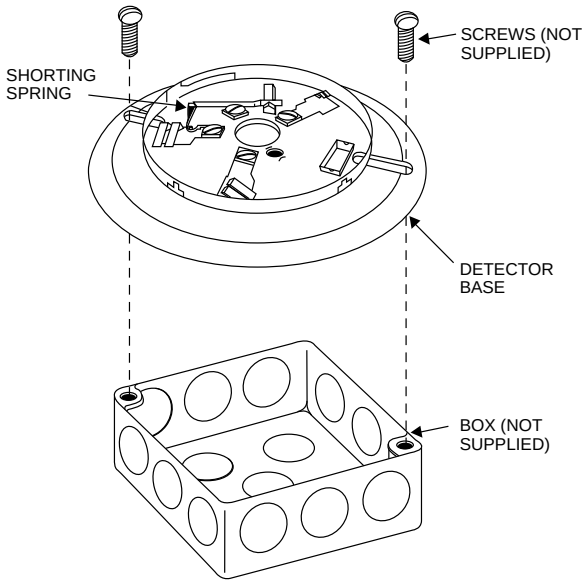


Figure 2. Mounting Base to Box

WIRING INSTALLATION GUIDELINES

All wiring must be installed in compliance with the National Electrical Code and the local authorities having jurisdiction. Proper wire gauges should be used. The conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to prevent wiring mistakes. Improper connections can prevent a system from responding properly in the event of a fire.

For signal wiring (the wiring between interconnected detectors or modules), it is recommended that the wire be no smaller than 18 gauge (1.0 square mm). Wire sizes up to 12 gauge wire (2.5 square mm) may be used with the base. **FOR BEST SYSTEM PERFORMANCE, THE POWER (+) AND POWER (-) LOOP WIRES SHOULD BE TWISTED PAIR INSTALLED IN SEPARATE GROUNDED CONDUIT TO PROTECT THE LOOP FROM EXTRANEOUS ELECTRICAL INTERFERENCE.**

Wire connections are made by stripping about 3/8″ of insulation from the end of the wire (use strip gauge molded in base), sliding the bare end of the wire under the clamping plate, and tightening the clamping plate screw. Do not loop the wire under the clamping plate.

The zone wiring of the detector base should be checked before the detector heads are installed in them. The wiring should be checked for continuity, polarity in the base, and dielectric tests.

The base contains a label to write the zone, address, and type of detector to be installed at that location. This information is important to set the address of the detector head that will later be plugged into the base and to verify the type required for that location.

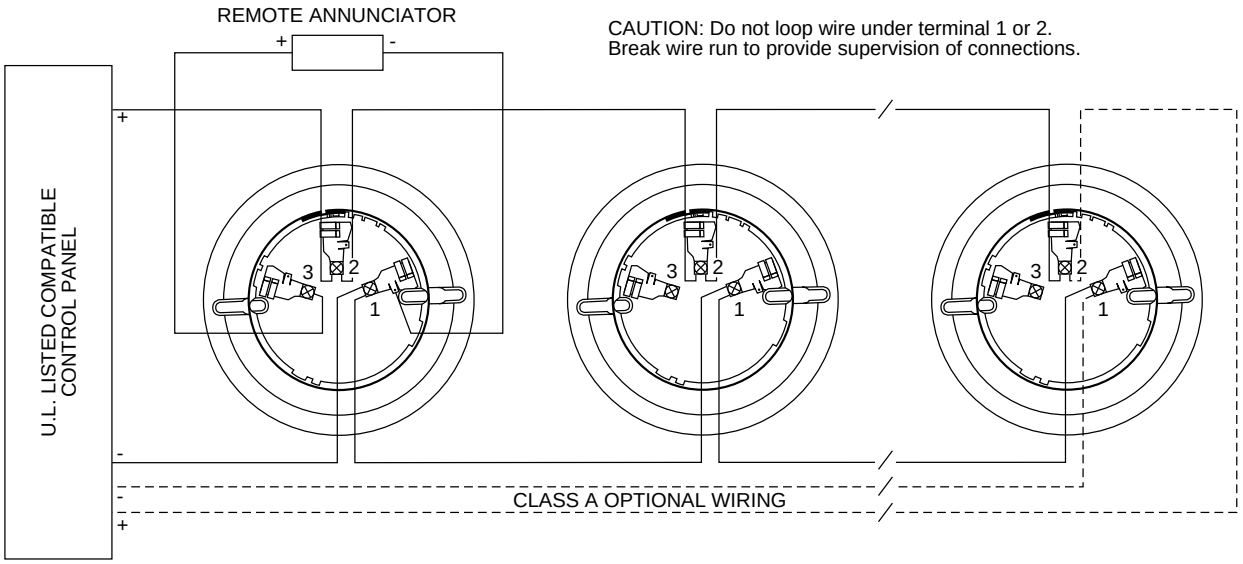


Figure 3. Typical Wiring Diagram for 2-Wire Loop

TAMPER-PROOF FEATURE

This detector base also includes an optional tamper-proof feature that, when activated, prevents removal of the detector without the use of a tool.

To activate this feature, simply break off the tab on the detector base shown in Figure 4A, then install the detector. To remove the detector from the base once the tamper-proof feature has been activated, place a small bladed screwdriver into the hole on the side of the base and push the plastic lever away from the detector head (see Figure 4B). This will allow the detector to be rotated counterclockwise for removal.

NOTE: Head removal after the tamper-proof feature has been activated first requires removal of the decorative ring. The tamper-proof feature may be defeated by breaking and removing the plastic lever from the base. However, this prevents ever using the feature again.

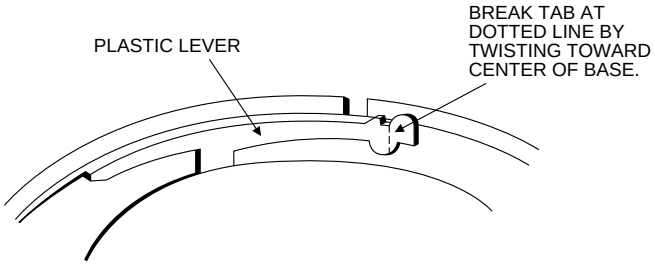


Figure 4A. Activating Tamper-Proof Feature

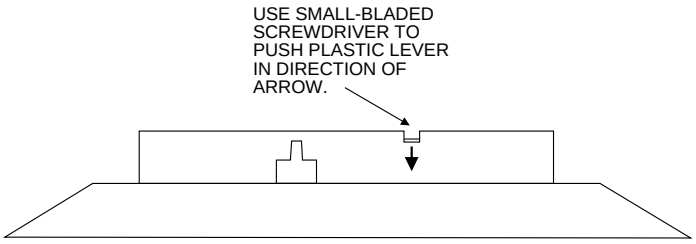


Figure 4B. Removing Detector Head From Base

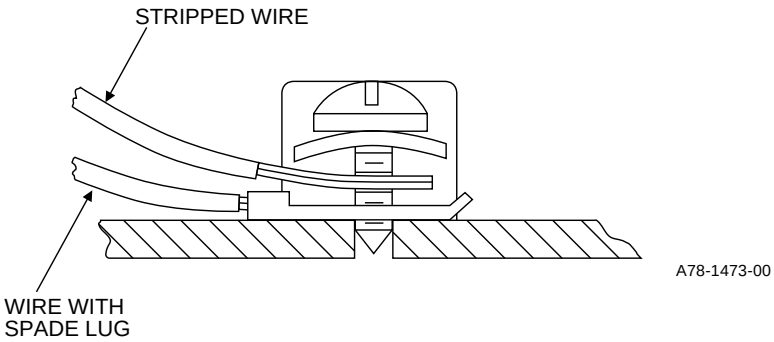


Figure 5. Connection to Remote Annunciator Terminal

REMOTE ANNUNCIATOR

The remote annunciator is connected between terminals 1 and 3 using the spade lug terminal packed with the remote annunciator. The spade lug terminal is connected to the base terminal as shown in Figure 5.

It is not acceptable to have three stripped wires under the same wiring terminal unless they are separated by a washer or equivalent means. The spade lug supplied with the remote annunciator is considered an equivalent means. See Figure 5 for proper installation.

NOTE: Suitable for use with panel Model AM2020, Loop Interface Board, LIB-200; compatibility ID:A; maximum number of detectors per loop is 99. See 155-531, Revision A, for installation and wiring diagrams.

WARNING
LIMITATIONS OF SMOKE DETECTORS

The smoke detectors used with this base are designed to activate and initiate emergency action, but will do so only when used in conjunction with other equipment. This detector is designed for installation in accordance with the current NFPA 72 standard.

Smoke detectors will not work without power. AC or DC powered smoke detectors will not work if the power supply is cut off for any reason.

Smoke detectors will not sense fires which start where smoke does not reach the detectors. Smoke from fires in chimneys, in walls, on roofs or on the other side of closed doors may not reach the smoke detector and alarm it.

A detector may not detect a fire developing on another level of a building. For this reason, detectors should be located on every level of a building.

Smoke detectors have sensing limitations, too. Ionization detectors offer broad range fire-sensing capability, but they are better at detecting fast, flaming fires than slow smoldering fires. Photoelectronic detectors sense smoldering fires better than flaming fires. Because fires develop in different ways, and are often unpredictable in their growth, neither type of detector is always best, and a given detector may not always provide warning of a fire. In general, detectors cannot be expected to provide warnings for fires resulting from inadequate fire protection practices, violent explosions, escaping gas, improper storage of flammable liquids like cleaning solvents, other safety hazards, or arson. Smoke detectors used in high air velocity conditions may fail to alarm due to dilution of smoke densities created by such frequent and rapid air exchanges. Additionally, high air velocity environments may create increased dust contamination, demanding more frequent maintenance.

Smoke detectors cannot last forever. Smoke detectors contain electronic parts. Even though detectors are made to last over 10 years, any of these parts could fail at any time. Therefore, test your smoke detector system at least semiannually. Clean and take care of your smoke detectors regularly. Taking care of the fire detection system you have installed will measurably reduce your product liability risks.