



Division of Pittway Corporation

B710LP and B710LPA Plug-in Detector Base Installation Instructions

For Use With The Following Models:

In US and Europe: CPX-751, SDX-751

In Canada: CPX-751A, SDX-751A

Before installing detectors, please thoroughly read the system wiring and installation manuals, 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 Notifier or through a Notifier distributor. (For installation in Canada, refer to CAN/ULC-S524-M86, *Standard for the Installation of Fire Alarm Systems* and CEC Part 1, Sec. 32.)

GENERAL DESCRIPTION

The Plug-in Detector Base is used with Notifier models CPX-751 and CPX-751A ionization and SDX-751 and SDX-751A photoelectronic detectors.

The B710LP/B710LPA 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. The base is suitable for use with panel Model AM2020, Loop Interface Board, LIB-200; compatibility ID; A maximum number of detectors per loop is 99. See I55-531, Revision A, for installation and wiring instructions.

BASE TERMINALS

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

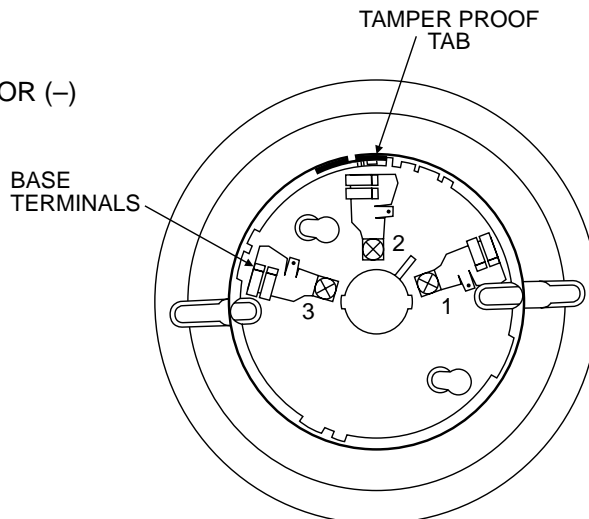


Figure 1: Terminal Layout

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SPECIFICATIONS

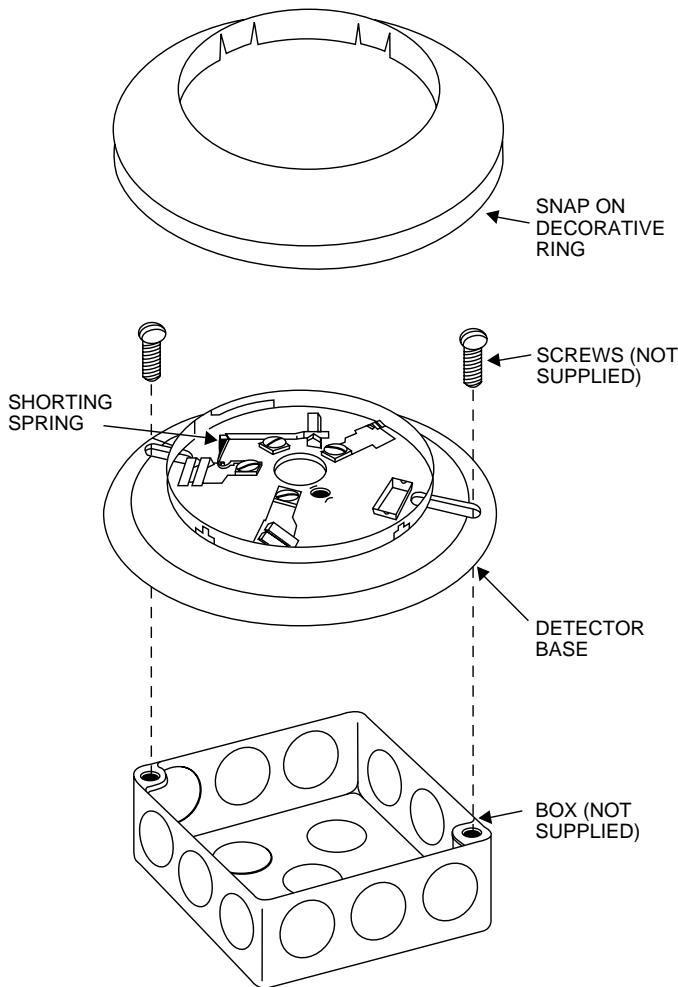
| | |
|-----------|--|
| Diameter: | 6.1 inches (15.5 cm) |
| Mounting: | 4-inch square box (102 mm x 102 mm) with or without plaster ring Min. Depth: 1.5 inches (38 mm) 4-inch (102 mm) Octagon Box, Min. Depth: 1.5 inches (38 mm) 3-1/2 inch (89 mm) Octagon Box, Min. Depth: 1.5 inches (38 mm) Single Gang Box, Min. Depth: 1.5 inches (38 mm) |

ELECTRICAL RATINGS — includes Base and Detector

| | |
|----------------------------|-----------------------|
| Voltage Range: | 15 – 32 Volts DC Peak |
| Standby Current (nominal): | 150 μ A at 24 VDC |
| Power-up Surge At | |
| Max. Rated Voltage: | 1.5 mA-sec. |
| LED Current (nominal): | 6.5 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).



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Figure 2: Mounting Detector to Box

INSTALLATION WIRING GUIDELINES

All wiring must be installed in compliance with the National Electrical Code and all applicable local codes and any special requirements of the authority having jurisdiction, using the proper wire size. The conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to reduce the likelihood of wiring errors. Improper connections can prevent a system from responding properly in the event of a fire.

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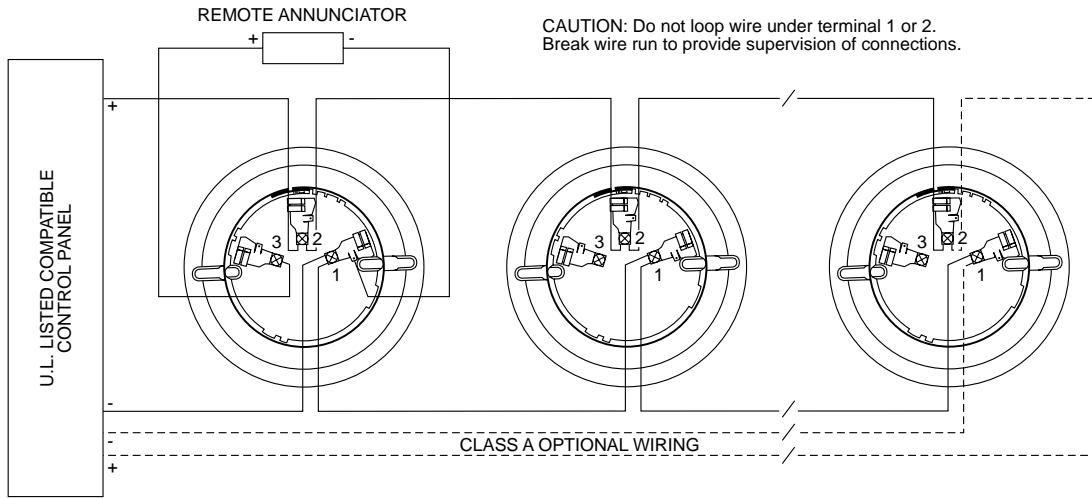
For signal wiring (the wiring between interconnected detectors), it is recommended that the wire be no smaller than AWG 18. However, the screws and clamping plate in the base can accommodate wire sizes up to AWG 12. The use of twisted pair wiring or shielded cable for the power (+ and -) loop is recommended to minimize the effects of electrical interference.

If shielded cable is used, the shield connection to and from the detector must be continuous by using wire nuts, crimping, or soldering, as appropriate for a reliable connection.

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 and polarity in the base, and dielectric tests should be performed.

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.



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Figure 3: Typical Wiring Diagram for 2-wire loop

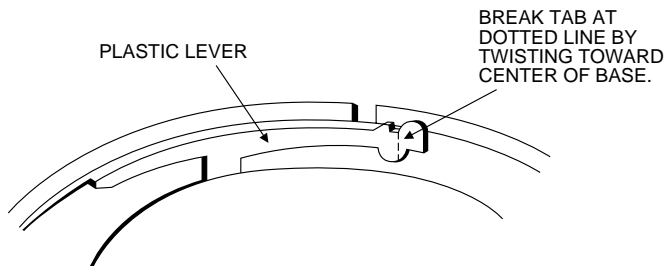
TAMPER-RESISTANCE

Note: Do NOT use the tamper-resistant capability if the XR2 Removal Tool will be used.

The Tamper Resistant Tab, in the Detector Mounting Bracket, can make the detector tamper-resistant by making it necessary to use a small screwdriver or similar tool to detach the detector from the base.

To make the detector tamper-resistant, use needle-nose pliers to break the smaller tab at the scribed line on the tamper resistant tab. Figure 1 shows the location of this tab on the detector mounting bracket.

To remove the detector from the base after it has been made tamper resistant, remove the decorative ring by rotating it in either direction and pulling it away from the base. Then, insert a small screwdriver into the notch, as indicated in Figure 3B, and press the plastic lever toward the mounting surface before rotating the detector counterclockwise for removal.



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Figure 4A. Enabling the Tamper-Resistant Capability

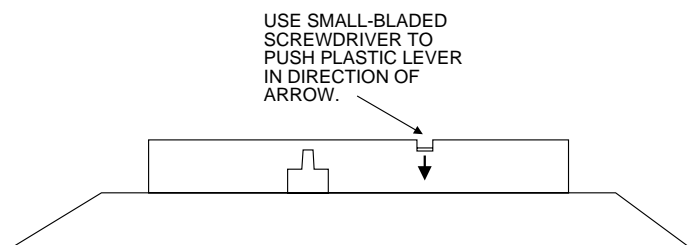
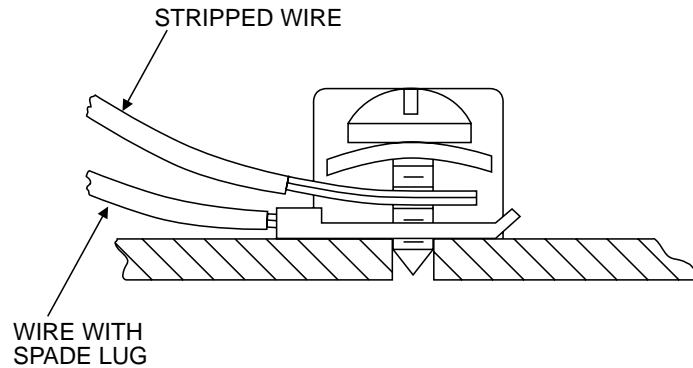


Figure 4B. Removing the Detector Head from the Base

REMOTE ANNUNCIATOR, MODEL RA400Z

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 for three stripped wires to be under the same wiring terminal unless they are separated by a washer or equivalent means. The spade lug supplied with the model RA400Z is considered an equivalent means. See Figure 5 for proper installation.



A78-1473-00

Figure 5: Connection to Remote Annunciator Terminal

WARNING LIMITATIONS OF SMOKE DETECTORS

This smoke detector used with this base is designed to **activate and initiate** emergency action, but will do so only when used in conjunction with an authorized fire alarm system. This detector must be installed in accordance with NFPA standard 72.

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. Smoldering fires typically do not generate a lot of heat which is needed to drive smoke up to the ceiling where the smoke detector is usually located. For this reason, there may be large delays in detecting a smoldering fire with either an ionization-type detector or a photoelectric-type detector. Either one of them may alarm only after flaming has initiated, which will generate the heat needed to drive the smoke to the ceiling.

Smoke from fires in chimneys, in walls, on roofs, or on the other side of a closed door may not reach the smoke detector and alarm it. A detector cannot quickly detect, or sense at all, a fire developing on another level of a building. For this reason, **detectors shall be located on every level and in every bedroom within a building.**

Smoke detectors have sensing limitations, too. Ionization detectors and photoelectric detectors are required to pass fire tests of the flaming and smoldering types. This is to ensure that both can detect a wide range of fires. Ionization detectors offer a broad range of fire-sensing capability, but they are somewhat better at detecting fast-flaming fires than slow-smoldering fires. Photoelectric detectors sense smoldering fires better than flaming fires, which have little, if any, visible smoke. 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 early warning of a specific type of fire.

In general, detectors cannot be expected to provide warnings for fires resulting from inadequate fire protection practices, violent explosions, escaping gases that ignite, improper storage of flammable liquids like cleaning solvents that ignite, other similar safety hazards, arson, smoking in bed, children playing with matches or lighters, etc. Smoke detectors used in high air velocity conditions may have a delay in alarm due to dilution of smoke densities created by frequent and rapid air exchanges. Additionally, high air velocity environments may create increased dust contamination, demanding more frequent detector maintenance.

Smoke detectors cannot last forever. Smoke detectors contain electronic parts. Even though detectors are made to last over 10 years, any part can fail at any time. Therefore, smoke detectors shall be replaced after being in service for 10 years. The smoke detector system that this detector is used in must be tested regularly per NFPA 72. This smoke detector should be cleaned regularly per NFPA 72 or at least once a year.