

B616LP PLUG-IN DETECTOR BASE INSTALLATION INSTRUCTIONS

FOR USE WITH THE FOLLOWING SMOKE DETECTOR MODELS:

IN US: CP-651, SD-651
IN CANADA: CP-651A, SD-651A
IN EUROPE: CP-651E, SD-651E

Before installing detectors, please thoroughly read manual I56-407, *Guide for Proper Use of System Smoke Detectors*, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications. Copies of this manual are available from Notifier or through the Notifier distributor. (For installations in Canada, refer to CAN4-S524-M86, Standard for the Installation of Fire Alarm Systems and CEC Part 1, Sec. 32.)

NOTICE: This manual should be left with the owner/user of this equipment.

IMPORTANT: The detector used with this base must be tested and maintained regularly following NFPA 72 requirements. The detector used with this base should be cleaned at least once a year.

GENERAL DESCRIPTION

The B616LP plug-in detector base is used with Notifier model CP-651, CP-651A, and CP-651E ionization detector heads and SD-651, SD-651A, and SD-651E photoelectronic detector heads. The capability of plugging these detectors into a variety of special bases makes them more versatile than equivalent direct-wired models.

The B616LP base is intended for use in 2-wire systems, with screw terminals provided for power and relay contact connections. These bases **MUST** be current limited by the system control panel in the alarm state.

SPECIFICATIONS

Base Diameter:	6.2 inches (157 mm)
Base Height:	0.95 inches (24 mm)
Weight:	0.3 lb. (130 g)
Mounting:	4-inch square box with or without plaster ring. Min. Depth—1.5 inches 4-inch octagon box. Min. Depth—1.5 inches 3-1/2-inch octagon box. Min. Depth—1.5 inches 50 mm box 60 mm box 70 mm box
Operating Temperature Range:	0° to +49°C (32° to 120°F) US and Canadian Installations 10° to +60°C (14° to 140°F) European Installations
Operating Humidity Range:	10% to 93% Relative Humidity

ELECTRICAL RATINGS – includes base and detector

System Voltage:	24 VDC
Maximum Ripple Voltage:	4 Volts peak to peak
Start-up Capacitance:	0.02 μ F Maximum
Standby Ratings:	15 VDC Minimum 35 VDC Maximum 120 μ A Maximum

ELECTRICAL RATINGS—Continued

Alarm Ratings: 8 V Minimum at 16 mA
12 V Maximum at 100 mA
(Alarm current **MUST** be limited to 100 mA maximum by the control panel.)

Relay Contact Ratings:
Resistive or Inductive (60% power factor) Load
Form C:* 2.0A @ 30 VAC/DC
0.6A @ 110 VDC
1.0A @ 125 VAC
Reset Voltage: 1.4 VDC Minimum
Reset Time: 0.3 Seconds Maximum
Start-up Time: 34.0 Seconds Maximum

*For Canadian installations relay contact ratings are 2.0A @ 30 VAC/DC.

MOUNTING

This detector base mounts directly to 3-1/2-inch and 4-inch octagon boxes, and 4-inch square boxes (with or without plaster rings).

To mount, remove the 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 the decorative ring back on the base, then turn in either direction until the ring snaps in place (see Figure 1).

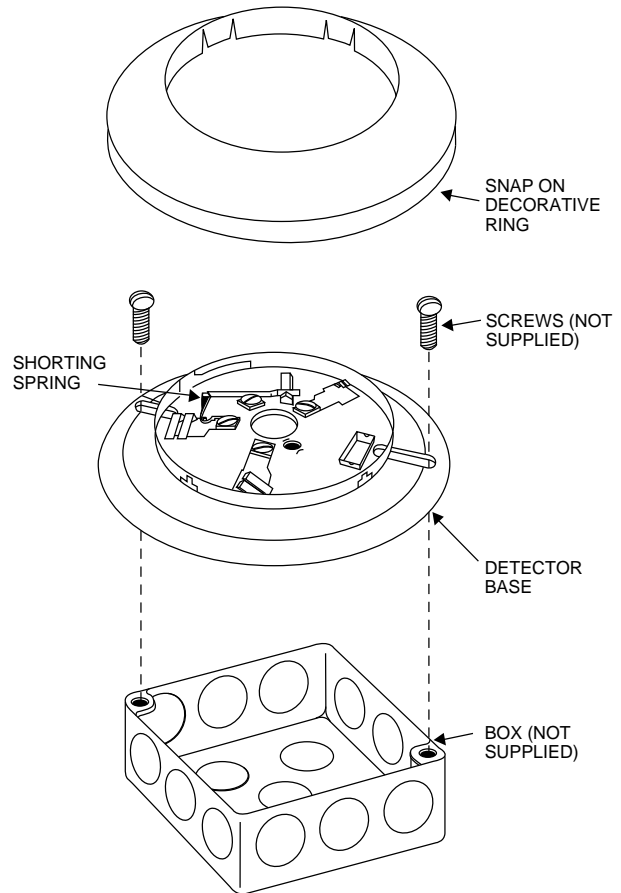


Figure 1. Mounting Base to Box

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INSTALLATION GUIDELINES

All wiring must be installed using the wire sizes specified by the National Electrical Code and all applicable local codes of the authority having jurisdiction. 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.

For signal wiring (the wiring between interconnected detectors), it is recommended that the wire be no smaller than 18 gauge. Wire sizes up to 12 gauge may be used with the base. For best system performance, the power (+) and (-) loop wires should be twisted pair and installed in separate grounded conduit to protect the loop against extraneous electrical interference.

Smoke detectors and alarm system control panels have specifications for allowable loop resistance. Consult the control panel manufacturer's specifications for the total loop resistance allowed for the particular model control panel being used before wiring the detector loops.

WIRING INSTRUCTIONS

CAUTION

For system supervision — For terminals 2, 3, and 5 do not use looped wire under terminals. Break wire run to provide system supervision of connections.

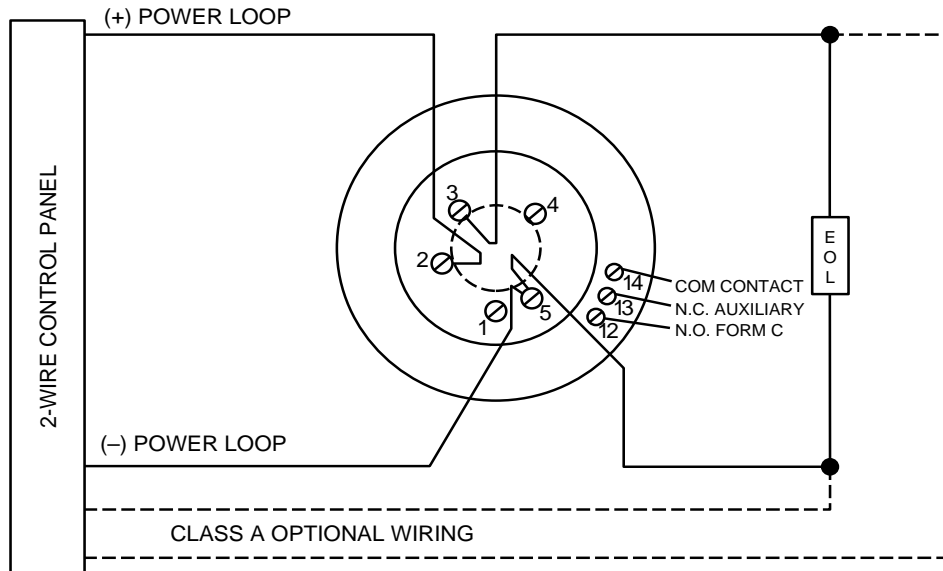


Figure 2. Typical Wiring Diagram

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Wire connections are made by stripping insulation from the end of the wire, sliding the bare end of the wire under the clamping plate, and tightening the clamping plate screw. Use the strip gauges molded into the inside and underside of the base for ease of wiring to terminals 1 through 5, and to terminals 12 through 14, respectively.

The zone wiring of the detector base should be checked before the detector heads are installed in them. To make this possible, this base contains a special spring-type shorting jumper. After a detector base is properly wired and mounted on an electrical box, make sure that the jumper spring is in contact with the base of Terminal 3. This temporary connection shorts the positive-in and positive-out leads and permits the wiring of the loop to be checked for continuity.

Once all the detector bases have been wired and mounted, and the loop wiring has been checked, the detector heads may be installed in the bases. The shorting spring in the base will disengage automatically when the detector head is removed from the base. DO NOT remove the shorting spring since it reengages as the detector head is turned into the base, completing the circuit.

TAMPER-RESISTANCE FEATURE

NOTE: Do NOT use the tamper-resistance feature if the XR2 Removal Tool will be used.

This detector base includes a tamper-resistance feature that prevents removal of the detector without the use of a tool. To make the detector tamper-resistant, break off the tab on the detector base shown in Figure 3A and then install the detector.

To remove the detector from the base once the tamper-resistance feature has been activated, place a small-bladed screwdriver into the small hole on the side of the base and push plastic lever away from the detector head (see Figure 3B). This will allow the detector to be rotated counterclockwise for removal.

Note: Head removal after the tamper resistant capability has been activated first requires removal of the decorative ring.

The tamper resistance can be defeated by breaking and removing the plastic lever from the base. However, this permanently disables the tamper resistant capability.

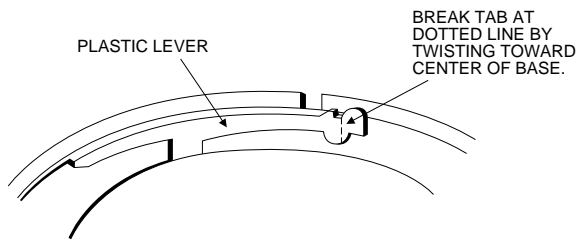
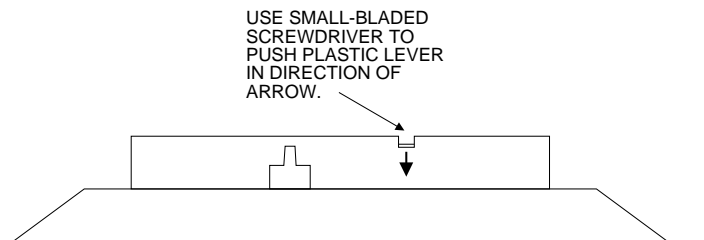


Figure 3A. Activating Tamper-resistance Feature



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Figure 3B. Removing Detector Head from Base

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 photoelectronic-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 photoelectronic 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. Photoelectronic 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.