

# B501 Plug-in Detector Base

**SPECIFICATIONS**

Base Diameter: 4.0 inches (10.2cm)  
 Base Height: 0.74 inches (18.8 mm)  
 Operating Temperature: Refer to applicable sensor Operating Temperature Range using the Base/Sensor Cross Reference Chart at systemsensor.com

**Electrical Ratings – includes base and detector**

Operating Voltage: 15 to 32 VDC  
 Standby Current: 150µA

**BEFORE INSTALLING**

Please read the *System Smoke Detectors Application Guide*, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications. Copies of this application guide are available from Xi'an System Sensor. NFPA 72 guidelines should be observed.

**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 should be cleaned at least once a year.

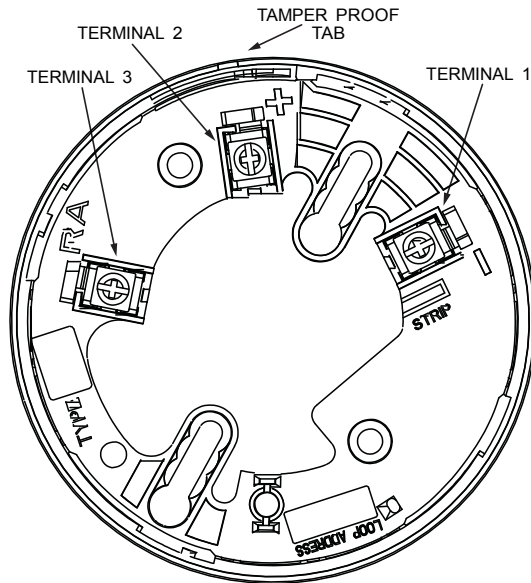
**GENERAL DESCRIPTION**

The B501 is a plug in detector base intended for use in an intelligent system with screw terminals provided for power (+) and (-), and remote annunciator connections. Communication takes place over the power (+) and (-) lines.

**BASE TERMINALS**

No.	Function
1	Power (-), Remote Annunciator (-)
2	Power (+)
3	Remote Annunciator (+)

**FIGURE 1. TERMINAL LAYOUT:**



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**MOUNTING**

This detector base mounts directly to 4 inch square with plaster ring, 3.5 inch octagon, single gang box, 50 mm, 60 mm, and 70 mm centers.

**INSTALLATION AND WIRING GUIDELINES (SEE FIGURE 2)**

All wiring must be installed in compliance with all applicable local codes and any special requirements of the local authority 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 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 and modules), it is recommended that the wiring be no smaller than 18 AWG (0.823 square mm). Wire sizes up to 12 AWG (3.31 square mm) may be used with the base.

Alarm system control panels have specifications for allowable loop resistance. Consult the control panel specifications for the total loop resistance allowed before wiring the detector loops.

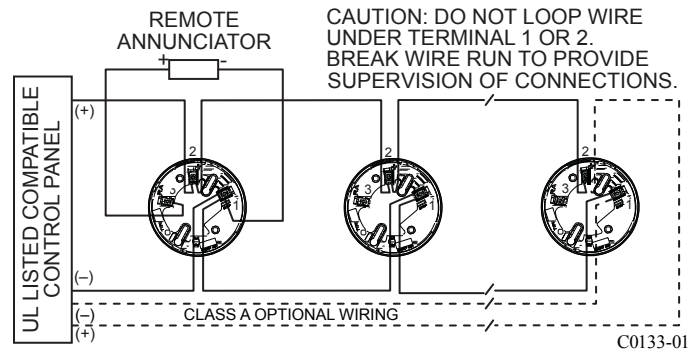
Make wiring connections by stripping about 3/8 inch (10mm) of insulation from the wire end (use strip gauge molded in base). Then slide the wire under the clamping plate and tighten the clamping plate screw. Do not loop the wire under the clamping plate. (see Figure 3)

Check the zone wiring of all bases in the system before installing the detectors. This includes checking the wiring for continuity, correct polarity, ground fault testing and performing a dielectric test.

The base includes an area for recording the zone, address, and type of detector to be installed at that location. This information is useful for setting the detector head address and for verification of the detector type required for that location.

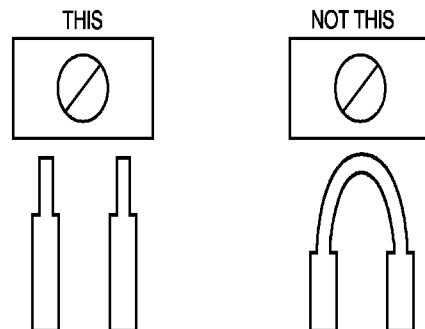
Once all detector bases have been wired and mounted, and the loop wiring has been checked, the detector heads may be installed in the bases.

**FIGURE 2. TYPICAL WIRING DIAGRAM FOR 2-WIRE LOOP:**



C0133-01

**FIGURE 3.:**



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**TAMPER-RESIST FEATURE**

**NOTE:** Do not use the tamper-resist feature if the removal tool is to be used.

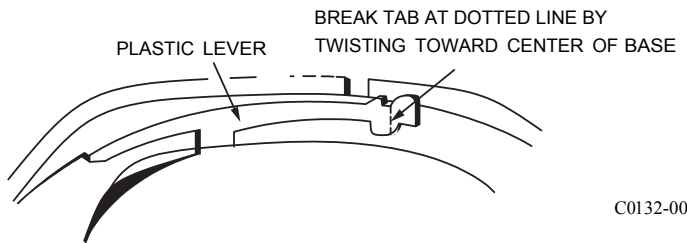
The detector base includes a tamper-resist feature that prevents removal of the detector without using a small screwdriver or similar tool.

To activate this feature, use needle-nose pliers to break the tab on the detector base as shown in Figure 4A. Then, install the detector.

To remove the detector from the base once the tamper-resist feature has been activated, insert a small-bladed screwdriver into the small hole on the side of the base and push the plastic lever away from the detector head (see Figure 4B). This allows the detector to be rotated counterclockwise for removal.

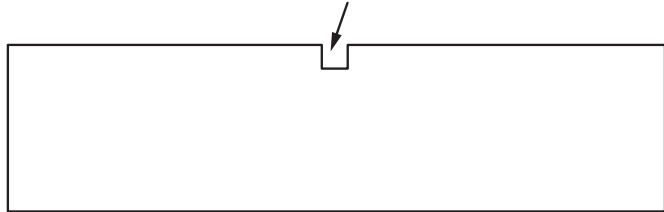
The tamper-resist feature can be defeated by breaking and removing the plastic lever from the base. However, this prevents the feature from being used again.

**FIGURE 4A. ACTIVATING TAMPER-RESIST FEATURE:**



**FIGURE 4B. REMOVING DETECTOR HEAD FROM BASE:**

USE SMALL-BLADED SCREWDRIVER TO PRESS PLASTIC LEVER IN DIRECTION OF ARROW

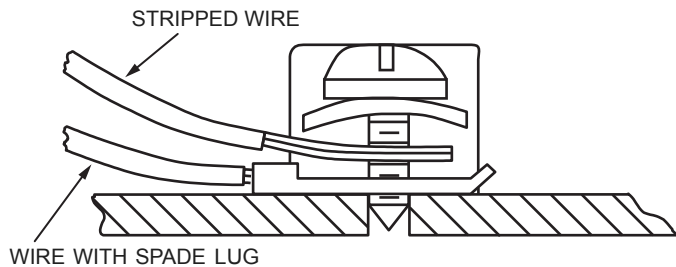


**REMOTE ANNUNCIATOR (RA400Z/RA100Z)**

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 model RA400Z/RA100Z is considered an equivalent means. See Figure 2 for proper installation.

**FIGURE 5. CONNECTION TO REMOTE ANNUNCIATOR TERMINAL:**



**Please refer to insert for the Limitations of Fire Alarm Systems**

**THREE-YEAR LIMITED WARRANTY**

Xi'an System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. Xi'an System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning Xi'an System Sensor for a Return Authorization Number and faxing a copy of the filled CUSTOMER RETURNS with authorized RA# to Xi'an System Sensor, send Defective units with a copy of the form postage prepaid to: Xi'an System Sensor Electronics, Ltd./

28 Tuan Jie South Road/ Xi'an National Hi-tech Industrial Development Zone, 710075/ China. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.