

## INSTALLATION AND MAINTENANCE INSTRUCTIONS

# HD101B

## Conventional Photoelectric Smoke Detector



### Before Installing

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

**IMPORTANT:** This detector used with the HD10X base must be tested and maintained regularly following NFPA 72 requirements. The detector should be cleaned at least once a year.

### General Description

This detector can be used in all areas where photoelectric smoke detector is required. It is suited for fires ranging from smoldering to flaming fires.

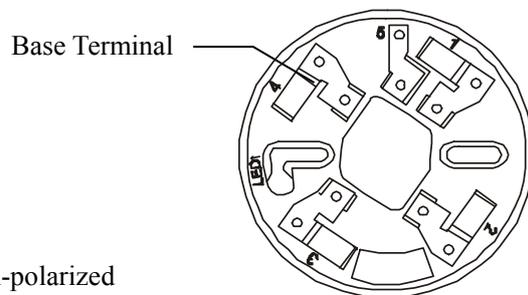
This detector uses a state-of-the-art optical sensing chamber, it is designed to provide open area protection and to be used with most conventional fire alarm control panel.

Two LEDs on each detector provide local 360° visible for indication of status. In the normal condition the LEDs flash red every 5 seconds. When the detector senses smoke goes into pre-alarm sensitivity the LEDs will flash red every 1 second. When the detector senses smoke and goes into alarm the LEDs will latch on red.

The alarm can be reset only by a momentary power interruption.

### Base Terminals

No.	Function
1	Remote Indicator (-)
2	Power (-), In
3	Power (-), Out
4	Power (+), Remote Indicator (+)



**Figure 1. Terminal layout of HD10X base**

### Specifications

Operating Voltage Range:	16 to 28VDC Volts Non-polarized
Standby Current:	60 $\mu$ A @ 28 VDC(Maximum)
Alarm Current (LED on: )	30mA @ 28 VDC(Maximum)
Adjustable Sensitivity:	0.12 to 0.25dB/m
Operating Temperature Range:	14°F to 122°F (-10°C to50°C)
Operating Humidity Range:	10% to 93% Relative Humidity, Non-condensing
Height:	2.2" (55 mm) installed in Base
Diameter:	4.0" (103 mm)
Weight:	5.5 oz. (155 g)
Color & Material	White/ ABS
Bases	HD10X
Compatible control panels	Conventional fire alarm control panel

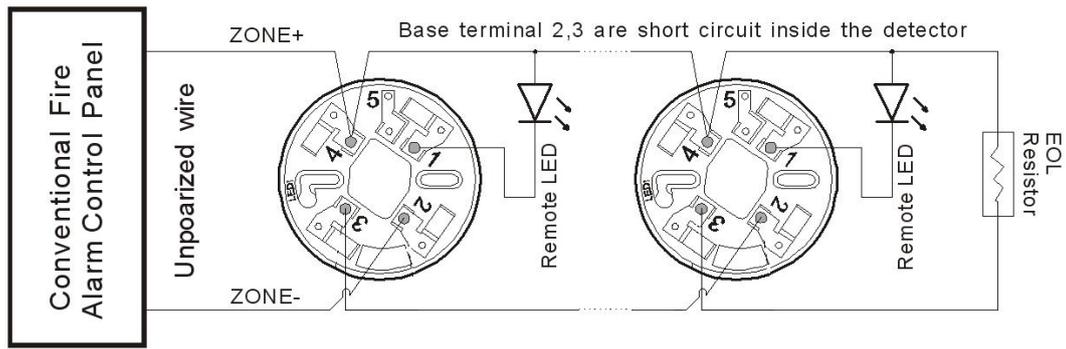
### Installation Guidelines (See Figure 2)

All wiring must be installed in compliance with the local codes 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), it is recommended that the wire be no smaller than 1.0 square mm. Wire sizes up to 2.5 square mm may be used with the base. For best system performance. The Power (+) and Power(-) wires should be twisted pair and installed in separate grounded conduit to protect the loop from extraneous electrical interference.

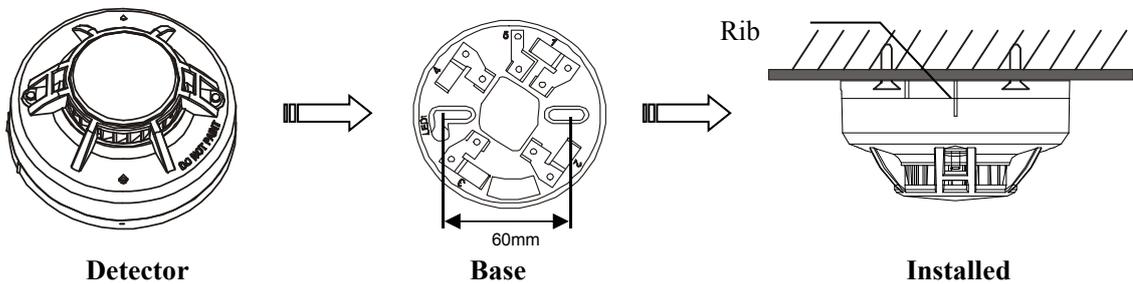
Smoke detector and fire alarm system control panels have specifications for allowable loop resistance. Consult the control panel manufacturer's for the total loop resistance allowed for the particular model control panel being used before are made by simply stripping about 3/8 inches (9.5 mm) insulation from the end of the wire. Sliding the bare end of the wire under the clamping plate.

The 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.



**Figure 2. Typical wiring diagram**

**Note:** During the installation, Make the rib of the detector align with the rib on the base until it drops into place.(see figure 3)



**Figure 3. Install the detector**

**Note:** Dust covers are an effective way to limit the entry of dust into smoke detector sensing chambers. However, they may not completely prevent airborne dust particles from entering the detector. Therefore, We recommends the removal of detectors before beginning construction or other dust producing activity.

Be sure to remove the dust covers from any sensors that were left in place during construction as part of returning the system to service.

**Remote LED**

The remote indicator is connected between terminals 1 and 4 as showing Figure 2. The remote indicator must be current limited to 20mA @24V. Maximum. Not limiting current could result in damage to the detector or cause a no alarm condition.

**Tamper-Resistance**

The detector include a tamper-resistant capability that prevents their removal from the bracket without the use of a tool.

**Testing**

Before testing, notify the proper authorities that the smoke detector system is undergoing maintenance and will temporarily be out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms. Detectors must be tested after installation and as part of periodic maintenance.

NOTE: Before testing the detector, check to ensure the LEDs blink. If they do not, the detector has lost power (check the wiring), it is defective (return it for repair), or the detector sensitivity is outside the listed limits.

The sensor can be tested in the following ways:

Smoke Entry test: Aerosol Generator (Gemini 501)

The GEMINI model 501 aerosol generator can be used for smoke entry testing. Set the generator to represent 4%/ft to 5%/ft obscuration as described in the GEMINI 501 manual. Using the bowl shaped applicator, apply aerosol until the panel alarms.

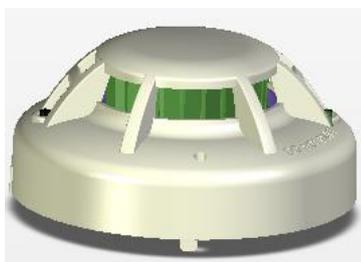
A sensor that fails any of these tests should be cleaned as described under CLEANING, and retested. If the sensor fails after cleaning, it must be replaced.

When testing is complete, restore the system to normal operation and notify the proper authorities that the system is back in operation.

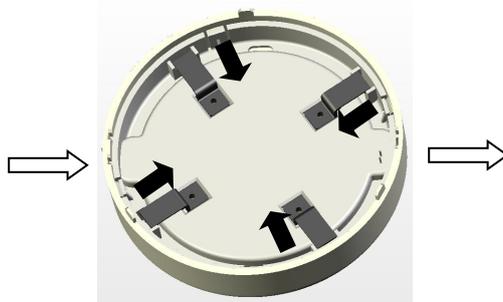
## **Maintenance**

Before removing the detector, notify the proper authorities that the smoke detector system is undergoing maintenance and will be temporarily out of service.

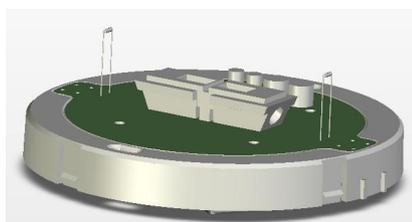
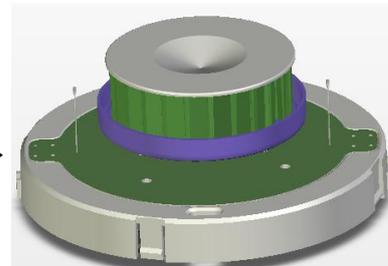
1. Counterclockwise rotation detector, remove it from the mounting base is removed.
2. Remove the detector cover by pressing firmly on each of the four removal tabs that hold the cover in place.
3. Vacuum the screen carefully without removing it. If further cleaning is required continue with Step 4, otherwise skip to Step 7.
4. Remove the chamber cover/screen assembly by pulling it straight out.
5. Use a vacuum cleaner or compressed air to remove dust and debris from the sensing chamber.
6. Reinstall the chamber cover/screen assembly by sliding the edge over the sensing chamber. Turn until it is firmly in place.
7. Replace the cover using the LEDs to align the cover and then gently pushing it until it locks into place.
8. Reinstall the detector.
9. Test the detector as described in TESTING.
10. Reconnect disabled circuits.
11. Notify the proper authorities that the system is back on line.



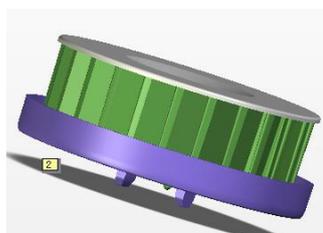
**Remove the detector from base.**



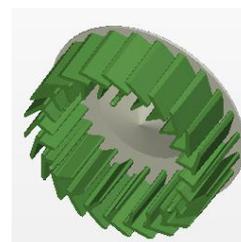
**Remove the detector cover**



**Remove the chamber from detector**



**To clean the chamber**



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HD101B Conventional smoke detector  
Fire detection and fire alarm systems installed in and around buildings.  
According to Construction Products Regulation EU N° 305/2011