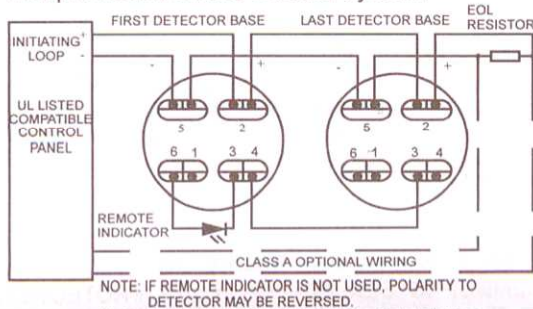


#### TYPICAL WIRING DIAGRAM

Figure 1.A shows the typical wiring diagram of 2-wire multiple-station smoke detector system.



NOTE: IF REMOTE INDICATOR IS NOT USED, POLARITY TO DETECTOR MAY BE REVERSED.

Fig. 1.a Installing the 2-wire multiple station smoke detector base

REMOTE LED INDICATOR OUTPUT (12VDC) IS FOR ZI-SD 269-LED AND ZI-SD 268-LED ONLY

DO NOT USE LOOPED WIRE UNDER TERMINALS 2 AND 5  
BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS

Figure 1.B shows the typical wiring diagram of 4-wire multiple-station smoke detector system.

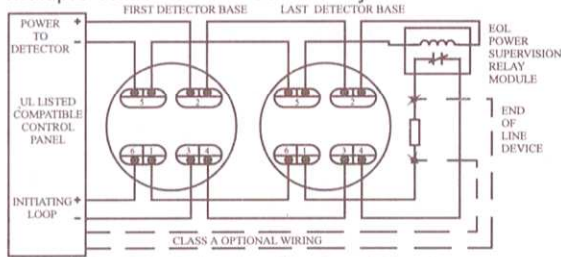


Fig. 1.B Installing the 4-wire multiple station smoke detector base

DO NOT USE LOOPED WIRE UNDER TERMINALS 2 AND 5  
BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS

#### WARNING

**TO PREVENT DETECTOR CONTAMINATION AND SUBSEQUENT WARRANTY CANCELLATION, THE SMOKE DETECTOR MUST REMAIN COVERED UNTIL THE AREA IS CLEAN AND DUST FREE.**

#### INSTALLING THE BASE

- To insure proper installation of the detector head to the base, all the wires should be properly addressed at installation:
  - Position all the wires flat against terminals.
  - Fasten the wires away from connector terminals.
- If you use a jumper wire to connect the poles of terminal 2 and 5 when testing the detector loop continuity, be sure to remove the jumper wire prior to the installation of the detector head.
- The end-of-line device shown in fig. 1(a) and 1(b) should be compatible with the control unit. The end-of-line supervisory relay used should be rated for the DC power voltage used.
- As per UL listing, open area smoke detectors are intended for mounting on a ceiling no less than 100mm from a wall or mounting on a wall than no less than

100mm and no more than 300mm from a ceiling.

- The base of the smoke detector can be mounted directly onto an electrical junction box such as an octagonal (75mm, 90mm or 100mm), a round (75mm), or a square (100mm) box without using any type of mechanical adapter.

#### INSTALLING THE HEAD

- Align the components as shown in fig. 2.
- Mate the detector head onto the base and twist clockwise to secure it.
- Do not install the detector head until the area is thoroughly cleaned of construction debris, dust, etc. The maximum number of smoke detectors able to be installed in the same loop is 30 units.

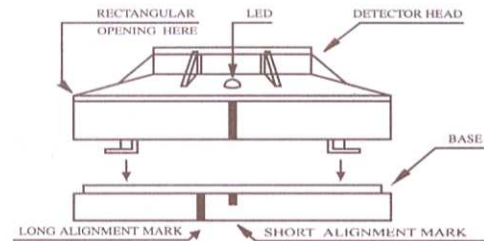


Fig. 2 Mating detector head onto base

#### ADJUSTING THE RELAY FOR NO/NC

The normal condition for the relay is "normally open" (NO).

- To adjust the normal condition of the relay to "normally closed" (NC), insert a screwdriver into the rectangular hole located on the side between the front cover and base and rotate to remove the front cover.
- Refer to figure 3. There is a jumper head next to the relay on the PCB. Remove the jumper head and reinsert it in the NC position.
- Carefully replace the front cover.

Relay contact rating:  
1A @ 30VDC  
0.5A @ 125VAC  
Operating voltage:  
Max: 26 VDC  
Min: 10.2 VDC

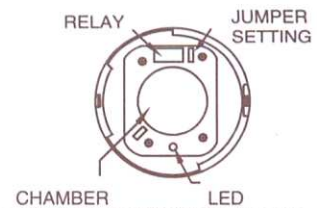


Fig. 3 Schematic of detector structure when front cover is open.

#### TESTING

- All the alarm signal services, releasing device and extinguisher system should be disengaged during the test period and must be reengaged immediately at the conclusion of testing.
- For 2-wire type: turn power on and energize the detector head for at least 5 minutes before proceeding the following testing procedures.  
For 4-wire type: after energizing the detector head for

approximately one minute, check to see the indicator LED flashing. If LED fails to flashing, it indicator the nonfunctioning of detector or faulty wiring. Recheck the wiring or replace the detector if necessary.

3. Allow smoke from a cotton wick or a punk to enter the detector sensing chamber for at least 10 seconds. When sufficient smoke has entered the chamber, an alarm signal will take place by indicating with a continuous illumination of the LED. After it alarms, Reset each detector and/or control unit before attempting to test the additional detector in the same zone. If the alarm fails in this step, it indicates a defective unit which requires service.

### HEAT SENSOR TESTING

The detector to be tested should be subject to a flow of warm air at a temperature between 140°F and 180°F. This requirement can be met by some domestic hair dryers.

Proceed as follows:

1. Switch on the warm air flow and check that temperature is correct and stable.
2. From a distance of inches, direct the airflow at the guard protecting the thermistor. The detector should alarm within 30 seconds.
3. On alarm immediately remove the heat source, check that the detector's red LED is lit. Reset the detector from the control panel.
4. If the detector fails to go into alarm within 30 seconds it is too insensitive and needs to be returned to the distributor for servicing.
5. After testing check that the system is set for normal

operation and notify the appropriate authorities that the testing operation is complete and the system is active again.

**NOT SUITABLE FOR INSTALLATION IN AREAS WHERE AIR VELOCITIES EXCEED 2000 ft/min (90.91 m/min).**

### MAINTENANCE

The recommended minimum requirement for detector maintenance consists of an annual cleaning of dust from the detector head by using a vacuum cleaner cleaning program should be agreed to the individual environment in conformance with NFPA-72A standard.

**CAUTION: DO NOT ATTEMPT TO DISASSEMBLE THE FACTORY SEALED SMOKE DETECTOR. THIS ASSEMBLY IS SEALED FOR YOUR PROTECTION AND IS NOT INTENDED TO BE OPENED FOR SERVICING BY USERS. OPENING THE DETECTOR HEAD WILL VOID THE WARRANTY.**

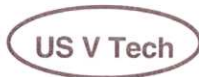
**REFERENCES TO THE TECHNICAL BULETTIN ISSUE NO. SDTB19960306, REV. E, January 13, 1998**

This detector is compatible with UL listed fire alarm control panels.

### SPECIFICATION

Model	2/4 wire	Thermal	Voltage DC (Max/Min)	Standby Current (Max)	Alarm Current (Max/Min)	Alarm Impedance (Max/Min)	Surge Current (Max.)	Star-Up Time (Max.)	Permissible Current (Max.)	Cycle Time	Alarm contact	Base model
US 168	4	135°F (57°)	12/24V	370µA	35/10mA	—	—	120 Sec	80mA	3-5 Sec.	Form A	US854001
US 169	4	—	12/24V	370µA	35/10mA	—	—	120 Sec	80mA	3-5 Sec.	Form A	US854001
US 268	2	135°F (57°)	12~28V	150µA	70/10mA	620Ω//150Ω	160µA	120 Sec	80mA	3-5 Sec.	—	US852001
US 269	2	—	12~28V	150µA	70/10mA	620Ω//150Ω	160µA	120 Sec	80mA	3-5 Sec.	—	US852001
US 268-LED*	2	135°F (57°)	12~28V	150µA	70/10mA	620Ω//150Ω	160µA	120 Sec	80mA	3-5 Sec.	—	US854001
US 269-LED*	2	—	12~28V	150µA	70/10mA	620Ω//150Ω	160µA	120 Sec	80mA	3-5 Sec.	—	US854001

\*For remote LED indicator output (12 VDC) types



### US V Tech

P.O.B. 36579  
 TEL-AVIV 61364  
 ISRAEL  
 Tel: +972 3 5181 444  
 Fax: +972 3 5181 445

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