

## GENERAL DESCRIPTION

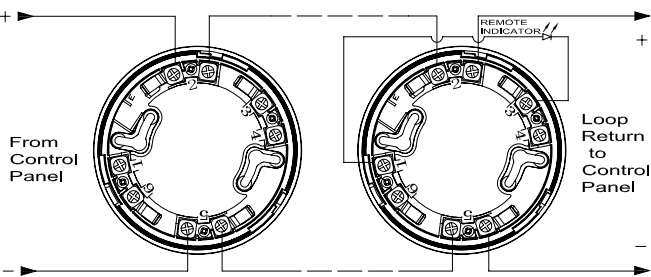
S(H)NA-360 series fire detector is designed to provide open area protection and to be used with compatible fire control panel, and combines an optical sensing chamber with addressable-analog communications. The fire detector transmits an analog representation of smoke density or temperature over a communication line to a fire control panel. Dip-switches are provided for setting the detector's address.

Two LEDs on the sensor are controlled by the panel to indicate sensor status. An output is provided for connection to an optional remote LED annunciator.

**★ NOTE:** S(H)NA-360 series fire detector requires compatible addressable communications to function properly. Connect the S(H)NA-360 series detector to listed - compatible control panels only.

## TYPICAL WIRING DIAGRAM

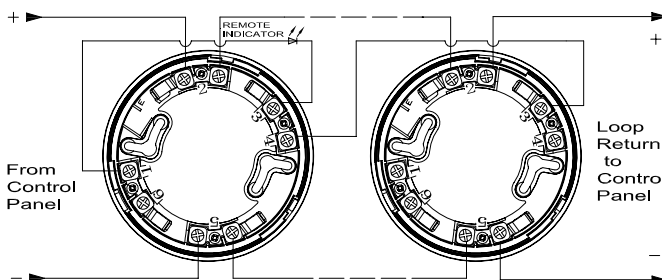
Figure 1. Schematic wiring diagram



Wiring Diagram of 2-Wire Mode

Figure 1

Figure 2. Schematic wiring diagram of detector circuit with a common remote LED



Wiring Diagram of Common Remote Indicator

Figure 2

### WARNING

TO PREVENT DETECTOR CONTAMINATION AND SUBSEQUENT WARRANTY CANCELLATION, DETECTOR MUST REMAIN COVERED UNTIL AREA IS CLEAN

### INSTALLING THE BASE

**★ NOTE:** All wiring must conform to applicable local codes, ordinances, and regulations.

### WARNING

REMOVE POWER FROM INITIATING-DEVICE CIRCUITS BEFORE THE INSTALLING DETECTORS

1. To insure proper installation of the detector head to the base, all the wires should be properly addressed at installation:

(A) Position all the wires flat against terminals.

(B) Fasten the wires away from connector terminals.

2. If you use the 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.

3. Per UL listing, open area smoke detectors are intended for mounting on a ceiling no less than 6 inches from a wall or mounting on a wall that no less than 4 inches and no more than 12 inches from a ceiling.

4. The base of smoke detector can be mounted directly onto electrical junction box such as octagonal (3", 3.5" or 4"), round (3"), and square (4" length) box without using any type of mechanical adapter.

**★ NOTE:** The maximum number of detector installed is 127 units in the same loop.

Verify that all detector bases are installed, that the initiating-device circuits have been tested, and the wiring is correct.

## ADDRESSING THE DETECTOR

DIP switch for address number from 1 to 127, set the desired address on the DIP switches. The weight of each bit is in the following table, see Figure 3.

BIT	1	2	3	4	5	6	7
WEIGHT	1	2	4	8	16	32	64

Figure 3

E.g. If the address 58 is expected, because  $58=32+16+8+2$ . So, bit 6, 5, 4 and 2 should be set to 1 status, see Figure 4.

The bit 8 of the DIP switch is not used.

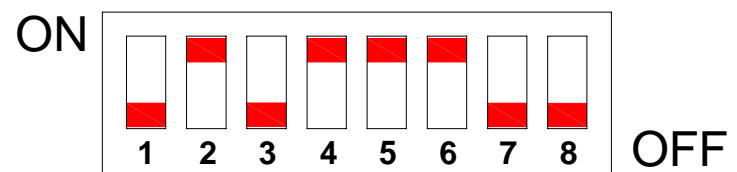


Figure 4

## INSTALLING THE HEAD

**★ NOTE:** Do not install the detector head until the area is thoroughly cleaned of construction debris, dusts, etc.

Detectors fit into bases one way only and require clockwise rotation without push force to be plugged in.

1. Place the detector head onto the detector base.

2. Turn the detector head clockwise until the detector head drops into place.

3. Continue turning detector clockwise to lock it in place.

4. After all detectors have been installed, apply power to the control unit.

5. Test the detector under TESTING

6. Rest the detector at the system control panel

## CAUTION

DUST COVERS MUST BE REMOVED BEFORE THE SENSORS CAN SENSE SMOKE

### TESTING

All the alarm signal services, releasing device and extinguisher system should be disengaged during the test period and must be re-engaged immediately at the conclusion of testing.

Detectors should be tested after installation. When the system has been reset, allow at least one minute for power stabilization.

#### A. SMOKE SENSOR TESTING

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. When sufficient smoke has entered the chamber, the detector should trigger an alarm message to the control panel, and, successively, the detector's red LED should be activated by the control panel itself.

#### B. 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. Some domestic hair dryers can meet such requirement.

Proceed as follows:

1. Switch on the warm airflow 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.

### SPECIFICATION

Model	Smoke Alarm	Heat Alarm	Voltage (DC)	Standby Current	Alarm Current	Cycle Time	Start-up Time	Remote LED	Base Model	Certificated
SNA-360-S2	✓	—	17 ~ 28V	260uA	2mA	1 S	60S	—	CN3022	EN54、BSI
SNA-360-SL	✓	—	17 ~ 28V	260uA	2mA	1 S	60S	✓	CN3042	EN54、BSI
SNA-360-C2	✓	✓/ 57°C	17 ~ 28V	260uA	5mA	1 S	60S	—	CN3022	EN54、BSI
SNA-360-CL	✓	✓/ 57°C	17 ~ 28V	260uA	5mA	1 S	60S	✓	CN3042	EN54、BSI
HNA-360-H2	—	✓/ 57°C	17 ~ 28V	260uA	5mA	1 S	60S	—	CN3022	EN54、BSI
HNA-360-HL	—	✓/ 57°C	17 ~ 28V	260uA	5mA	1 S	60S	✓	CN3042	EN54、BSI

Remark: S-Smoke Sensor; C-Smoke & Heat Sensor ; L- Remote Indicator Output;

### LIMITED WARRANTY STATEMENT

Ningbo Ambest Electronics Co., Ltd the maker of NUMENS brand warrants its enclosed fire detector to be free from defects in materials and workmanship under normal use and service for a period of twelve (12) months from date of manufacture. NUMENS makes no other express warranty for this fire detector. 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 repair or replacement of any part of the fire detector which is found to be defective in materials or workmanship under normal use and service during the 12 months period commencing with the date of manufacture. Contact NUMENS directly for a return merchandise authorization (RMA) number, send defective units postage prepaid to the factory in Ningbo City, China. Please include a note describing the malfunction and suspected cause of failure. The company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture.

CN-SM-360, VER2.0

#### Manufacturer:



#### Ningbo Ambest Electronics Co., Ltd.

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Web: <http://www.numens.net>

If the detector does not respond to the tests correctly it may be necessary to clean it: in this case follow the instructions indicated in "MAINTENANCE" paragraph.

**If testing fails again after maintenance then replace the detector with a new one and return the faulty one for servicing.**

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 300 ft/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 REMOVE THE SCREWS, WHICH HOLD THE ASSEMBLY OF SMOKE-SENSING CHAMBER AND PRINTED CIRCUIT BOARD (PCB). THIS ASSEMBLY IS SEALED FOR YOUR PROTECTION AND IS NOT INTENDED TO BE SEPARATED FOR SERVICING BY USERS. OPENING SUCH ASSEMBLY WILL VOID THE WARRANTY.**

REFER TO THE TECHNICAL BULLETIN ISSUE NO. CN-STB-360, VER1.0