

## AIE-EA IONIZATION SMOKE SENSOR



*Shown without base*

### STANDARD FEATURES

- Low Profile - Only 2.22" high, including base.
- Simple and reliable device addressing method.
- Very low current consumption using the unique "Low Power Mode".
- Automatic compensation for sensor contamination.
- Built in fire test feature.
- Uses the noise immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires.

### SPECIFICATIONS

Operating Voltage	17-41 VDC
Current Consumption	
Standby:	Normal: 350 $\mu$ A (typical) Low Power Mode: 140 $\mu$ A (@ 0.75 sec)
Average when polled:	2mA
Alarm:	8mA
Transmission Method	DCP - <i>Digital Communication Protocol</i>
Maximum Humidity	95% RH Non Condensing
UL Ambient Installation	32°F to 100°F
Temperature Range	(0°C to 37.8°C)
Operating Temperature	14°F to 122°F
Range	(-10°C to 50°C)
Radiation Source	Americium 241 (0.98 $\mu$ Ci)
Color & Case Material	Bone PC / ABS Blend
Weight	4.2oz (5.9 oz. w/ 4" base)
Base	4" YBN-NSA-4 6" HSB-NSA-6

*Specifications subject to change without notice.*

### APPLICATION

The HOCHIKI America AIE-EA Ionization smoke sensor has a responsive and highly stable operation that gives it an extremely wide range of uses. The AIE-EA can be used in areas where early warning of trouble from super-heated or flaming combustibles is expected. The AIE-EA is also constructed to be effectively used where outside RFI (Radio Frequency Interference) and other electrical interference is expected to be encountered.

### OPERATION

A single radioactive source ionizes two chambers which causes a small DC current to flow between the electrodes in each chamber. Smoke can freely enter the outer chamber while the inner chamber is virtually sealed to smoke. Smoke entering the outer chamber causes a reduction in the DC current, the imbalance between the two chambers is proportional to the smoke density. The two chamber design is utilized to compensate for changes in atmospheric and environmental conditions. When the sensed input value exceeds a predetermined threshold, an interrupt is issued to the control panel indicating a fire alarm.

The fire alarm control panel can adjust the sensor threshold to compensate for contamination. Up to 127 devices are permitted on each loop. A sensor address can be set by a hand held programming unit. The sensor mounts to an electronics free base and incorporates a locking mechanism for secure installation. The base provides mounting slots, terminals for field wiring and a third contact for a remote indicator/LED. The sensor incorporates dual LED's for easy viewing of sensor status.

### ENGINEERING SPECIFICATIONS

The contractor shall furnish and install where indicated on the plans, dual-chamber, ionization smoke sensor HOCHIKI America AIE-EA. The combination sensor head and twist-lock base shall be UL listed compatible with a UL listed fire alarm control panel.

### PRODUCT LISTINGS

Underwriters Laboratories: S1383  
CSFM #: 7271-0410:148  
FM#: 3022559  
MEA Report#: 284-91-E Vol. IV

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### Hochiki America Corporation

7051 Village Drive, Suite 100 Buena Park, CA 90621-2268  
Phone: 714/522-2246 Fax: 714/522-2268  
Technical Support: 800/845-6692 or technicalsupport@hochiki.com



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## ENGINEERING SPECIFICATIONS, continued

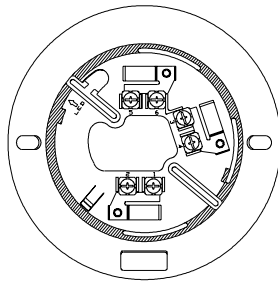
The base shall permit direct interchange with the HOCHIKI America ALG-V photoelectric sensor and the ATG-EA heat sensor.

The sensitivity of the sensor shall be capable of being measured by the control panel.

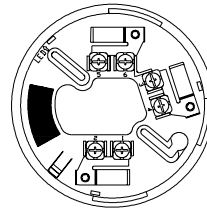
The vandal-resistant, security locking feature shall be used in those areas indicated on the drawing. The locking feature shall be optional and can be implemented when required.

## BASES

The HOCHIKI America HSB-NSA-6 and the YBN-NSA-4 mounting bases are electronics free and are a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper head locking system is provided which is enabled by removing a small plastic tab on the back of the sensor. Once locked, the head can be removed using a small diameter screw driver.

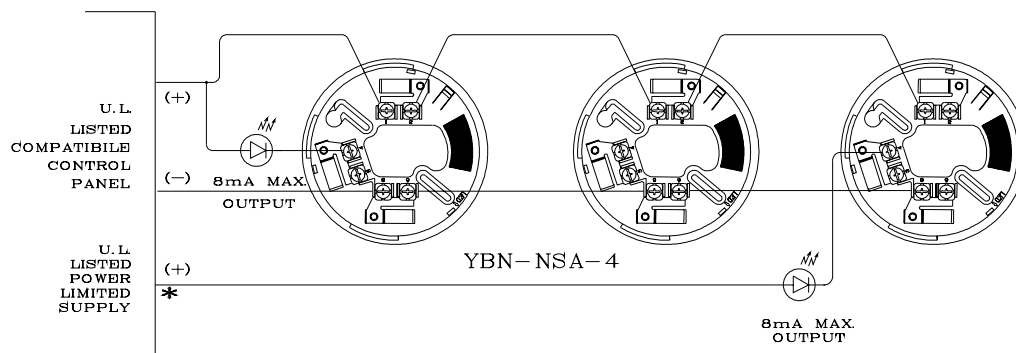
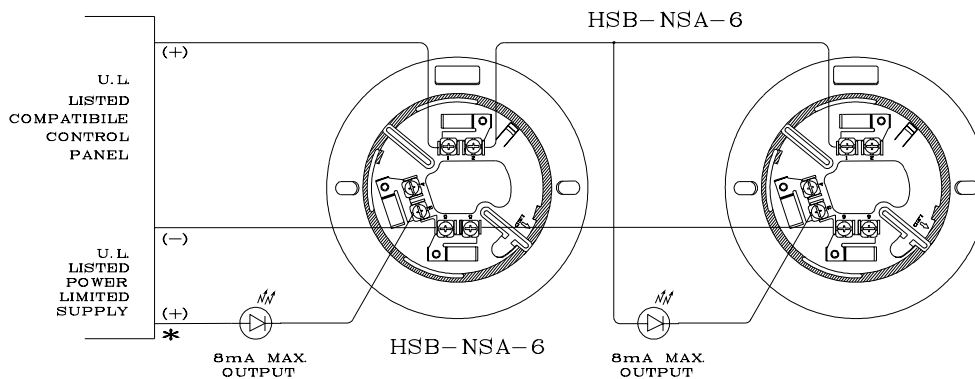


HSB-NSA-6 Base



YBN-NSA-4 Base

## TYPICAL WIRING DIAGRAMS



**NOTE: Fire alarm control panel compatibility is required for DCP products.**

**State-of-the-art communications protocol, DCP, allows system components (DCP sensors AIE-EA, ALG-V and ATG-EA, bases and modules), to be used concurrently in a system's signal conditioning loop.**