ALK-V PHOTOELECTRIC SMOKE SENSOR

Shown without base

STANDARD FEATURES

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing method
- 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
- Two built-in power/alarm LED's
- Non-directional smoke chamber
- Vandal resistant security locking feature
- Removable smoke labyrinth for cleaning or replacement
- Compatible with the AIE-EA ionization detector, ALG-V Photoelectric detector & the ATG-EA heat detector

SPECIFICATIONS	
Operating Voltage	17-41 VDC
Current Consumption Standby	Normal: 390mA (typical)
Average when Polled Alarm Condition	2mA 8mA
Transmission Method	DCP - *Digital Communication Protocol*
Maximum Humidity UL Ambient Installation	95% RH Non-Condensing 32°F to 100° F
Temperature Range	(0° C to 37.8° C)
Operating Temperature Range	14°F to 122° F (-10° C to 50° C)
Sensitivity Range	0.5 - 3.8%/FT@300FPM 0.5 - 2.74%/FT@2000FPM 0.5 - 2.68%/FT@4000FPM
Air Velocity Range	0-4000 fpm
Color & Case Material	Bone PC / ABS Blend
Weight	3.4oz (5.1 oz. with 4" base)
Bases	4" YBN-NSA-4 6" HSB-NSA-6 & ASB

APPLICATION

The HOCHIKI America ALK-V Photoelectric Smoke Sensor is particularly suited to detecting optically dense smoke typical of fires involving materials such as soft furnishings, plastic, foam or other similar materials which tend to smolder and produce large visible smoke particles. Hochiki's unique design allows fast response to flaming fires as well as smoldering fires while eliminating false alarms.

OPERATION

The detection chamber consists of a light emitting diode (LED) and photodiode arrangement. The chamber is designed such that light emitted by the LED cannot normally reach the photo diode. In the event of fire, particles of smoke enter the chamber and scatter the light. As the smoke level increases, the scattering effect increases, causing more light to hit the photodiode. The chamber contains a unique baffle design which allows smoke to enter the chamber while preventing external light from affecting the photodiode. The photodiode input level is sampled to sense smoke density.

When the smoke density exceeds a preset threshold the sensor transmits an interrupt to the fire control panel indicating a fire condition. 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, photoelectric sensors HOCHIKI America Model ALK-V. The combination sensor head and twist lock base shall be UL listed compatible with a UL listed fire alarm control panel.

PRODUCT LISTINGS

SIGNALING UL LISTED S1383

FM APPROVED 3034568

California State Fire Marshal 7272-0410:173

Continued on back.

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

ENGINEERING SPECIFICATIONS, *continued*

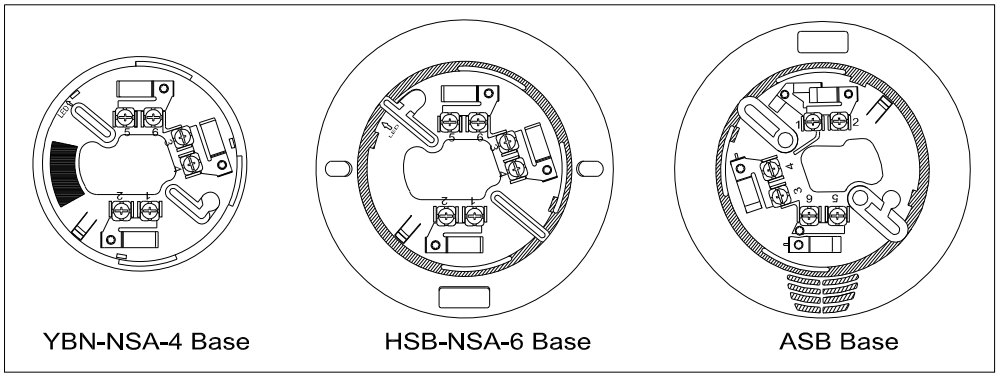
The base shall permit direct interchange with the HOCHIKI America AIE-EA ionization type smoke sensor, ALG-V Photoelectric type smoke sensor, and the ATG-EA heat sensor.

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 as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

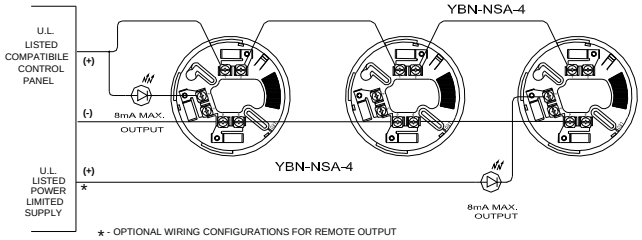
BASES

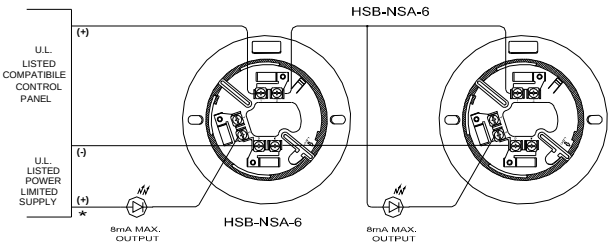
The HOCHIKI America except for ASB both YBN-NSA-4 and the HSB-NSA-6 mounting bases are electronics free and are a simple rugged design with screw terminals for wiring connections. A common mounting base allows sensor interchange and maintains loop continuity when sensors are removed. A simple anti-tamper 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.

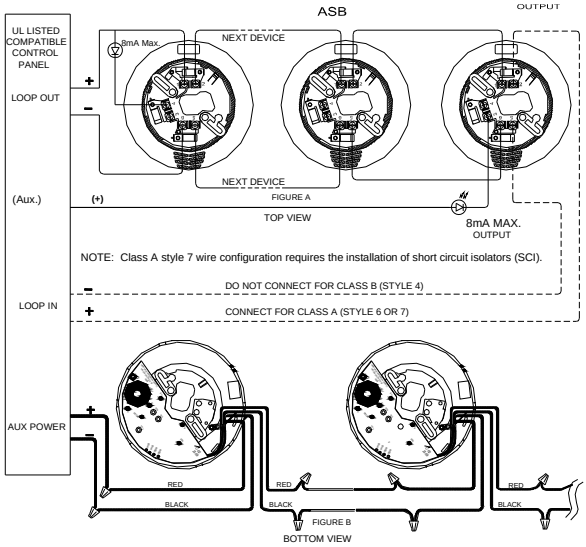


TYPICAL WIRING DIAGRAMS

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, ALK-V, ALK-V, ALK-V2 and ATG-EA, bases and modules), to be used concurrently in a system's signaling line circuit.







NUMBER OF ASB BASES PERMITTED	
# of Bases In Alarm	Maximum Auxiliary 24VDC Power Wire Resistance (Total Auxiliary Run Length)
127	1.4 ohms
75	2.4 ohms
60	3.0 ohms
50	3.6 ohms
30	6.1 ohms
20	9.1 ohms
15	12.2 ohms
10	18.3 ohms

NOTE: SLC maximum wiring resistance is 50 ohms.

ALG-V PHOTOELECTRIC SMOKE SENSOR

Shown without base

STANDARD FEATURES

- Low Profile - Only 1.97" high, including base
- Simple and reliable device addressing method
- Automatic compensation for sensor contamination
- Built-in optical 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: 390µA (typical)
Average when Polled Alarm	2mA 8mA
Transmission Method	DCP - *Digital Communication Protocol*
Maximum Humidity UL Ambient Installation	95% RH Non-Condensing 32°F to 100° F
Temperature Range	(0° C to 37.8° C)
Operating Temperature Range	14°F to 122° F (-10° C to 50° C)
Air Velocity Range Color & Case Material	0-4000 fpm Bone PC / ABS Blend
Weight	3.4oz (5.1 oz. with 4" base)
Bases	4" YBN-NSA-4 6" HSB-NSA-6

Specifications subject to change without notice.

APPLICATION

The HOCHIKI America ALG-V Photoelectric Smoke Sensor is particularly suited to detecting optically dense smoke typical of fires involving materials such as soft furnishings, plastic, foam or other similar materials which tend to smoulder and produce large visible smoke particles. Hochiki's unique design allows fast response to flaming fires as well as smoldering fires while eliminating false alarms.

OPERATION

The detection chamber consists of a light emitting diode (LED) and photodiode arrangement. The chamber is designed such that light emitted by the LED cannot normally reach the photo diode. In the event of fire, particles of smoke enter the chamber and scatter the light. As the smoke level increases, the scattering effect increases, causing more light to hit the photo- diode. The chamber contains a unique baffle design which allows smoke to enter the chamber while preventing external light from affecting the photodiode. The photodiode input level is sampled to sense smoke density.

When the smoke density exceeds a preset threshold the sensor transmits an interrupt to the fire control panel indicating a fire condition. 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, photoelectric sensors HOCHIKI America Model ALG-V. The combination sensor head and twist lock base shall be UL listed compatible with a UL listed fire alarm control panel.

PRODUCT LISTINGS

SIGNALING UL LISTED S1383

FM APPROVED 3022559

MEA NYC Department of Building 284-91-E Vol. 4

California State Fire Marshal 7272-0410:149

Continued on back.

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ENGINEERING SPECIFICATIONS, *continued*

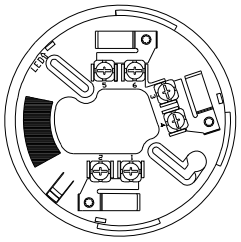
The base shall permit direct interchange with the HOCHIKI America AIE-EA ionization type smoke sensor, and the ATG-EA heat sensor.

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

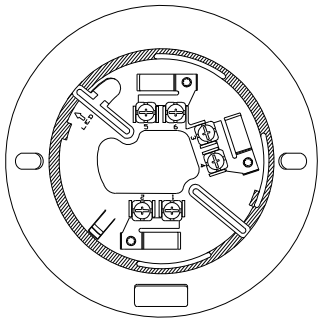
The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

BASES

The HOCHIKI America YBN-NSA-4 and the HSB-NSA-6 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.

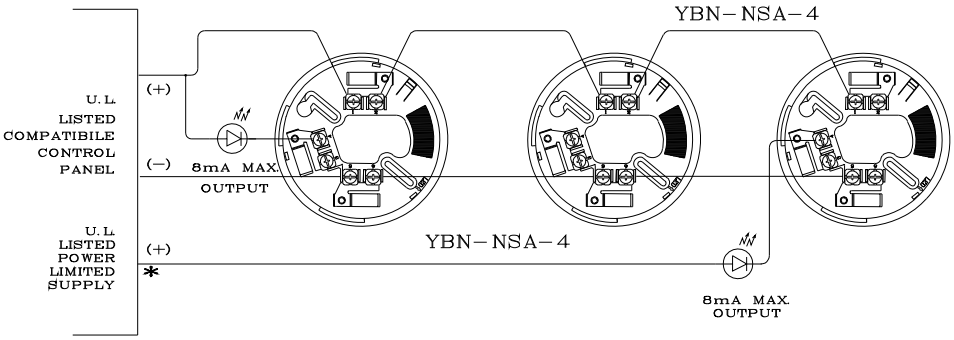


YBN-NSA-4 Base

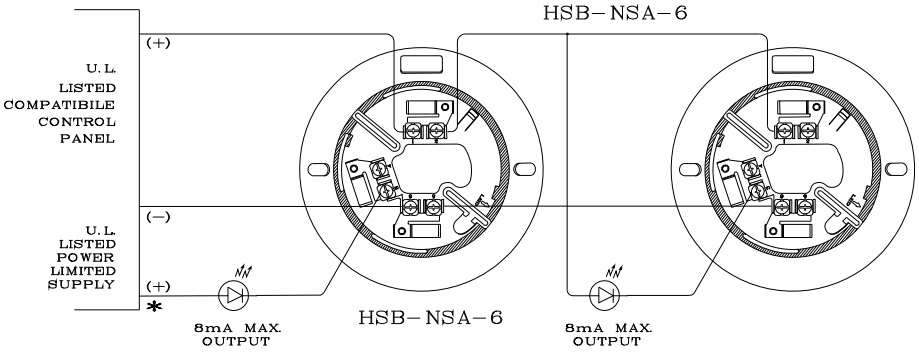


HSB-NSA-6 Base

TYPICAL WIRING DIAGRAMS



*− OPTIONAL WIRING CONFIGURATIONS FOR REMOTE OUTPUT



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.

ATG-EA HEAT SENSOR

STANDARD FEATURES

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing method
- Uses the noise immune Digital Communication Protocol (DCP), which utilizes interrupts for fast response to fires
- Adjustable threshold temperature 135°F - 150°F (determined by panel)

SPECIFICATIONS	
Operating Voltage	17-41 VDC
Current Consumption Standby	 Normal: 350µA (typical)
Average when Polled Alarm	2mA 8mA
Transmission Method	DCP - Digital Communication Protocol
Maximum Humidity UL Ambient Installation	95% RH Non-Condensing 32°F to 115° F
Temperature Range	(0° C to 47° C)
Operating Temperature Range	135°F to 150° F (57.2° C to 65.6° C)
Color & Case Material	Bone PC / ABS blend
Weight	3.2oz (4.9 oz. with 4" base)
Bases	4" YBN-NSA-4 6" HSB-NSA-6

APPLICATION

The HOCHIKI America ATG-EA Sensor provides accurate temperature measurement data to the fire alarm control panel. This sensor is particularly suited to environments where smoke detectors are unsuitable because of the precense of system or cooking fumes such as in a kitchen.

OPERATION

The ATG-EA Heat sensor incorporates a highly linear thermistor circuit, with the thermistor mounted externally. The specially designed cover protects the thermistor while allowing maximum air flow. The thermistor circuit produces a voltage proportional to temperature which is scaled, and transmitted as a digitally encoded value to the control panel. When the ambient temperature exceeds a pre-programmed threshold (fixed temperature), the sensor transmits an interrupt to the control panel indicating a fire alarm. The fire alarm control panel can adjust the sensor threshold for different Standard's requirements.

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 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

Heat sensors are installed in accordance with NFPA (National Fire Protection Association) 72, the UL Listed Spacing Requirements and the rules and regulations set forth by the local authorities having

PRODUCT LISTINGS

SIGNALING UL LISTED S2966

FM APPROVED 3022559

MEA NYC Department of Building 284-91-E Vol. 4

California State Fire Marshal 7270-0410:147

Specifications subject to change without notice.

Continued on back.

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Technical Support: 800/845-6692 or technicalsupport@hochiki.com

ENGINEERING SPECIFICATIONS, *continued*

jurisdiction. Automatic heat sensors shall be Underwriters Laboratories listed.

The base shall permit direct interchange with the HOCHIKI America AIE-EA ionization type smoke sensor, and the ALG-V photoelectric smoke sensor.

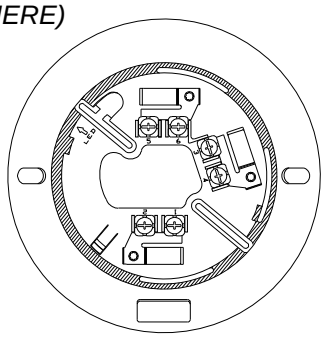
The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be optional and can be implemented when required.

It shall be possible to perform a functional test of the sensor without generating heat. The test method shall simulate the effects of heat on the device to insure testing of internal circuitry.

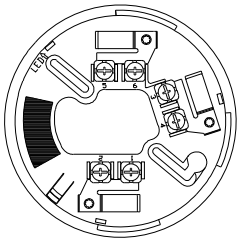
BASES

The HOCHIKI America HSB-NSA-6 and the YBN-NSA-4 mounting bases are electronic 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.

(DIAGRAM OF 2 BASES HERE)

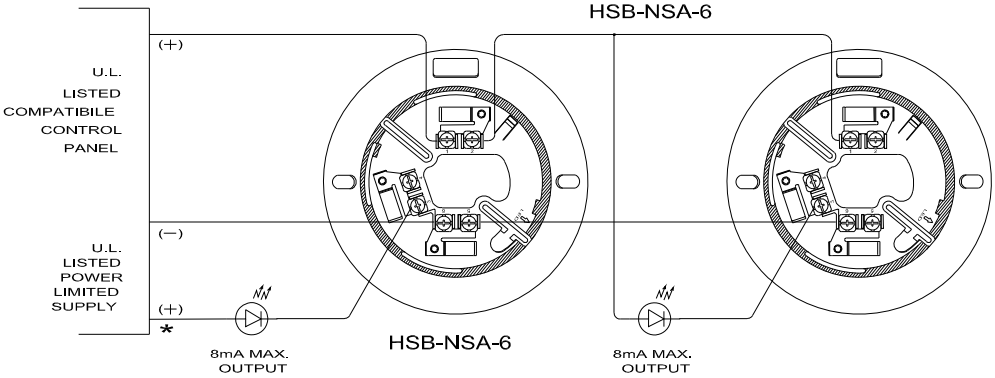


HSB-NSA-6 Base

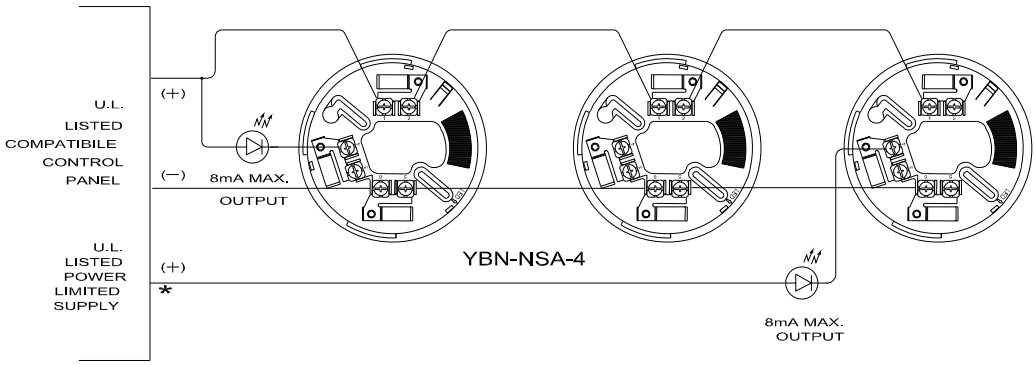


YBN-NSA-4 Base

TYPICAL WIRING DIAGRAMS



*- OPTIONAL WIRING CONFIGURATIONS FOR REMOTE OUTPUT



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.

ASB - ANALOG SOUNDER BASE

Shown without sensor *Shown with sensor*

STANDARD FEATURES

- Programmable evacuation codes - Continuous, March, ANSI Temporal patterns
- Base learns the sensor address and assumes an upper range address (128-254)
- Up to 127 sensors and 127 ASBs can be used on one SLC loop
- Can be alarmed or reset by zone or by individual address
- ASB SLC loop wire resistance = 50 ohms Max. (total SLC wire run length)
- High sound pressure level (85dB SPL at 10 feet)

PRODUCT LISTINGS

S1383

California State Fire Marshal 7300-0410:161

SPECIFICATIONS	
Operating Voltage	17 - 41 VDC
SLC Loop Idle Current	110 μA
SLC Loop Max. Alarm Current	110 μA
Aux. Power Supply Voltage	16 - 31 VDC
Device Aux. Power Min. Voltage	15.0 VDC
Aux. Idle Current	550μA
Aux. Max. Alarm Current	18mA
Max. Humidity	93%RH (non-condensing)
Sound Pressure Level at 10 ft	85dB
UL Ambient Installation Temperature Range	32°F (0°C) ~ 100°F (38°C)
Operating Temperature Range	32°F (0°C) ~ 122°F (50°C)
Base Diamater	5.9"
Base Height (without sensor)	1.3"
Weight	0.455 lb
Compatible Sensors	ALG-V, ALK-V, ALK-V2, AIE-EA & ATG-EA

DESCRIPTION

The ASB Analog Sounder Base is designed for use with Hochiki analog style sensors models ALG-V, ALK-V, ALK-V2 AIE-EA, and ATG-EA. Each addressable base is to be connected to a Hochiki America Corporation DCP Signaling Line Circuit (SLC). The ASB provides an audible alarm in the immediate vicinity. Typical applications are use in hotels, apartments, and hospitals.

The ASB has a highly configurable programming algorithm that allows the user to setup groups of bases for synchronization of modulation tones. Each device has 16 states that are programmed with the desired output pattern to be used (e.g., “Temporal” or “March”) for each state.

Specifications subject to change without notice.

Continued on back.

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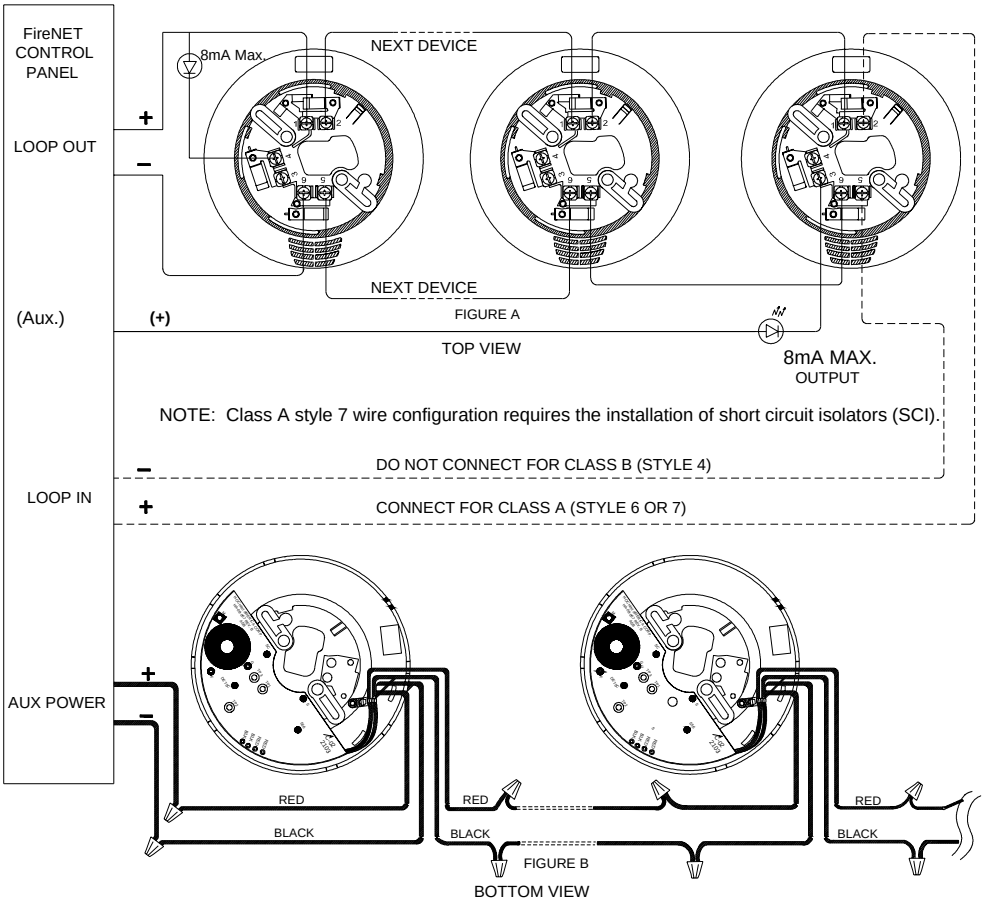
Technical Support: 800/845-6692 or technicalsupport@hochiki.com

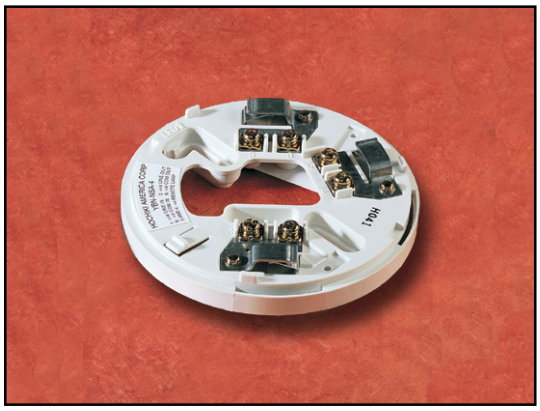
WIRING DIAGRAM



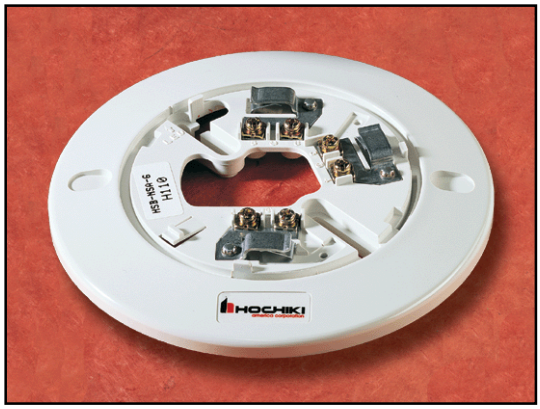
NUMBER OF BASES PERMITTED	
# of Bases In Alarm	Maximum Auxiliary 24VDC Power Wire Resistance (Total Auxiliary Run Length)
127	1.4 ohm
75	2.4 ohm
60	3.0 ohm
50	3.6 ohm
30	6.1 ohm
20	9.1 ohm
15	12.2 ohm
10	18.3 ohm

NOTE: SLC maximum wiring resistance is 50 ohms.

ANALOG SENSOR BASES



YBN-NSA-4



HSB-NSA-6

APPLICATION

The HOCHIKI America YBN-NSA-4 and the HSB-NSA-6 mounting bases are electronics free and contain 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 only be removed using a small diameter screw driver.

OPERATION

The YBN-NSA-4 and HSB-NSA-6 are designed specifically for use with the Hochiki NS Analog models AIE-EA Ionization Smoke Sensor, ALG-V Photoelectric Smoke Sensor and ATG-EA Heat Sensor.

The YBN-NSA-4 and HSB-NSA-6 common mounting bases allows for complete compatibility for all of the Hochiki NS Series Analog sensors. The bases are lightweight and very thin, providing a low profile once installed. The solder-less screw terminals enable quick and easy wiring connections.

STANDARD FEATURES

- UL & ULC Listed
- Designed for use with all NS analog sensors.
- Available in 4 and 6 inch models.
- Contains a security locking tab for tamper protection.

SPECIFICATIONS

YBN-NSA-4	4 inches
HSB-NSA-6	6 inches
Security Feature	Plastic Tamper-Lock
Color	Bone PC / ABS Blend

PRODUCT LISTINGS

Underwriters Laboratories: S1383
Underwriters Laboratories of Canada: CS463
CSFM #: 7300-0410:132
FM#: 3022559
MEA Report #: 284-91-E Vol. IV

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Specifications subject to change without notice.

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Technical Support: 800/845-6692 or technicalsupport@hochiki.com

ENGINEERING SPECIFICATIONS

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

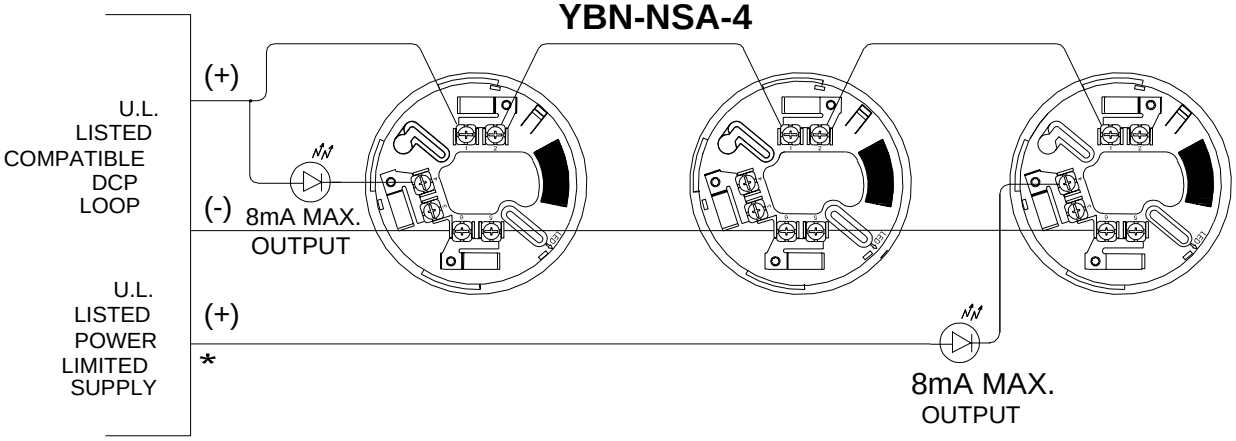
The sensitivity of the sensor shall be capable of being measured by the control panel.

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

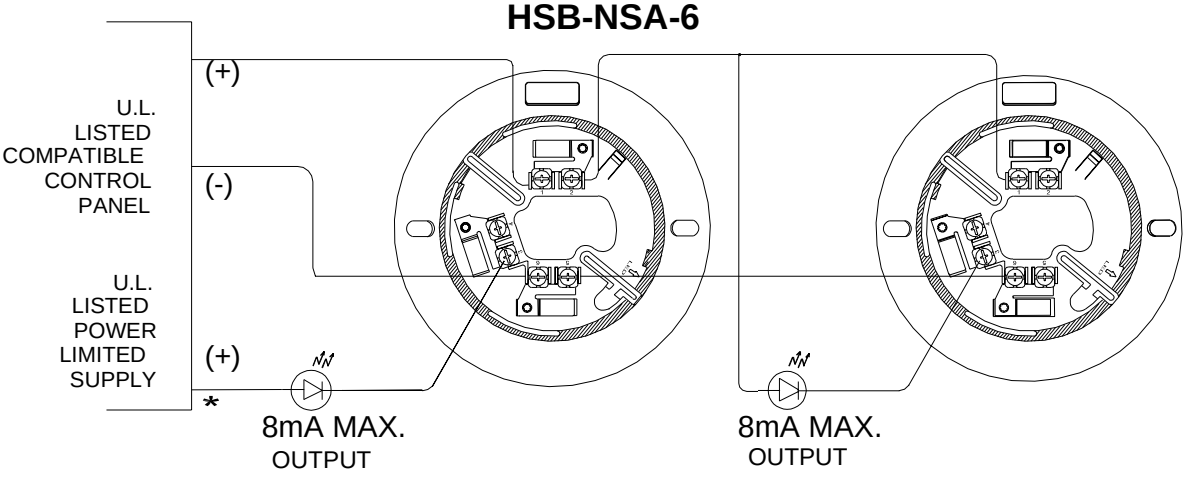
It shall be possible to perform a functional test of the sensor without the need of generating smoke. The test method shall simulate the effects of products of combustion in the chamber to ensure testing of internal circuitry.

TYPICAL WIRING DIAGRAMS

YBN-NSA-4



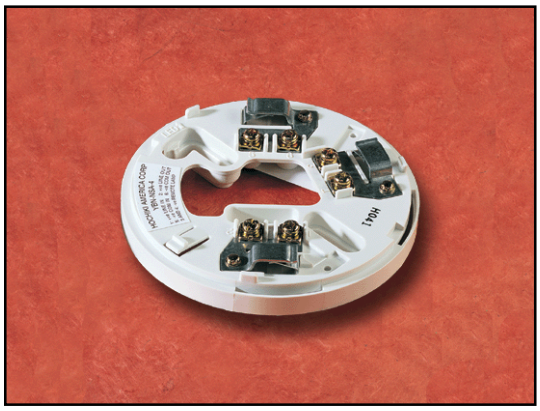
HSB-NSA-6



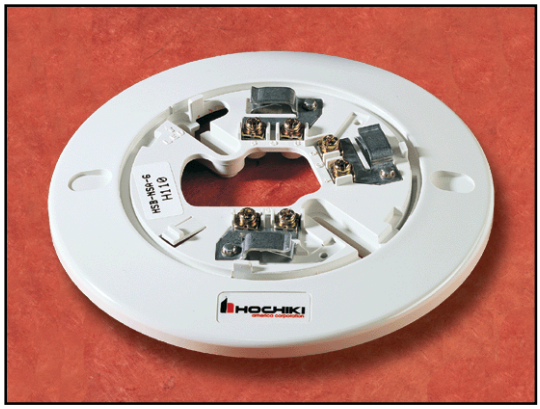
*** - OPTIONAL WIRING CONFIGURATIONS FOR REMOTE OUTPUT**

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 signaling line circuit.

ANALOG SENSOR BASES



YBN-NSA-4



HSB-NSA-6

APPLICATION

The HOCHIKI America YBN-NSA-4 and the HSB-NSA-6 mounting bases are electronics free and contain 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 only be removed using a small diameter screw driver.

OPERATION

The YBN-NSA-4 and HSB-NSA-6 are designed specifically for use with the Hochiki NS Analog models AIE-EA Ionization Smoke Sensor, ALG-V Photoelectric Smoke Sensor and ATG-EA Heat Sensor.

The YBN-NSA-4 and HSB-NSA-6 common mounting bases allows for complete compatibility for all of the Hochiki NS Series Analog sensors. The bases are lightweight and very thin, providing a low profile once installed. The solder-less screw terminals enable quick and easy wiring connections.

STANDARD FEATURES

- UL & ULC Listed
- Designed for use with all NS analog sensors.
- Available in 4 and 6 inch models.
- Contains a security locking tab for tamper protection.

SPECIFICATIONS

YBN-NSA-4	4 inches
HSB-NSA-6	6 inches
Security Feature	Plastic Tamper-Lock
Color	Bone PC / ABS Blend

PRODUCT LISTINGS

Underwriters Laboratories: S1383
Underwriters Laboratories of Canada: CS463
CSFM #: 7300-0410:132
FM#: 3022559
MEA Report #: 284-91-E Vol. IV

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Specifications subject to change without notice.

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ENGINEERING SPECIFICATIONS

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

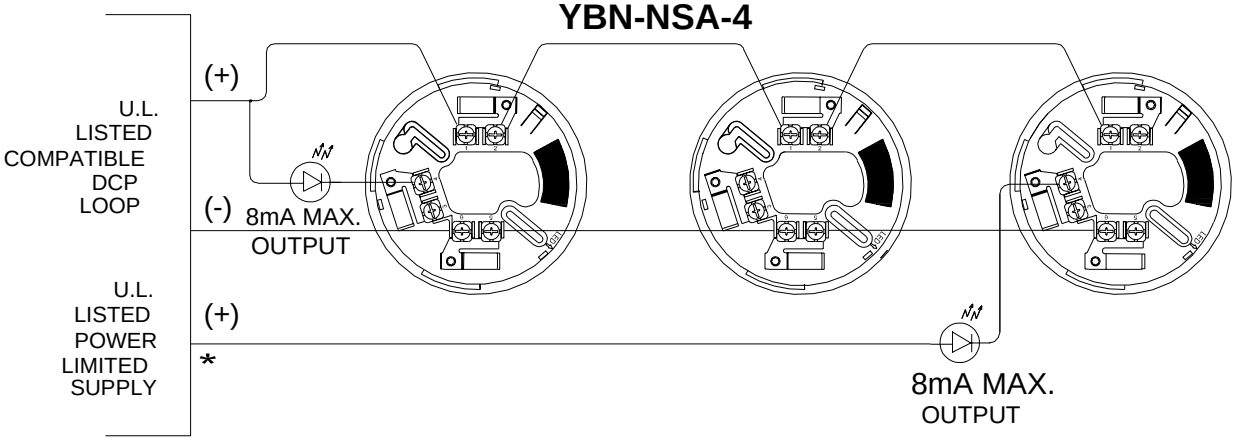
The sensitivity of the sensor shall be capable of being measured by the control panel.

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

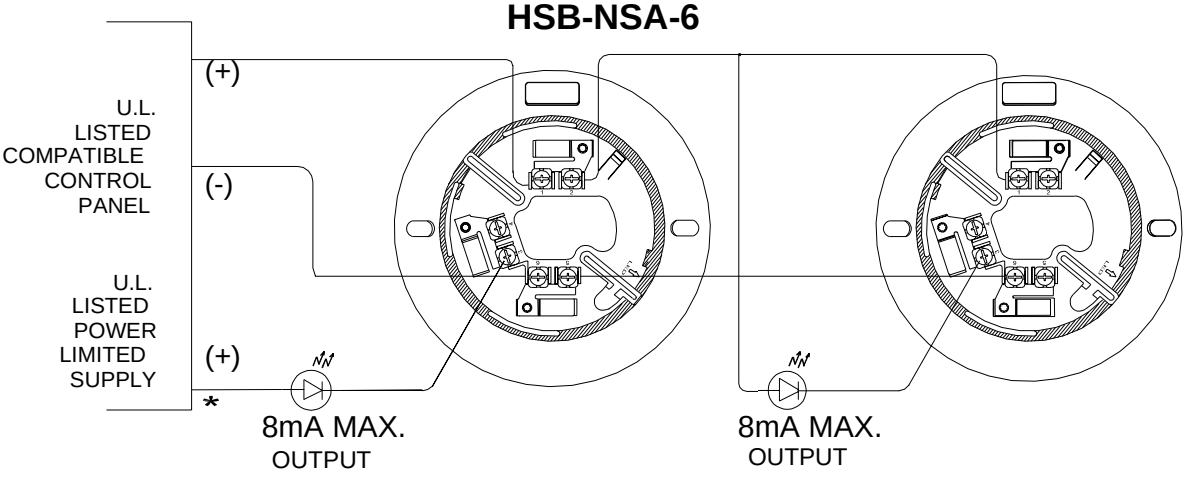
It shall be possible to perform a functional test of the sensor without the need of generating smoke. The test method shall simulate the effects of products of combustion in the chamber to ensure testing of internal circuitry.

TYPICAL WIRING DIAGRAMS

YBN-NSA-4



HSB-NSA-6



*** - OPTIONAL WIRING CONFIGURATIONS FOR REMOTE OUTPUT**

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 signaling line circuit.

SRA-24 REFLECTIVE BEAM DETECTOR

STANDARD FEATURES

- Detector spacing from 25ft-100ft.
- Pulsed beam to reduce overall consumption and improve the noise rejection characteristics.
- Small flat reflector.
- Automatic drift compensation.
- Fire detection sensitivity can be set to 20% or 30% obscuration.

SPECIFICATIONS

Operating Voltage	15-33Vdc
Stand-by Current	350μA at 24Vdc
Max Current In Alarm	50mA at 24Vdc
Operating Range	25ft - 100ft
Sensitivity	20% or 30%
Compensation	1% per Hr. ±50%
Reflector mounting angle	±10%
Operating Temp. Range	32°F to +100°F
Storage Temp. Range	-22°F to +158°F
Maximum Humidity	95%RH - Non condensing
	(at 104°F)
Color & Case Material	Ivory ABS
Size: SRA-24	6" x 4.8" x 3.1"
Reflector	7.5" x 7.5" x.1"
Weight: SRA-24	1.9 lbs (Including termination module)
Reflector	1.6 oz.

APPLICATION

Hochiki's Reflective Beam Detector is designed for smoke detection in large spaces such as halls, warehouse, museums, theatres etc., where conventional point detection is impractical or more costly. The unit is not suitable for applications where strong or reflected sunlight is present, in these instances the SPB-24N should be considered. The unit detects smoke linearly over the protected range enabling early detection before the fire spreads. Compact design, good looks and flush mounting installation makes this unit ideal for fitting in areas where architectural considerations are important.

GENERAL DESCRIPTION

The Photoelectric reflective beam detector consists of the SRA-24 unit and a reflector, which face each other at a distance of between 25ft and 100ft.
In the event of fire the smoke generated will decrease the amount of near infrared light energy on the SRA-24, this decrease is electronically interpreted to identify the occurrence of fire. An important feature of the detector is that it monitors the protected space linearly. This enables the detector to identify a fire before it spreads, even when the smoke is scattered over a large area.
The fire detection sensitivity is factory set at 20% beam obscuration and it can be changed to 30% with a sensitivity switch.

The status of the unit is indicated by three LEDs which are viewed through a unique lens that allows good visibility from any viewing angle, particularly from beneath the unit. The LEDs indicate, *Normal, Setup, Fault and Fire Condition,* so the user can verify which unit is in alarm.

The unit indicates a fault on the zone under the following conditions:

- Compensation limit exceeded
- Total obscuration of beam
- Beam detector unit removed from zone

PRODUCT LISTINGS

Underwriters Laboratories: S1383
Factory Mutual:
CSFM #: 7260-0410:158

Specifications subject to change without notice.

Continued on back.

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Find latest revision at **www.hochiki.com**

ISO 9001:2000 REGISTERED

12/2003

ENGINEERING SPECIFICATIONS

The contractor shall furnish and install, where indicated on the plans, HOCHIKI America SRA-24 Reflective Beam Detector. The detector shall have a range of 25 feet to 100 feet. The beam smoke detector shall be field adjustable to one of the two obscuration settings of 20%, or 30% per span. These settings shall be capable of being verified with calibrated filters. Side to side spacing shall be a maximum of 60 feet on center.

The reflective beam detector shall posses circuitry that automatically compensates for normal ambient changes in the intensity of the emitted beam strength. The microprocessor shall provide compensation for a change in received signal value, with time, caused by contamination of the optics. Since such a change with time appears as a slow change in the beam signal, the microcomputer compensates in such a manner that the signal moves closer to the reference data at a rate of approximately +1% per hour. When this compensating capability reaches a limit, the microcomputer automatically generates a trouble signal.

The reflective beam detector(s) shall also signal a trouble condition if the beam has a blockage of 90% for more than 20 seconds and automatically resets to normal when blockage is removed.

The reflective beam detector(s) shall be UL listed for these applications. Voltage and RF transient protection shall be integral to the internal circuitry of the reflective beam detector so as to minimize false alarm potential.

To facilitate easy installation and setup, the reflective beam detectors shall employ signal strength indicating LED's. Alignment shall be facilitated by turning an alignment adjustment screws and monitoring the relative signal strength based upon which LEDs are illuminated.

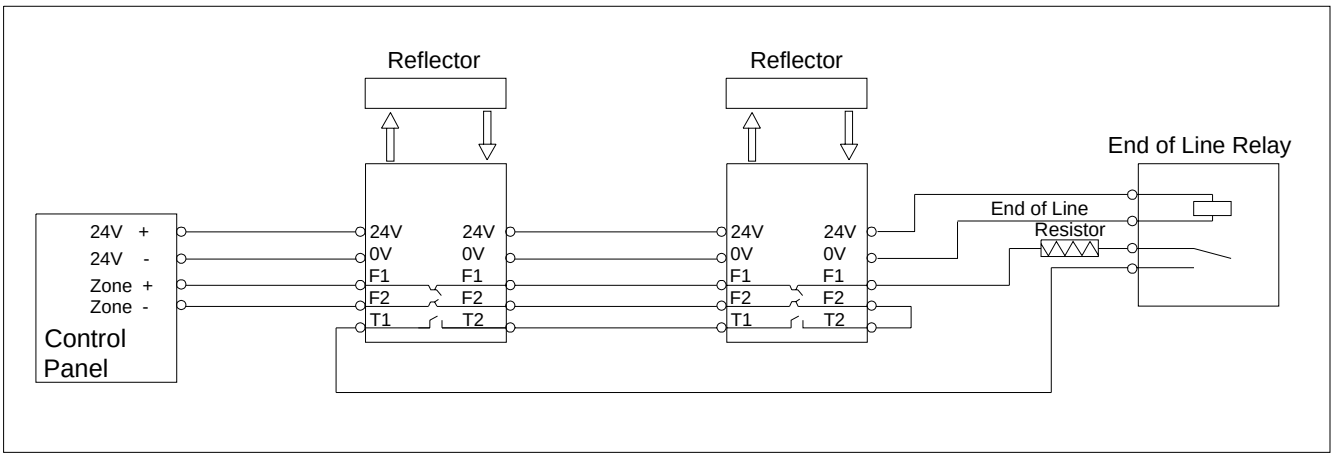
The detectors shall also illuminate a red LED, which is visible externally, when an alarm condition is indicated.

The reflective beam detector shall provide a Form "A" dry contact for alarm and Form "B" dry contact for trouble.

INSTALLATION

The HOCHIKI America SRA-24 Reflective Beam Detector shall be installed in accordance with the *Installation Instruction Guide* provided with every unit. Refer to the applicable NFPA Standards for additional guidance on spacing, irregular ceiling surfaces and other design considerations.

TYPICAL WIRING



NOTE: End of line relay and trouble contacts are closed when power is applied.

HOCHIKI
america corporation

SPC-24 PROJECTED BEAM SMOKE DETECTOR

STANDARD FEATURES

- Microprocessor based for reliability
- Simple setup & alignment with signal strength LED's
- Provides 60 feet on center linear protection at a range of 32.8 feet to 328 feet
- Automatic compensation for signal drift or dirty lens
- Three field adjustable sensitivity settings
- Form A alarm and Form B trouble contacts
- Calibrated filters available to verify sensitivity
- Color-coded emitter and receiver labels for easy recognition

SPECIFICATIONS

Rated Voltage	24VDC
Supply Voltage	19VDC - 33VDC
Supervisory Current	Emitter 50µA @ 24VDC Receiver 200µA @24VDC
Alarm Current	20mA @ 24DC
Trouble Current	20mA @ 24VDC
Operating Temperature Range	14° F - 122° F
UL Installation Temperature Range	32° F - 100° F
Sensitivity Test Feature	Hochiki test filters
Allowable misalignment angle (MAX)	Emitter +/- 0.5° Reciever +/-1.0°
Dimensions	3.2"W x 5.5"H x 4.0"D
Mounting	Wall mount or Single Gang Box
Maximum Humidity	95% R.H. non-condensing

Specifications subject to change without notice.

APPLICATION

The Hochiki America SPC-24 Projected Beam Smoke Detector consists of an emitter and receiver. The projected beam smoke detector should be placed so that smoke generated by a fire will likely rise into the path of the beam. The receiver is constantly monitoring and measuring the intensity of the beam transmitted by the emitter. Should the smoke from a fire cause a decrease in the signal strength of a magnitude that exceeds the programmed obscuration setting, an alarm signal is generated.

The SPC-24 Projected Beam Smoke Detector can provide vital fire detection in applications where other types of detectors may not be able to respond quickly, or at all, to a fire condition. Examples of some applications where projected beam smoke detectors have been successfully used include:

atriums	gymnasiums	theatres
museums	factories	tunnels
churches	stables	warehouses
anechoic chambers	high air velocity areas	

The Hochiki America SPC-24 Projected Beam Smoke Detector may also be used in conjunction with more traditional spot type smoke detection devices to provide an even more comprehensive detection system.

OPERATION

The near infrared pulsed beam generated by the emitter is sensed by the photodiode of the receiver, where it is converted into an electrical signal. This signal is then amplified and applied, via an analog to digital converter, to a microprocessor. The normal state signal (the initial beam data) once stored in the microprocessor is used as reference for comparison with subsequent beam signals.

When there is a difference between actual beam strength and stored reference data that exceeds the programmed alarm obscuration reference level, a fire signal is produced. A trouble signal is generated if the beam is more that 90% obstructed (as opposed to partially obscured by smoke).

PRODUCT LISTINGS

SIGNALING UL LISTED S1383

California State Fire Marshal 7260-0410:172

Continued on back.

Hochiki America Corporation
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Technical Support: 800/845-6692 or technicalsupport@hochiki.com

OPERATION, *continued*

The microprocessor also provides compensation for a change in received signal value, with time, caused by contamination of the optics. Since such a change with time appears as a slow change in the beam signal, the microprocessor compensates in such a manner that the signal moves closer to the reference data at a rate approximately +1% per hour. When this compensating capability reaches a limit, the SPC-24 automatically generates a trouble signal.

A calibrated test filter is available upon request to test and verify the sensitivity setting of the SPC-24 projected beam smoke detectors.

ENGINEERING SPECIFICATIONS

The contractor shall furnish and install, where indicated on the plans, Hochiki America SPC-24 Projected Beam Smoke Detector. The projected beam smoke detector shall have a range of 32.8 feet to 328 feet. The projected beam smoke detector shall be field adjustable to one of the three obscuration settings of 25%, 50% or 70% per span. These settings shall be capable of being verified with calibrated filters. Side to side spacing shall be a maximum of 60 feet on center.

The projected beam smoke detector shall possess circuitry that automatically compensates for normal ambient changes in the intensity of the emitted beam strength. The microprocessor shall provide compensation for a change in received signal value, with time, caused by contamination of the optics. Since such a change with time appears as a slow change in the beam signal, the microprocessor shall compensate in such a manner that the signal moves closer to the reference data at a rate of approximately +1% per hour. When this compensating capability reaches a limit, the microprocessor shall automatically generate a trouble signal.

The projected beam smoke detector(s) shall also signal a trouble condition if the beam has a blockage of 90% or more for more than 20 seconds and automatically resets to normal when blockage is removed.

The projected beam smoke detector(s) shall be UL listed for these applications. Voltage and RF transient protection shall be integral to the internal circuitry of the projected beam smoke detector so as to minimize false alarm potential.

To facilitate easy installation and setup, the projected beam smoke detectors shall employ signal strength indicating LED's. Alignment shall be facilitated by turning an alignment adjustment wheel and monitoring the relative signal strength based upon which LED's are illuminated.

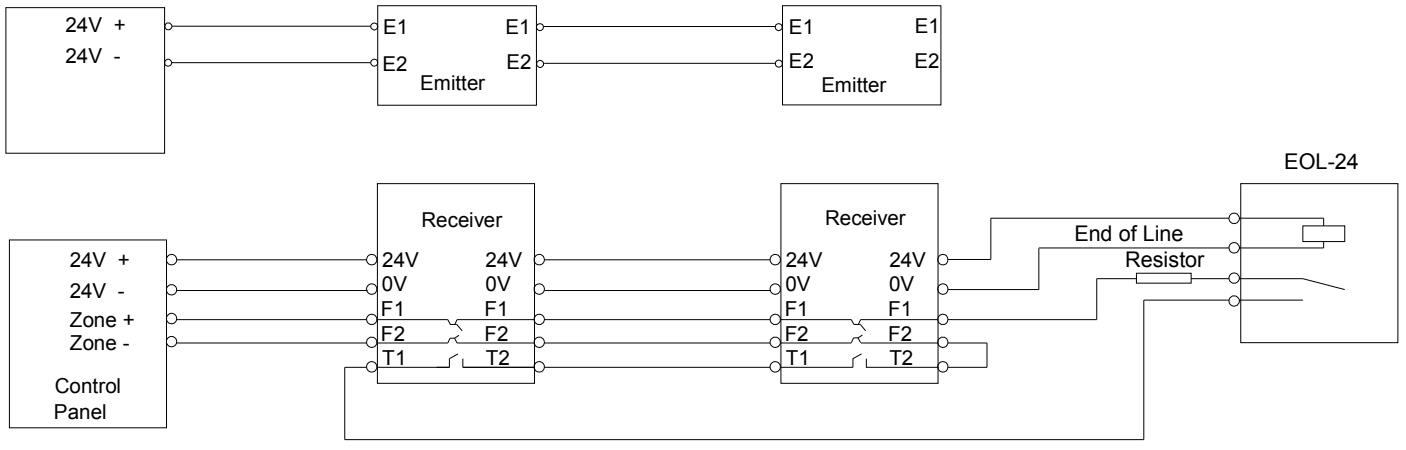
The detectors shall also illuminate a red LED, which is visible externally, when an alarm condition is indicated.

The projected beam smoke detector shall provide a Form "A" dry contact for alarm and Form "B" dry contact for trouble.

INSTALLATION

The HOCHIKI America SPC-24 Projected Beam Smoke Detector shall be installed in accordance with the *Installation Instruction Guide* provided with every unit. Refer to the applicable NFPA Standards for additional guidance on spacing, irregular ceiling surfaces and other design considerations.

FOUR WIRE CONNECTION TO THE CONTROL PANEL



NOTE: *End of line relay and trouble contacts are closed when power is applied.*

NOTE: *EOLR-24 required for power supervision on Receiver.*