



145

# RECORD SET HANDLING

File No. 15-6  
(Read only)

Application # 03 115444

Project Name William Penn Elem. New Modular CRs  
(Read only)

Please return the original plans and specifications as instructed below: (Client must check appropriate box below)

DSA stamped plans and specifications	
Check all that applies:	<input checked="" type="checkbox"/> Plans <input type="checkbox"/> Specs
Total number of drawings	<u>58</u>
Stamped date	<u>9-10-2014</u> Date
Submittal	
<input checked="" type="checkbox"/> Record Set	
Call for pick-up	Increment _____ Description (eg. CO#, Add#) _____

I will have my representative pick-up the original documents.  
 Call me Nicholas Morrissey at (913 ) 219-4919 for pick-up

Please package and ship original documents via the delivery service indicated: \_\_\_\_\_  
 My account number: \_\_\_\_\_ Method of Delivery: \_\_\_\_\_  
(e.g.: ground, next day, etc.)

Insurance Requested?  Yes  No Declared Value: \_\_\_\_\_  
(Enter -0- if no insurance is requested)

I understand the risks inherent in shipping documents using the delivery method indicated above and agree to hold the State harmless for any loss or damage to the original plans and specifications that may be incurred. I agree to pay the shipping cost.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Name: \_\_\_\_\_ Email: \_\_\_\_\_  
(PRINT NAME)

**Ship to** Attention: \_\_\_\_\_  
 Company: \_\_\_\_\_ Street: \_\_\_\_\_  
 City: \_\_\_\_\_ State: CA Zip code : \_\_\_\_\_ Phone #: ( ) \_\_\_\_\_

### Pick-up Verification:

I picked-up the original documents for the referenced project

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
 Company: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

**SCANNED**

# Original Document Control Sheet

Application Number: 03-115444 File Number: 15-6

Project Name: William Penn ES. - Bakersfield School District

Number of Drawings: 58 Specifications? Yes  No

Responsible Plan Reviewer: (print name) C.M. LIN

Initial: CML Date: 9 / 10 / 2014

Scan Personnel: (print name) \_\_\_\_\_

Initial: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Mailroom Personnel: (print name) \_\_\_\_\_

Initial: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

## INSPECTION CARD BUILDING IDENTIFIER

This form is to be completed by DSA plan review staff during back check.  
 Inspection cards will be issued based on this form.

School District/Owner: <u>Bakersfield city school District</u>	DSA File #: <u>15-6</u>
Project Name/School: <u>William Penn E.S. - New Modular</u>	DSA App. #: <u>03-115449</u>
Design Professional: <u>PJHM architects</u>	Date Approved: <u>9-10-2014</u>
Plan Reviewer: <u>C.M. LIN</u>	Revision Date:

Complete the following for each building that is part of this DSA application. Site work and non-building site structures, as defined below, are covered by the Site Work inspection card and do not need to be described.  
 See DSA Procedure PR 13-01 for additional Inspection Card information.

**NON-BUILDING SITE STRUCTURES** (Per DSA Procedure PR 13-01) – Structures that are required to resist loads imposed by gravity, wind, seismic, earth or other external forces and are not enclosed by walls and a roof. (For example shade structures not enclosed by walls, bleachers, ball walls, trash enclosures, dugouts, tanks, equipment, fences, retaining walls, ramps, stairs, light poles, etc.)  
 The term "Non-Building Site Structures" is used only to clarify the types of site structures that are relevant when issuing form DSA 152 for site work. These types of structures are "School Buildings" as defined in the California Administrative Code Title 24, Part 1.

Site work Inspection card required? (See definition of Non-Building Site Structure above.)  YES  NO

CONSTRUCTION OF	ADDITION TO	ALTERATION TO	RELOCATION OF	RECONSTRUCTION OF	REHABILITATION OF	INCREMENT #	BUILDING TYPE For each building the description below should match that shown on the Tracker Scope screen. Structures covered under the Site work Inspection Card per PR 13-01 should not be listed below.	IN-PLANT INSP.?	IDENTIFIER FOR INSPECTION CARD UNIQUE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<u>CLASS ROOM BUILDING</u>	<input type="checkbox"/>	<u>CR #1</u>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<u>CR Building</u>	<input type="checkbox"/>	<u>CR #2</u>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<u>ADMIN/ CR Building</u>	<input type="checkbox"/>	<u>ADMIN Bldg.</u>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	

Comments:





DSA-103 rev 12/20/13  
**Statement of Structural Tests & Special Inspections - 2013 CBC**

INCREMENT #  DSA File No.:   
 Application No.:   
 Date Submitted:  7/22/14  
 Revised:  15-6  
 Revises:  03-115444  
 Revises:

School Name: Stella Hills Elementary School - New Modular Classrooms

District: Bakersfield City School District

**IMPORTANT:** This form is only a summary list of structural tests and special inspections required for the project. The actual tests and inspections must be performed as detailed on the DSA approved documents. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A.  
 NOTE: This form is also available for projects submitted for review under the 2007 and 2010 CBC.

**INSTRUCTIONS:** Click a plus sign (+) before any category or subcategory to reveal additional tests and special inspections. An "X" before a listed test or inspection indicates it is a mandatory requirement. A shaded box indicates a test or special inspection that may be required, depending on the scope of the construction and other issues. A shaded box can be clicked indicating your selection of that test. Note: A minus (-) on a category or subcategory heading indicates that it can be collapsed. However, any selections you may have made will be cleared. Click on the "COMPLETE" button to show only the tests finally selected. For more information on use of this form, see DSA-103.INSTR.

Note: References are to the 2013 edition of the California Building Code (CBC) unless otherwise noted.

REQUIRED	TEST OR SPECIAL INSPECTION	TYPE	PERFORMED BY	CODE REFERENCE AND NOTES
+	SOILS			Table 1705A.3
+	CONCRETE			TMS 402-11/ACI 530-11/ASCE 5-11 Table 1.19.3
+	MASONRY			Table 1705A.2.1
+	STEEL			

**SCANNED**



DSA-103 rev. 12/20/13  
**Statement of Structural Tests & Special Inspections - 2013 CBC**

INCREMENT #   
 DSA File No.:   
 Application No.:   
 Date Submitted:   
 Revised:   
 Revised:

+	WOOD						
-	OTHER						
X	28. Building Grounding Reports						

1 Shop Welding Inspection: Special Inspection Verified Report - Form DSA-292

KEY to Columns	
1	2
Type -	Performed By -
Continuous - Indicates that a continuous special inspection is required	GE - Indicates that the special inspection is to be performed by a registered geotechnical engineer or his or her authorized representative
Periodic - Indicates that a periodic special inspection is required	Lab - Indicates that the test or inspection is to be performed by a testing laboratory accepted in the DSA laboratory Evaluation and Acceptance (LEA) Program. See section 4.335, 2013 CBC Title 24, Part 1.
Test - Indicates that a test is required	PI - Indicates that the special inspection is to be performed by the project inspector
	SI - Indicates that the special inspection is to be performed by a special inspector

**COMPILE**      **PRINT**

**Kenneth Podany**  
 Name of Architect or Engineer in general responsible charge  
 Name of Structural Engineer (When structural design has been delegated)  
 Signature of Architect or Structural Engineer *Ken Podany* date 9-8-2014

IDENTIFICATION STAMP  
 DIV OF THE STATE ARCHITECT  
 APP. # 03-115444  
 AC N/A FLS N/A SS CA11  
 DATE 9-10-2014

SCANNED

WILLIAM PENN ELEMENTARY SCHOOL  
NEW MODULAR CLASSROOMS  
BAKERSFIELD CITY SCHOOL DISTRICT

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

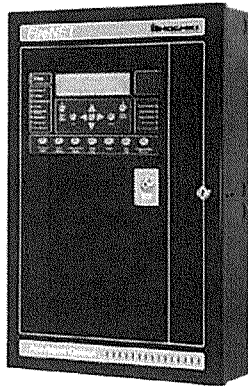
APPO3 115444

AC  FLS  SS  
DATE SEP 10 2014

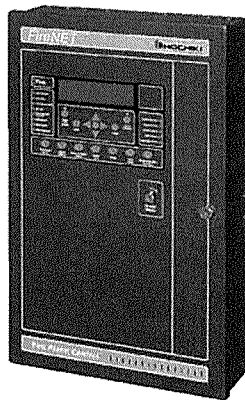
**SCANNED**

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## FireNET™ Series - ANALOG ADDRESSABLE FIRE ALARM CONTROL PANEL



**RED**



**CHARCOAL**

### DESCRIPTION

The FireNET™ 4127 control panel is an analog addressable fire alarm panel containing 2 or 4 SLC loops with each loop supporting 127 devices of any combination (sensors or modules), and 127 analog sounder bases, for a possible total of 254 points. Communication between devices is transferred through standard cable (shielded or twisted pair is not required). Each panel includes a 5.25 amp power supply and has 4 on board NAC circuits. An RS-485 bus provides communication to the panel network, while the RS-232 interface allows the convenience of programming via a PC. The system will support a variety of Hochiki devices: photo, ion and heat sensors, which contain a unique, patented sensor design incorporating automatic drift compensation and day/night sensitivity mode. Additional devices include contact monitors, relay controllers, supervised auxiliary output and short circuit isolator modules. In addition, interfaces to conventional detection systems can be established by using a conventional zone-monitoring module. The Loop Explorer Windows® Software interface provides the installer with fingertip access to installation programming and diagnostic tools. An Auto-learn feature offers the convenience for quick start applications. Add to this a reputation for high quality and dedicated service makes this an exceptional product both in performance and value.

### STANDARD FEATURES

- UL 864 9th edition Listed
- Seismic Certified
- Analog design using Hochiki's advanced DCP protocol for fast and robust communication
- Up to 127 sensors & modules, plus 127 analog sounder bases, for a total of 254 points possible per loop
- Uses standard wire, no shielded or twisted pair required on SLC loops
- Supports Class B (style 4) and Class A (style 6 or 7) SLC loops
- 4 on board Class B (style Y) NAC circuits rated at 2.5 Amps each
- Programmable sensitivity levels per device & automatic day/night sensitivity modes
- Automatic daily calibration & drift compensation routine
- Large 8-line x 40-character LCD display (320 char.)
- 2 loop (FN-2127 Series) or 4 loop (FN-4127 Series) versions (800 addresses/sub-addr. max.)
- Dual RS-485 bus for panel network
- 2 built-in RS-232 interfaces for programming via a PC and serial printer interface
- 5 on board programmable Form C relays rated at 1 amp at 30VDC (Fire1, Fire2, trouble, supervisory, aux.)
- 500mA of auxiliary power available rated at 24 VDC
- Loop Explorer Windows® configuration utility
- 500 network wide software zones
- Network Capability of up to 64 panels
- RS485 slave bus for expansion - up to 32 FN-4127-IO boards or up to 15 FN-LCD-S serial annunciators and up to 17 FN-4127-IO boards
- Auto-learn feature
- Fire Drill test function
- Walk Test function
- Alarm Verification feature
- FireNET is UL listed for Central Station Service, Remote Station Service and Proprietary Service
- Operates on 120VAC or 240VAC input voltage
- Powerful & versatile Cause & Effect programming (up to 500 maximum, network wide) including:
  - \*Cause & Effect action
  - \*Disable function configuration
  - \*Test mode configuration

Continued on back.

### PRODUCT LISTINGS



UL 864, Local Signaling Unit.  
Types: Automatic, manual, waterflow, sprinkler supervisory, Remote Station and Central Station Service (DACT) Non-coded signaling.  
NFPA 70, 72 & 13 Compliant



California State Fire Marshal  
7165-0410:159



Specifications subject to change without notice.

### 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

Find latest revision at [www.hochiki.com](http://www.hochiki.com)



<b>SPECIFICATIONS</b>	
Primary AC	120VAC @ 2.1 Amps 60hz or 220VAC @ 1.1Amps 50hz
Output DC	24VDC @ 5.25 Amps (4 Amps available for system power)
Power Supply	5.25 Amps integrated
Charger Current	1.5 Amps max.
Dimensions	14.5" W x 24" H x 5" D
Weight	31 lbs. (without batteries)
Color	Red (optional charcoal)
Material	ABS/steel enclosure
Display	8 line x 40 character LCD (320 characters total)
Network	Dual RS485 ports (64 panels max.)
Zones	500 network wide software zones per system
SLC loops	2 or 4 (class A, "style 6 or 7" or class B, "style 4")
Devices per loop	127 sensors & modules, plus 127 analog sounder bases, 254 total
Addresses per panel	(800 addresses+sub-addresses max. per panel)
NAC Outputs	(4) 2.5 Amps @ 24VDC (class B)
Relay Outputs	(5) Form C 1 Amp @ 30VDC
Voltage Outputs	(3) 500mA @ 24VDC
Aux. Power	500mA @ 24VDC
Aux. Inputs	(8) digital pull downs
PC Port	RS232
Printer Port	RS232
Operating Temp.	32°F (0°C) 120°F (49°C)
Relative Humidity	85% RH Non-Condensing

<b>SLC COMPATIBLE DEVICES &amp; SYSTEM ACCESSORIES</b>	
<b>MODEL</b>	<b>DESCRIPTION</b>
<b>CONTROL PANEL EXPANDERS</b>	
FN-4127-SLC	Dual SLC Loop Expansion Card
FN-4127-NIC	Network Interface Card
FN-4127-IO	16 Channel Input/Output Board
FN-DAC	Digital Alarm Communicator
FN-CTM	City-Tie Module (Local Energy Type)
<b>ANNUNCIATORS</b>	
FN-LCD-N	Network LCD Annunciator
FN-LCD-S	Serial LCD Annunciator
<b>SLC LOOP DEVICES</b>	
ALG-V	Analog Addressable Photoelectric Sensor
ALK-V & ALK-V2	Analog Addressable Photoelectric Sensor
ACA-V	Analog Addressable Multi-Criteria Photo/Heat Sensor
AIE-EA	Analog Addressable Ionization Sensor
ATG-EA	Analog Addressable Heat Sensor
NSA-6	Six inch Sensor Base
NSA-4	Four inch Sensor Base
ASB	Analog Sounder Base
DH-98A	Analog Addressable Duct Detector Unit
DH-98AR	Analog Addressable Duct Detector Unit (with relays)
MS-RA, MS-RA/R, MS-KA/R	Remote Test Station for DH98A & DH98AR
FRCME-M	Contact Monitoring Module (mini w/terminal blocks)
FRCME-P	Contact Monitoring Module (mini w/pigtail leads)
FRCME-4	Contact Monitoring Module (with faceplate/indicating LED)
FRCMA, FRCMA-I	Class A Input Module 4" Box Mount (FRCMA-I has built-in SCI)
DIMM	Dual Input Monitor Module (with faceplate/indicating LED)
CZM	Conventional Zone Module
R2M	Dual Relay Module
SOM	Supervised Output Module
SOM-A, SOM-AI	Class A Supervised Output Module With SCI or Without SCI
SOM-R	Supervised Output Module for Releasing Pre-action System
SCI	Short Circuit Isolator Module
AMS Series	Addressable Manual Pull Station
<b>ACCESSORIES</b>	
TCH-B100	Hand Held Programmer (portable device addresser)
FN-ACC	Battery/Accessory Enclosure (houses up to 33AH size batteries)
FN-ETR	Enclosure Trim Ring for Panel Flush Mount



CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

LISTING No. 7165-0410:0159

Page 1 of 2

CATEGORY: 7165 -- FIRE ALARM CONTROL UNIT (COMMERCIAL)

LISTEE: Hochiki America Corporation 7051 Village Drive, Ste. 100, Buena Park, CA 90621-2268  
Contact: Michael Um (714) 670-3248 Fax (714) 522-2268  
Email: mum@hochiki.com

DESIGN: Model FireNet 4127 Analog Addressable fire alarm control unit. Automatic, manual, waterflow and sprinkler supervisory service. Refer to the listee's data sheet for detailed product description and operational considerations. System components:

<u>MODULE</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
FN-4127-BO	(K6002)	Control Board
FN-4127-IO	(K6006)	16 Channel Input/Output Board
FN-4127-CPA-BO	(K6001)	Front LCD Indicator Panel
FN-4127-SLC	(K6004)	Loop 3, 4 Board
FN-4127-NIC	(K6005)	Network Card
FN-PS402	(S402)	Power Supply
FN-DAC	(FN-DAC)	Digital Alarm Communicator
FN-ENC	(FN-ENC)	Enclosures
FN-ACC	(FN-ACC)	Battery/Accessory Enclosure
FN-CTM	(7000-00780)	City Tie Module
D9068	(D9068)	Bosch Digital Alarm Communication Transmitter
HMX-DP		Voice Evacuation System Distribution Panel
HMX-MP		Voice Evacuation System Master Panel
EVX-100		Audio Adjunct Module
EVX-RM		Remote Microphone

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes & ordinances, and in a manner acceptable to the authority having jurisdiction.

MARKING: Listee's name, model number, electrical rating, and UL label.

APPROVAL: Listed as fire alarm control unit for use with separately listed compatible initiating and indicating devices. \*Also suitable for high-rise applications.

These control units can generate the distinctive three-pulse Temporal Pattern Fire Alarm Evacuation Signal as required per NFPA 72, 2002 Edition.

This control unit meets the requirements of UL-864, \*9th Edition Standard

NOTE: 1. For Fire Alarm Verification Feature (Delay of fire alarm), the maximum

\*Rev 6-24-2009 fm



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2014**

Listing Expires **June 30, 2015**

Authorized By: **JAMES PARSEGAN, Program Coordinator**

*Fire Engineering Division*

Retard/Reset/Restart period must be adjusted to 30 seconds or less.

2. Combined with 7170-0410:170

\*Rev 6-24-2009 fm



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This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

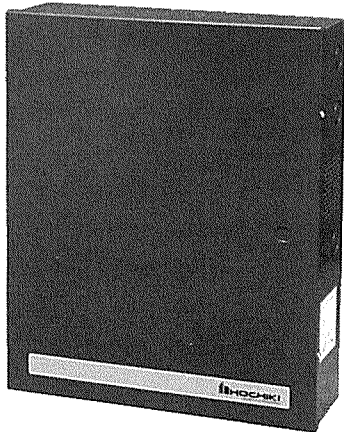
Date Issued: **July 01, 2014**

*Listing Expires* **June 30, 2015**

Authorized By: **JAMES PARSEGIAN**, Program Coordinator

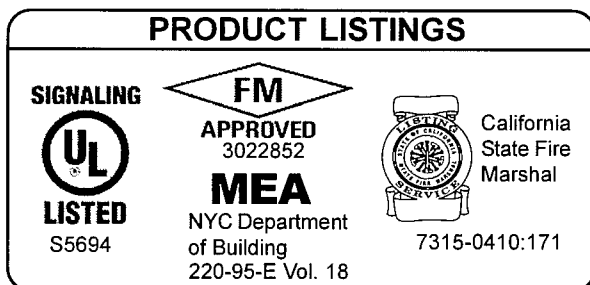
*Fire Engineering Division*

## FN-642-ULADA, FN-842-ULADA, FN-1042-ULADA



### DESCRIPTION

The FN-642-ULADA, FN-842-ULADA, and FN-1042-ULADA are extremely cost effective voltage regulated remote NAC Power Extenders. They may be connected to any 12 or 24VDC Fire Alarm Control Panel (FACP). Primary applications include Notification Appliance Circuit (NAC) expansion (supports ADA requirements) and will provide auxiliary power to support system accessories.



### SPECIFICATIONS

#### FN-642-ULADA:

- 24VDC OR 12VDC rated @ 6.5 amps max
- Four (4) Class A or Four (4) Class B outputs
- Enclosure size of 18"H x 14.5"W x 4.625"D

#### FN-842-ULADA:

- 24VDC OR 12VDC rated @ 8 amps max
- Four (4) Class A or Four (4) Class B outputs
- Enclosure size of 18"H x 14.5"W x 4.625"D

#### FN-1042-ULADA:

- 24VDC OR 12VDC rated @ 10 amps max
- Four (4) Class A or Four (4) Class B outputs
- Enclosure size of 18"H x 14.5"W x 4.625"D

### STANDARD FEATURES

- Two (2) Class A or (2) Class B FACP inputs
- Two (2) NC dry contact trigger inputs
- Four (4) Class A or Four (4) Class B indicating circuits
- Two (2) Class B outputs may be paralleled for more power on an indicating circuit
- One (1) Aux. Power Output @ 1 amp supply current (with or without battery back up)
- Signal Circuit Trouble Memory - Facilitates quickly locating intermittent system trouble and eliminates costly and unnecessary service calls. LED's indicate a prior fault (short, open, ground) has occurred on one or more signaling circuit outputs.
- 2 wire Horn/Strobe Sync mode allows audible notification appliances (Horns) to be silenced while visual notification appliances (Strobes) continue to operate
- Horn/Strobe sync protocols include: Gentex, System Sensor, Faraday, Wheelock and Amseco.
- Temporal Code 3 Mode
- Steady Mode
- Input to Output Follower Mode (maintains synchronization of notification appliance circuits)
- March Time
- Compatible with 24VDC or 12VDC fire panels
- Input 115VAC
- AC fail, battery presence & low battery monitoring
- Accommodates up to two (2) 12VDC/12AH batteries
- Power supply, logic board, red enclosure, cam lock, transformer & battery leads

*Specifications subject to change without notice*

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

LISTING No. 7315-0410:0166

Page 1 of 1

CATEGORY: 7315 -- POWER UNITS

LISTEE: Hochiki America Corporation 7051 Village Drive, Ste. 100, Buena Park, CA 90621-2268  
Contact: Michael Um (714) 670-3248 Fax (714) 522-2268  
Email: mum@hochiki.com

DESIGN: Models FN-642-ULADA, FN-842-ULADA and FN-1042-ULADA Indicating Circuit Power Supply may be followed by -R, -G, -C, or -B. Units are a regulated 12 or 24 VDC power supply/charger used for supervision and expanded power driving capability of four notification appliance circuits. Refer to listee's data sheet for additional detailed product description and operational considerations.

RATING: 115 VAC primary, 12 or 24 VDC secondary

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes & ordinances and in a manner acceptable to the authority having jurisdiction

MARKING: Listee's name, model number, electrical rating, and UL label.

APPROVAL: Listed as power supply units for use with separately listed compatible fire alarm control units. Refer to listee's Installation Instruction Manual for details.

NOTE: The system must have the secondary power supply capable of operating the system for at least 24 hours battery standby) in the normal condition and followed by not less than 5 minutes of alarm as required by code. The battery circuit must be fully supervised.

XLF: 7315-1335:0109

5-3-2005



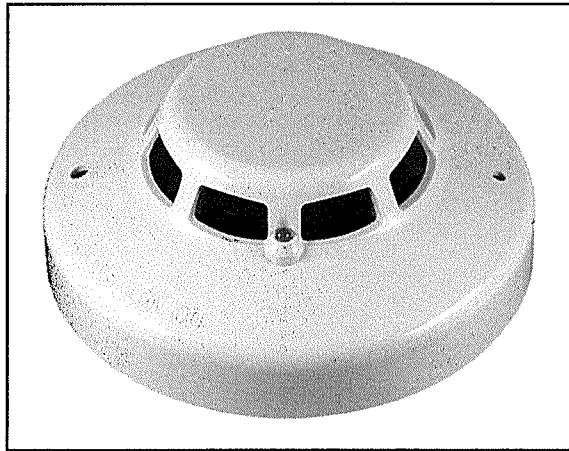
This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2014**

*Listing Expires* **June 30, 2015**

Authorized By: **JAMES PARSESIAN**, Program Coordinator  
*Fire Engineering Division*

## 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
- Programmable Non-polling 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
Standby Current	390 $\mu$ A
Alarm Current	800 $\mu$ A
Transmission Method	DCP - <i>Digital Communication Protocol</i>
Maximum Humidity	95% RH Non-Condensing
UL Ambient Installation Temperature Range	32°F to 100° F (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, Black / 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

<b>SIGNALING</b> 			California State Fire Marshal 7272-0410:173
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*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](mailto:technicalsupport@hochiki.com)

Find latest revision at [www.hochiki.com](http://www.hochiki.com)



## ENGINEERING SPECIFICATIONS, *continued*

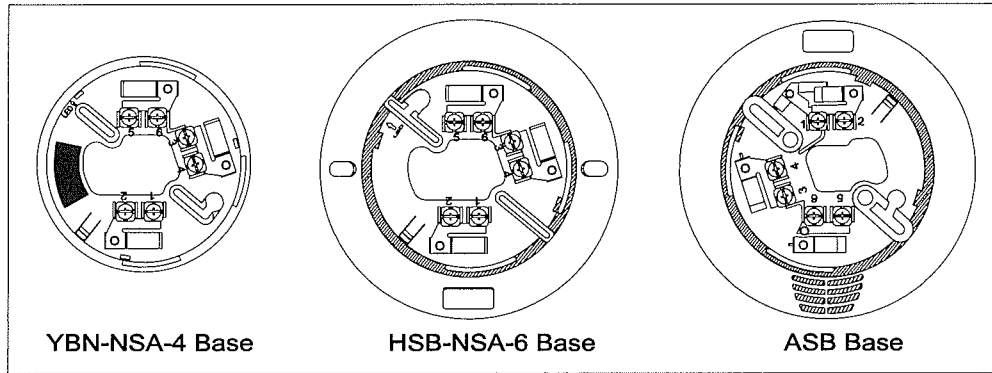
The base shall permit direct interchange with the HOCHIKI America AIE-EA ionization type smoke sensor, ALG-V Photoelectric type smoke sensor, and the ATG-EA heat sensor.

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.

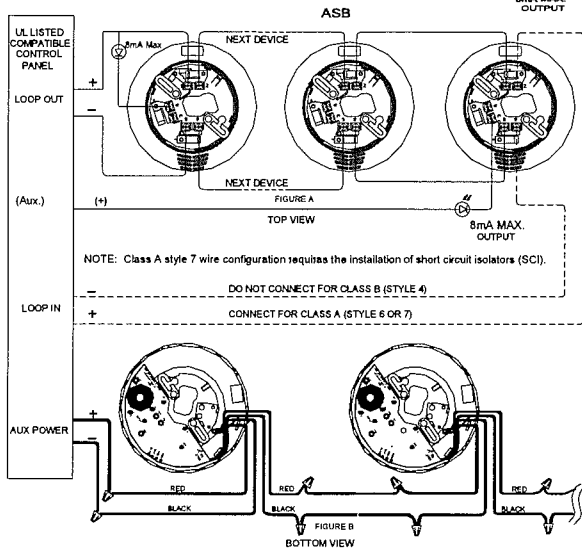
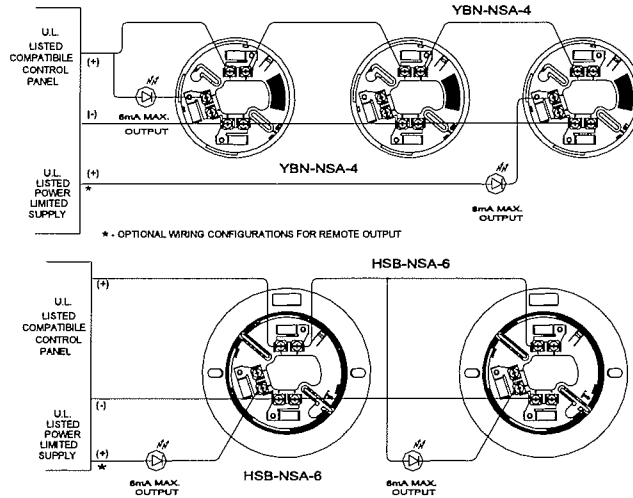
## BASES

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.

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
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FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

**LISTING No.** 7272-0410:0173 Page 1 of 1

**CATEGORY:** 7272 -- SMOKE DETECTOR-SYSTEM TYPE-PHOTOELECTRIC

**LISTEE:** Hochiki America Corporation 7051 Village Drive, Ste. 100, Buena Park, CA 90621-2268  
Contact: Michael Um (714) 670-3248 Fax (714) 522-2268  
Email: mum@hochiki.com

**DESIGN:** Models ALK-V, ALK-V2, \*FFO-SMOKE analog addressable photoelectric type smoke detector with listed compatible bases, Hochiki Model YBN-NSA-4, HSB-NSA-6, \*FFO-4BASE or \*FFO-6BASE (CSFM Listing No. 7300-0410:0132). Unit consists of resistors, capacitors, diodes, transistors, LED, photo diode, mounted on a printed wiring board inside an enclosure. Refer to listee's data sheet for additional detailed product description and operational considerations.

**RATING:** 39.5 VDC

**INSTALLATION:** In accordance with listee's printed installation instructions, applicable codes & ordinances and in a manner acceptable to the authority having jurisdiction.

**MARKING:** Listee's name, model designation, electrical rating and UL label.

**APPROVAL:** Listed as photoelectric smoke detector for use with separately listed compatible fire alarm control units. Also suitable for in-duct use in air velocities up to 4000 ft/min. Refer to listee's Installation Instruction Manual for details.

\*Rev 01-12-12 gt



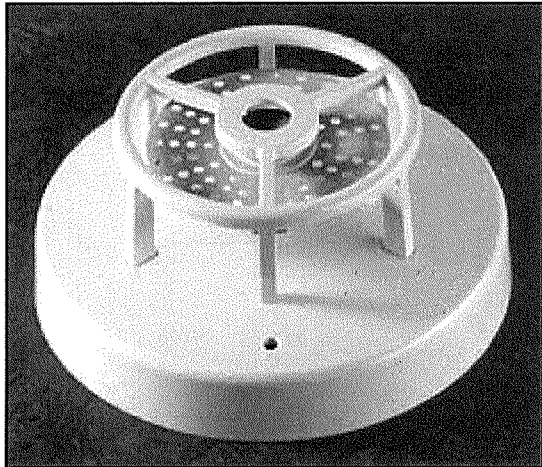
This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2014**

Listing Expires **June 30, 2015**

Authorized By: **JAMES PARSEGIAN, Program Coordinator**  
*Fire Engineering Division*

## DFE 135/190 FIXED TEMPERATURE HEAT DETECTOR



### STANDARD FEATURES

- Choice of fixed temperature - 135°F or 190°F
- UL Listed ceiling spacing of 50' by 50' (2,500 square feet)
- Self-Restoring
- Heat element protected by a built-in guard
- Contact Rating of 100 mA
- Highly Dependable
- Latching LED base available

### SPECIFICATIONS

Response	Temperature	135° ± 7.5°F
	Temperature	190° ± 7.5°F
Contact Rating	N/O Contacts 100mA @ 60 V	
Color & Case Material	Ivory ACS	
Mounting	Refer to back of this sheet	

### PRODUCT LISTINGS

SIGNALING



California  
State Fire  
Marshal  
7270-0410:119

**MEA**  
284-91E Vol. II

### APPLICATION

The DFE 135/190 fixed temperature heat detector is suited for installation where high heat output fires are expected or in areas where ambient conditions would not allow use of other detection methods.

Heat detectors are used for property protection. **Do not rely on heat detectors for life safety protection.** Where life safety is involved, smoke detectors must also be used.

Heat detectors should be electronically supervised from a UL listed alarm panel.

### OPERATION

The DFE 135/190 fixed temperature heat detector is suited to alarm in the presence of slowly rising temperatures. The construction of this model incorporates an oversized heat collector protected from damage by the built-in, durable plastic guard. The DFE 135/190 fixed temperature heat detector used the proven snap-disc principle of operation. This bi-metal disc deflects when temperature reaches a predetermined value. The disc deflection then causes a push-rod to close the internal contact resulting in an alarm condition. The bi-metal disc returns to its normal shape when the heat subsides causing internal contacts to return to their normally open position. A standby condition is restored.

### ENGINEERING SPECIFICATIONS

Automatic heat detectors shall be fixed temperature rated at 135°F for areas where ambient temperatures do not exceed 120°F and 190°F where ambient temperatures exceed 120°F but not 160°F. The fixed temperature element shall consist of a bi-metallic disc and actuator shaft. Electrical contacts shall be normally open, rated at 100mA @ 60VDC.

Heat detectors shall be installed in accordance with National Fire Protection Association Standard 72, the spacing assigned by Underwriters Laboratories, and in accordance with the rules and regulations set forth by the local authorities having jurisdiction. Automatic heat detectors shall be Underwriters Laboratories listed.

Specifications subject to change without notice.

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

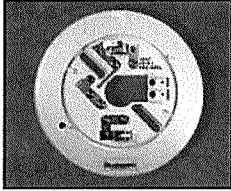
Find latest revision at [www.hochiki.com](http://www.hochiki.com)



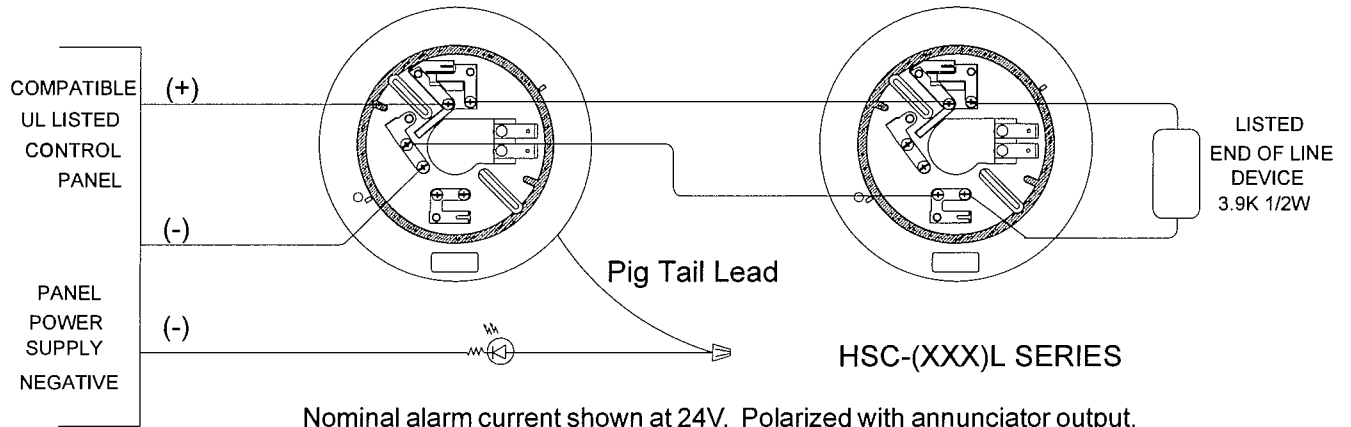


## COMPATIBLE BASES

### HSC-(XXX)L HEAT DETECTOR BASE



The HSC-xxx L Series is a 6" base featuring a current limiting resistor, latching annunciator output and a latching circuit so the alarm LED will remain lit until the control panel has been reset. Heat detectors are not recognized as proper detection for life safety protection, therefore they should be utilized only for the protection of property.



Nominal alarm current shown at 24V. Polarized with annunciator output.

HSC-21L	24mA	HSC-221L	41mA
HSC-224L	38mA	HSC-220L	73mA

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OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

**LISTING No.** 7270-0410:0119 Page 1 of 1

**CATEGORY:** 7270 -- HEAT DETECTOR

**LISTEE:** Hochiki America Corporation 7051 Village Drive, Ste. 100, Buena Park, CA 90621-2268  
Contact: Michael Um (714) 670-3248 Fax (714) 522-2268  
Email: mum@hochiki.com

**DESIGN:** Models AL-DFE-135 and AL-DFE-190. Refer to listee's data sheet for detailed product description and operational considerations.

**INSTALLATION:** In accordance with the listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

**MARKING:** Listee's name, model number, temperature & electrical ratings and UL label.

**APPROVAL:** Listed as system heat detectors when used in conjunction with listed compatible bases (CSFM Listing No. 7300-0410:132) and separately listed compatible control units.

\*Rev 11-16-2000



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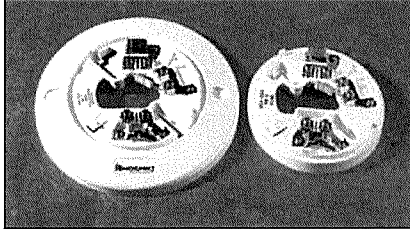
Date Issued: **July 01, 2014**

*Listing Expires* **June 30, 2015**

Authorized By: **JAMES PARSEGAN**, Program Coordinator  
*Fire Engineering Division*

## Conventional Detector Bases

### NS6 AND NS4 SERIES BASE

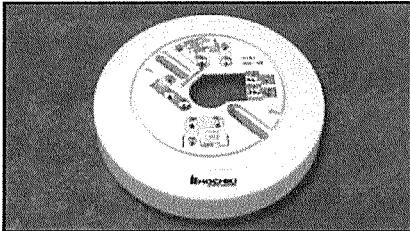


NS Series Bases	Alarm Current	ID
NS6-224 OR NS4-224	43mA (70mA @ 33.0V MAX)	HB-5
NS6-220 OR NS4-220	99mA (136mA @ 33.0V MAX)	HB-3
NS6-221 OR NS4-221	46mA (77mA @ 33.0V MAX)	HB-4
NS6-100* OR NS4-100*	150mA @ 15.0 – 33.0V MAX)	HB-55

\*Requires external current external limiting to 150mA maximum

The NS6 and NS4 Series is designed specifically for use with HOCHIKI Conventional Models SIJ-24 Ionization Smoke Detector, SLR-24V Photoelectric Smoke Detector, SLV-24, SLV-24N, SLV-24V Photoelectric Smoke Detectors, SLR-24H Photoelectric with Heat Smoke Detector, SLR-835 Photoelectric Smoke Detector, SLR-835H Photoelectric Smoke Detector w/heat, or DCD-135/190 Fixed Temperature/Rate-of-Rise Heat Detector. The Base is an electronics free 6" base featuring a plastic tamper-lock lug. Each base is equipped with a resistor. Refer to the chart (left) for additional specifications. The NS4 base is a 4" version of the NS6 base.

### HSC- (X)R RELAY BASE & HSC- 4R 4 WIRE BASE



2 Wire Auxiliary Relay Bases	Alarm Current	ID
HSC-224R	43mA (58mA @ 30.0V MAX)	HB-73
HSC-220R	88mA (98mA @ 26.5V MAX)	HB-72
HSC-221R	49mA (62mA @ 30.0V MAX)	HB-71
4 Wire Base	Alarm Current	ID
HSC-4R	43mA (58mA @ 30.0V MAX)	N/A
HSC-4R12	47mA (75mA @ 18.0V MAX)	N/A

Models HSC-224R, HSC-220R and the HSC-221R are designed specifically for use with the HOCHIKI Conventional Models SIJ-24, SLR-24V, SLR-24H, SLV-24, SLV-24N, SLV-24V, SLR-835, SLR-835H or DCD-135/190. The HSC-(X)R series is a 6" base with two sets of Form "C" relay contacts.

Models HSC-224R, HSC-220R and the HSC-221R are also approved for use with HOCHIKI previous Conventional Models SIH-24F, SLK-24F, SLK-24FH and the DFE 135/190.

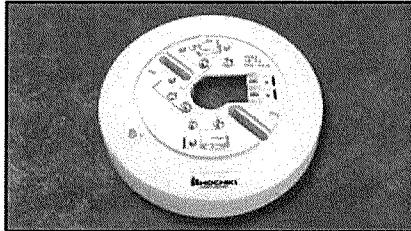
The HSC-4R is designed specifically for 24 volt 4 wire applications using HOCHIKI Conventional Models SIJ-24, SLR-24V, SLR-24H, SLV-24, SLV-2N, SLV-24V, SLR-835, SLR-835H or DCD-135/190. The 6" diameter base is current limited. Relay contact place a direct short circuit across the loop when the detector is actuated.

Model HSC-4R is also approved for use with previous HOCHIKI Conventional Models SIH-24F, SLK-24F, SLK-24FH and the DFE 135/190.

The HSC-4R12 is designed specifically for 12 volt 4 wire applications using HOCHIKI Conventional Models SLR-835, SLR-835H. The 6" diameter base is current limited. Relay contact place a direct short circuit across the loop when the detector is actuated.

Model HSC-4R12 is also approved for use with previous HOCHIKI Conventional Model SLK-835.

### HSC- (X) L LATCHING LED BASE



2 Wire Latching	Alarm Current	ID
HSC-224L	35-42mA @ 24V (54mA MAX)	HB-62
HSC-220L	67-80mA @ 24V (88.5mA @ 26.5VDC MAX)	HB-64
HSC-221L	37-45mA @ 24V (57mA MAX)	HB-63

The HSC-L Base Series is designed specifically for use with the HOCHIKI Fixed Temperature Heat Detectors Models DFE-135/ 190.

The HSC-L Series is a 6" base featuring a current limiting resistor, latching annunciator output and a latching circuit so the alarm LED will remain lit until the control panel has been reset.

*We try to keep our product information up-to-date and accurate. However, we cannot cover all specifications or anticipate all requirements. For additional information contact your local distributor or Hochiki America Corporation.*

### 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

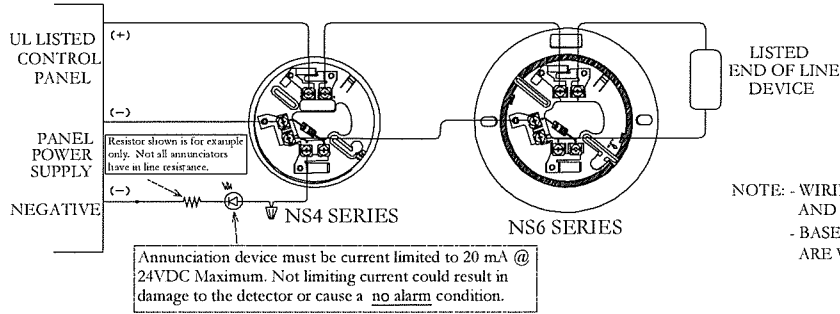
Find latest revision at [www.hochiki.com](http://www.hochiki.com)



# Conventional Detector Bases

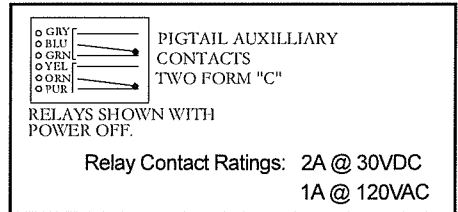
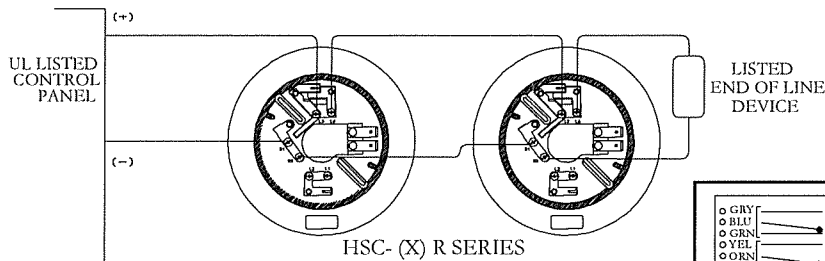
## NS4 AND NS6 SERIES BASE

### 2-WIRE OPERATION



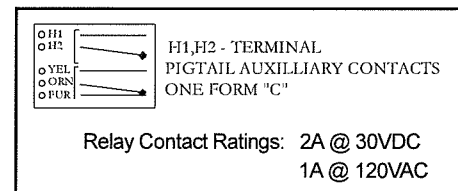
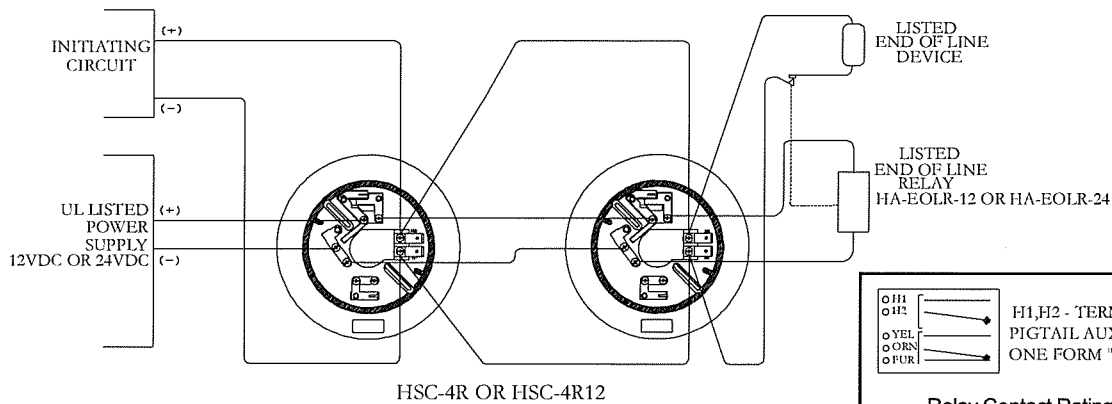
## HSC-(X)R RELAY BASE

### 2-WIRE OPERATION



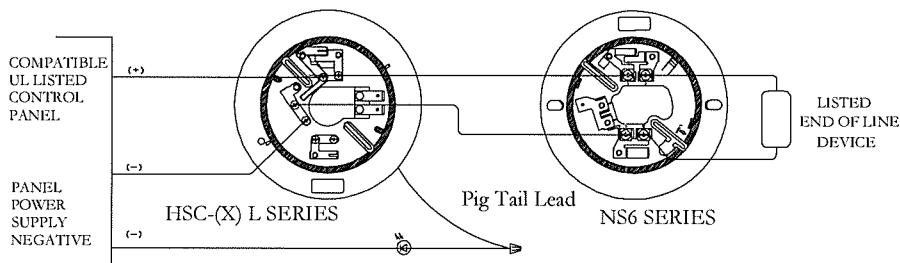
## HSC-4R FOUR WIRE BASE

### 4-WIRE OPERATION



## HSC-(X) L LATCHING LED BASE

### 2-WIRE OPERATION



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 FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

**LISTING No.** 7300-0410:0132 Page 1 of 2

**CATEGORY:** 7300 -- FIRE ALARM CONTROL UNIT ACCESSORIES/MISC. DEVICES

**LISTEE:** Hochiki America Corporation 7051 Village Drive, Ste. 100, Buena Park, CA 90621-2268  
 Contact: Michael Um (714) 670-3248 Fax (714) 522-2268  
 Email: mum@hochiki.com

**DESIGN:** Detector bases (2 and 4-wire). Unit is intended for use with a separately listed compatible detector head. Refer to listee's data sheet for detailed product description and operational considerations. Models listed below.

HA-4W	HA-4W1	HA-4WX	HA-2
HA-SL	HA-SR	HA-SLR	HA-RA2
HA-NRA2	HA-L12R	HA-2R	HA-22R
HA-L2	HA-L2A	HA-L2R	HA-L22
HA-L22A	HA-L22F	HA-L22R	HA-L22S
HA-LA2	HA-LRA	HA-LRA2	HA-LNA2
HA-LNRA2			

HS-2	HS-2L	HS-2D	HS-21
HS-21L	HS-21D	HS-22	HS-22L
HS-22D	HS-100	HS-200D	HS-220
HS-220L	HS-220D	HS-221	HS-221L
HS-221D	HS-221X	HS-221XL	HS-221XD
HS-224	HS-224L	HS-224D	HS-225
HS-225L	HS-225D	HS-2RB	HS-21RB
HS-220RB	HS-221RB	HS-224RB	HS-2RB4

HSB-2	HSB-2N	HSB-12-1	HSB-12-1N
HSB-12-4	HSB-12-4N	HSB-21	HSB-21N
HSB-100	HSB-200	HSB-200N	HSB-220
HSB-220N	HSB-221	HSB-221N	HSB-221S
HSB-224	HSB-224N	HSB-225	HSB-225N
HSC-4R	HSC-21L	HSC-220L	HSC-220R
HSC-221L	HSC-221R	HSC-224RA	HSC-224L
HSC-224R	HSC-225L	HSB-DCP-6	HSB-NSA-6

YBA-M2	YBA-M21	YBA-M22	YBA-M220
YBA-M221	YBA-M224	YBA-M225	YBA-M100
YBA-MAP	YBA-R3	YBA-RL/4	YBA-RL/4-1
YBA-RL/4-2	YBA-RL/4-RA	YBC-RL/12	YBC-RL/12-1

\*Rev 01-12-12 gt



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Date Issued: **July 01, 2014** Listing Expires **June 30, 2015**

Authorized By: **JAMES PARSESIAN, Program Coordinator**

*Fire Engineering Division*

YBC-RL/12-2	YBC-RL/12-4	YBC-RL/4-RA	YBC-RL/2NC
YBC-RL/2NBE	YBJ-RL/2ND	YBN-R/2NA	YBN-NSA-4
NS4-100	NS4-220	NS4-221	NS4-224
NS6-100	NS6-220	NS6-221	NS6-224
*FFO-4BASE	*FFO-6BASE	*FFO-SBASE	

Models may or may not come with suffix -W.

- INSTALLATION:** In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.
- MARKING:** Listee's name, model number, electrical rating and UL label.
- APPROVAL:** Listed as bases for use with listee's separately listed compatible smoke and heat detectors. Refer to heat or smoke detector listings for compatibility. Models HA-2R, HA-SLR, HA-LRA2 and HSC Series w/ suffix R are also suitable for releasing device service. Model YBA-R3 is intended for use with thermostat detector only.
- NOTE:** Formerly 7300-0410:100, 106, 115, 124, 125, 126, 130, 131 & 133

\*Rev 01-12-12 gt



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Date Issued: **July 01, 2014**

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Authorized By: **JAMES PARSEGIAN, Program Coordinator**

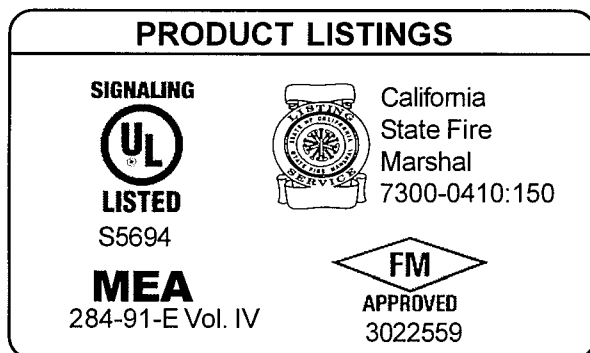
*Fire Engineering Division*

## DCP-FRCME-P - FAST RESPONSE CONTACT MODULE



### STANDARD FEATURES

- UL 864 9th Edition Listed
- Single input contact monitor
- Fast, reliable contact monitoring utilizing the Hochiki **DCP** (Digital Communications Protocol)
- 127 devices can be used per **DCP** loop
- Can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts
- Operates on Class A or Class B SLC loop



SPECIFICATIONS	
Supply Voltage (S-SC)	25.3 ~ 39 VDC
Average Current Consumption	550 $\mu$ A (Typical) 660 $\mu$ A (Alarm)
Programmable Input	Monitoring Inputs
EOL Device	10K ohms Resistor
Max. Quantity Per Loop	127
Dimensions	3.0"W x 1.9"H x 0.5"D
Operating Temperature	32°F (0°C) ~ 120°F (49°C)
Mounting	Single gang electrical box
Relative Humidity	90% RH Non-Condensing

### DESCRIPTION

The Hochiki DCP-FRCME-P Fast Response Contact Monitoring Modules are designed to be used with pull stations, water flow switches, and other applications requiring the monitoring of dry contact devices. The interrupt driven Digital Communications Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. The DCP-FRCME-P contact monitoring module does not require a separate 24 VDC power source.

Each addressable contact monitoring module is programmed with its own unique Signaling Line Circuit (SLC) loop address. The device address is electrically programmable and stored in onboard EEPROM. Up to 127 devices can be placed on the Hochiki DCP SLC loop. The module supervises the wiring to the contact with an End Of Line (EOL) resistor. It can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts. If a fault condition occurs in the wiring, the module sends a trouble status signal to the fire alarm control panel. When a change of status (contact changes state) is sensed by the DCP-FRCME-P, it sends an interrupt to the control panel indicating that an alarm has occurred.

The **DCP-FRCME-P** is small design and is suitable for mounting in a single gang box.

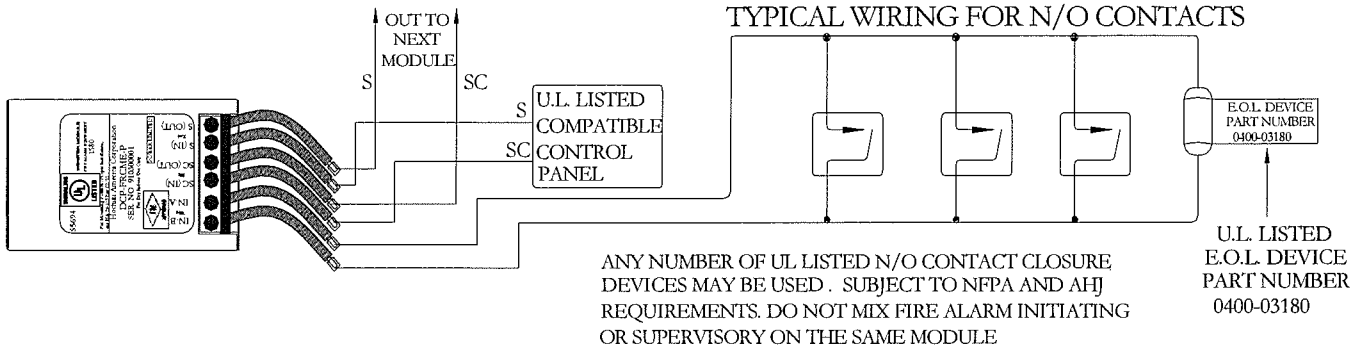
Specifications subject to change without notice.

Continued on back.

# ENGINEERING SPECIFICATIONS

The contractor shall furnish and install where indicated on the plans, addressable contact monitoring modules Hochiki DCP-FRCME-P. The modules shall be UL listed and compatible with the Hochiki Digital Communication Protocol (DCP) supporting control panel. The device address shall be electrically programmable and stored in EEPROM.

The DCP-FRCME-P shall fit inside a single gang electrical back box.



ALL CIRCUIT ARE SUPERVISED AND INHERENTLY POWER LIMITED



CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
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FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

**LISTING No.** 7300-0410:0150 Page 1 of 1  
**CATEGORY:** 7300 -- FIRE ALARM CONTROL UNIT ACCESSORIES/MISC. DEVICES  
**LISTEE:** Hochiki America Corporation 7051 Village Drive, Ste. 100, Buena Park, CA 90621-2268  
Contact: Michael Um (714) 670-3248 Fax (714) 522-2268  
Email: mum@hochiki.com  
**DESIGN:** Control Unit Accessories Models:

DCP-RM, DCP-R2M, \*FFO-2RM; Analog Relay Module  
DCP-SCI,\*FFO-SCIM; Short Circuit Isolator  
DCP-FRCME, DCP-FRCME-M, DCP-FRCME-P,\*FFO-MMP; Monitor Modules  
DCP-FRCME-S, DCP-FRCME-4,\*FFO-MM4; Monitor Modules  
DCP-FRCME-S-100, DCP-FRCME-4-100; Monitor Modules  
DCP-SOM,\*FFO-OM; Supervised Output Module  
DCP-SRM; Solenoid Releasing Module  
DCP-DIMM,\*FFO-2MM; Dual Input Monitor Module  
DCP-CZM,\*FFO-ZM; Conventional Zone Module  
DCP-SOM-A; Supervised Output Module  
DCP-SOM-R; Supervised Output Module Release  
DCP-SOM-AI; Supervised Output Module with Integrated SCI  
DCP-FRCMA; Input Module Box Mount  
DCP-FRCMA-I; Input Module Box Mount with Integrated SCI  
DCP-R2MH; Dual Relay Module, 2 amps @ 30VDC  
DCP-R2MH-I; Dual Relay Module, 2 amps @ 30VDC with Integrated SCI  
DCP-R2ML; Dual Relay Module, 8 amps @ 30VDC  
DCP-R2ML-I; Dual Relay Module, 8 amps @ 30VDC with Integrated SCI

Refer to listee's data sheet for additional detailed product description and operational considerations.

**INSTALLATION:** In accordance with listee's printed installation instructions, applicable codes & ordinances and in a manner acceptable to the authority having jurisdiction.  
**MARKING:** Listee's name, model number, electrical rating, and UL label.  
**APPROVAL:** Listed as control unit accessories for use with separately listed compatible fire alarm control units. Refer to listee's Installation Instruction Manual for details.

\*Rev. 01-12-12 gt

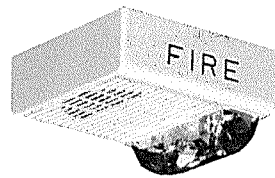


This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

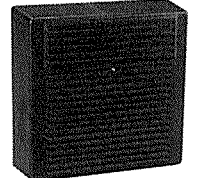
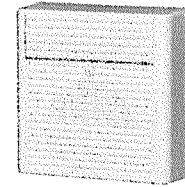
Date Issued: **July 01, 2014** *Listing Expires* **June 30, 2015**

Authorized By: **JAMES PARSEGAN, Program Coordinator**  
*Fire Engineering Division*

## Series AS Audible Strobe Appliances and Series AH Audibles



**SERIES AS**



**SERIES AH**

### Description

The Wheelock patented 2-wire Series AS Audible Strobe Appliances and Series AH Audibles offer more features with low current draw.

Strobe options for wall mount models include 1575cd or the Wheelock patented MCW multi-candela wall strobes with field selectable candela settings of 15/30/75/110cd, or the high intensity MCWH strobe with field selectable 135/185cd.

Ceiling mount models incorporate Wheelock's patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

The audible provides a selectable choice of either a continuous horn or temporal pattern (Code 3) when constant voltage from a Fire Alarm Panel (FACP) is applied. Each tone has 3 dBA settings to choose from.

When used with the Wheelock Series DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol, synchronization of the continuous horn tone provides the temporal (code 3) tone (mandated by NFPA 72) simultaneously for all audible appliances. This ensures a distinct temporal (code 3) pattern when 2 or more audibles are within hearing distance. If not synchronized the temporal sound could overlap and not be distinctive. At the same time the strobes will be synchronized. This provides the ability to comply with ADA guidelines concerning photosensitive epilepsy and the NFPA standards when installing 2 or more visual appliances within the field of view all of this plus the ability to silence the audible is achieved by using only 2 wire.

### Features

- Approvals include: UL Standard 1971, UL Standard 464 New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM), and Chicago (BFP). See approvals by model in Specifications and Ordering Information
- ADA/NFPA/UFC/ANSI Compliant
- Wall mount models are available with Field Selectable Candela Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (single candela model)
- Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (multi-candela ceiling models)
- Selectable Continuous Horn or Temporal (Code 3).
- 3 Selectable dBA settings (99, 95 and 90 dBA) in both tones
- Patented 2-Wire Audible Strobe Appliance.
- Patented Universal Mounting Plate
- Weatherproof models are available for outdoor use
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage Range" using filtered DC or unfiltered FWR input voltage
- Synchronize using the Wheelock Sync Modules or panels with built-in Wheelock Patented Sync Protocol
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires

For Weatherproof Series AS, See Datasheet S9004



**NOTE: All CAUTIONS and WARNINGS are identified by the symbol ▲. All warnings are printed in bold capital letters.**

**▲ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT WWW.COOPERNOTIFICATION.COM OR CONTACT COOPER WHEELLOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

**General Notes:**

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

Model Number	Input Voltage VDC	Regulated Voltage Range VDC/FWR	Strobe Candela (cd)
AS-24MCW	24	16.0 - 33.0	15/30/75/110
AS-24MCCH	24	16.0 - 33.0	115/177
AS-241575W	24	16.0 - 33.0	15 (75 on Axis)
AS-121575W	12	8.0 – 17.5	15 (75 on Axis)
AS-24MCC	24	16.0 - 33.0	15/30/75/95
AS-24MCWH	24	16.0 - 33.0	135/185
ASWP-2475W	24	16.0 - 33.0	75 @ -31°F

Description	Volume	Reverberant dBA Per UL 464 @ 10 ft.	Anechoic dBA @ 10 ft.
Continuous Horn	High	91	99
	Medium	88	95
	Low	83	90
Code 3 Horn	High	87	99
	Medium	84	95
	Low	79	90

24 VDC Models		Audible	Wall Mount Audible Strobe Models							Ceiling Mount Audible Strobe Models					
			AH-24	AS-241575W	AS-24MCW				AS-24MCWH	AS-24MCC				AS-24MCCH	
			1575cd	15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
High (99) dBA	24 vdc	<b>0.062</b>	<b>0.100</b>	<b>0.080</b>	<b>0.102</b>	<b>0.150</b>	<b>0.194</b>	<b>0.250</b>	<b>0.320</b>	<b>0.088</b>	<b>0.114</b>	<b>0.165</b>	<b>0.205</b>	<b>0.250</b>	<b>0.320</b>
	UL max*	0.080	0.121	0.088	0.125	0.200	0.267	0.355	0.480	0.095	0.138	0.221	0.285	0.355	0.480
Med (95) dBA	24 vdc	<b>0.033</b>	<b>0.080</b>	<b>0.060</b>	<b>0.084</b>	<b>0.132</b>	<b>0.173</b>	<b>0.230</b>	<b>0.305</b>	<b>0.066</b>	<b>0.092</b>	<b>0.145</b>	<b>0.186</b>	<b>0.230</b>	<b>0.305</b>
	UL max*	0.043	0.107	0.074	0.110	0.190	0.253	0.340	0.465	0.080	0.122	0.201	0.269	0.340	0.465
Low (90) dBA	24 vdc	<b>0.017</b>	<b>0.072</b>	<b>0.052</b>	<b>0.076</b>	<b>0.121</b>	<b>0.158</b>	<b>0.220</b>	<b>0.295</b>	<b>0.056</b>	<b>0.082</b>	<b>0.132</b>	<b>0.173</b>	<b>0.220</b>	<b>0.295</b>
	UL max*	0.021	0.100	0.068	0.105	0.182	0.245	0.335	0.460	0.074	0.113	0.198	0.263	0.335	0.460

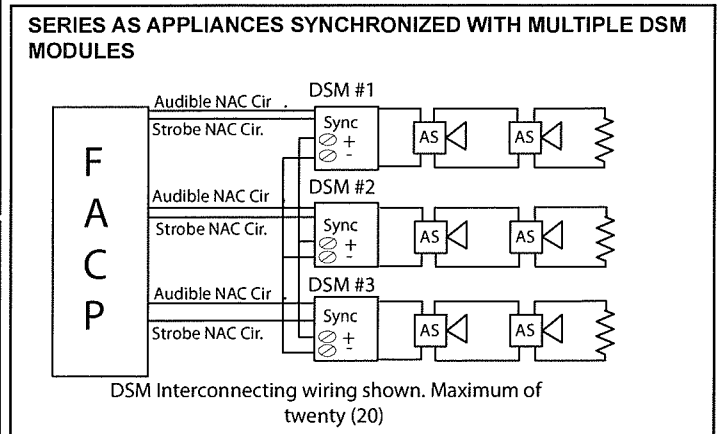
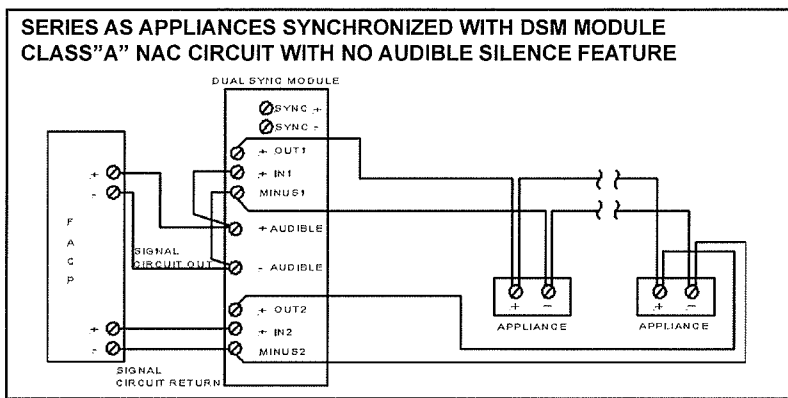
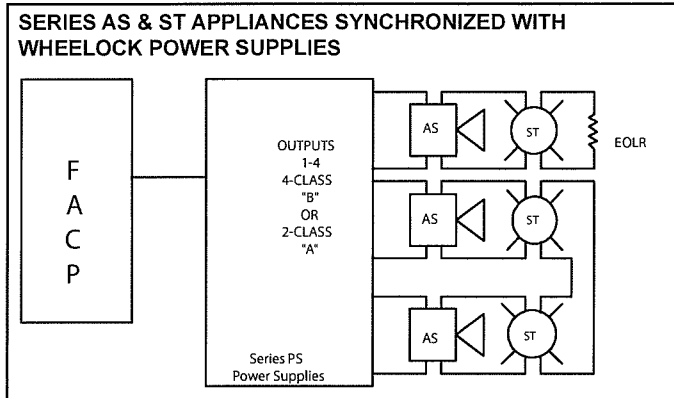
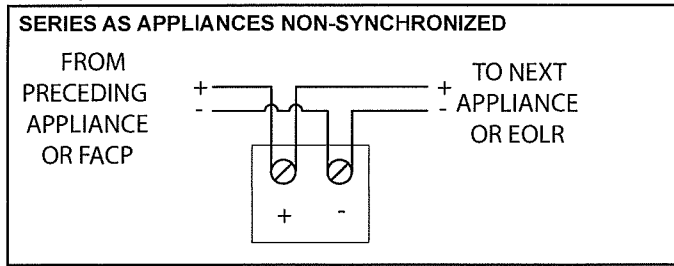
Voltage	High dBA Setting (99) dBA	Medium dBA Setting (95) dBA	Low dBA Setting (90) dBA
24.0 VDC	0.128	0.105	0.098
UL Max*	0.168	0.155	0.150

12 VDC Models		Audible	Wall Mount Audible Strobe	
			AH-12	AS-121575W
High (99) dBA	12 vdc	0.163	0.260	
	UL max*	0.192	0.320	
Med (95) dBA	12 vdc	0.076	0.195	
	UL max*	0.108	0.275	
Low (90) dBA	12 vdc	0.039	0.175	
	UL max*	0.058	0.265	

\* RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

## Wiring Diagrams#



# For detail using DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83177 for DSM. For wiring information on the power supplies refer to Installation Instructions P84905 for Wheellock Power Supplies.

## Specifications and Ordering Information

Model Number	Order Code	Strobe Candela	Non-Sync	Sync DSM or Wheellock Power Supplies	24 VDC	12 VDC	Wall Mount	Ceiling Mount	Mounting Options***	Agency Approvals				
										UL	MEA	CSFM	FM	BFP
AS-24MCW-FR	9024	15/30/75/110	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCW-FW	9025	15/30/75/110	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCWH-FR	3468	135/185	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-24MCWH-FW	3469	135/185	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-241575W-FR	7405	15 (75 on Axis)	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-121575W-FR	7410	15 (75 on Axis)	X	X	-	X	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCC-FR	3161	15/30/75/95	X	X	X	-	-	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-24MCC-FW	3162	15/30/75/95	X	X	X	-	-	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-24MCCH-FW	3467	115/177	X	X	X	-	-	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
ASWP-2475W-FR**	9012	75 @ -31°F	X	X	X	-	X	-	I (see Data Sheet S9004)	X	X	X	X	X
AH-24-R	7892	-	X	X	X	-	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-24-W	7893	-	X	X	X	-	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-12-R	7891	-	X	X	-	X	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-12-W	7894	-	X	X	-	X	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-24WP-R**	7416	-	X	X	X	-	X	X	K	X	X	X	-	X
AH-12WP-R**	7415	-	X	X	-	X	X	X	K	X	X	X	-	X

\*\*For Weatherproof Series AS/AH specifications see data sheet S9004.

\*\*\*Refer to Data Sheet S7000 for Mounting Options.

Note: Models are available in either Red or White. Contact Customer Service for Order Code and Delivery.

**NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Wheelock Inc. standard terms and conditions.**

\*PENDING

## Architects and Engineers Specifications

The notification appliances shall be Wheelock Series AS Audible Strobe appliances and Series AH Audible appliances or approved equals. The Series AS Audible be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series AH Audible shall be UL Listed under Standard 464 (Fire Protective Signaling). Both shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

The audible portion of the appliance shall have a minimum of three (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The Series AS shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110 or 135/185 candela for wall mount and 15/30/75/95 or 115/177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels with built-in Wheelock Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash-rate. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock synchronization.

The Series AS Audible Strobe and Series AH Audible shall incorporate a Patented Universal Mounting Plate that shall allow mounting to a single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided.

All notification appliances shall be backward compatible.



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION  
3 YEAR WARRANTY

S8100 AS/AH 06/11

NJ Location  
273 Branchport Ave.  
Long Branch, NJ 07740  
P: 800-631-2148  
F: 732-222-8707  
[www.coopernotification.com](http://www.coopernotification.com)

Cooper Notification is

Wheelock®



SAFEPATH®

WAVES®



**COOPER** Notification

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

LISTING No. 7125-0785:0131

Page 1 of 2

CATEGORY: 7125 -- FIRE ALARM DEVICES FOR THE HEARING IMPAIRED

LISTEE: Cooper Wheelock Inc. 7246 16th St. E., Ste. 105, Sarasota, FL 34243  
Contact: Tom Conover (941) 487-2336  
Email: thomas.conover@cooperindustries.com

DESIGN: Models AS-1215, -2415, -1230, -2430, -121575, -241575, -2475 and -24110 audible/strobes for the hearing impaired followed by any three alpha/numeric characters indicating lens orientation, lettering and color.

Models AS-1215W, -2415W, -1230W, -2430W, -121575W, -241575W, -2475W and -24110W audible/strobes for the hearing impaired followed by any three alpha/numeric characters indicating lens orientation, lettering and color. These units with suffix -W are for wall mount only. \*Models AS-121575W and AS-241575W lens color may be white, red, blue, green, or amber.

Models AS-2415C, -2430C, -2475C and -24100C audible/strobes for the hearing impaired followed by two alpha/numeric characters indicating lens lettering, orientation and color. These units are intended for ceiling mount only.

Model AH-12, -24, AH-12WP, -24WP audible appliances (no strobe), followed by an alpha or numeric character indicating product color.

Model AS-24MCW and AS-24MCC audible/strobe, followed by any two alpha or numeric character indicating lettering and product color. \*Lens color may be white, red, blue, green, or amber.

Models ASWP-2475W and \*ASWP-2475C audible/strobe with integral private mode fire/emergency visual signaling for non-hearing impaired applications. Lens color may be white, red, blue, green, and amber. Both models are suitable for outdoor use when mounted on the Model WPBB back box.

Models AS-24MCWH, AS-24MCCH, \*ASWP-24MCWH, and \*ASWP-24MCCH audible/strobes for the hearing impaired followed by two alpha/numeric characters indicating lens lettering and product color. Units with suffix CH are for ceiling mount only. Units with suffix WH are for wall mount only. \*Lens color may be white, red, blue, green, or amber.

Refer to the listee's data sheet for detailed product description and operational considerations.

\*Rev. 10-01-07



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2014**

Listing Expires **June 30, 2015**

Authorized By: **JAMES PARSESIAN, Program Coordinator**  
*Fire Engineering Division*

- RATING:** Electrical: 8-17.5/16-33 VDC/FWR  
Flash Rate: 60 flashes/minute  
Candela: 15:15cd,1575:15/75cd,30:30cd,75:75cd,95:95cd,100:100cd, 110:110cd  
MCW: Selectable 15cd, 30cd, 75cd,110cd  
MCC: Selectable 15cd, 30cd,75cd,95cd  
MCWH: Selectable 135cd,185cd (65cd, 90cd at -40 C)  
MCCH: Selectable 115cd,177cd (50cd, 75cd at -40 C)
- INSTALLATION:** In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction. Models ASWP-2475W, ASWP-24MCWH, AS-24MCW and AS-24MCWH are for wall mount only. Models ASWP-2475C, ASWP-24MCCH, AS-24MCCH, AND AS-24MCC are for ceiling mount only. Models with suffix -W or WH are for wall mount only. Models with suffix -C or -CH are for ceiling mount only.
- MARKING:** Listee's name, model number, electrical/candela rating, and UL label.
- APPROVAL:** Listed as audible and audible/visual signaling devices suitable for the hearing impaired when used in conjunction with separately listed electrically compatible fire alarm control units. For indoor use only except Models AH-12WP, AH-24WP, \*ASWP-2475W, ASWP-2475C, ASWP-24MCWH, and ASWP-24MCCH audible appliances are suitable for indoor/outdoor. For synchronization, Models AS Series must be used with Model SM-12/24, SMX-12/24, DSM-12/24 or DSMX-12/24 sync control module (CSFM Listing No. 7300-0785:132). Refer to listee's Installation Instruction Manual for details.  
These appliances can generate a distinctive three-pulse Temporal Pattern Fire Alarm Evacuation Signal (for total evacuation) in accordance with NFPA 72, 2002 Edition.
- NOTE:** Models AH-12, AH-24, -12WP and -24WP audible devices are not suitable for the hearing impaired applications.

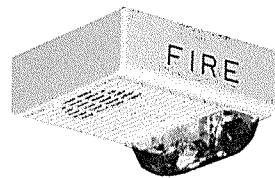
\*Rev. 10-01-07



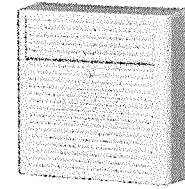
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Date Issued: **July 01, 2014**Listing Expires **June 30, 2015**Authorized By: **JAMES PARSEGIAN, Program Coordinator***Fire Engineering Division*

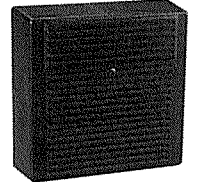
## Series AS Audible Strobe Appliances and Series AH Audibles



**SERIES AS**



**SERIES AH**



### Description

The Wheelock patented 2-wire Series AS Audible Strobe Appliances and Series AH Audibles offer more features with low current draw.

Strobe options for wall mount models include 1575cd or the Wheelock patented MCW multi-candela wall strobes with field selectable candela settings of 15/30/75/110cd, or the high intensity MCWH strobe with field selectable 135/185cd.

Ceiling mount models incorporate Wheelock's patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

The audible provides a selectable choice of either a continuous horn or temporal pattern (Code 3) when constant voltage from a Fire Alarm Panel (FACP) is applied. Each tone has 3 dBA settings to choose from.

When used with the Wheelock Series DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol, synchronization of the continuous horn tone provides the temporal (code 3) tone (mandated by NFPA 72) simultaneously for all audible appliances. This ensures a distinct temporal (code 3) pattern when 2 or more audibles are within hearing distance. If not synchronized the temporal sound could overlap and not be distinctive. At the same time the strobes will be synchronized. This provides the ability to comply with ADA guidelines concerning photosensitive epilepsy and the NFPA standards when installing 2 or more visual appliances within the field of view all of this plus the ability to silence the audible is achieved by using only 2 wire.

### Features

- Approvals include: UL Standard 1971, UL Standard 464 New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM), and Chicago (BFP). See approvals by model in Specifications and Ordering Information
- ADA/NFPA/UFC/ANSI Compliant
- Wall mount models are available with Field Selectable Candela Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (single candela model)
- Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (multi-candela ceiling models)
- Selectable Continuous Horn or Temporal (Code 3).
- 3 Selectable dBA settings (99, 95 and 90 dBA) in both tones
- Patented 2-Wire Audible Strobe Appliance.
- Patented Universal Mounting Plate
- Weatherproof models are available for outdoor use
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage Range" using filtered DC or unfiltered FWR input voltage
- Synchronize using the Wheelock Sync Modules or panels with built-in Wheelock Patented Sync Protocol
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires

For Weatherproof Series AS, See Datasheet S9004





**NOTE: All CAUTIONS and WARNINGS are identified by the symbol ▲. All warnings are printed in bold capital letters.**

**▲ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT WWW.COOPERNOTIFICATION.COM OR CONTACT COOPER WHEELLOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

**General Notes:**

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

Model Number	Input Voltage VDC	Regulated Voltage Range VDC/FWR	Strobe Candela (cd)
AS-24MCW	24	16.0 - 33.0	15/30/75/110
AS-24MCCH	24	16.0 - 33.0	115/177
AS-241575W	24	16.0 - 33.0	15 (75 on Axis)
AS-121575W	12	8.0 – 17.5	15 (75 on Axis)
AS-24MCC	24	16.0 - 33.0	15/30/75/95
AS-24MCWH	24	16.0 - 33.0	135/185
ASWP-2475W	24	16.0 - 33.0	75 @ -31°F

Description	Volume	Reverberant dBA Per UL 464 @ 10 ft.	Anechoic dBA @ 10 ft.
Continuous Horn	High	91	99
	Medium	88	95
	Low	83	90
Code 3 Horn	High	87	99
	Medium	84	95
	Low	79	90

24 VDC Models		Audible	Wall Mount Audible Strobe Models							Ceiling Mount Audible Strobe Models					
			AH-24	AS-241575W	AS-24MCW				AS-24MCWH	AS-24MCC				AS-24MCCH	
			1575cd	15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
High (99) dBA	24 vdc	<b>0.062</b>	<b>0.100</b>	<b>0.080</b>	<b>0.102</b>	<b>0.150</b>	<b>0.194</b>	<b>0.250</b>	<b>0.320</b>	<b>0.088</b>	<b>0.114</b>	<b>0.165</b>	<b>0.205</b>	<b>0.250</b>	<b>0.320</b>
	UL max*	0.080	0.121	0.088	0.125	0.200	0.267	0.355	0.480	0.095	0.138	0.221	0.285	0.355	0.480
Med (95) dBA	24 vdc	<b>0.033</b>	<b>0.080</b>	<b>0.060</b>	<b>0.084</b>	<b>0.132</b>	<b>0.173</b>	<b>0.230</b>	<b>0.305</b>	<b>0.066</b>	<b>0.092</b>	<b>0.145</b>	<b>0.186</b>	<b>0.230</b>	<b>0.305</b>
	UL max*	0.043	0.107	0.074	0.110	0.190	0.253	0.340	0.465	0.080	0.122	0.201	0.269	0.340	0.465
Low (90) dBA	24 vdc	<b>0.017</b>	<b>0.072</b>	<b>0.052</b>	<b>0.076</b>	<b>0.121</b>	<b>0.158</b>	<b>0.220</b>	<b>0.295</b>	<b>0.056</b>	<b>0.082</b>	<b>0.132</b>	<b>0.173</b>	<b>0.220</b>	<b>0.295</b>
	UL max*	0.021	0.100	0.068	0.105	0.182	0.245	0.335	0.460	0.074	0.113	0.198	0.263	0.335	0.460

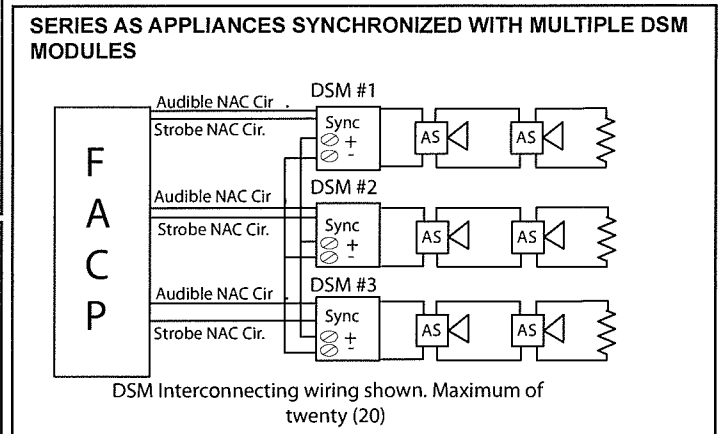
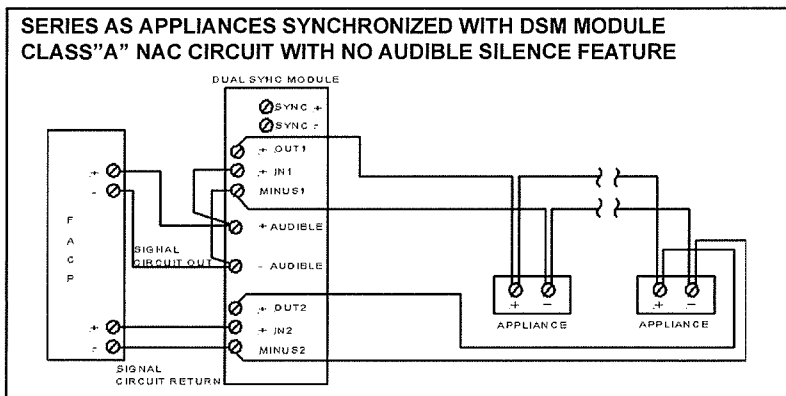
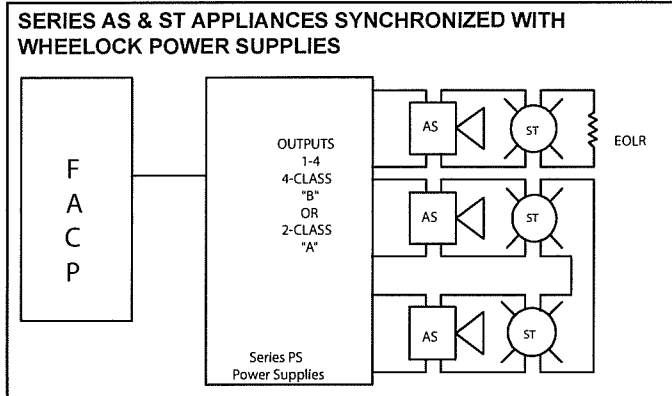
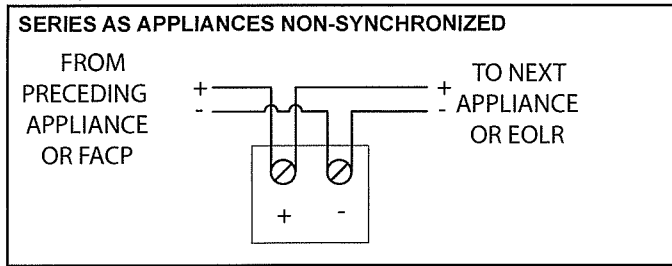
12 VDC Models		Audible	Wall Mount Audible Strobe
		AH-12	AS-121575W
High (99) dBA	12 vdc	0.163	0.260
	UL max*	0.192	0.320
Med (95) dBA	12 vdc	0.076	0.195
	UL max*	0.108	0.275
Low (90) dBA	12 vdc	0.039	0.175
	UL max*	0.058	0.265

Voltage	High dBA Setting (99) dBA	Medium dBA Setting (95) dBA	Low dBA Setting (90) dBA
24.0 VDC	0.128	0.105	0.098
UL Max*	0.168	0.155	0.150

\* RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

## Wiring Diagrams #



# For detail using DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83177 for DSM. For wiring information on the power supplies refer to Installation Instructions P84905 for Wheellock Power Supplies.

## Specifications and Ordering Information

Model Number	Order Code	Strobe Candela	Non-Sync	Sync DSM or Wheellock Power Supplies	24 VDC	12 VDC	Wall Mount	Ceiling Mount	Mounting Options***	Agency Approvals				
										UL	MEA	CSFM	FM	BFP
AS-24MCW-FR	9024	15/30/75/110	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCW-FW	9025	15/30/75/110	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCWH-FR	3468	135/185	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-24MCWH-FW	3469	135/185	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-241575W-FR	7405	15 (75 on Axis)	X	X	X	-	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-121575W-FR	7410	15 (75 on Axis)	X	X	-	X	X	-	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCC-FR	3161	15/30/75/95	X	X	X	-	-	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-24MCC-FW	3162	15/30/75/95	X	X	X	-	-	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
AS-24MCCH-FW	3467	115/177	X	X	X	-	-	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	-
ASWP-2475W-FR**	9012	75 @ -31°F	X	X	X	-	X	-	I (see Data Sheet S9004)	X	X	X	X	X
AH-24-R	7892	-	X	X	X	-	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-24-W	7893	-	X	X	X	-	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-12-R	7891	-	X	X	-	X	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-12-W	7894	-	X	X	-	X	X	X	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-24WP-R**	7416	-	X	X	X	-	X	X	K	X	X	X	-	X
AH-12WP-R**	7415	-	X	X	-	X	X	X	K	X	X	X	-	X

\*\*For Weatherproof Series AS/AH specifications see data sheet S9004.

\*\*\*Refer to Data Sheet S7000 for Mounting Options.

Note: Models are available in either Red or White. Contact Customer Service for Order Code and Delivery.

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Wheelock Inc. standard terms and conditions.

\*PENDING

## Architects and Engineers Specifications

The notification appliances shall be Wheelock Series AS Audible Strobe appliances and Series AH Audible appliances or approved equals. The Series AS Audible be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series AH Audible shall be UL Listed under Standard 464 (Fire Protective Signaling). Both shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

The audible portion of the appliance shall have a minimum of three (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The Series AS shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110 or 135/185 candela for wall mount and 15/30/75/95 or 115/177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels with built-in Wheelock Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash-rate. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock synchronization.

The Series AS Audible Strobe and Series AH Audible shall incorporate a Patented Universal Mounting Plate that shall allow mounting to a single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided.

All notification appliances shall be backward compatible.



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION  
3 YEAR WARRANTY

S8100 AS/AH 06/11

NJ Location  
273 Branchport Ave.  
Long Branch, NJ 07740  
P: 800-631-2148  
F: 732-222-8707  
[www.coopernotification.com](http://www.coopernotification.com)

Cooper Notification is

Wheelock®  SAFEPATH® WAVES® 

 **COOPER** Notification

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

**LISTING No.** 7125-0785:0131

Page 1 of 2

**CATEGORY:** 7125 -- FIRE ALARM DEVICES FOR THE HEARING IMPAIRED

**LISTEE:** Cooper Wheelock Inc. 7246 16th St. E., Ste. 105, Sarasota, FL 34243  
Contact: Tom Conover (941) 487-2336  
Email: thomas.conover@cooperindustries.com

**DESIGN:** Models AS-1215, -2415, -1230, -2430, -121575, -241575, -2475 and -24110 audible/strobes for the hearing impaired followed by any three alpha/numeric characters indicating lens orientation, lettering and color.

Models AS-1215W, -2415W, -1230W, -2430W, -121575W, -241575W, -2475W and -24110W audible/strobes for the hearing impaired followed by any three alpha/numeric characters indicating lens orientation, lettering and color. These units with suffix -W are for wall mount only. \*Models AS-121575W and AS-241575W lens color may be white, red, blue, green, or amber.

Models AS-2415C, -2430C, -2475C and -24100C audible/strobes for the hearing impaired followed by two alpha/numeric characters indicating lens lettering, orientation and color. These units are intended for ceiling mount only.

Model AH-12, -24, AH-12WP, -24WP audible appliances (no strobe), followed by an alpha or numeric character indicating product color.

Model AS-24MCW and AS-24MCC audible/strobe, followed by any two alpha or numeric character indicating lettering and product color. \*Lens color may be white, red, blue, green, or amber.

Models ASWP-2475W and \*ASWP-2475C audible/strobe with integral private mode fire/emergency visual signaling for non-hearing impaired applications. Lens color may be white, red, blue, green, and amber. Both models are suitable for outdoor use when mounted on the Model WPBB back box.

Models AS-24MCWH, AS-24MCCH, \*ASWP-24MCWH, and \*ASWP-24MCCH audible/strobes for the hearing impaired followed by two alpha/numeric characters indicating lens lettering and product color. Units with suffix CH are for ceiling mount only. Units with suffix WH are for wall mount only. \*Lens color may be white, red, blue, green, or amber.

Refer to the listee's data sheet for detailed product description and operational considerations.

\*Rev. 10-01-07



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2014**

Listing Expires **June 30, 2015**

Authorized By: **JAMES PARSESIAN, Program Coordinator**  
*Fire Engineering Division*

- RATING:** Electrical: 8-17.5/16-33 VDC/VFWR  
Flash Rate: 60 flashes/minute  
Candela: 15:15cd,1575:15/75cd,30:30cd,75:75cd,95:95cd,100:100cd, 110:110cd  
MCW: Selectable 15cd, 30cd, 75cd, 110cd  
MCC: Selectable 15cd, 30cd, 75cd, 95cd  
MCWH: Selectable 135cd, 185cd (65cd, 90cd at -40 C)  
MCCH: Selectable 115cd, 177cd (50cd, 75cd at -40 C)
- INSTALLATION:** In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction. Models ASWP-2475W, ASWP-24MCWH, AS-24MCW and AS-24MCWH are for wall mount only. Models ASWP-2475C, ASWP-24MCCH, AS-24MCCH, AND AS-24MCC are for ceiling mount only. Models with suffix -W or WH are for wall mount only. Models with suffix -C or -CH are for ceiling mount only.
- MARKING:** Listee's name, model number, electrical/candela rating, and UL label.
- APPROVAL:** Listed as audible and audible/visual signaling devices suitable for the hearing impaired when used in conjunction with separately listed electrically compatible fire alarm control units. For indoor use only except Models AH-12WP, AH-24WP, \*ASWP-2475W, ASWP-2475C, ASWP-24MCWH, and ASWP-24MCCH audible appliances are suitable for indoor/outdoor. For synchronization, Models AS Series must be used with Model SM-12/24, SMX-12/24, DSM-12/24 or DSMX-12/24 sync control module (CSFM Listing No. 7300-0785:132). Refer to listee's Installation Instruction Manual for details.  
These appliances can generate a distinctive three-pulse Temporal Pattern Fire Alarm Evacuation Signal (for total evacuation) in accordance with NFPA 72, 2002 Edition.
- NOTE:** Models AH-12, AH-24, -12WP and -24WP audible devices are not suitable for the hearing impaired applications.

\*Rev. 10-01-07



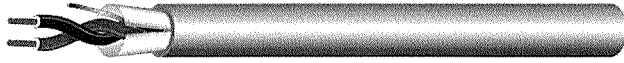
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Date Issued: **July 01, 2014**Listing Expires **June 30, 2015**Authorized By: **JAMES PARSESIAN, Program Coordinator***Fire Engineering Division*

# Technical Data Sheet

## Fire Alarm Cables

# WEST PENN WIRE



2833 West Chestnut Street  
Washington, PA 15301  
Toll Free: (800) 245-4964  
Fax: (724) 222-6420  
www.westpenn-wpw.com

---

<b>PART NUMBER:</b>	<b>975</b>
<b>DESCRIPTION:</b>	18/2 Solid bare copper conductors, shielded with an overall jacket.
<b>NEC RATING:</b>	FPLR, NEC Article 760
<b>APPROVALS:</b>	(UL) Listed
<b>APPLICATION:</b>	Indoor for (Fire Alarm, Audio Circuits, Control Circuits, Initiating Circuits, Notification Circuits)

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### Construction Parameters:

Conductor	18 AWG Bare Copper
Stranding	Solid
Insulation Material	Polypropylene
Insulation Thickness	0.007" Nom.
Number of Conductors	2
Shield	100% Aluminum Polyester Foil
Drain	Stranded Tinned Copper
Jacket Material	PVC
Jacket Thickness	0.017" Nom.
Overall Cable Diameter	0.150" Nom.
Rip Cord	Yes
Approximate Cable Weight	22 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test
NEC Article	760
Other Specifications	California State Fire Marshall

---

### Electrical & Environmental Properties:

Temperature Rating	-20deg C to 60deg C
Operating Voltage	300 V RMS
Max. Capacitance Between Conductors @ 1 KHz	40 pf/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	72 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	6.4 Ohms/1M' Nom.
Insulation Colors	Black, Red
Jacket Color	Red, Blue, White, Yellow
RoHS Compliant	Yes

---

### Mechanical Properties:

Max. Recommended Pull Tension	53.2 lbs.
Min. Bend Radius (Install)	1.5"

---

# **WEST PENN WIRE**

## **Put Ups:**

Advantage Box - 1000ft

Advantage Box - 500ft

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## **Colors Available:**

975-RD - RED

975-BK- BLACK

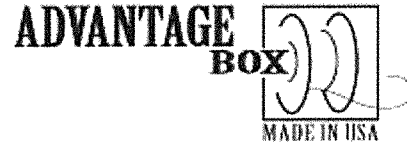
975-WH- WHITE

975-YE - YELLOW

975-B- BLUE

975-GN- GREEN

Tracer Stripping is available



Specification Issue Date: 8/13

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The Jacket is sequentially footmarked.  
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CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



# LISTING SERVICE

**LISTING No.** 7161-0859:0101 Page 1 of 1

**CATEGORY:** 7161 -- CABLES-FIRE PROTECTIVE SIGNALING

**LISTEE:** West Penn Wire 2833 W Chestnut St, Washington, PA 15301  
Contact: Mark Sams (724) 222-7060 Fax (724) 229-1151  
Email: msams@westpenn-cdt.com

**DESIGN:** Types FPL and FPLP power limited fire protective signaling cable. Refer to listee's data sheet for detailed product description and operational considerations.

**INSTALLATION:** In accordance with listee's printed installation instructions, NEC Article 760, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

**MARKING:** Listee's name, type, NEC rating and UL label.

**APPROVAL:** Listed as power-limited fire protective signaling cable.

\*Rev. 05-23-2005



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Date Issued: **July 01, 2014** *Listing Expires* **June 30, 2015**

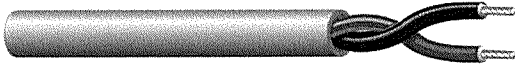
Authorized By: **JAMES PARSEGAN, Program Coordinator**  
*Fire Engineering Division*



# Technical Data Sheet

## Fire Alarm Cables

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2833 West Chestnut Street  
Washington, PA 15301  
Toll Free: (800) 245-4964  
Fax: (724) 222-6420  
www.westpenn-wpw.com

---

<b>PART NUMBER:</b>	<b>998</b>
<b>DESCRIPTION:</b>	1/2 Solid bare copper conductors, unshielded with an overall jacket.
<b>NEC RATING:</b>	FPLR, NEC Article 760
<b>APPROVALS:</b>	(UL) Listed
<b>APPLICATION:</b>	Indoor for (Audio Circuits, Control Circuits, Initiating Circuits, Notification Circuits)

---

### Construction Parameters:

Conductor	12 AWG Bare Copper
Stranding	Solid
Insulation Material	Polypropylene
Insulation Thickness	0.010" Nom.
Number of Conductors	2
Shield	None
Drain	None
Jacket Material	PVC
Jacket Thickness	0.017" Nom.
Overall Cable Diameter	0.244" Nom.
Approximate Cable Weight	57 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test

---

### Electrical & Environmental Properties:

Temperature Rating	-20deg C to 60deg C
Operating Voltage	300 V RMS
Max.Capacitance Between Conductors @ 1 KHz	23 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	1.53 Ohms/1M' Nom.
Insulation Colors	Black, Red
Jacket Color	Red – optional: Black
RoHS Compliant	Yes

---

### Mechanical Properties:

Max. Recommended Pull Tension	158 lbs.
Min. Bend Radius (Install)	2.5"

Specification Issue Date: 8/13

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**MARKING:** Listee's name, type, NEC rating and UL label.

**APPROVAL:** Listed as power-limited fire protective signaling cable.

\*Rev. 05-23-2005



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Date Issued: **July 01, 2014**

*Listing Expires* **June 30, 2015**

Authorized By: **JAMES PARSEGIAN**, Program Coordinator  
*Fire Engineering Division*