Equipment Submittal

New Building

1460 Southeast Broadway Drive

Lee's Summit, MO 64081

FIRE ALARM SYSTEM

System Installed By:

Alliance Fire Protection, LLC

130 W. 9th Ave, Suite 101

North Kansas City, MO 64116

Office: 913.888.0647

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Compas

Analog Addressable Fire Alarm Control Panels

Standard Features

- UL Listed (Tenth Edition) and FM Approved
- Supports Hochiki and Apollo Protocols
- 2 to 8 loop or 2 to 16 loop versions
- 400mA loop current
- 4 programmable NACs; Class B or 2 Class A with internal synchronization
- 5.25 A or 10.25 A power supply options
- 3 programmable inputs and 5 programmable relay outputs
- 7 inch, full-color resistive touch screen with intuitive user interface
- Up to 24 programmable soft “function keys”
- Up to 64 user login accounts
- Hard-wired fire and trouble routing inputs and outputs
- Modular and expandable electronics
- 400 subaddress points per loop (800 per loop module)
- Option to “invert” inputs and outputs
- 5000 programmable cause and effects; over 50,000 inputs and outputs
- Can be networked with programmable functionality
- Programming via USB port to PC or memory stick

VES Fire Detection Systems | 620 Allendale Road | King of Prussia, PA 19406 | 800.270.3066 | www.ves-network.com

Revised November 2020

Product Overview

The all new Compas product range of fire alarm control equipment combines the very latest hardware and software to produce a control and indication system, which is powerful and sophisticated, yet simple to use and understand. The flexibility of the Compas platform is such that it can be re-configured to realize many other control and indication applications, with direct integration into intelligent buildings.

Moving away from the simple, price driven competitive model used by most manufacturers today, the Compas concept is designed to add value to System Designers, Integrators, Service Providers, and end users. Developed from the "ground up" and using some of the most advanced technology available, Compas is designed as one of the most powerful, intelligent, and technically robust fire alarm products available.

Not only do the products and services offered under the Compas brand provide solutions to the most technically challenging applications in life safety, Compas will deliver added value, market advantage, and a competitive edge to your business.

Optional Panel Peripherals

- **LatiView Graphics**
  L@tiView enables the creation of a 2D map of any site or building to monitor fire safety and detection, and automatically switches to an area where a fire device has been activated to allow immediate viewing and investigation of an event.
- **Dual Loop Panel Module (S758)**
  The Dual Loop Panel Module monitors loop device status and provides status to the panel processor. It holds device configurations and operates in a standalone manner when catastrophic failures occur.
- **16 Channel I/O Interface Card (S560)**
  The 16 Channel I/O Interface enhances the versatility of the alarm system by providing additional input and output capabilities to the Compas Fire Alarm Control Panel. Inputs or outputs can be selected for up to 16 individual channels, and are configured in the same way as devices connected to addressable loops of the panel. The 16 Channel I/O Interface can be configured to contribute or act upon cause and effect logic.
- **Media Gateway™ Panel Module (S788)**
  The Media Gateway Panel Module provides connectivity to monitoring centers using IP (Sur-Gard), or dial-up connectivity. The Media Gateway may also be used to meet integration application requirements.
- **8 Channel Relay Panel Module (S791)**
  The 8 Channel Relay Panel Module has 8 voltage-free changeover relay contacts, each of which can be individually programmed. All outputs are configurable in the same way as devices connected to the loops and all may be acted upon by cause and effect logic. These boards are typically used in applications which require more than the five standard relay outputs, such as signaling to other systems or plant control.
- **Network Module (S723)**
  The Network Module provides enhanced high-speed communication for networking fire control panels. The network provided by this module can support combinations of Fire Alarm Control Panels and Vision units. Fire Alarm Control Panels can receive events from other panels in the network. The Class X networking used in conjunction with the Network Module provides tolerance against open and short circuit trouble conditions.
- **Printer (S768)**
  The Printer is an optional feature for printing fire system events as they occur. The printer is located on the fascia, below the Zone LEDs (if present). It is a thermal printer and never requires replacement ink. Printing is performed on heat-sensitive paper rolls. A trouble message is reported when the paper runs out. The printer includes a front-loading feature for replacing paper rolls.
- **Zone LED Module (S771)**
  The Zone LED module contains 48 LEDs and is connected to the LCD Main Processor Board of the Compas Fire Alarm Control Panel. A maximum of three Zone LED modules can be connected to provide the fascia with 144 Zone LED indicators.
- **4 Channel NAC Panel Module (S793)**
  Additional NAC output capability can be added to by using 4 Channel NAC Modules. These boards have 4 supervised NAC outputs, each of which can be individually programmed. The circuits can be configured for class A or B operation. These circuits can be configured to act upon cause and effect logic.
- **8 Channel Conventional Zone Panel Module (S792)**
  The 8 Channel Conventional Zone Panel Module has 8 supervised detection circuits (Class B). Each circuit can support up to 20 conventional detectors and approved devices. Individual circuits may be configured for trigger resistor or short circuit activation. These circuits may be used for any of the standard input actions and can be configured to contribute to cause and effect logic. Each pair of circuits (e.g., 1 and 2, 3 and 4, etc.) can be joined to form a single Class A configuration.
- **16 Channel I/O Interface Panel Module (S772)**
  The 16 Channel I/O Interface Panel Module will provide the same functionality as the 16 Channel I/O Interface Card, with the convenience of a plug-in module.

Technical Specifications

2 to 8 LOOP (4 SLOT) ENCLOSURE

Size	**Standard Cabinet** - 420mm (W) x 590mm (H) x 153mm (D), or 16.5in (W) x 23.2in (H) x 6in (D) **Deep Cabinet** - 420mm (W) x 590mm (H) x 203mm (D), or 16.5in (W) x 23.2in (H) x 8in (D)
Construction	Mild sheet steel enclosure, 16 SWG
Cable Entry	**Standard Cabinet** - 28 knockouts top, 19 knockouts back, 1 knockout each side, 2 knockouts bottom **Deep** - 38 knockouts top, 19 knockouts back, 1 knockout each side, 2 knockouts bottom
Optional Semi-Flush Mounting Kit	Semi-Flush Mounting Collar Kit KM5FCRD - Red KM5FCGY - Gray KM5FCBS - Black
Battery Capacity	**Standard Cabinet** - Up to 28 Ah (Power Sonic PS-12280) **Deep Cabinet** - Up to 40 Ah (Power Sonic PS-12400)

2 to 16 LOOP (8 SLOT) ENCLOSURE

Size	**Standard Cabinet** - 540mm (W) x 720mm (H) x 160mm (D), or 21.3in (W) x 28.3in (H) x 6.3in (D) **Deep Cabinet** - 540mm (W) x 720mm (H) x 212mm (D), or 21.3in (W) x 28.3in (H) x 8.3in (D)
Construction	Mild sheet steel enclosure, 16 SWG
Cable Entry	**Standard Cabinet** - 38 knockouts top, 25 knockouts back, 2 knockouts each side, 2 knockouts bottom **Deep Cabinet** - 50 knockouts top, 25 knockouts back, 2 knockouts each side, 2 knockouts bottom
Battery Capacity	**Standard Cabinet** - Up to 28 Ah (Power Sonic PS-12280) **Deep Cabinet** - Up to 40 Ah (Power Sonic PS-12400)

ALL MODELS

Finish	Epoxy powder coated
Color	Enclosure Red (RAL3002) Gray (BS 00 A 05) Black (RAL9005) Fascia Pantone 532 C
Power supply voltage	115 V AC or 230 V AC
Power supply rating at 24V DC	5.25 A (charges up to 60 Ah) 10.25 A (charges up to 100 Ah)
Display	Full-color 800 x 480 LCD with resistive touch screen and automatic backlight dimming
Software zones	2000
Software groups	5000
Cause and Effects	5000
Event log	10,000 events, 1 second resolution. Filterable and printable.
Detection loops	2 to 16 added 2 at a time (S758 dual loop cards)
Detection loop current	400 mA each
AUX 24V Output	2; each rated at 900 mA
NACs	4; each rated at 2.5 A. Class B or 2 Class A.
Programmable Relay Outputs	5; 30 V DC 1 Amp
Programmable Inputs	3; designed to be activated by voltage-free contacts
Network Connection	Optional network card provides communication for networking 127 fire control panels
NAC Synchronization	Internal Support of System Sensor, Wheelock, Gentex, and Amseco protocols
Printer (OPTIONAL)	40 column, front-loading thermal
Zone LED Indicators (OPTIONAL)	Up to 3 banks of 48 (144) as standard
Operating Temperature	23° F to 120° F (-5° C to 49° C)
Operating Humidity	to 95% (non condensing)

Compas Network Vision Annunciator

CRC00NC-10 (Red), CRC00NC-40 (Gray), and CRC00NC-60 (Black)

Standard Features

- Full-color 7" (800 x 480 pixel) interface
- Replicates information displayed at the FACP
- Automatic display brightness adjustment
- Internal buzzer
- Connects via control panel network terminals
- Low current, 24V DC powered
- Configurable functionality
- Enable key-switch
- Sheet steel enclosure
- Surface or semi-flush enclosure options available

Technical Specifications

Supply Voltage Range	21-30V DC
Quiescent Current during Power Failure	253mA typical (buzzer off @ 24V DC) 301mA typical (buzzer on @ 24V DC) 341mA max (buzzer on @ 21V DC)
Maximum Number of Units on a Network	31 Annunciators
Size	9.25" x 6.7" x 2.2" (235 mm x 170 mm x 55 mm)
Display	Full color 800 x 480 LCD with resistive touch screen and automatic back-light dimming
Construction	18 SWG, 1.2 mm mild sheet steel
Cable Entry	2 x 20 mm knockouts on top & bottom 4 x 20 mm and 2 x 28 mm knockouts in back
Vision Annunciator Electronics Only	S787
Finish	Epoxy powder coated
Color	Enclosure Red (RAL3002) Gray (BS 00 A 05) Black (RAL9005) Fascia Pantone 532 C
Optional Semi-Flush Mounting Collar Kit	KM1098RD - Red KM1098GY - Gray KM1098BS - Black
Weight	4.4 lbs (2 kg) maximum
IP Rating	IP30

Product Overview

The Compas Network Vision Annunciator is the most qualified annunciator on the market. It is a full-color graphical display and touchscreen. It represents the most versatile annunciator for life safety systems available today. The Annunciator is a full-function fire alarm repeater that is configurable and application-flexible for use in applications such as hospital nursing stations and elevator alarms.

Compas Network Vision Annunciators can be configured to fully replicate fire control panel functionality, or to operate as simple, display-only devices for applications where access to fire alarm controls are inappropriate.

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Revised September 2021

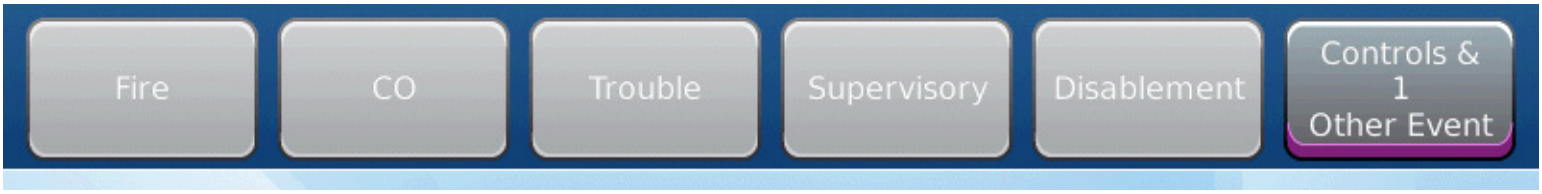
BASIC OPERATING INSTRUCTIONS FOR THE COMPAS FIRE ALARM CONTROL PANEL

Frame these instructions and mount on the wall next to the control panel.

FIRE SYSTEM NORMAL CONDITION

Only the GREEN AC POWER ON indicator is illuminated. All other LEDs are off.

The event tabs will numerically indicate active events on the panel; the event type with the highest active event priority will automatically be displayed. Any event type can be accessed by pressing the associated tab.



IN THE EVENT OF A FIRE

- the Fire indicator on the panel flashes red
- the applicable indicator on the Zone LED Board flashes (if connected)
- the panel GUI displays details about the Fire event
- fire warning notification appliances activate as programmed
- outputs programmed to operate in the event of a fire will activate
- the panel buzzer activates

IN THE EVENT OF A CO ALARM

- the CO Alarm indicator on the panel illuminates yellow
- the applicable indicator on the Zone LED Board flashes (if connected)
- the panel GUI displays details about the CO Alarm
- CO warning notification appliances activate as programmed
- the panel buzzer activates

For both fire and CO alarms, take the following actions:

1. **Evacuate the area.**
2. **Notify the proper authorities immediately and state the nature and location of the emergency.**
3. **Be prepared to provide directions to firefighters.**

IN THE EVENT OF A TROUBLE

WARNING! Trouble conditions may affect the panel's ability to provide early detection and indication of a fire. Contact Authorized Service Personnel to clear trouble conditions immediately.

- the General Trouble indicator on the panel flashes yellow. There may be other LED indications which identify the nature of the trouble.
- outputs programmed to operate in the event of a trouble will activate
- the panel GUI displays details about the Trouble
- the panel buzzer activates

Troubles will typically reset automatically once the condition has cleared.

IN THE EVENT OF A SUPERVISORY

- the Supervisory Alarm indicator on the panel illuminates yellow
- panel outputs programmed to operate in the case of a Supervisory event will activate
- the panel buzzer activates
- the panel GUI displays details about the Supervisory Alarm

Supervisory Alarms will typically reset automatically once the condition has cleared (device may be programmed latching or non-latching).

WITH ACCESS LEVEL 2 OR HIGHER, THE FOLLOWING FUNCTIONS ARE AVAILABLE

Silence Alarms	Press **Activate Controls** > **Silence Alarms** to silence notifications. Notifications can be reactivated by pressing **Re-Sound Alarm**.
Buzzer Silence	Press **Buzzer Silence** to silence the panel buzzer.
Reset System	Press **Reset System**.

WARNING! Alarm notification signals should not be silenced until all occupants have been evacuated.

Lamp & Buzzer Test

This test confirms operation of the indicator lamps and the buzzer. To perform the Lamp & Buzzer Test:

1. Press the panel GUI during the Fire System Normal condition.
2. Press **Panel Tests** > **Lamp & Buzzer Test**. The internal buzzer of the fire control panel sounds and all indicator lamps light for 5 seconds. Contact Technical Support if fascia lamps do not light.

Display Test

This test confirms operation of the panel GUI.

1. Press the panel GUI during the Fire System Normal condition.
2. Press **Panel Tests** > **Display Test**. A confirmation window will appear.
3. Press **Continue** to test the display. The panel GUI cycles through a series of blank raster colors.

FOR ADDITIONAL INFORMATION, REFER TO THE COMPAS FIRE ALARM CONTROL PANEL INSTALLATION GUIDE.

ACCESS LEVEL KEY

The key to access user level 2 can be found at the following location:

_____

PANEL KEY

The key to access internal panel components can be found at the following location:

_____

FOR SERVICE, CONTACT:

Company: Alliance Fire Protection

Address: 130 West 9th Ave, Suite 101, North Kansas City, MO 64116

Phone: 913.888.0647

Version 1.00 | May 2019 | MAN-1433COM

VF071X-X0

Fire Document Enclosure

Standard Features

- Matches design & color scheme for standard Elite control panel ranges
- Easy to install
- Key Lockable
- Designed for versatility
- Choice of small or large capacity enclosure

Product Overview

- Another addition to the VES range, the document box is designed to complement the design & color of the Elite range of control panels. The standard version Document Box will hold up to 50 A4 sheets of information on the Fire Detection or other security systems within a premises. The deep version will hold up to 100 sheets.
- The "Doc Box" also doubles up as a Key Box providing 7 easily accessible formed key hooks inside the enclosure.

Available in Gray

Technical Specifications

Construction: 18AWG sheet steel
Dimensions:
VF0711 / VF0713: 14.5"W x 12.2"H x 3.4" D
VF0710 / VF0712: 14.5"W x 12.2"H x 2.5" D
Weight: 6.6lb
Finish (lid & box): RAL3002 (Red) or BS 00 A 05 (Gray)
Finish (product labels): BS 00 A 05 (Gray)

Panel Options

VF0710-xx: Standard
VF0711-xx: Deep
VF0712-xx: Standard w/ Tamper
VF0713-xx: Deep w/ Tamper
xx = 10 (Red) or 40 (Gray)

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E-mail: info@ves-network.com
Web: www.ves-network.com

VF2015-00 | Analog Photoelectric Smoke Detector

Standard Features

- UL 268 7th Edition Listed
- Designed to resist unwanted alarms from cooking and other nuisance alarm sources
- Optical particulate identification
- Early fire smoke detection
- 360° view of detector status LED
- Vandal resistant security locking feature

Application

The VF2015-00 (UL 268 7th edition listed) is a reliable, high quality multi-criteria Photoelectric Smoke Detector. It can be used in all open areas where Photoelectric Smoke Detectors are required. This detector is also suitable for monitoring smoke in HVAC ducts. The newly developed "multi-spectrum smoke categorization technology" detects smoldering and flaming fires fueled by traditional materials and polyurethane while reducing nuisance alarms. The VF7013-00, VF7014-00, VF7015-00, VF7016-00, VF7017-00, and VF7018-00 bases are UL Listed with the VF2015-00.

Operation

The construction of the new chamber enhances the smoke entry for early fire smoke detection. The detection chamber utilizes light from IR and Blue LED sources. In the event of fire, particles of smoke enter the chamber and scatter light in proportion to the smoke density, resulting in an increased analog smoke measurement. The chamber contains a unique baffle design which allows smoke to enter the chamber while preventing external light from affecting the photo diode detector.

When the smoke density exceeds the programmed sensitivity threshold, the detector transmits an interrupt to the fire alarm control panel indicating a fire condition. The fire alarm control panel automatically adjusts the detector threshold to compensate for contamination.

Up to 127 detectors are permitted on each SLC loop. The detector can mount to a variety of bases including electronics-free 4- and 6-inch bases, and sounder bases. The detector's status LED is viewable on the main face of the detector from all directions.

Detector Spacing

Smoke detector spacing shall be in compliance with NFPA 72. For smooth ceilings and in the absence of specific performance-based design criteria, the distance between smoke detectors shall not exceed a nominal spacing of 30 ft. (9.1m) or all points on the ceiling shall have a detector within a distance equal to or less than 0.7 times the nominal 30 ft. (9.1m) spacing. Detectors shall be located within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height. For additional instructions see NFPA 72.

FM PENDING

UL CERTIFIED SAFETY SIGNALING US S6661

VF2015-00 Intelligent Multi-Criteria Photoelectric Smoke Detector

Supply Voltage	Operating Voltage Range (High Signal)	24 - 41 VDC
	Signal Voltage (Peak to Peak)[1]	7 - 9 VDC
Current Consumption	Normal Standby Current	340µA
	Alarm Current (LED Off)[2]	340µA
	Alarm Current (LED On)[2]	8.5mA
	Remote Indicator Current[3]	9.2mA
	Polling Current[4]	6.75mA
Smoke Density Range	1.40 – 3.30%/ft @0 - 300 FPM Open Area	
	1.40 – 2.75%/ft @300 FPM In Duct	
	1.40 – 4.00%/ft @1000 FPM In Duct	
	1.40 – 4.00%/ft @2000 FPM In Duct	
	1.40 – 2.37%/ft @3000 FPM In Duct	
	1.40 – 4.00%/ft @4000 FPM In Duct	
Compatible Bases Operating	VF7013-00,VF7014-00,VF7015-00,VF7016-00,VF7017-00,VF7018-00	
Temperature Range	32°F ~ 120°F	
UL Listed Ambient Temperature	32°F ~ 120°F	
Storage Temperature Range	-22F ~ +140F (104F or less at 95%RH, 140F or less at 80%RH)	
Operating Humidity Limit	<95%RH at 104F, <80%RH at 120F	
Dimension	3.94” diameter x 1.68” tall	
Color	(VF2015-00) Ivory, (VF2015-00(WHT)) White	
Weight	3.4 oz.	

Notes

1. Measured during FACP transmission. 17V Minimum Voltage (Operating Voltage less Signal Voltage).
2. When the total number of active alarm LEDs is limited by the FACP, additional detectors in Alarm will consume the Alarm Current (LED Off) current.
3. RI is current limited by the detector not to exceed 9.2mA. Actual RI current is equal to the load current for loads less than 9.2mA.
4. Polling Current should be added to sum-total Normal Standby Current for each SLC loop. Voltage drop calculations do not need to include Polling Current.

4" and 6" Sensor Base

VF7013-00 and VF7014-00

Standard Features

- UL Listed.
- Updated design compatible with all analog sensors and new UL268 edition sensors.
- Available in 4 and 6 inch models.
- Contains a security locking tab for tamper protection.

Operation

The VF7014 6" base and VF7013 4" base are designed specifically for use with the VES Analog sensors, models VF2001 Ionization Smoke Sensor, VF2002, VF2005, VF2011, & VF2015 Photoelectric Smoke Sensor, VF2003 & VF2010 Heat Sensor and VF2008, VF2012 & VF2014 Multi-Criteria Sensors.

The VF7014 and VF7013 common mounting bases allow for complete compatibility for all of the VES Analog sensors. The bases are lightweight and very thin, providing a low profile once installed. The solderless screw terminals enable quick and easy wiring connections.

Technical Specifications

VF7013-00	4" Sensor Base
VF7014-00	6" Sensor Base
Security	Plastic tamper lock
Color and Case Material	Bone PC / ABS Blend
Compatible Sensors	VF2001, VF2002, VF2003, VF2005, VF2008, VF2010, VF2011, VF2012 VF2014, VF2015

Application

The VF7014 6" base and VF7013 4" base are designed for use with VES analog style sensors models VF2001, VF2002, VF2003, VF2005, VF2008, VF2010, VF2011, VF2012, VF2014 and VF2015.

Each base is connected to the VES DCP Signaling Line Circuit (SLC) and provides easy replacement of sensors, without disturbing the wiring.

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

Engineering Specifications

The Dealer shall furnish and install where indicated on the plans, models VF2001 Ionization Smoke Sensor, VF2002, VF2005, VF2011 & VF2015 Photoelectric Smoke Sensor, VF2003 & VF2010 Heat Sensor and VF2008, VF2012 & VF2014 Multi-Criteria Sensors.

The selected sensor shall be attached to the VF7013 or VF7014 base and permit direct interchange between the listed sensors.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.

NOTE SLC maximum resistance is 50 ohms.

AMS Manual Pull Station

VF3031-10, VF3032-10, and VF3029-10

VF3031-10

VF3032-10

VF3029-10

Standard Features

- Addressable integrated design
- All metal construction
- Single and dual action models available
- Extremely easy to operate
- Bi-colored status LED indicates Standby and Alarm conditions
- Address is programmable in EEPROM
- Address can be programmed when installed
- Key lock or hex key lock models available
- Enclosed switch with glass rod (included)
- Terminals accept up to 14AWG wire
- Surface mount back box available

Ordering Codes

VF3031-10	Single action with Hex Screw Lock
VF3032-10	Single action with Hex Key Lock
VF3029-10	Dual action with Key Lock

Product Overview

The AMS series of addressable manual pull stations provide a fast and practical means of manually initiating a fire alarm signal. Both single action and dual action manual pull stations are available. Resetting of the pull station requires either a Cat 30 key or a 1/8" hex key (depending upon the model used).

An alarm condition is actuated by pulling down on the handle of the VF3031-10 and VF3032-10 single action models. On the dual action model VF3029-10 the Lift and Pull cover must be lifted before pulling down on the pull station handle. Once the pull station is activated, the handle cannot be put back into a normal standby condition without using the key operated reset feature.

The AMS series is electronically addressable and includes a bi-colored status LED. The LED blinks green indicating normal communication with the DCP compatible SLC loop. When an alarm condition is actuated by pulling the handle, the LED will latch Red to indicate the alarm condition.

Revised December 2019

Engineering Specification

Manual pull stations shall be VES addressable AMS series single or dual action models, VF3031-10, VF3032-10, or VF3029-10. Models shall be made of 14 AWG CRS and painted with Red enamel. The words Fire Alarm shall be in a contrasting color and be embossed text 1/2" tall. The electronics shall be fully integrated into the manual pull station requiring only connection to the SLC loop of the control panel. Programming of the manual pull station address must be possible with the manual pull station fully installed.

Manual pull stations shall be Underwriters Laboratories Inc. Listed and be installed within the limits defined in the Americans With Disabilities Act.

Technical Specifications

Operating Voltage	17-41 VDC
Average Consumption	550 µA (typical) 660 µA (standard)
Ambient Temperature	32°F to 120°F
Maximum Humidity	90% non-condensing
Dimensions	3.4"W x 4.8"H x 2.0"D
Mounting	Single gang or 4" square electrical box

VF6007-00

Dual Input Monitor Module

Back side of a VF6007

Standard Features

- Fast, reliable contact monitoring utilizing the VES DCP (Digital Communications Protocol)
- 127 devices can be used per DCP loop
- Bi-colored indicating LED provides module status
- Dual input contact monitor
- Can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts
- Operates on Class A or Class B SLC loop
- Accepts up to 14 AWG wire
- Mounts to 4" square gang box

Application

- The VES VF6007 provides installing dealers an economical approach to monitor devices in the same proximity, such as water flow and valve supervision on the same interface device.
- This capability when coupled with VES's SIA DACT transmission provides sub-point reporting for complete annunciation and accurate reporting to responders and users.
- VES's reporting approach is superior in that the capability to accurately report dissimilar inputs, such as alarm and supervisory are pesent.

Operation

The VES Dual Monitor Module (VF6007) is designed for use on the Elite analog addressable system. It provides two independent contact monitoring circuits while only utilizing one address on the SLC loop.

Up to 127 devices can be placed on a single SLC loop. The device address is uniquely stored on an onboard EEPROM. The module can be programmed to monitor normally open (NO) or normally closed (NC) contact fire alarm and supervisory devices.

The interrupt driven Digital Communication Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions.

The module has a single bi-colored LED to indicate device status.

It fits into a standard 4" square or double gang electrical back box.

Technical Specifications

Operating Voltage: 17-41 VDC
Average Current Consumption: 600µA (typical)
Alarm Current: 30mA
Operating Temperature Range: 32º F to 120º F
Maximum Humidity: 90% RH Non-Condensing
Dimensions: 4.2"W x 4.7"H x 1.4"D
Mounting: 4" square electrical box

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Dual Relay Modules

VF6052-00
Low Voltage

VF6053-00
Low Voltage w/Isolator

VF6054-00
High Voltage

VF6055-00
High Voltage w/Isolator

Back side of a VF6052

Back side of a VF6053

Standard Features

- Provides two independently configurable Form C contacts per address
- Contacts are rated as follow:
  VF6052/ VF6053: 2A @ 30 VDC / 0.5A @ 120 VAC
  VF6054/ VF6055: 8A @ 30VDC / 4.8A @ 250 VAC
- Up to127 devices can be used on each SLC loop
- Visible Bi-colored LED is software controlled and can be programmed to blink red or green when polled. The LED can be latched on when activated. (For All Models)
- Yellow LED indicates a short circuit condition (VF6053 & VF6055 only)
- Programming is highly flexible providing 16 priority states plus zoning capability
- Operates on Class A or Class B SLC loop

Operation

The Dual Relay Modules have been designed to provide flexible and quick response to emergency conditions. The VES Series allows independent control of two form C contacts for a variety of normally open and normally closed contact applications such as fan operation, elevator recall, door closure, and auxiliary notification.

Each VES Series module provides independent control of two Form C contacts while utilizing one SLC (Signaling Line Circuit) address. The modules have a highly configurable programming algorithm that allows the user to set up groups of devices (zoning) for simultaneous operation of multiple VF6052, VF6053, VF6054, VF6055 modules. The operating parameters are maintained by the module and do not require individual communication with the control panel during the emergency condition to operate. The control panel broadcasts the control command on the SLC loop and the VES Series modules do the rest based on their custom configuration. Since mechanically latching relays are used within the VES Series modules, a separate 24VDC power source is not required.

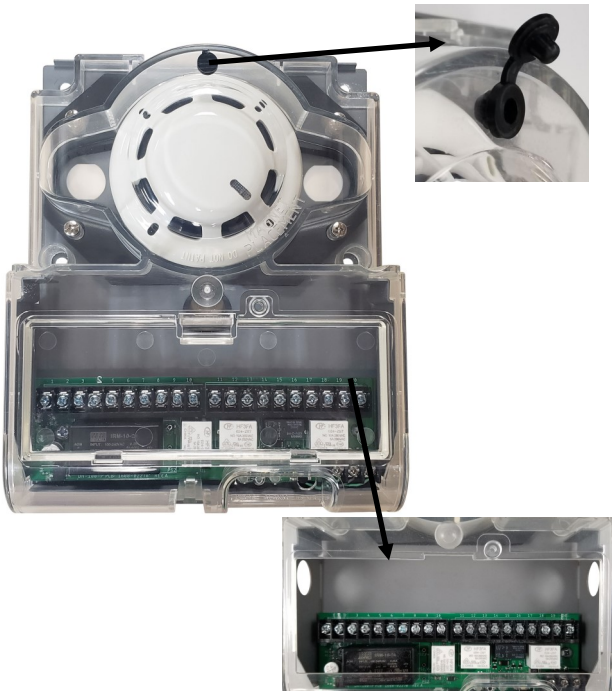
Technical Specifications

Supply Voltage Nominal: 25.3-39 VDC
Average Current Consumption: 350µA (Typical), 405µA (Alarm)
Contacts: 2 Independently Controlled Form C **VF6052/VF6053:** 2A @ 30 VDC/ 0.5A @ 120 VAC **VF6054/VF6055:** 8A @ 30 VDC/ 4.8A @ 250 VAC
SCI on Resistance: 40 ohm Mx. (normal condition)
SCI Fault Detection Threshold: 12 Volts (Typical)
SCI Isolation Current (short circuit condition): 10mA (Typical)
Maximum Quantity per Loop: 127
Dimensions: 4.2" W x 4.7" H x 1.4" D
Mounting: 4" square electrical box
Relative Humidity: 90% RH Non-Condensing
UL Ambient Installation Temperature Range: 32º F to 120º F

VES Fire Detection Systems,
620 Allendale Road, King of Prussia, PA. 19406
Tel (US): 800.270.3066 (Toll free) **Tel (non US):** (001) 610.992.3378
Fax: 610.992.3380
E-mail: info@ves-network.com
Web: www.ves-network.com

DH-100-P - Conventional Duct Smoke Detector

Smoke port for testing without cover removal



Wiring Access hatch for wiring maintenance without cover removal

STANDARD FEATURES

- New Rugged Durable Housing
- Easy Smoke Testing Port
- Removable Terminal Cover
- Durable Steel Base, Silicone Gaskets, Polycarbonate Housing
- Compatible with building automation and fire alarm systems
- Installs quickly and easily
- No screens or filters to clean
- UL 268A Listed

APPLICATION

The HOCHIKI AMERICA DH-100-P 4-wire duct smoke detector provides early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial, Industrial and Residential applications. The DH-100-P is designed to prevent the recirculation of smoke in areas by the air handling systems, fans and blowers. Complete systems may be shut down in the event of smoke detection. The HOCHIKI AMERICA DH-100-P operates on 120VAC, 240VAC, 24VAC, or 24VDC and has no compatibility restrictions.

PRODUCT LISTINGS

SIGNALING UL LISTED S1383

California State Fire Marshal 3240-0410:0155

SPECIFICATIONS

Duct Detector	**Model: DH-100-P**	**P/N: 0200-09410**			
Detector Head	**Model: SOC-24DH**	**P/N: 0200-10090**			
Input Voltage / Current	**Alarm**	**24VDC 78mA**	**24VAC 370mA**	**115AC 48mA**	**230VAC 31mA**
(includes SOC-24DH, and Remote Accessories)	**Normal Standby**	**24VDC 20mA**	**24VAC 263mA**	**115AC 15mA**	**230VAC 10mA**
Operating Temperature Range	**Inside Duct**	**0°C (32°F) ~ 38°C (100°F)**			
	Housing Ambient	**0°C (32°F) ~ 49°C (120°F)**			
Detector Head Type	**Conventional Photoelectric**				
Standby Current	**20mA @ 24VDC**				
Alarm Current	**78mA @ 24VDC**				
Alarm Contacts	**2 form C rated 10A @ 115/230 VAC 7A @ 28VDC**				
Test Method	**Test Switch or Smoke Port or Magnet**				
Air Velocity	**1000 to 4000 ft/min.**				
Sensitivity	**1.36-2.33%/FT @ 4000FPM**				
Visual Indicator (Status LED)	**PILOT: Green - Normal | Off - Shutoff/Detector Missing**				
	ALARM: Off - Normal | Yellow - Check Voltage / Detector Head | Red - Alarm				
Storage Temperature Range	**-30°C (-22°F) ~ 70°C (158°F)**				
Ambient Temperature	**0°C (32°F) to 38°C (100°F)**				
Humidity	**10% to 93% Relative Humidity (non-condensing)**				
Maximum Relative Humidity	**93% Relative Humidity (non-condensing)**				
Environment	**Indoor dry use only, Mount to Duct Side or Top**				
Housing Material	**18 G.A. steel backbox, clear plastic cover**				
Finish	**Grey Paint**				
Dimensions	**7.5"W x 9.5"H x 2.5"D**				
Weight	**Approximately 3.0lb**				
Sampling Tubes	**2.5 Foot**	**Model: STS-2.5**	**P/N: 0400-01580**		
	5 Foot	**Model: STS-5.0**	**P/N: 0400-01590**		
	10 Foot	**Model: STS-10.0**	**P/N: 0400-01570**		

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

ISO 9001:2015 CERTIFIED

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

DH-100-P - Conventional Duct Smoke Detector

PRODUCT DESCRIPTION

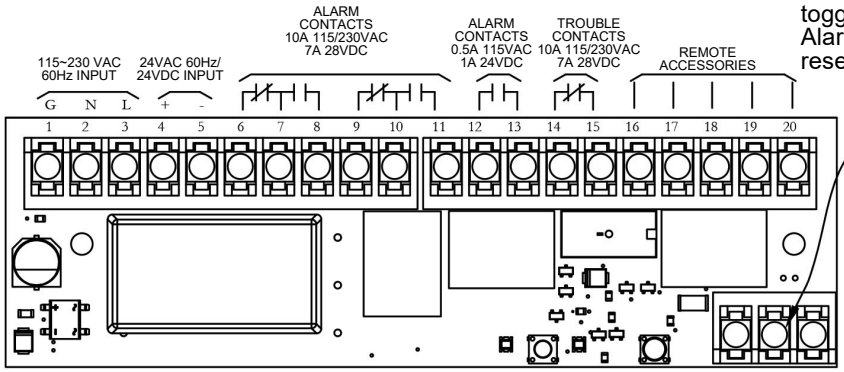
The DH-100-P is designed and built to meet all local requirements, as well as the NFPA regulations regarding duct smoke detectors. The DH-100-P is provided with a local test button, and output terminals for remote status indicators and test switches. Air sampling is accomplished by two tubes which protrude into the duct. The 7.5" exhaust tube is supplied with the duct smoke detector unit. Once the duct width has been determined the air intake sampling tubes must be ordered. Sampling tubes are supplied in three standard lengths 2.5ft., 5 ft. and 10ft. and cut to size to fit the duct.

ELECTRICAL INSTALLATION

Wiring must conform to applicable local codes, ordinances and regulations covering these types of devices. Wire the detectors according to the engineering drawings for the particular job requirements. These detectors are not intended for open area protection, nor should they be used for open air protection. Refer to NFPA 90A and NFPA 72 for general and additional information on Duct Smoke Detectors concerning operation and installation. Terminals are suitable for up to #14 gauge wire.

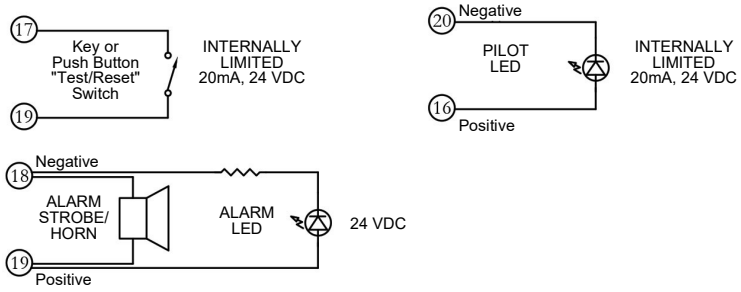
WIRING DIAGRAMS

All contacts are shown in normal supervisory condition. Alarm contacts will toggle during alarm or test switch activation. Trouble contacts will toggle to trouble condition if detector is removed. Alarm contacts must be reset by pressing the reset switch after activation.



FACTORY WIRED TERMINALS. DO NOT ADJUST.

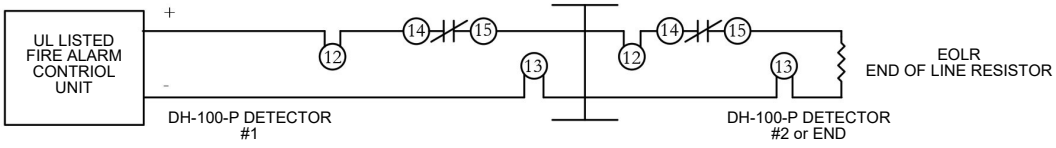
REMOTE ACCESSORY WIRING



COMPATIBLE REMOTE ACCESSORIES

Model Number	Product Description
MS-RA	Remote Alarm LED
MS-RA/P	Remote Alarm LED & Pilot LED
MS-RA/R	Remote Alarm LED & Push Button Test/Reset Switch
MS-RA/P/R	Remote Alarm LED, Pilot LED, & Push Button Test/Reset Switch
MS-KA/R	Remote Alarm LED & Key-Operated Test/Reset Switch
MS-KA/P/R	Remote Alarm LED, Pilot LED, & Key-Operated Test/Reset Switch

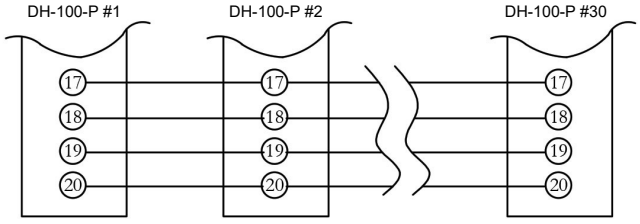
FIRE ALARM CONTROL PANEL WIRING



COMMON FUNCTION WIRING

Up to 30 units may be interconnected for all alarm relays to operate with a single alarm. Terminals 17 and 19 are optional

REMOTE COMMON TEST/RESET
REMOTE COMMON ALARM
REMOTE COMMON AUX POWER
COMMON AUX GROUND



* Individual Remote Pilot LED's must be installed to monitor detector head or power source removal for each unit.

Analog Duct Sensor Remote Accessories

Product Overview

- The Remote Accessories are designed to be used with the analog Duct Sensors to provide audible and visual indication as well as remote test/ reset functions. These devices are constructed of attractive, yet durable brushed stainless steel and mount on a standard single or double gang electrical backbox.

VF5020-00
Remote Alarm LED

VF5040-00
Remote Controls - Pilot & Alarm

VF5021-00
Remote Push Button Test Switch

VF5039-00
Remote Controls - Pilot, Alarm & Test/ Reset Push Button

VF5038-00
Remote Controls - Pilot & Trouble

VF5037-00
Remote Controls - Pilot, Trouble & Test/ Reset Push Button

VF5023-00
Key Op Test Switch for Duct Smoke Single LED

VF5036-00
Remote Controls - Pilot, Alarm & Key Operated

VF5035-00
Remote Controls - Pilot, Trouble & Key Operated

VF5034-00
Remote Controls - Alarm Only

VF5033-00
Remote Controls - Trouble Only

VF5032-00
Remote Controls - Horn, Pilot & Alarm

VF5022-00
Key Op Test Switch for Duct Smoke Dual LED

VF5031-00
Remote Controls - Double Gang, Horn, Key Operated Reset, Trouble, Alarm & Pilot

VF5030-00
Remote Controls - Horn Only

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Web: www.ves-network.com

VES FIRE DETECTION SYSTEMS

Technical Specifications

Power Requirements:
Alarm LED: 15mA @ 24V DC
Trouble LED: 15mA @ 24V DC
Pilot LED: 15mA @ 24V DC
Alarm Horn: 20mA @ 24V DC

Sound Pressure (Alarm Horn): 78db @ 10ft

Dimensions:
Single Gang: 4 1/2"H x 2 3/4"W
Double Gang: 4 1/2"H x 4 1/2"W

Wiring:
LEDs/ Horn: 6" /24 SWG pigtails
Switches: 6" /22 SWG pigtails

	Pilot LED (Green)	Alarm LED (Red)	Fault/ Trouble LED (Yellow)	Push Button Test/ Reset	Key Operated Test/ Reset	Horn	Single Gang	Double Gang
VF5020-00		●					●	
VF5040-00	●	●					●	
VF5021-00		●		●			●	
VF2039-00	●	●		●			●	
VF5038-00	●		●				●	
VF5037-00	●		●	●			●	
VF5023-00		●			●		●	
VF5036-00	●	●			●		●	
VF5035-00	●		●		●		●	
VF5034-00		●					●	
VF5033-00			●				●	
VF5032-00	●	●				●	●	
VF5022-00	●	●			●	●		●
VF5031-00	●	●	●		●	●		●
VF5030-00						●	●	

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Eluxa horns, horn strobes, & strobes

Description

The Wheelock Eluxa horns, horn strobes, and strobes by Eaton feature an advanced power saving LED technology with a full range of low and high candela settings for indoor wall and ceiling-mount applications. Designed in sleek, modern enclosures, Eluxa's aesthetically pleasing low profile will blend with the building's interior décor.

High efficiency, LED technology

Eaton's high energy efficient technology leads the industry in lowest current draw for a combined high and low candela device, which reduces overall power consumption. As the first notification appliances in the industry to utilize LED as the light source, this breakthrough optical design, resulting in best-in-class efficiency, enables material and system cost savings, allowing for a greater number of appliances on the notification appliance circuit and fewer power supplies. This reduces installation and operating costs. All strobe models feature six candela settings: 15, 30, 75, 110, 135, 185 cd on wall models and 15, 30, 75, 110, 150, 177 cd on ceiling models.

Low profile design and rich feature set

With the industry's smallest footprint, the Eluxa horns, horn strobes, and strobes are aesthetically pleasing to building owners as the low profile design does not detract from the interior decor. Eluxa is feature rich with 6 candela settings and 3 horn patterns (Continuous, T3, T3/T4) in 1 device, pre-wire/pre-test via mounting plate with hinged feature for ease-of-installation, single-gang design (wall models), and no tools needed for setting changes. The ELST strobe, ELHS horn strobe, and the ELHN horn are for 24V operation. ELHN is suitable for 12V applications.

Approvals and synchronization

Eaton's Eluxa strobes meet the 20 millisecond light pulse duration requirements of the 2016 edition of NFPA 72. By meeting this latest requirement, xenon and LED devices can now be in the same field of view.

The Eluxa notification appliances are listed under UL Standards 1971, 1638, and 464 and under CAN/ULC-S525 and CAN/ULC-S526. The appliances are Restriction of Hazardous Substances (RoHS) compliant and contain no mercury or other hazardous substances.

In addition, the Eluxa product line has been UL/ULC listed as compatible with all Fire Alarm Control Panels (FACP) and accessories that have been determined to be compatible with Exceder LED3 and Wheelock RSS strobe-based products including the RSS, CH, E, EH, ET, ST, HS, MT, S8, SA, STH and Z Series. The listing also includes the ability to install the Eluxa strobes in the same notification zone and field of view with any Wheelock RSS and Exceder LED3 strobe models.

EATON
Powering Business Worldwide

Features

- Energy efficient
  - LED technology provides industry's lowest current draw
  - Fewer power supplies required, smaller wire gage, reduced wire runs
- Low-profile design
  - One of the smallest, most compact single-gang designs
  - Sleek, modern aesthetics with no visible mounting screws
- Special lettering available
- 6 Field selectable settings in 1 device
  - Wall: 15, 30, 75, 110, 135, 185 cd
  - Ceiling: 15, 30, 75, 110, 150, 177 cd
- 3 horn patterns
  - Continuous, T3, and T3/T4; Fire and CO signaling in 1 device
- Sound pressure (Anechoic) dBA
  - Low 86, High 91 (for Continuous, T3, and T4)
- Easy-to-install
  - Mounting plate included with all models: Convenient capture hinge allows installers to easily hold the device while fastening the single-mount screw in place.
  - Pre-wire/pre-test capability to check for wiring and ground faults prior to appliance installation
  - Finger slide switches–No tools needed for setting changes
  - IN/OUT screw terminals using #12 to #18 AWG wires
  - Mounting options include ELSBB, any single-gang backbox and to 4" square with adapter kit for wall models and LSPKBB-C backboxes and 4" square, 1 1/2" or 2 1/8"deep for ceiling
- Strobe synchronization
  - Meet synchronizing standards with Wheelock's DSM Sync Modules, PS Power Supplies or SAFEPATH products
  - Ability to mix xenon and LED strobes in the same field of view
- Compliance
  - NFPA 72 2016 - 20 ms flash duration requirements
  - UL 1971, UL 1638, UL 464, ULC-S525, ULC-S526
  - California State Fire Marshal (CSFM)
  - Factory Mutual (FM)
  - RoHS
  - FCC Part 15, ICES

Note: Please read these specifications and associated installation instructions, before using, specifying, or installing this product. Visit Eaton.com/Lifesafetynotification for current installation instructions.

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 1971.

Drawings

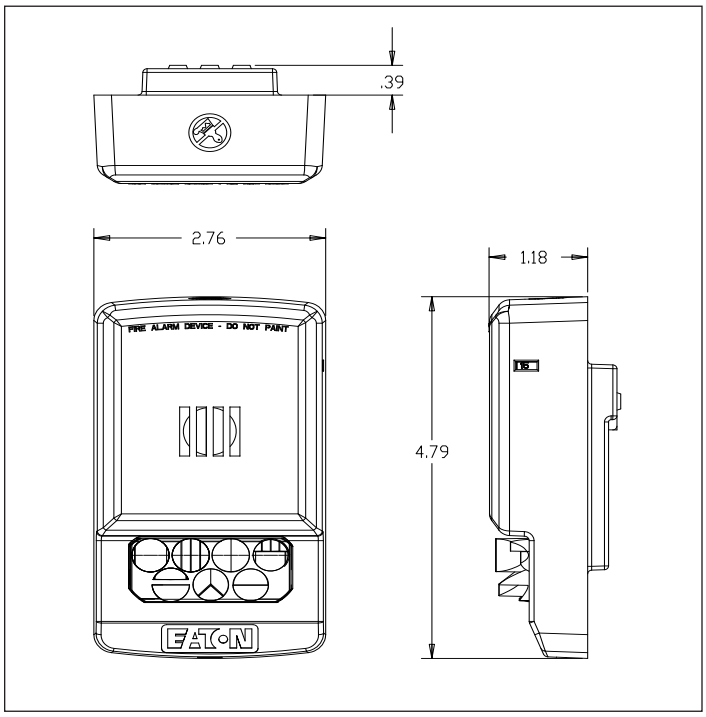

Figure 1. Wall, horn strobe

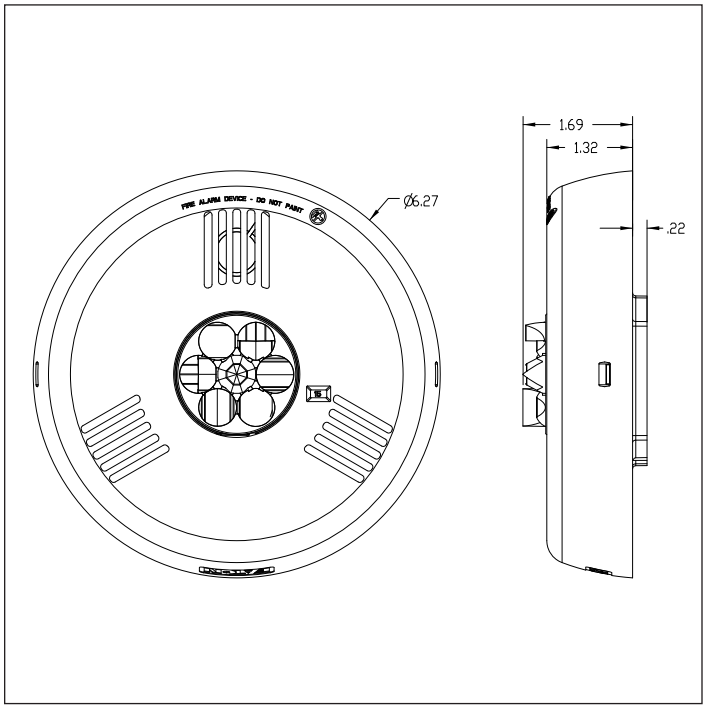

Figure 2. Ceiling, horn strobe

Table 1. Horn ratings per UL/ULC Anechoic

Eluxa Horns			
Model	**Regulated Voltage Range VDC**	**High dB**	**Low dB**
ELHN/ELHNC	8.0 - 17.5	0.025	0.020
ELHN/ELHNC	16.0 - 33.0	0.028	0.021

Table 2. Strobe ratings

		UL/ULC Max Current ①							
		24VDC							
Model	Regulated Voltage Range VDC	15	30	75	110	135	150	177	185
ELST	16.0-33.0	0.022	0.030	0.060	0.086	0.125			0.185
ELSTC	16.0-33.0	0.022	0.030	0.060	0.086		0.125	0.185	

Table 3. Code 3 horn strobe ratings

		UL/ULC Max Current ① at Anechoic High continuous							
Eluxa Horn Strobes		24VDC							
Model	Regulated Voltage Range VDC	15	30	75	110	135	150	177	185
ELHS	16.0-33.0	0.037	0.046	0.077	0.109	0.146			0.208
ELHSC	16.0-33.0	0.037	0.046	0.077	0.109		0.146	0.208	

		UL/ULC Max Current ① at Anechoic Low continuous							
Eluxa Horn Strobes		24VDC							
Model	Regulated Voltage Range VDC	15	30	75	110	135	150	177	185
ELHS	16.0-33.0	0.030	0.039	0.070	0.102	0.139			0.201
ELHSC	16.0-33.0	0.030	0.039	0.070	0.102		0.139	0.201	

Table 4. Specification & Ordering Information

Model	Mounting	Strobe Candela	Red	White	Lettering	Sync w/ DSM or Wheelock Power Supplies
Horn strobes						
ELHSR	Wall	15/30/75/110/135/185	X		FIRE	X
ELHSW	Wall	15/30/75/110/135/185		X	FIRE	X
ELHSR-A	Wall	15/30/75/110/135/185	X		AGENT	X
ELHSR-N	Wall	15/30/75/110/135/185	X		No Lettering	X
ELHSW-A	Wall	15/30/75/110/135/185		X	AGENT	X
ELHSW-AL	Wall	15/30/75/110/135/185		X	ALERT	X
ELHSW-N	Wall	15/30/75/110/135/185		X	No Lettering	X
ELHSW-EV	Wall	15/30/75/110/135/185		X	EVACUATE	X
ELHSRC	Ceiling	15/30/75/110/150/177	X		FIRE	X
ELHSWC	Ceiling	15/30/75/110/150/177		X	FIRE	X
ELHSWC-N	Ceiling	15/30/75/110/150/177		X	No lettering	X
Strobes						
ELSTR	Wall	15/30/75/110/135/185	X		FIRE	X
ELSTW	Wall	15/30/75/110/135/185		X	FIRE	X
ELSTR-A	Wall	15/30/75/110/135/185	X		AGENT	X
ELSTR-AL	Wall	15/30/75/110/135/185	X		ALERT	X
ELSTW-A	Wall	15/30/75/110/135/185		X	AGENT	X
ELSTW-AL	Wall	15/30/75/110/135/185		X	ALERT	X
ELSTW-N	Wall	15/30/75/110/135/185		X	No Lettering	X
ELSTR-N	Wall	15/30/75/110/135/185	X		No Lettering	X
ELSTW-EV	Wall	15/30/75/110/135/185		X	EVACUATE	X
ELSTRC	Ceiling	15/30/75/110/150/177	X		FIRE	X
ELSTWC	Ceiling	15/30/75/110/150/177		X	FIRE	X
ELSTRC-AL	Ceiling	15/30/75/110/150/177	X		ALERT	X
ELSTWC-AL	Ceiling	15/30/75/110/150/177		X	ALERT	X
ELSTWC-EV	Ceiling	15/30/75/110/150/177		X	EVACUATE	X
Horns						
ELHNR	Wall		X		No Lettering	X
ELHNW	Wall			X	No Lettering	X
ELHNRC	Ceiling		X		No Lettering	X
ELHNWC	Ceiling			X	No Lettering	X
Accessories						
ELSBB-R	LED Backbox, wall		X			
ELSBB-W	LED Backbox, wall			X		
ESB-KIT-R	Trim Plate, wall		X			
ESB-KIT-W	Trim Plate, wall			X		
LSPKBB-CR	Backbox, ceiling		X			
LSPKBB-CW	Backbox, ceiling			X		

① RMS current ratings are per UL maximum 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.

② Regulated Voltage Range- VDC

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

Table 5. Specifications

Physical	
Material	Red or white textured UV stabilized, colored impregnated engineered plastic. Exceeds 94V-0 UL flammability rating
Weight	Wall: 0.35 lbs; Ceiling: 0.55 lbs
Lens	Light Emitting Diode (LED) in a rugged Lexan lens
Dimensions	Wall: 4.79"H x 2.76" W x 1.18" D, Trimplate: 5.25" H x 4.58" W x 0.32" D; Ceiling: 6.27" Diameter x 1.69" D
Operating Temperature	Indoor: 32°F to 122°F (0°C to 50°C) and maximum humidity of 93%
Mounting & Wire Connections	
Mounting (indoor only)	Mounting plate included with all models. ELHS and ELST are for wall-mount applications only. ELHN can be used for wall and ceiling-mount applications. Wall mounting: Single-gang, ELSBB backboxes or to 4" square with adapter kit. ELHN can be used for wall and ceiling-mount applications. ELHSC and ELSTC are for ceiling mount applications only. The ELHNC can also be used for wall-mount applications. Ceiling mounting: LSPKBB-C backboxes or to 4" square, 1 1/2" or 2 1/8"
Wire Connections	#12 through #18 AWG
Power & General	
Operating voltage	12 VDC/VFWR: 8 - 17.5 VDC/VFWR; 24 VDC/VFWR: 16 - 33 VDC/VFWR (12 VDC ELHN/ELHNC models only)
Strobe Output Rating	UL 1971, UL 1638, ULC S526: Selectable 15, 30, 75, 110, 135, 185 candela output for wall models; Selectable 15, 30, 75, 110, 150, 177 candela output for ceiling models
Synchronization Models	Strobes can be synchronized with Wheelock's DSM Sync Modules, PS Power Supplies or SAFEPATH products, using Wheelock patented sync protocol

Architects and Engineers Specifications

The LED notification appliances shall be Wheelock® ELHS audible visual strobe appliances, ELST visual strobe appliances and ELHN audible appliances for wall and ceiling-mount applications with a low-profile design or approved equals. Special lettering, including AGENT, ALERT, EVACUATE, and no lettering, shall be available. The ELHS and ELST strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service and UL 1638 (Visible Signaling Devices. The ELHS and ELHN Audibles shall be UL Listed under Standard 464 (Fire Protective Signaling). All models shall meet the requirements of FCC Part 15 and ICES-003. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 16 to 33 VDC/VFWR.

The ELHS audible strobe and ELST strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Light Emitting Diode (LED) as the light source with a rugged Lexan® lens. The appliances shall be of low current design. The LED strobe flash duration shall be 20 ms. Where Multi-Candela appliances are specified, the strobe intensity shall have 6 field selectable settings at 15, 30, 75, 110, 135 and 185 candela for wall mount applications and 15, 30, 75, 110, 150 and 177 for ceiling applications. The selector switch for selecting the candela shall be tamper resistant. Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a choice of three (3) horn patterns (high & low output): Continuous, T3, and T3/T4 for fire (T3) and CO (T4) signaling.

The ELHS audible strobe, ELST strobe, and ELHN audible shall include a hinged mounting plate. Mounting options shall include LED backboxes, single-gang backbox and to 4" square with adapter kit for wall-mount models and LED Ceiling backboxes and 4" square, 1 1/2" or 2 1/8"deep for ceiling models. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). All notification appliances shall be backwards compatible.

The ELHS, ELHN and ELST wall models shall have a low profile measuring 4.79"H x 2.76"W x 1.18"D. The ELHSC, ELHNC and ELSTC ceiling models shall have a low profile measuring 6.27" Diameter with 1.69"D.

When synchronization is required, the appliance shall be compatible with Wheelock®'s DSM Sync Modules, PS Power Supplies, SAFEPATH products or other manufacturer's panels with built-in Wheelock® Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock® patented sync protocol.

NFPA 72 2016, UL 1971, UL, 1638, UL 464 ULC-S525-16, ULC-S526-16, CSFM, FM, FCC, RoHS, ICES

NEMA Member

WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

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Cleveland, OH 44122
United States
Eaton.com

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EATON
Powering Business Worldwide

Eluxa outdoor 3R/4X horn, horn-strobe and strobe

EL3RHN/EL4XHN Horn, EL3RST/EL4XST Strobe, EL3RHS/EL4XRHS Horn/Strobe

The Wheelock Eluxa weatherproof series EL3RHN/EL4XHN horn, EL3RST/EL4XST strobe, and EL3RHS/EL4XHS horn/strobe appliances are designed for easy installation with a pre-wire capable EL4XBB back box or EL3RMP mounting plate. All models are for 24V operation. The Eluxa 4X/3R horn is also for 12V operation. All Eluxa 4X/3R models are for indoor/outdoor use and wall or ceiling mount.

Rugged

The cutting-edge solution delivers optimal performance thanks to its NEMA type 3R and 4X ratings, which make it resistant to corrosion, ice formation. The IP54 and IP66 ratings provide superior protection against dust and water, making it ideal for areas of high humidity, extreme heat, or severe cold.

Energy Efficient

With six candela settings in a single device, Eluxa features one of the industry's lowest current draws across the full candela range. The Eluxa outdoor product line reduces overall power consumption, allowing for more appliances on each circuit (NAC) and fewer power supplies.

Compliance and Approvals

- Certified to NEMA type 3R | 4X
- IP54 |IP66 Certified |Tested to IP67
- NFPA 72 2016 (Meets maximum light pulse duration of 20 ms)
- IEC 60529 2nd edition + amendment 3- August 2013
- FCC Part 15B / ICES-003- Class A
- UL 50 13th edition- October 2020
- UL 50E 3rd edition- October 2020
- UL464 11th edition: CAN/ULC 525 5th edition- May 2023
- UL1480 7th edition: CAN/ULC 541 5th edition- May 2023
- UL1638 6th edition: CAN/ULC 526 5th edition- April 2023
- California State Fire Marshal (CSFM) - pending
- Factory Mutual (FM) - pending
- ADA/NFPA/ANSI/OSHA

Complete and Compliant

The Wheelock Eluxa 3R/4X series meets NFPA 2016 20 millisecond light pulse duration code requirements. In addition, the Wheelock Eluxa and LED3 product lines have been UL/ULC listed as compatible with all Fire Alarm Control Panels (FACP) and accessories that have been determined to be compatible with Wheelock model RSS Strobe based products including the RSS, CH, E, EH, ET, ST, HS, MT, S8, SA, STH and Z Series. The maximum number of Eluxa devices per NAC is determined by dividing the maximum current rating of the FACP NAC by the total current rating of one Eluxa device, with a maximum of 105 Eluxa (or LED3) devices per NAC. Refer to FACP installation instructions for more detail. The Wheelock Eluxa Series and Exceder LED3 Series strobes may be installed in the same notification zone and field of view with any RSS Strobe based product.

Powering Business Worldwide

Complete and Compliant

Wheelock Eluxa 3R/4X Multi-Candela Strobes can provide a non-synchronized strobe appliance when connected directly to a Fire Alarm Control Panel (FACP), or provide a synchronized strobe appliance when used in conjunction with an FACP that incorporates the Cooper Wheelock sync protocol, a Dual Sync Module (DSM), or the Wheelock Power Supply.

Drawings

Figure 1. Eluxa outdoor 3R

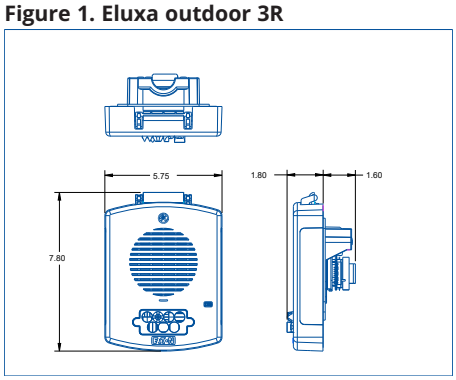

Figure 2. Eluxa outdoor 4X

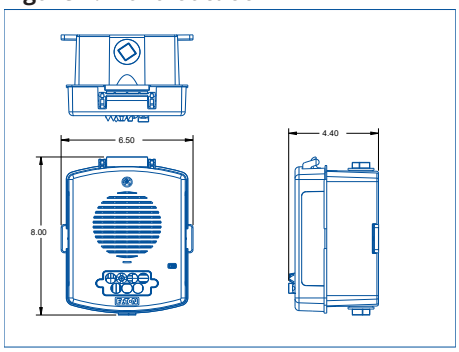

Table 1. EL3RHN/EL4XHN Horn current ratings (AMPS)

Input	Horn Setting	Regulated 12V (8-17.5V)	Regulated 24V (16-33V)
DC	CONT, T3, T3/T4 (H)	0.054	0.052
DC	CONT, T3, T3/T4 (L)	0.034	0.038
FWR	CONT, T3, T3/T4 (H)	0.102	0.102
FWR	CONT, T3, T3/T4 (L)	0.075	0.075

Table 1A: EL4X/3R Horn Sound Pressure Level Ratings (SPL)

Horn Setting	Reverberant dBA at 10Ft per UL464/ULC-525	
	SPL at 12V (HN Only)	SPL at 24V (HN and HS Models)
CONT, T3, T3/T4 (H)	83	90
CONT, T3, T3/T4 (L)	74	86

Table 1B: EL4X/3R Horn Directional Characteristics

-3dB	+/- 43 Degrees Horizontal, +/- 48 Degrees Vertical
-6dB	+/- 53 Degrees Horizontal, +/- 56 Degrees Vertical
-18dB	+/- 90 Degrees Horizontal/Vertical

Table 2. EL3RST/EL4XST Strobe Ratings

		UL/ULC Max Current					
		24VDC |FWR					
Strobe (Clear)	**Regulated Voltage Range VDC**	**15**	**30**	**75**	**110**	**150**	**185**
EL3RST	16.0-33.0	0.026	0.038	0.070	0.097	0.179	0.206
EL4XST	16.0-33.0	0.026	0.038	0.070	0.097	0.179	0.206
	FWR	0.034	0.053	0.098	0.137	0.235	0.308
Strobe (Amber)		**15**	**30**	**75**	**95**	**150**	**177**
EL3RSTA (Amber)	16.0-33.0	0.026	0.038	0.070	0.097	0.179	0.206
EL4XSTA (Amber)	16.0-33.0	0.026	0.038	0.070	0.097	0.179	0.206
	FWR	0.034	0.053	0.098	0.137	0.235	0.308

Table 3. EL3RHS/EL4XHS Horn-Strobe Ratings at 24V (AMPS)

		Strobe Candela Setting					
Input	**Horn Setting**	**15cd**	**30cd**	**75cd**	**95/110cd**	**150cd**	**177/185cd**
DC	CONT, T3, T3/T4 (H)	0.063	0.083	0.105	0.127	0.193	0.230
DC	CONT, T3, T3/T4 (L)	0.045	0.066	0.085	0.107	0.175	0.215
FWR	CONT, T3, T3/T4 (H)	0.095	0.119	0.162	0.197	0.291	0.339
FWR	CONT, T3, T3/T4 (L)	0.076	0.096	0.136	0.169	0.267	0.321

Table 4. Specifications

Physical	
Material	Red or white textured UV stabilized, colored impregnated engineered plastic.
Weight	3R = 1.7 lbs 4X = 2.3
Lens	Light Emitting Diode (LED) in a rugged Lexan lens
Dimensions	3R: 7.8"L x 5.75"W x 1.6"H 4X: 8"L x 6.5"W x 4.5"H
Operating Temperature	Indoor/Outdoor Use. -40° C to 66° C (-40° F to 150° F) 95% R.H.
Mounting & Wire Connections	
Mounting	Wall & Ceiling
Wire Connections	18 to 12 AWG. 2 wire.
Power & General	
Operating voltage	16-33 VDC/FWR. HN only is 12/24 VDC.
Strobe Output Rating	Clear 15/30/75/110/150/185 Cd Amber 15/30/75/95/150/177 Cd
Strobe Flash Rate	1 Hz
Synchronization Models	ALL

Table 5. Accessories

Standard Letter Plates	**Color**	**Description**
ELLP-FR (10Pk)	Red	ELUXA LETTER PLATE, RED, FIRE (10 PAIR PER PKG. - 1 Pair PER DEVICE)
ELLP-FW (10Pk)	White	ELUXA LETTER PLATE, WHITE, FIRE (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-NR (10Pk)	Red	ELUXA LETTER PLATE, RED, NO LETTERING (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-NW (10Pk)	White	ELUXA LETTER PLATE, WHITE, NO LETTERING (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-AR (10Pk)	Red	ELUXA LETTER PLATE, RED, AGENT (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-AW (10Pk)	White	ELUXA LETTER PLATE, WHITE, AGENT (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-ALR (10Pk)	Red	ELUXA LETTER PLATE, RED, ALERT (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-ALW (10Pk)	White	ELUXA LETTER PLATE, WHITE, ALERT (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
Special Project Letter Plates	**Color**	**Description**
ELLP-COR (10Pk)	Red	ELUXA LETTER PLATE, RED, CARBON DIOXIDE (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-COW (10Pk)	White	ELUXA LETTER PLATE, WHITE, CARBON DIOXIDE (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-EVR (10Pk)	Red	ELUXA LETTER PLATE, RED, EVACUATE (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-EVW (10Pk)	White	ELUXA LETTER PLATE, WHITE, EVACUATE (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-MR (10Pk)	Red	ELUXA LETTER PLATE, RED, EMERGENCY (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-MW (10Pk)	White	ELUXA LETTER PLATE, WHITE, EMERGENCY (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-FFR (10Pk)	Red	ELUXA LETTER PLATE, RED, FIRE / FEU (10 PAIR PER PKG. - 1 PAIR PER DEVICE)
ELLP-FFW (10Pk)	White	ELUXA LETTER PLATE, WHITE, FIRE / FEU (10 PAIR PER PKG. - 1 PAIR PER DEVICE)

Table 6. Ordering Information

Model	Strobe Candela	Lens	Red	White	Lettering	Sync w/DSM or Wheelock Power Supplies
Horn Strobe						
EL3RHS - FR	15, 30, 75, 95/110, 150, 177/185	Clear	X		FIRE	X
EL3RHS - FW	15, 30, 75, 95/110, 150, 177/185	Clear		X	FIRE	X
EL4XHS - FR	15, 30, 75, 95/110, 150, 177/185	Clear	X		FIRE	X
EL4XHS - FW	15, 30, 75, 95/110, 150, 177/185	Clear		X	FIRE	X
Strobe						
EL3RST - FR	15, 30, 75, 110, 150, 185	Clear	X		FIRE	X
EL3RST - FW	15, 30, 75, 110, 150, 185	Clear		X	FIRE	X
EL3RSTA-ALW	15, 30, 75, 95, 150, 177	Amber		X	ALERT	X
EL3RSTA-NW	15, 30, 75, 95, 150, 177	Amber		X	No Lettering	X
EL4XST - FR	15, 30, 75, 110, 150, 185	Clear	X		FIRE	X
EL4XST - FW	15, 30, 75, 110, 150, 185	Clear		X	FIRE	X
EL4XSTA-ALW	15, 30, 75, 95, 150, 177	Amber		X	ALERT	X
EL4XSTA-NW	15, 30, 75, 95, 150, 177	Amber		X	No Lettering	X
Horn						
EL3RHN - NR			X		No Lettering	X
EL3RHN - NW				X	No Lettering	X
EL4XHN - NR			X		No Lettering	X
EL4XHN - NW				X	No Lettering	X

Architects and Engineers Specifications

The LED outdoor notification appliances shall be Wheelock® EL3RHS/EL4XHS audible visual strobe appliances, EL3RST/EL4XST visual strobe appliances and EL3RHN/EL4XHN audible appliances for wall and ceiling-mount applications with a low-profile design or approved equals. Special lettering, including AGENT, ALERT, EVACUATE, and no lettering, shall be available. The outdoor series EL3RHN/EL4XHN, EL3RST/EL4XST, EL3RHS/EL4XHS, EL3RSTA/EL4XSTA (Amber) shall be listed for: Certified to NEMA type 3R | 4X, IP54 |IP66 Certified |Tested to IP67, NFPA 72 2016 (Meets maximum light pulse duration of 20 ms), IEC 60529 2nd edition + amendment 3- August 2013, FCC Part 15B / ICES-003- Class A, UL 50 13th edition- October 2020, UL 50E 3rd edition- October 2020, UL464 11th edition: CAN/ULC 525 5th edition- May 2023, UL1480 7th edition: CAN/ULC S541 5th edition- May 2023, UL1638 6th edition: CAN/ULC S526 5th edition- April 2023, California State Fire Marshal (CSFM), Factory Mutual (FM), ADA/NFPA/ANSI/OSHA. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 16 to 33 VDC/VFWR.

The EL3RHS/EL4XHS audible strobe and EL3RST/EL4XHS strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Light Emitting Diode (LED) as the light source with a rugged Lexan® lens. The appliances shall be of low current design. The LED strobe flash duration shall be 20 ms. Where Multi-Candela appliances are specified, the strobe intensity shall have 6 field selectable settings at 15, 30, 75, 110, 150 and 185 candela for the clear lens and 15, 30, 75, 95, 150, 177cd for the amber lens. The selector switch for selecting the candela shall be tamper resistant. Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a choice of three (3) horn patterns (high & low output): Continuous, T3, and T3/T4 for fire (T3) and CO (T4) signaling. The EL3RHS/EL4XHS audible strobe, EL3RST/EL4XST strobe (clear and amber), and EL3RHN/EL4XHN audible shall include a hinged mounting plate.

The outdoor series EL3RHN/EL4XHN, EL3RST/EL4XST, EL3RHS/EL4XHS, EL3RSTA/EL4XSTA (Amber)appliances shall include a mounting plate or surface mounting box from the factory. The outdoor series EL3RHN/EL4XHN, EL3RST/EL4XST, EL3RHS/EL4XHS, EL3RSTA/EL4XSTA (Amber) incorporates pre-wire, pre-test mounting plate and back box terminals. The outdoor series EL3RHN/EL4XHN, EL3RST/EL4XST, EL3RHS/EL4XHS, EL3RSTA/EL4XSTA (Amber) rated to NEMA type 3R, IP54 and NEMA type 4X, IP66 respectively, when used with the included mounting accessory. Two wire appliance wiring shall be capable of directly connecting to the mounting plate or back box. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). All notification appliances shall be backwards compatible.

The outdoor series EL3RHN/EL4XHN, EL3RST/EL4XST, EL3RHS/EL4XHS, EL3RSTA/EL4XSTA (Amber)appliances shall provide installers ease of installation provided by the self-supporting hanging hinge feature.

When synchronization is required, the appliance shall be compatible with Wheelock®'s DSM Sync Modules, PS Power Supplies, Intelligent Notification Controller, SAFEPATH products or other manufacturer's panels with built-in Wheelock® Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flashrate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock® patented sync protocol.

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

Eaton
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Life safety & mass notification solutions
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Long Branch, NJ 07740
Eaton.com/Lifesafetynotification

Printed in USA
Publication No. TD450187EN
July 2024

Powering Business Worldwide

Specification & Technical Data Sheet

Part Number: RWC-P162F-RD/BL

16-02 SOLID BC NS FPLP - RED JACKET W/ BLUE STRIPE

---

1. Conductor

- AWG Size: 16
- Type: Solid Bare Copper

2. Insulation

- Material: Plenum
- Wall Thickness: 0.010"
- Color Code: 1-Black; 2-Red

3. Assembly

- Cable Lay Length: 3.00” LHL (4.00 Tw/Ft)
- Shield: Non
- Drain: N/A
- Braid:

4. Jacket

- Material: Plenum
- Wall Thickness: 0.015"
- Diameter: 0.173"
- Color: Red w/ Blue Stripe
- Ripcord: Yes
- Weight: 25.0000 lbs/Mft.

5. Markings

- Type: Inkjet Printer
- Legend: Sequential Foot Markers; UL Standard Legend; Plenum Rated
- Footage Markers: Yes

6. Electricals

- Impedance: Ω/Mft.
- Capacitance: 31 pF/ft +/- 10%
- DC Resistance: 4.02 Ω/Mft. @ 20°C

7. Standards

- UL listed as type FPLP 75°C per UL standard 1424 or CL3P per UL Standard 13, CMP per UL 444
- All materials used in the manufacture of this cable are RoHS II & REACH compliant
- Maximum Operating Voltage: 300V RMS
- Made in the USA

Specification & Technical Data Sheet

Part Number: RWC-P182F-RD/YL

18-02 SOLID BC NS FPLP - RED W/ YELLOW STRIPE

---

1. Conductor

- AWG Size: 18
- Type: Solid Bare Copper

2. Insulation

- Material: Plenum
- Wall Thickness: 0.010"
- Color Code: 1-Black; 2-Red

3. Assembly

- Cable Lay Length: 3.00” LHL (4.00 Tw/Ft)
- Shield: Non
- Drain: N/A
- Braid:

4. Jacket

- Material: Plenum
- Wall Thickness: 0.015"
- Diameter: 0.152"
- Color: Red w/ Yellow Stripe
- Ripcord: Yes
- Weight: 18.0000 lbs/Mft.

5. Markings

- Type: Inkjet Printer
- Legend: Sequential Foot Markers; UL Standard Legend; Plenum Rated
- Footage Markers: Yes

6. Electricals

- Impedance: Ω/Mft.
- Capacitance: 28 pF/ft +/- 10%
- DC Resistance: 6.39 Ω/Mft. @ 20°C

7. Standards

- UL listed as type FPLP 75°C per UL standard 1424 or CL3P per UL Standard 13, CMP per UL 444
- All materials used in the manufacture of this cable are RoHS II & REACH compliant
- Maximum Operating Voltage: 300V RMS
- Made in the USA

Specification & Technical Data Sheet

Part Number: RWC-P184FS

18-04 SOLID BC OAS FPLP - RED JKT

---

1. **Conductor**
   - AWG Size & Stranding: 18
   - Material: Solid Bare Copper

2. **Insulation**
   - Material: Plenum
   - Wall Thickness: 0.009"
   - Color Code: 1-Black; 2-Red; 3-Brown; 4-Blue

3. **Assembly**
   - Pair Lay Length: 3.00” LHL (4.00 Tw/Ft)
   - Cable Lay Length: 3.00” LHL (4.00 Tw/Ft)
   - Shield: Shielded
   - Drain: 24AWG 7 Strand Tinned Copper
   - Braid:

4. **Jacket**
   - Material: Plenum
   - Wall Thickness: 0.015"
   - Diameter: 0.174"
   - Color: Red
   - Ripcord: Yes
   - Weight: 35.0000 lbs/Mft.

5. **Markings***
   - Type: Inkjet Printer
   - Legend: Sequential Foot Markers; UL Standard Legend; Plenum Rated
   - Footage Markers: Yes

6. **Electricals**
   - Impedance: Ω/Mft.
   - Capacitance: 53 pF/ft +/- 10%
   - DC Resistance: 6.39 Ω/Mft. @ 20°C

7. **Standards**
   - UL listed as type FPLP 75°C per UL standard 1424 or CL3P per UL Standard 13, CMP per UL 444
   - All materials used in the manufacture of this cable are RoHS II & REACH compliant
   - Maximum Operating Voltage: 300V RMS
   - Made in the USA

POWER PS SONIC
TRUSTED BATTERY SOLUTIONS

PS SERIES

General Purpose | Emergency Lighting | Medical | Fire & Security

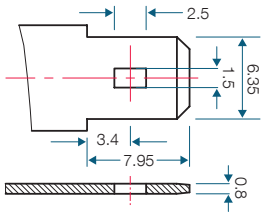
PS-12260

12V 26.0 AH @ 20-hr.
12V 24.7 AH @ 10-hr.

Rechargeable Sealed Lead Acid Battery
PS – General Purpose Series

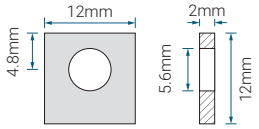
TERMINALS: (mm)

F2: Quick disconnect tabs, 0.250" x 0.032" – Mate with AMP. INC FASTON "250" series



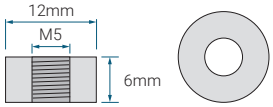
Torque – Not Applicable

NB1: Tin plated brass post with 'Nut & Bolt' fasteners



Torque: 2.0~3.0 Nxm

T12: Threaded insert with 5mm stud fastener



Torque: 2.0~3.0 Nxm

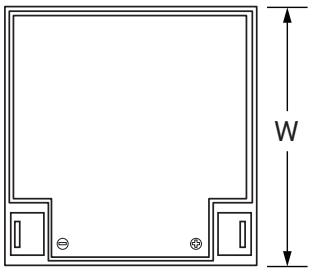
FEATURES

- 5 year design life
- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, maintenance free spill proof construction
- Power/volume ratio yielding excellent energy density
- Rugged vibration and impact resistant ABS case and cover
- Gas recombination technology

APPROVALS

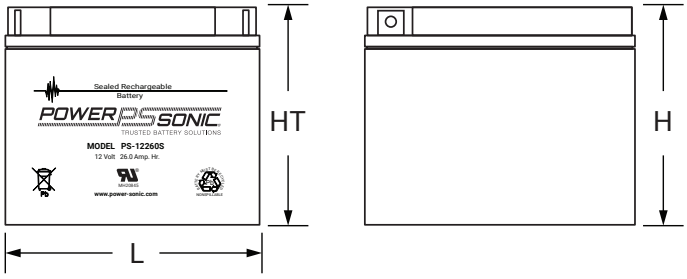
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized
- ISO9001:2015 – Quality management systems

DIMENSIONS: inch (mm)



L: 6.56 (167)
W: 6.97 (177)
H: 4.92 (125)
HT: 4.92 (125)

Tolerances are +/- 0.04 in. (+/- 1mm) and +/- 0.08 in. (+/- 2mm) for height dimensions. All data subject to change without notice.



PERFORMANCE SPECIFICATIONS

Nominal Voltage	12 volts (6 cells)
Nominal Capacity	
20-hr. (1.3A to 10.50 volts)	26.0 AH
10-hr. (2.47A to 10.50 volts)	24.7 AH
5-hr. (4.42A to 10.20 volts)	22.1 AH
1-hr. (15.8A to 9.60 volts)	15.8AH
Approximate Weight	17.60 lbs. (8.0 kg)
Internal Resistance (approx.)	11.0 milliohms
Max Short-Duration Discharge Current (5 Sec.)	390.0 amperes
Shelf Life (% of nominal capacity at 68°F (20°C)	
1 Month	92%
3 Month	90%
6 Month	80%
Operating Temperature Range	
Charge	5°F (-15°C) to 104°F (40°C)
Discharge	5°F (-15°C) to 122°F (50°C)
Case	ABS Plastic
Power Sonic Chargers	PSC-124000-PC PSC-124000A-C

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POWER PS SONIC
TRUSTED BATTERY SOLUTIONS

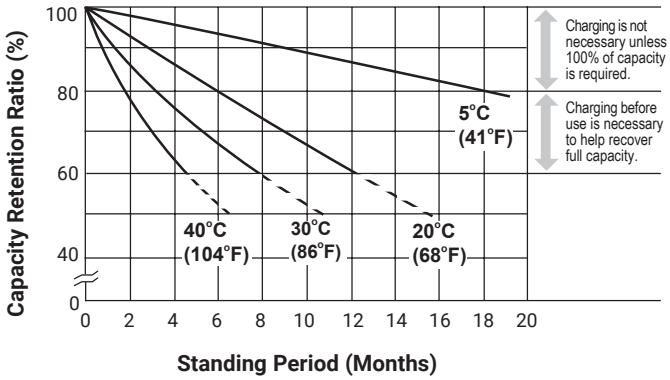
PS SERIES

PS-12260

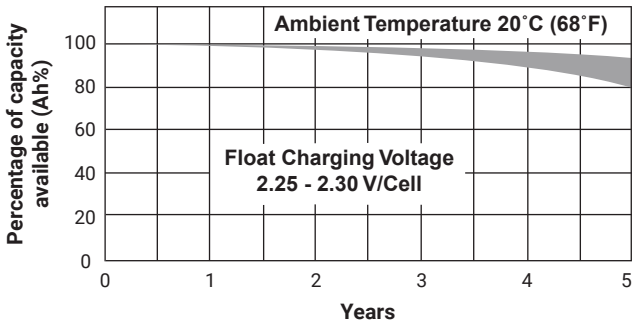
12V 26.0 AH @ 20-hr.
12V 24.7 AH @ 10-hr.

Rechargeable Sealed Lead Acid Battery
PS – General Purpose Series

SHELF LIFE & STORAGE



LIFE CHARACTERISTICS IN STAND-BY USE



CHARGING

Cycle Applications: Apply constant voltage charge at 2.35v/c – 2.45v/c (14.1 – 14.7v for 12v Monobloc) at 20°C. Initial charging current should be set at less than 0.25C Amps. Switch to float charge to avoid overcharging.

"Float" or "Stand-By" Service: Apply constant voltage charge of 2.25v/c – 2.30v/c (13.5 to 13.8 volts for 12v Monobloc at 20°C. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Temperature Compensation: Charging Voltage for both Cyclic and Standby applications should be regulated in relation to ambient temperature. As temperature rises charging voltage should be reduced to prevent overcharge and increased as temperature falls to avoid undercharge.

For further charging information including temperature compensation factors, see Power Sonic Technical Manual/ Power Sonic Charger specifications.

APPLICATIONS

- General purpose
- Emergency lighting
- Medical
- Fire and security

CHARGERS

Power Sonic offers a wide range of chargers suitable for batteries with a variety of capacities.

Please refer to our website for more information on our switch mode and transformer type chargers.

Please contact our technical department for advice if you have difficulty in locating a suitable charger.

FURTHER INFORMATION

Please refer to our website **www.power-sonic.com** for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc.

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