

Equipment Submittal

Discovery Animal Hospital

1901 NE Trails Edge Blvd.

Lee's Summit, MO 64086

FIRE ALARM SYSTEM



System Installed By:

Alliance Fire Protection, LLC

130 W. 9th Ave, Suite 101

North Kansas City, MO 64116

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Elite RS | Analog Addressable Fire Control Panels

VF0810-xx (1 Loop)

VF0820-xx (2 Loop)

where xx=10 for Red and xx=40 for Gray



Standard Features

- One full SLC circuit expandable to two
- 3 programmable relays
- 5.25A power supply
- Large graphic display
- Compatible with eMATRIX graphics annunciator
- Powerful, network wide cause and effects (500 total)
- Fully user-programmable by point or zone
- Can be networked with additional RS and/ or Elite control panels
- Compatible with eVIEW Annunciator
- Programmable through a PC connection to the panel
- Same look and feel as Elite range
- Stores 1000 last events in history log
- Optional cellular communicators that support Contact ID and SIA formats.
- Available in Red or Gray
- 2 Programmable NAC circuits with internal synchronization support

Product Overview

Elite RS is a versatile range of open protocol fire alarm control panels compatible with existing Elite fire alarm panel technology.

Available with one or two detection loops for a total of 127 or 254 primary SLC points or up to 800 points using addresses and sub-addresses. Elite RS uses microprocessor based electronics to provide a flexible control system with high reliability and integrity.

Suitable for all small to medium sized fire detection systems, Elite RS control panels can be expanded and networked to become part of much larger systems if the need arises, therefore providing a future proof solution for any installation.

With its large display and ergonomic button and indicator layout, the Elite RS control panel is simple and straightforward to understand for installers, commissioning engineers, and end users alike.



Manufactured by Kentec Electronics Ltd.
Dartford, DA11 1JQ, United Kingdom

Technical Specifications

Construction	16AWG sheet steel
Dimensions	14.5"W x 18.9"H x 4.25" D
Weight (without batteries)	20lb
Finish (lid & box)	RAL3002 (Red) BS 00 A 05 (Gray)
Finish (product labels)	BS 00 A 05 (Gray)
AC Voltage Supply	120 or 240V AC, 50 or 60 Hz (specify when ordering, default is 120V)
AC Supply Fuse	1.6A 250V
DC Power Supply Rating	24V 5.25 Amps
AUX 24V Supply	Two 24vDC outputs, 360mA each
Battery (24 hour standby)	9Ah 12V (2 per panel, non-networked)
Fault Contact Rating	30V DC 1 Amp
Fire Contact Rating	30V DC 1 Amp
Alarm Contact Rating	30V DC 1 Amp
NAC Output Rating	2.3 A each, max 3.1 A total
Detection Loop	250 milliamp output
Serial Expansion Port	Serial RS485
PC Port	Serial RS232
Network Connection	Optional network cards allow the use of eNet networking.
NAC Synchronization	Internal Support
NAC Protocols	System Sensor, Wheelock, Gentex, Amseco

Additional Models

- VF0815, 1 Loop panel with factory installed network card.
- VF0825, 2 Loop panel with factory installed network card.

Optional Accessories

- VF1170-00, eNET Network Card
Field upgrade to add networking capability to VF0810-xx or 0820-xx.
- VF1054-00, 1 Loop Expansion Board
Field upgrade to expand a 1 Loop panel to 2 Loops.
- VF1071-xx, Trim Ring
Metal frame for recessed wall mount.

Panel Peripherals

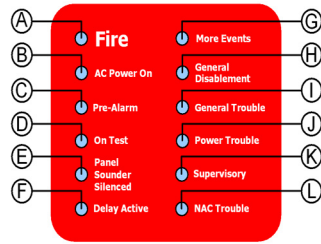
- VF1660-00, M2M Pathway Pro, Cellular communicator, Dual SIM.
Add central station monitoring capability using SIA or Contact ID protocols.
- VF1661-00, Telguard FIRENET Comm 5G-A, Cellular communicator.
Add central station monitoring capability using Contact ID protocol over the AT&T cellular network.
- VF1662-00, Telguard FIRENET Comm 5G-V, Cellular communicator.
Add central station monitoring capability using Contact ID protocol over the Verizon cellular network.

OPERATING INSTRUCTIONS

OPERATING INSTRUCTIONS FOR ALL MODELS OF THE eLAN-RS, AND ELITE-RS PANEL

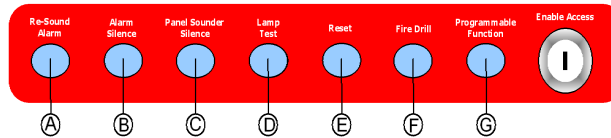
PATENT PENDING

LED INDICATORS

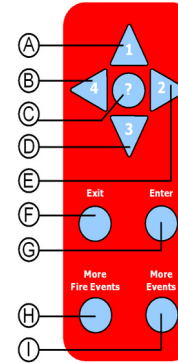


Key	LED	Color	LED Lit
A	Fire	Red	An alarm or fire drill condition exists. The status condition is provided on the LCD display. The control panel buzzer sounds intermittently. Output relays are activated. - Flashing = NACs activated - On Continuous = NACs silenced - OFF = Panel and NACs reset
B	AC Power On	Green	AC power is on.
C	Pre-Alarm	Yellow	A pre-alarm condition exists. Pre-alarm status is provided on the LCD display. The buzzer on the control panel sounds continuously.
D	On Test	Yellow	A test is in progress.
E	Panel Sounder Silenced	Yellow	The Panel Sounder Silence button was depressed. NAC outputs are not affected.
F	Delay Active	Yellow	Warning sounders have been delayed during a fire condition. Press the Alarm Silence button to mute or extend the delay to a second stage delay.
G	More Events	Yellow	A non-fire alarm event exists. The e-LAN buzzer sounds continuously.
H	Point Bypassed	Yellow	LCD menu options have been used to disable devices.
I	General Trouble	Yellow	A General Trouble condition exists when flashing. The General Trouble condition is also identified by other lit LEDs. Status is provided on the LCD display. The buzzer on the control panel sounds continuously.
J	Power Trouble	Yellow	A Power Trouble exists. Status is provided on the LCD display. The buzzer on the control panel sounds continuously.
K	Supervisory Alarm	Yellow	Status is provided on the LCD display. The buzzer on the control panel sounds continuously.
L	NAC Trouble	Yellow	A NAC Trouble exists on one or both of the NAC outputs. Connections at this location are faulty or disabled.

CONTROLS



Key	Name	Description	Operation
A	Re-Sound Alarm	Re-sounds alarm of control panel after the condition is silenced by the Panel Sounder Silence button. Re-sounds NAC alarms silenced by the Alarm Silence button.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter 4 Press the Re-Sound Alarm button.
B	Alarm Silence	Silences NACs. Also silences the buzzer of the control panel during Fire Drill tests, troubles and alarms.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter 4 Press the Alarm Silence button.
C	Panel Sounder Silence	Mutes the buzzer of the control panel only.	Press the Panel Sounder Silence button.
D	Lamp Test	Tests LEDs of the control panel. Also tests the LCD display and the internal buzzer.	Press the Lamp Test button to illuminate all LEDs, darken the front-panel display and sound the buzzer of the control panel.
E	Reset	Resets latching inputs such as fire and pre-alarm events.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter 4 Press the Reset button.
F	Fire Drill	Provides a panel Fire Drill. The Fire Drill button can also be configured to perform other functions.	1 Press 3 to display "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Enter. 4 Press the Fire Drill button. To stop the fire drill: 1 Press 4 to display the "SET ACCESS LEVEL 2 MENU". 2 Provide Access Level 2 authorization. 3 Press Reset or Fire Drill.
G	Programmable Function	The Programmable Function button can be configured to perform other functions.	Requires ACCESS LEVEL 3 to configure the button.



Key	Name	Description	Operation
A	1	Navigates menu selections up.	Press 1 to navigate menu selections up.
B	4	Navigates menu selections left.	Press 4 to navigate menu selections left.
C	?	Provides a "help screen" for the current menu display and also displays status.	Press ? to provide status of the control panel on the LCD display.
D	3	Navigates menu selections down.	Press 3 navigate menu selections down.
E	2	Navigates menu selections right.	Press 2 to navigate menu selections right.
F	Exit	Cancels the current menu selection and returns to the main menu.	Press Exit to cancel the current menu selection and return to the main menu.
G	Enter	Enables the menu selection.	Press Enter to enable the menu selection.
H	More Fire Events	Displays the number of alarms present and overrides the display provided by menu navigation. Provides event status for fires.	1 Press the More Fire Events button. 2 Read event on LCD. 3 Press 3 to scroll through events. 4 Press 2 to display event. 5 Press 3 to scroll through events.
I	More Events	Displays the number of events and overrides menu navigation. Provides event status for non-fire alarm events.	1 Press the More Events button. 2 Read event on LCD. 3 Press 3 to scroll through events. 4 Press 2 to display event. 5 Press 3 to scroll through events.

MAINTENANCE AND REPAIR

REPLACING THE 3 AMP POWER-SUPPLY FUSE

TO REMOVE THE FUSE:

- TURN OFF 120 VAC POWER TO THE CONTROL PANEL.
- LOCATE THE 3 AMP FUSE ON THE MAIN CIRCUIT BOARD OF THE CONTROL PANEL.
- GENTLY INSERT A SMALL-FLAT-BLADE SCREW DRIVER INTO THE SLOT OF THE FUSE-HOUSING.
- SLIDE THE LENGTH OF THE SCREWDRIVER INTO THE SLOT OF THE FUSE-HOUSING UNTIL THE UPPER-HALF DISLODGEES FROM THE LOWER-HALF OF THE HOUSING.
- REMOVE THE FUSE FROM THE UPPER-HALF OF THE FUSE-HOUSING.

TO INSTALL THE NEW FUSE:

- INSERT THE FUSE IN THE UPPER-HOUSING.
- CENTER THE POSITION OF THE FUSE IN THE UPPER-HOUSING.
- PRESS THE UPPER-HOUSING ON THE LOWER-HOUSING UNTIL THE HALVES SNAP TOGETHER.
- RESTORE 120 VAC POWER TO THE CONTROL PANEL.
- CHECK CONTROL PANEL OPERATION FOLLOWING THIS PROCEDURE TO CONFIRM THAT FUSE REPLACEMENT RESTORED FUNCTIONALITY.

REPLACING THE 10 AMP BATTERY FUSE

TO REMOVE THE FUSE:

- DISCONNECT THE JUMPER-CABLE BETWEEN BATTERY 1 AND BATTERY 2.
- DISCONNECT THE RED-CABLE FROM THE POSITIVE TERMINAL OF BATTERY 2.
- DISCONNECT THE BLACK-CABLE FROM THE NEGATIVE TERMINAL OF BATTERY 1.
- DISPOSE THE CABLES DESCRIBED IN THE STEPS ABOVE.
- REMOVE BATTERY 1 AND BATTERY 2 FROM THE BOTTOM OF THE CABINET AND RE-CYCLE THEM ACCORDING TO MANUFACTURER GUIDELINES.

TO INSTALL THE NEW FUSE:

- MOUNT THE REPLACEMENT BATTERIES IN THE BASE OF THE CONTROL PANEL CABINET.
- CONNECT THE REPLACEMENT JUMPER-CABLE FROM THE NEGATIVE TERMINAL OF BATTERY 1 TO THE POSITIVE TERMINAL OF BATTERY 2.
- CONNECT THE BLACK-WIRE OF THE REPLACEMENT BATTERY-CABLE TO THE NEGATIVE TERMINAL OF BATTERY 2.
- CONNECT THE RED-WIRE OF THE REPLACEMENT BATTERY-CABLE TO THE POSITIVE TERMINAL OF BATTERY 1.
- DETERMINE THAT TROUBLE CONDITIONS ARE NOT REPORTED BY THE CONTROL PANEL FOLLOWING THE FUSE REPLACEMENT.

OPERATING CHARACTERISTICS NORMAL-STANDBY

THE FOLLOWING FORMAT APPEARS ON THE FRONT-PANEL-DISPLAY WHEN OPERATING WITHOUT TROUBLES OR ALARMS:

TIME, DAY, DATE
DEFAULT OR USER DEFINED MESSAGE
USE ARROW KEYS TO ENABLE PANEL
PRESS ? FOR HELP

STANDBY BATTERIES ARE SEALED-RECHARGEABLE AND PROVIDE FACP RECOVERY IN THE EVENT OF POWER FAILURE. INSPECT STANDBY BATTERIES AND CONNECTIONS ANNUALLY. REPLACE STANDBY BATTERIES EVERY 3 TO 5 YEARS. CONNECT STANDBY BATTERIES IN SERIES. DO NOT CONNECT STANDBY BATTERIES IN PARALLEL.

IN THE EVENT OF TROUBLE

CONTACT:	
NAME:	Alliance Fire Protection
ADDRESS:	130 West 9th Ave
CITY:	North Kansas City
STATE:	MO
ZIP:	64116
TELEPHONE:	913-888-0647

REFERENCE MATERIAL

INSTALL CONTROL PANEL MODELS OF THE eLAN-RS OR ELITE-RS IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS:

- eLAN-RS H INSTALLATION MANUAL, VF3528-00, REV. E01.XX
- eLAN-RS A INSTALLATION MANUAL, VF3531-00, REV. E01.XX
- ELITE-RS H INSTALLATION MANUAL, VF3529-00, REV. E01.XX
- ELITE-RS A INSTALLATION MANUAL, VF3532-00, REV. E01.XX

INSTRUCTION PLACEMENT

FRAME THESE INSTRUCTIONS AND PLACE THEM ADJACENT TO THE CONTROL UNIT FOR READY REFERENCE.

TROUBLE-SILENCE

THE FOLLOWING CONDITIONS OCCUR AFTER PRESSING THE "PANEL SOUNDER SILENCE" BUTTON TO SILENCE A TROUBLE:

- THE GENERAL TROUBLE LED FLASHES YELLOW.
- THE POWER TROUBLE LED FLASHES YELLOW.
- THE INTERNAL SOUNDER DOES NOT ANNUNCIATE THE LCD DISPLAY. PROVIDES A MESSAGE TO IDENTIFY THE TROUBLE CONDITION.



PART NUMBER: VF3535-00, REVISION E01.00
DATE: 06/06/09

Comm 5G by Telguard Cellular Cellular Communicator

VF1661-00 | VF1662-00



APPLICATION

The Comm 5G by Telguard is a sole path communication system that ensures uninterrupted connectivity in critical situations. Powered either directly from the fire panel's auxiliary supply or a UL listed power supply. The Comm 5G by Telguard offers both flexibility and reliability.

Utilizing LTE-M bands for 4G and 5G networks, the system enhances in-building penetration and longevity, ensuring emergency signals reliably reach the central station, which is crucial for fire alarm systems.

Specifications

Electrical

Input Voltage	Idle, No Supervision	Idle w/Link Supervision	Max during Transmission
24VDC regulated Fire Panel or UL listed Power Supply	27mA	42mA	110mA
Trip Input	30VDC/100mA Max Load		
Supervisory Relay, STC 1	N/O, 30VDC/120mA Max Load (Resistive)		
Supervisory Relay, STC 2	N/C, 30VDC/100mA Max Load (Resistive)		
Antenna	50Ω TNC connector (female)		
Frequencies	AT&T: 700/1700/1900/2100 MHz) Verizon: 700/1700/2100 MHz		

Environment

Operating Temperature	32°F to 120°F (0° C to 49°C)
Humidity	0 to 93% Non-condensing

Physical

Dimensions:	11.4 x 7.75 x 3.3 inches (without antenna)
Shipping Weight:	7 lbs. (3.18 kilograms)
Color:	Red

Remote Firmware Updates

Available through Telguard Technical Support. A technician must be on-site for updates.

Approvals

UL 864, 1610, FCC, CSFM

Standard Features

- Connects to the serial PC port of the Elite RS panel for full data reporting of events by point
- Includes VES Elite RS Interface Connection Cable, Antenna, 12' Antenna Cable, and Antenna Mount*
- AT&T and Verizon Network Models Available
- LTE-M 5G Cellular Service for Signal Reporting. No Phone Line Needed
- Powered by the Fire Panel or a UL listed Power Supply
- Supports Contact ID Format

*Additional supplied accessories will not be used

Specifications subject to change without notice.

Comm 5G by Telguard

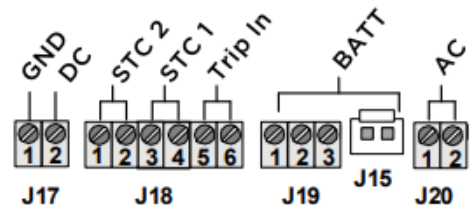
Communicator Activation Process

To Begin; the serial number must be registered in portal.telguard.com. Although the communicator has a "hot SIM" (connects to AT&T or Verizon and it will read signal strength) it will not actually deliver any alarm data if it is not registered first. It's during the registration process that the customer will input the phone numbers and account number.

1. Connect panel to the communicator (serial PC port), and power up the communicator so it can establish a connection to the cellular network (powered up for about 90 seconds)
2. Activate an input on the alarm panel and confirm that the communicator to trigger event activation. This event will not be reported but it is necessary to activate the communication pathway
3. After the initial alarm event has established communication between the communicator and TCC, the communicator will begin operating in normal mode. This is indicated by LED 1 (green) being illuminated. At this point you must test the complete system – including the communicator - for correct operation according to NFPA and local requirements

Terminal Connections

- J17:** 24VDC Input (Fire Alarm Panel or UL listed Power Supply)
J18: STC 1, N/O, 30VDC/120mA Max Load (Resistive)
STC 2, N/C, 30VDC/100mA Max Load (Resistive)
Trip Input, 30VDC/100mA Max Load (Not for initiating zones)
J19: Back-up Battery (not to be used)
J20: AC Input (not to be used)



Ordering Information

Part Number	Description
(VF-1661-00)	Comm 5G-A, AT&T, Cellular Communicator
(VF1662-00)	Comm 5G-V, Verizon, Cellular Communicator
(VF1663-00)	12' of Low Loss High Performance Antenna Cable & Mounting Bracket*
(VF1664-00)	35' of Low Loss High performance Antenna Cable & Mounting Bracket*
(VF1665-00)	50' of Low Loss High performance Antenna Cable & Mounting Bracket*
(VF1666-00)	100' of Low Loss High performance Antenna Cable & Mounting Bracket*
(VF-1667-00)	High Gain Directional Antenna
(VF1668-00)	External Omni-Directional Antenna
(VF1669-00)	Tamper Switch for metal enclosure

* antenna cables do not include an antenna

For additional information please contact VES Fire Detection Systems

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)

AMS Manual Pull Stations

VF3031-10 Single Action w/ Hex Screw (H)

VF3032-10 Single Action w/ Key Lock (H)

VF3029-10 Dual Action w/ Key Lock (H)



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

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.

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.

Ordering Codes

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

Technical Specifications

Operating Voltage: 17-41 VDC

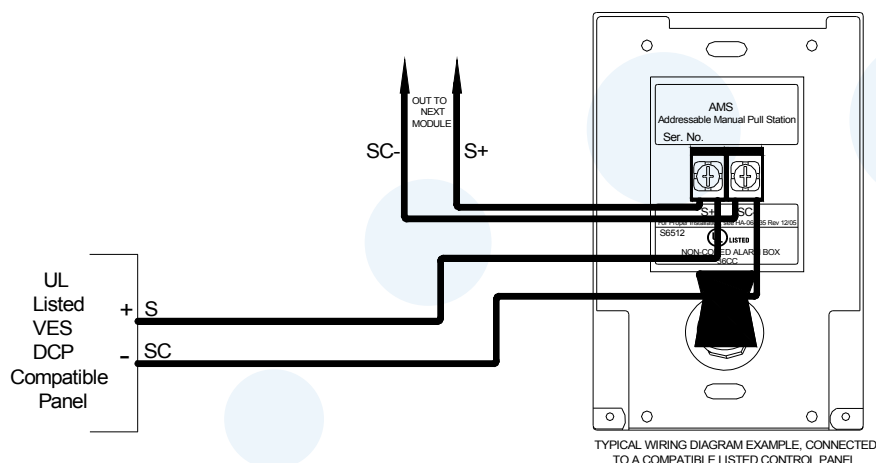
Average current consumption: 550µA (typical)
660µA (standard)

Ambient Temperature: 32°F to 120°F

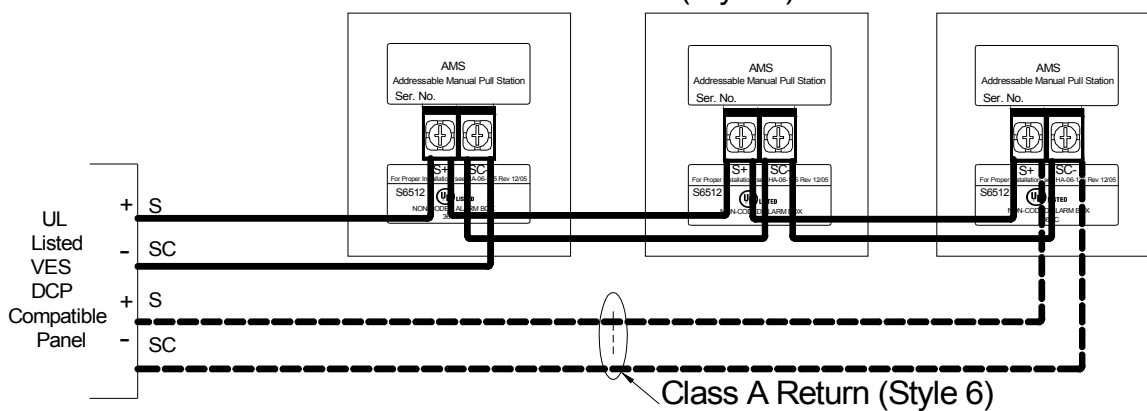
Maximum humidity: 90% RH non-condensing

Dimensions: 3.4"W x 4.8"H x 2.0"D

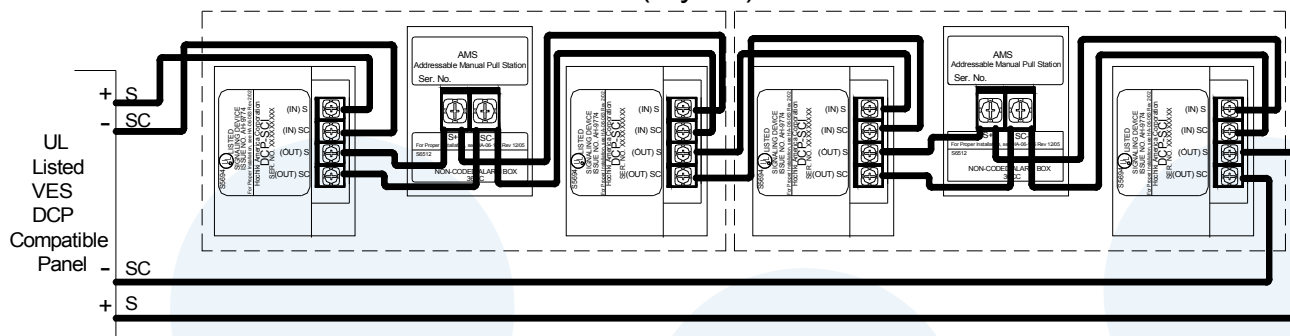
Mounting: Single gang or 4" square electrical box



Class B (Style 4)



Class A (Style 7)



VF2011-00

Photoelectric Smoke Sensor



Standard Features

- Low Profile - Only 2.0" high, including base
- Simple and reliable device addressing
- 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 LEDs
- Programmable non-polling LEDs
- Non-directional smoke chamber
- Vandal resistant security locking feature
- Removable smoke labyrinth for cleaning or replacement

Note:

Bases are not included with detectors, please order separately.

Application

- The VF2011 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. VES's unique design allows fast response to flaming fires as well as smoldering fires while preventing 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 photodiode. 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 SLC loop. A sensor address is 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 LEDs for easy viewing of sensor status.

Engineering Specification

The contractor shall furnish and install where indicated on the plans, photoelectric sensors VF2011 The combination sensor head and twist lock base shall be UL listed compatible with a UL listed fire alarm control panel.

The Sensor and Base shall be UL listed as compatible with the fire alarm control panel (FACP). The base shall permit direct interchange with the VES, VF2002, VF2005 & VF2011 photoelectric smoke sensor, VF2001 ionization type smoke sensor, VF2003 & VF2010 heat sensor, and the VF2008 & VF2012 Multi-Criteria 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 VF7001 and the VF7002 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.

Technical Specifications

Operating Voltage: 17-41 VDC

Standby Current: 450µA

Alarm Current: 540µA

Transmission Method: DCP—Digital Communication Protocol

Maximum Humidity: 95% RH Non-Condensing

UL Temperature Range: 32° F to 115° F

Operating Temperature Range: 14° F to 122° F

Sensitivity Range: 0.7 - 4.0%/ FT @ 300 FPM
0.7 - 3.86%/ FT @ 2000 FPM
0.7 - 2.65%/ FT @ 4000 FPM

Air Velocity Range: 0-4000 fpm

Color & Case Material: Bone/ White - ABS Blend

Weight: 3.4 oz, (5.1 oz with 4" base)

Ordering Codes

Part number	Description
VF2011-00	Photoelectric Smoke Detector
VF7001-00	4" Mounting Base
VF7002-00	6" Mounting Base
VF7008-00	6" Sounder Base

VF7001

4" Sensor Base

VF7002

6" Sensor Base

Sensor Bases



Standard Features

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

Application

The **VF7001** 4" base and **VF7002** 6" base are designed for use with VES analog style sensors models **VF2001**, **VF2002** and **VF2003**.

Each base is connected to an eLAN 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.

Operation

The **VF7001** 4" base and **VF7002** 6" base are designed specifically for use with the VES Analog sensors, models **VF2001** Ionization Smoke Sensor, **VF2002** Photoelectric Smoke Sensor and **VF2003** Heat Sensor.

The **VF7001** and **VF7002** common mounting bases allows for complete compatibility for all of the VES Analog sensors.

The bases are lightweight and very thin, providing a low profile once installed. The solder-less screw terminals enable quick and easy wiring connections.

Engineering Specifications

The Dealer shall furnish and install where indicated on the plans, VES **VF2002** photoelectric sensors, **VF2001** Ionization Smoke Sensor or **VF2003** Heat part number.

The selected sensor shall be attached to the **VF7001** or **VF7002** 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.

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

NOTE: SLC maximum resistance is 50 ohms.

Technical Specifications

VF7001: 4" Sensor Base

VF7002: 6" Sensor Base

Security feature: Plastic Tamper-Lock

Color & Case Material: Bone PC / ABS Blend

Compatible Sensors: VF2001, VF2002, VF2003

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 present.

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: 32° F to 120° F

Maximum Humidity: 90% RH Non-Condensing

Dimensions: 4.2" W x 4.7" H x 1.4" D

Mounting: 4" square electrical box

VF6020-00 & VF6021-00

with Short Circuit Isolator

Fast Response Contact Modules (Class A Wiring)



Back side of a VF6020

Back side of a VF6021



Standard Features

- Single input contact monitor
- Fast, reliable contact monitoring utilizing the DCP (Digital Communications Protocol)
- Two different mounting configurations
- 127 devices can be used per DCP loop
- Bi-colored indicating LED provides module status (Both Models)
- Yellow LED indicates a short circuit condition (VF6021-00 only)
- Can be programmed to monitor Normally Open (NO) or Normally Closed (NC) contacts in Class B
- Operates on Class A or Class B SLC loop
- Accepts up to 14 AWG wire

Operation

The VES VF6020 and VF6021 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 alarm initiating devices. The interrupt driven Digital Communications Protocol (DCP) combines maximum communication reliability and fast response to emergency conditions. Two different mounting configurations are provided to meet a wide range of applications. The VF6020 and VF6021 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 on onboard EEPROM. Up to 127 devices can be placed on the DCP SLC loop. The module supervises the wiring to the contact with an End Of Line (EOL) resistor in Class B mode. 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 VF6020 and VF6021, it sends an interrupt to the Fire Alarm Control Panel indicating that an alarm has occurred. VF6021-00 version has built-in integrated SCI circuitry. In the event of a short on the S-SC line, the SCI circuit will activate and its yellow LED indicator will be turned on steady and the module will report the short circuit condition to the Fire Control Panel.

Technical Specifications

Supply Voltage Nominal: 25.3-39VDC
Average Current Consumption: 630µA (Typical), 6.3mA (Alarm)
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: 32° F to 120° F

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/EL4XRHS 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.

EAT•N

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

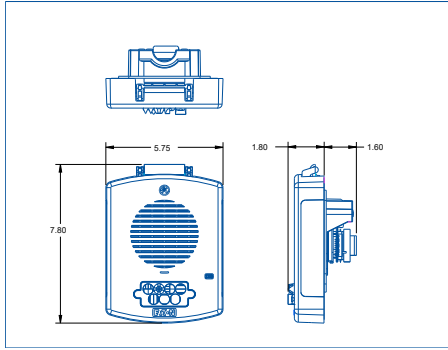


Figure 2. Eluxa outdoor 4X

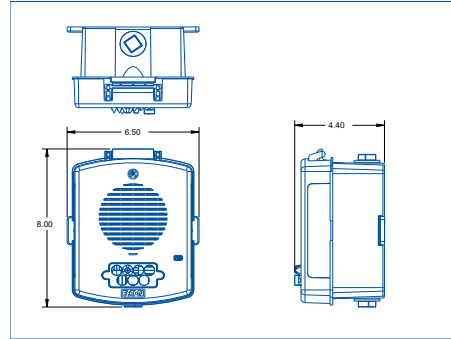


Table 1. EL3RHN/EL4XHN Horn current ratings (AMPS)

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)

Input	Horn Setting	Strobe Candela 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.

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.

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.

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



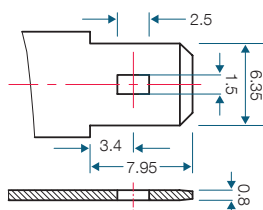
PS-12120

12V 12.0 AH @ 20-hr.
12V 11.4 AH @ 10-hr.

Rechargeable Sealed Lead Acid Battery
PS – General Purpose Series

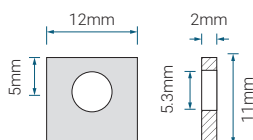
TERMINALS: (mm)

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



Torque – Not Applicable

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



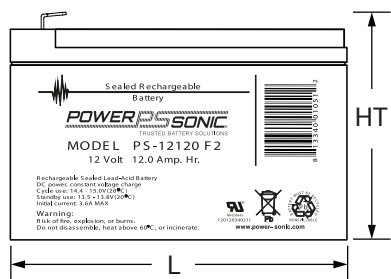
Torque: 2.0~3.0 Nxm

DIMENSIONS: inch (mm)



F2:
L: 5.94 (151) W: 3.86 (98)
H: 3.66 (93) HT: 3.86 (98)

NB:
L: 5.94 (151) W: 3.86 (98)
H: 3.66 (93) HT: 4.09 (104)



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

GLOBAL HEADQUARTERS (USA AND INTERNATIONAL EXCLUDING EMEA)

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T UK: + 44 1268 560 686
T FR: + 33 344 32 18 17
E: salesEMEA@power-sonic.com

FEATURES

- 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
- 5 year design life

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

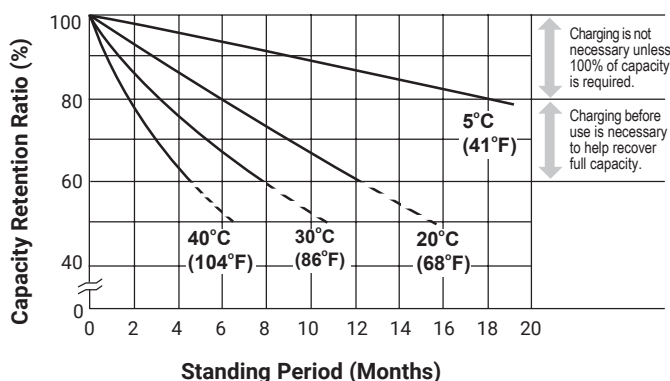
PERFORMANCE SPECIFICATIONS

Nominal Voltage	12 volts (6 cells)
Nominal Capacity	
20-hr. (600mA to 10.50 volts)	12.00 AH
10-hr. (1.14A to 10.50 volts)	11.40 AH
5-hr. (2.04A to 10.20 volts)	10.20 AH
1-hr. (8.82A to 9.60 volts)	8.82 AH
Approximate Weight	8.1 lbs. (3.68 kg)
Internal Resistance (approx.)	13.0 milliohms
Max Short-Duration Discharge Current (5 Sec.)	180.0 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-122000A-C PSC-122000-PC

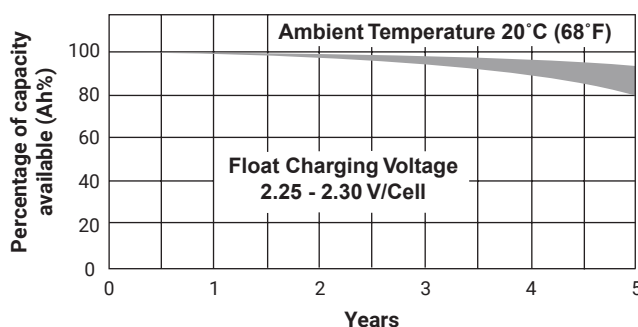
PS-12120 12V 12.0 AH @ 20-hr. 12V 11.4 AH @ 10-hr.

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.

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.

APPLICATIONS

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

GLOBAL HEADQUARTERS (USA AND INTERNATIONAL EXCLUDING EMEA)

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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.

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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

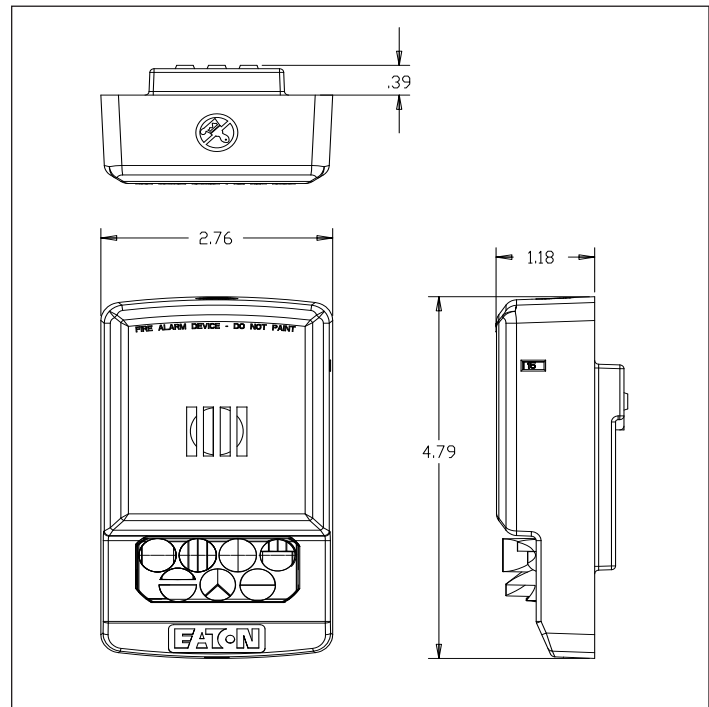


Figure 1. Wall, horn strobe

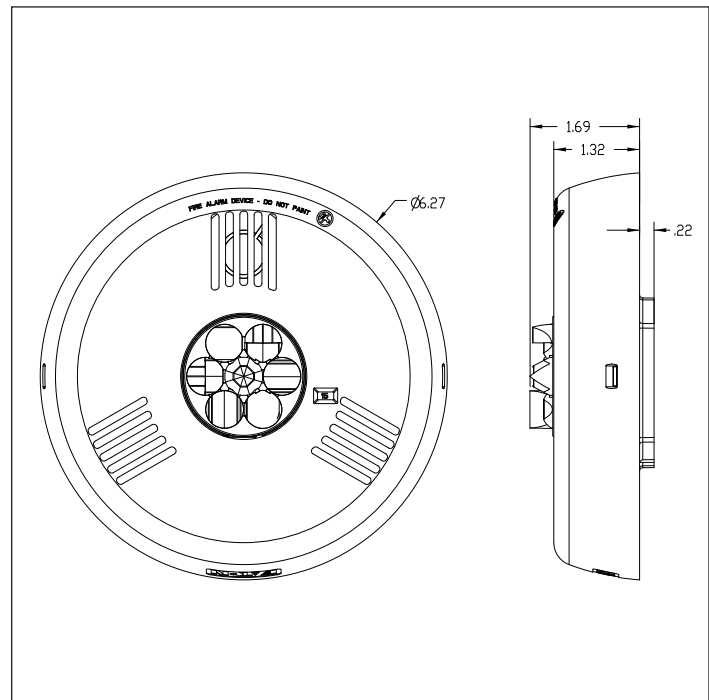


Figure 2. Ceiling, horn strobe

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
ELHNR-C	Ceiling		X		No Lettering	X
ELHNW-C	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



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