Gold Coast Fire & Security, Inc.
11840 Lacy Lane
Fort Myers, FL 33966
239-337-4142 Phone
239-337-4143 Fax

To   Collier Plan Review   1-7-18
For   ADDISON CLUB HS
        8633 Addison Place Cir
        Naples, Fl

Following you will a submittal for Fire Alarm at Addison Club house.
I have included battery calculations, current draw, specifications sheets and
drawings.

EQUIPMENT

1-	Silent Knight (SK) 5808		1-	SK 450 Voice Evac
1-	SKPulls		1-	SK Smokes
1-	SK Dual Input Mods		1-	ET70 WP Spk Strobe
11-	SPSR SPK Strobes		8-	RSS Strobes
10-	SK Duct Smokes		4-	7 amp Batteries
	Surge Suppression		1-	Napco Cell Transmitter
	wire 14, 16, 18-2 FPLR			Wire 18-2 FPLUG

Please call with questions.

Thanks,

Chuck Simonson
239-822-3157

SILENT KNIGHT

5808 Calculations
Version 12.30.10

Global Project Values:
Project Name: ADDISON Clubhouse
Project ID:
Prepared By:
Date: 1/7/2018

Standby Hours: 24
Alarm Mins: 15
Derating Factor: 1.2
Voltage Drop Warning Threshold % : 20

Panel ID: 5808
Location: FCP Rm

Model: 5808 Add. Fire Alarm Control Panel
Volts: 24 VDC

Max NAC Current: 3.0 Amps
Max Panel Current: 6.0 Amps

Ckt.#	Circuit Name	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5808	5808 CTRL Panel	1	0.170	0.325						
SK	Photo, Photo-T	1	0.000	0.000						
SK	Ion		0.000	0.000						
SK	Heat, Heat-HT		0.000	0.000						
SK	Heat ROR		0.000	0.000						
SK	Beam, Beam-T		0.000	0.000						
SK	Duct	10	0.003	0.003						
SK	Acclimate		0.000	0.000						
SK	Control		0.000	0.000						
SK	Relaymon		0.000	0.000						
SK	Control-6		0.000	0.000						
SK	Monitor, Minimon		0.000	0.000						
SK	Monitor-2	1	0.001	0.001						
SK	Monitor-10		0.000	0.000						
SK	Pull-SA, Pull-DA	1	0.000	0.000						
SK	Relay		0.000	0.000						
SK	Relay-6		0.000	0.000						
SK	Zone		0.000	0.000						
SK	Zone-6		0.000	0.000						
SK	Isolator Module		0.000	0.000						
SSB224BI	Isolator Base		0.000	0.000						
B200SR	Sounder Base		0.000	0.000						
SSB224RB	Relay Base		0.000	0.000						
SSRTS151	Magnetic Remote Test		0.000	0.000						
SSRTS151KEY	Key Activated Test		0.000	0.000						
SSRA100Z	Remote LED		0.000	0.000						
5860	LCD Remote Annunc	1	0.020	0.025						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
5895XL	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
NAC #1	Notification Appl Circuit		0.000	1.540	#14 Solid	2.52		0.00	20.40	0.00%
NAC #2	Notification Appl Circuit		0.000	1.570	#14 Solid	2.52		0.00	20.40	0.00%
NAC #3	Notification Appl Circuit		0.000		#14 Solid	2.52		0.00	20.40	0.00%
NAC #4			0.000							

N/A

	Standby	Alarm
Total Standby Current (Amps)	0.194	3.464
Standby Time In Hours	24	0.250
Total Standby AH Required	4.658	0.866

Total Alarm Current (Amps)
Alarm Time In Minutes / 60   (15 Mins)
Total Alarm AH Required

Total Combined AH Required	5.52
Multiply By The Derating Factor	1.20
Minimum Battery AmpHours Required	**7.00**

Command Shortcuts

Configure Circuits

Print Page

NAC 1 FCP					
DEVICE	Current Drain	Qty	Total Current Draw.		
SPK STROBE SPSW 110 Wall	0.220	2	0.440		
SPK STROBE SPSW 75 Wall	0.165	2	0.330		
STROBE RSS 75	0.094	3	0.282		
SPK STROBE WP ET 70	0.102	1	0.102		

VOLTAGE DROP

17.7 @ EOL

TOTAL DRAW

1.154 Amps

NAC 2 FCP					
DEVICE	Current Drain	Qty	Total Current Draw.		
SPK STROBE SPSW 110 Wall	0.220	2	0.440		
SPK STROBE SPSW 75 Wall	0.165	4	0.660		
STROBE RSS 75	0.094	5	0.470		

Voltage Drop

17.7 @ EOL

TOTAL DRAW

1.570 Amps

SILENT KNIGHT
by Honeywell

IntelliKnight® 5808
Single Loop Addressable
Fire Alarm Control System

The convenience of an addressable fire alarm control panel in a cost-effective easy to use package.

IntelliKnight Model 5808 is a 127 point class leading single loop addressable fire alarm control/communicator system. 5808 provides you with the revolutionary value and performance of addressable sensing technology combined with exclusive, built-in digital communication, distributed intelligent power, easy to use interface. Powerful features such as drift compensation and maintenance alert are delivered in this powerful FACP from Silent Knight.

For more information about the IntelliKnight system, or to locate your nearest source, please call 1-800-328-0103.

Description

The basic 5808 system can be enhanced by adding modules such as 5860 remote annunciator, 5824 serial/parallel printer interface module (for printing system reports), and 5496 intelligent power module. 5808 supports SD or SK protocol devices. 5808 also features a powerful built-in dual line fire communicator that allows for reporting of all system activity to a remote monitoring location.

Features

- Built-in support for up to 99 SK detectors *and* 99 SK modules.
- Built in support for 127 SD devices.
- Up to 125 zones and 125 output groups.
- Uses standard wire—no shielded or twisted pair required
- Built-in digital communicator.
- Central station reporting by point or by zone
- Supports Class B (Style 4) and Class A (Style 6 or 7) configuration for SLC.
- Distributed, intelligent power.
- Drift compensation.
- 13 pre-programmed output cadences, (including ANSI-3.41), and 4 programmable outputs.
- Notification circuits can be configured as 2 Class A (Style Z) or 4 Class B (Style Y), or auxiliary power for resettable, constant, or door holder power.
- Built-in annunciator with 80-character LCD display.
- RS-485 bus provides communication to system accessories.
- Built-in RS-232 and USB interface for programming via a PC.
- Upload or download programming, event history, or detector status via remote or direct connection.
- Improvements in SKSS deliver five times faster upload/downloads.
- Built-in synchronization for appliances from AMSECO, Gentex®, Faraday, System Sensor®, and Wheelock®.
- One Form C trouble relay rated at 2.5A at 27.4 VDC and two Form C programmable relays rated at 2.5A at 27.4 VDC.

Model 5808

- Plex-2 door option combines a dead front cabinet door with a clear window, limiting access to the panel while providing single button operation of the reset and silence functions.
- Integrated dead front panel protects operator from exposure to electrical components.
- The FACP enclosure features a Plexiglass® viewing window to protect annunciator.
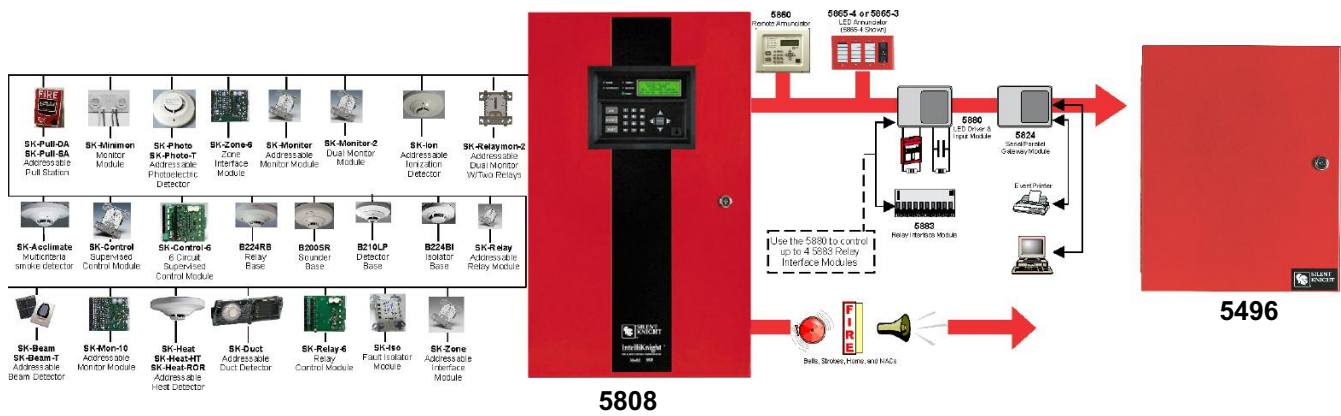- Acknowledge function allows operator to keep track of event status.

Installation

The 5800 can be surface or flush mounted.

Compatibility

The 5808 signal line circuit (SLC) supports multiple device types of the *same* protocol:

- SK (System Sensor)
- SD

You cannot mix SD and SK SLC devices on a FACP.

5808

5496

Specifications

Electrical

Primary AC: 120 VRMS at 50/60 Hz, 2.75A

Total Accessory Load: 6A @ 27.4 VDC

Notification Power: 6A @ 27.4 VDC, power-limited

Standby Current: 170 mA

Alarm Current: 325 mA

Notification & Auxiliary Circuits: 3A @ 27.4 VDC per circuit,power-limited

Battery Charging Capacity: 7.0-35 AH

Battery Size: 18 AH max. allowed in FACP. Larger capacity batteries can be housed in an RBB accessory cabinet

Physical

Flush Mount Dimensions: 14.5" W x 24.75" H x 3.5" D (36.8 W x 62.9 H x 8.73 D cm)

Overall Dimensions: 16" W x 26.4" H x 4.65" D (40.6 W x 67 H x 11.8 D cm)

Weight: 28 lbs. (12.8 kg)

Color: Red

Telephone Requirements: FCC Part 15 and Part 68 approved Type of Jack: RJ31X (two required)

Approvals

NFPA 13, NFPA 15, NFPA 16, NFPA 70, & NFPA 72: Central Station; Remote Signalling; Local Protective Signalling Systems; Auxiliary Protected Premises Unit; & Water Deluge Releasing Service. Suitable for automatic, manual, waterflow, sprinkler supervisory (DACT non-coded) signalling services. UL Listed
CSFM 7165-0559:0142;
MEA 429-92-E Vol. XIV

S-BUS Accessories

5860/R Remote Fire Annunciator
Features the same 80 character backlit LCD display keypad and firefighter's key switch as the 5808. 5860 is gray and 5860R is red.

5496 Intelligent Power Module
A 6 amp notification power expander that provides four additional power-limited notification appliance circuit outputs.

5880 LED/IO Module
Features 40 LED outputs, 8 normally open dry contact inputs and one piezo output.

5865-3 and 5865-4
Remote LED Annunciator
Features 30 programmable LED (15 red and 15 yellow) outputs and a piezo sounder. The 5865-4 adds a silence and reset switch to the package.

5824 Serial/Parallel Printer Interface Module
Provides one parallel and one RS-232 serial port for connecting a printer to 5808. Use to print a real-time log of system events, detector status reports, and event history.

5883 Relay Board
Features 10 general purpose Form C relays. Used with 5880 module.

Miscellaneous Accessories

5660 Silent Knight Software Suite
PC-base software for FACP programming. Upload and view panel account information, event history, and detector status.

5670 Silent Knight Software Suite
End-user facility management software allows viewing of detector status and event history via modem or direct connection.

Plex-2 Door
Dead front cabinet door with clear window to limit access to the FACP.

RBB
Remote Battery Box Accessory Cabinet. Use if backup batteries are too large to fit into FACP cabinet. Dimensions:

16" W x 10" H x 6" D(406 mm W x 254 mm H x 152 mm D)

SD and SK Devices
See the specification sheets listed below for a complete listing of the SD and SK devices.

53624 SD Devices data sheet

53623 SK Devices data sheet

IntelliKnight & JumpStart are Registered Trademarks of Silent Knight Flexput is a Trademark of Silent Knight

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

350386 Rev. J
© 2012 Honeywell International Inc.

SKE-Series Voice Evacuation System Model SKE-450, Model SKE-450-ZN4 / ZN6

The SKE-Series Voice Evacuation System provides maximum flexibility to accommodate your voice evacuation requirements

The SKE-Series Voice Evacuation system provides 50 watts of output power. The SKE-Series system consists of several different models, the SKE-450, SKE-450-ZN4 or SKE-450-ZN6. Each model has a built in Digital Message Repeater, power supply and a supervised microphone. All models have two alarm inputs, one triggered by reverse polarity and one by supervised dry contact trigger. The system supports 25 or 70.7 VRMS operation to accommodate most installations. The audio messages are field programmable via the built in microphone, through the line level input, or by downloading via the internet. The models SKE-450-ZN4 (w/4-zone splitter) and SKE-450-ZN6 (w/6-zone splitter) also contain a zone splitter capable of dividing the speaker output into 4 or 6 separate outputs.

SKE-Series Voice Evac. System

The SKE-450 and SKE-450-ZN4/ZN6 voice evacuation are activated when one of the two alarm inputs are tripped. When this occurs the control will output a pre-recorded audio message corresponding to the alarm input that was tripped. The repetition of the digital audio message and the selected notification output are completely programmable.

The SKE-450-ZN4/ZN6 comes equipped with a 4 or 6 zone splitter respectively, capable of dividing the speaker output from the amplifier into four or six Class B or Class A outputs. The zone splitter also has an All Call feature that will activate all speaker zones regardless of the individual toggle switch settings.

Both models provide seven visual indicators for, Speaker Trouble, Alarm, Microphone Trouble, Command 2 Trouble, Earth Ground Fault, Low Battery, and Power.

Features

- 50 watts of output power on a 25 or 70.7 VRMS speaker circuit. The speaker circuit can be Class A or B. Provides maximum flexibility for new or retrofit jobs.
- Downloadable Voice Messages via direct connect. If you need a different message download it from the SK website free of charge!
- Digital Message Repeater -Built in to

the SKE motherboard. No additional wiring to install makes setup fast and easy. Capable of storing three messages, messages one and two are built in messages of up to 30 seconds. Message three is field programmable and can be up to 45 seconds long.

- Digital Signal Processor -Processes digital quality audio, generates tones and provides control functions.
- Supervised Microphone -The built in supervised microphone provides system paging function and field message programming capability.
- Dead Front Cabinet - Provides protection for users, prevents tampering with system electronics.
- Dedicated relays-Built in form "C" relays for alarm and trouble increase flexibility and keeps installation cost down.
- Two Inputs-One reverse polarity input and one supervised dry contact input provides maximum flexibility.
- Built in system power is capable of operating the system and charging system backup batteries.
- The SKE-ZN4 zone splitter provides four Class B or Class A output circuits (each loop can draw 50 watts, with maximum of 50 watts total for whole system). The SKE-ZN6 zone splitter provides six Class B or Class A output circuits (20 watts per circuit, with 50 watts max for the whole system). Both splitters provide paging by zone or all call.

SKE-Series Voice Evacuation

Listing/Approvals
- UL Listed
- MEA approval 429-92-E Vol. XI
- CSFM Listed

SILENT KNIGHT

by Honeywell

SKE-Series
Voice Evacuation System
Model SKE-450 and Model SKE-450-ZN4

Engineering Specifications

The system shall contain a voice evacuation system to supervise and operate UL listed voice evacuation speakers. The system shall have a built in UL listed power supply. The system shall be capable of supporting an optional UL listed zone splitter that can be housed in the main voice control cabinet. In addition, the system will issue pre-recorded voice commands locally for purpose of evacuation. The system must support a minimum of two pre-recorded messages and have the capability of adding application specific messages through the use of a PC. The voice evacuation system shall have the ability to provide a supervised microphone for the purpose of audible local instructions that will override the pre-recorded messages. The system shall contain a dead front panel inside the enclosure to protect the circuitry from tampering and to protect the operator from hazardous voltages.

Specifications

Operating Voltage: 120 Vrms @ 60Hz / *230 Vrms @ 50Hz (*ask for HV version)

Current Draw:
  Standby: 140 mA
  Alarm: 590 mA

ZN4 Current Draw:
  Standby: 45 mA
  Alarm: 250 mA
  (all channels)

Flush Mount Dimensions:
  Height: 24.75" (62.9 cm)
  Width: 14.5" (36.8 cm)
  Depth: 3-7/16" (8.73 cm) with 5/8" protruding

Overall Dimensions
  Height: 26-3/8" (67 cm)
  Width: 17-3/16" (43.66 cm)
  Total Depth: 4" (10.16 cm)

Operating Temp.: 32° to 120° F (0° to 49° C)
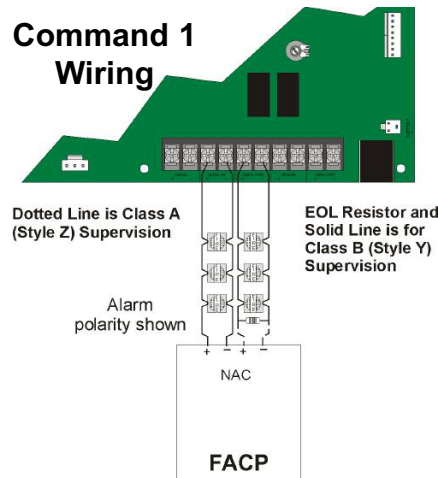
Humidity: 10 to 93% RH

Optional Accessories

SKE-V70 Module–Converts speaker circuit voltage from 25 to 70.7 Vrms. Current Draw: Standby 10 mA; Alarm: 70 mA.

SKE-SRM–Supervised remote microphone. Current Draw: Standby & Alarm: 30 mA.
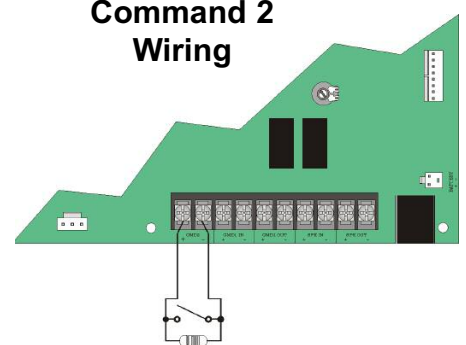
Speaker Wiring
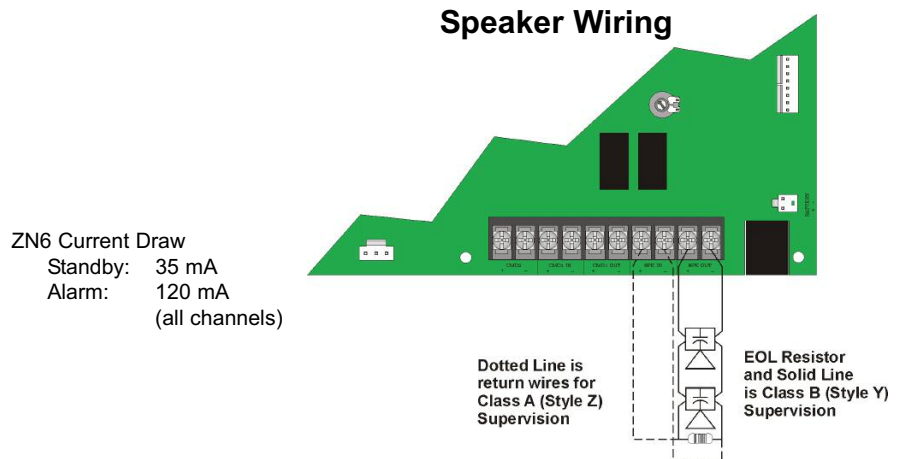
ZN6 Current Draw
  Standby: 35 mA
  Alarm: 120 mA
  (all channels)

Dotted Line is return wires for Class A (Style Z) Supervision

EOL Resistor and Solid Line is Class B (Style Y) Supervision

Command 1 Wiring

Dotted Line is Class A (Style Z) Supervision

EOL Resistor and Solid Line is for Class B (Style Y) Supervision

Alarm polarity shown

NAC

FACP

Command 2 Wiring

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

SILENT KNIGHT
by Honeywell

5860 Remote Annunciator

Bring the power to control an IntelliKnight fire alarm control panel to every area within your facility.

Now you can operate and program your IntelliKnight system from up to eight locations throughout your facility. The 5860 remote annunciator provides the same advanced, easy-to-use interface found on the IntelliKnight panel's built-in annunciator. The 80-character display and ergonomically designed keypad allow for simple and error-free system operation. All operations—including reset, silence, detector status checking, fire drill, and programming—are identical.

Access to the system is through a firefighter's key or an access code. For security, a special installation code is needed for programming functions. The 5860 connects to the IntelliKnight panel via the RS-485 system bus. Wire runs can be up to 6000 feet from the panel.

For more information about the IntelliKnight system, or to locate your nearest source, please call 1-800-328-0103.

Description
Features include an 80-character backlit LCD providing easy-to-understand system messages. The annunciator is ergonomically designed with over-sized buttons for the most frequently used features, like Reset and Silence.

In addition to status messages displayed on the LCD, there are five LEDs for alarm, supervisory, trouble, silence, and AC power status.

The annunciator is available in gray to match virtually any decor and red for applications where the annunciator must stand out. The annunciator enclosure can be surface or flush mounted. A trim ring kit is available for surface mounting.

Features
• 80-character backlit LCD display (4 lines with 20 characters on each line)
• Tactile and audible feedback
• Accepts user codes or fire fighter's key
• Larger keypad buttons for system reset and silence
• Install up to eight 5860s per FACP
• Available in red or light gray
• Support for simultaneous use of

multiple 5860s
• RS-485 interface to panel
• Operation and appearance is identical to 5860 built-in annunciator
• On-board piezo sounder audibly indicates alarms, troubles, and supervisories
• Five status LEDs for alarm, supervisory, trouble, silence and AC power conditions
• Wiring lengths up to 6000 ft. from the FACP (depending on wire gauge and number of devices on SBUS)
• UL listed, complies with NFPA 72
• CSFM approved

Electrical Specifications
Operating Voltage: 24 VDC

Standby Current: 20 mA max

Alarm Current: 25 mA

Wiring Distance: 6,000 max. from FACP (depending on wire gauge and number of devices on the SBUS)

Max Per System: 8

Mechanical Specifications
Physical 9.1" W x 7.4" H x 1.5" D (23.1 W x 18.8 H x 3.8 D cm)

Shipping Weight: 2.8 lbs (1.3 kg)

Color
  5860R: Red
  5860: Gray

5860

Environmental
Operating Temperature: 32ºF – 120ºF (0ºC – 49ºC)

Humidity: 10% – 93% non-condensing

Compatibility
The 5860 is compatible is the following FACP's:

• IntelliKnight 5820XL FACP
• IntelliKnight 5808 FACP
• IntelliKnight 5700 FACP

Approvals/Listings
NFPA 72; UL Listed;
CSFM 7170-0559: 135;
MEA 429-92-E Vol. IX;
FM Approved

5860 Remote Annunciator

Engineering Specifications

The main control must have a built-in annunciator and must support up to eight remote annunciators. Remote annunciators shall have the same control and display layout so as to match the appearance of the built-in annunciator. Remote annunciators shall be available in two colors, red or light gray.

Remote annunciators shall have identical functionality and operation as the built-in annunciator. All annunciators must have an 80-character LCD display and must feature five LEDs for: General Alarm, Supervisory, System Trouble, System Silence, and System Power.

All controls and programming keys are silicone mechanical type with tactile and audible feedback. Keys have a travel of .040 inches. No membrane style buttons will be permissible.

The annunciator must be able to silence and reset alarms through the use of a code entered on the annunciator keypad or by using a firefighter's key. The annunciator must have two levels of user codes that will limit the operating system programming to authorized individuals. The control panel must allow all annunciators to accommodate multiple user input simultaneously.
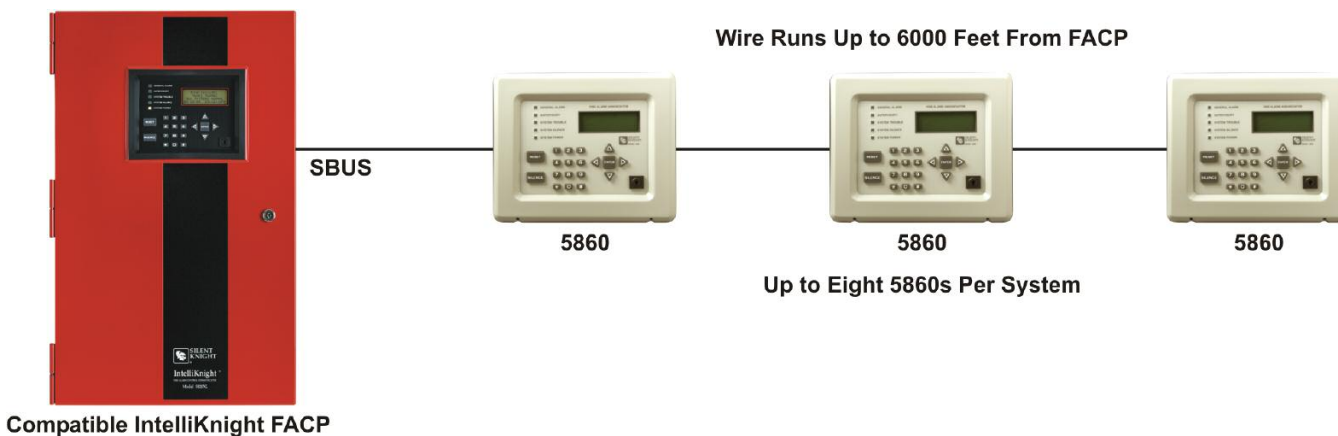
Ordering Information

5860R	Remote Annunicator four line LCD annunciator with 20 characters per line. Red.
5860	Remote Annunciator.Four line LCD annunciator with 20 characters per line. Gray.

Accessories

5860TR	Red Trim Ring for surface mounting.
5860TG	Gray Trim Ring for surface mounting.

SILENT KNIGHT
by Honeywell

SK-Photo, SK-Photo-T and SK-PhotoR
Intelligent Photoelectric Smoke Sensors

The SK-Photo is a photoelectric smoke detector, the SK-Photo-T is a photoelectric smoke detector with thermal and SK-PhotoR is a photoelectric detector with remote test capability. These plug in smoke detectors, with integral communication, provide features that surpass conventional detectors and are for use with Silent Knight IntelliKnight Fire Alarm Control Panels (FACPs).

For more information about the IntelliKnight system, or to locate your nearest source, please call 800-328-0103.

Description

SK-Photo and SK-Photo-T are plug-in type smoke sensors that combine a photoelectric sensing chamber with addressable analog communications. Point ID capability allows each detector's address to be set with rotary address switches, providing exact detector locations for selective maintenance when chamber contamination reaches unacceptable levels.

SK-Photo and SK-Photo-T have a unique optical sensing chamber that is engineered to sense smoke produced by a wide range of combustion sources. In the SK-Photo-T, dual electronic thermistors add 135ºF (57ºC) thermal technology to maximize detection.

The SK-PhotoR is a remote test capable detector for use with the DNR/DNRW duct smoke detector. (not included)

Features

- Sleek, low-profile design
- Base included
- Reliable analog communications for trouble-free operation
- Age resistant polymer housing
- Dual electronic thermistor design on the SK-Photo-T
- Superior EMI resistance for reliability
- Simple field cleaning for code compliance
- Variety of mounting options to meet any application
- Dual LED indicators for 360º visibility
- Detector transmits signal to indicate maintenance is required

- Optional remote LED annunciator (System Sensor® PN RA100Z)
- Plug-in mounting provides ease of installation
- Tamper-proof feature available on mounting bases
- Listed for use in duct applications
- Rotary address switches for fast installation
- UL Listed
- FM Approved

Specifications

Physical
Height: 2.0" (5.0 cm)
Diameter: 4.1" (10.4 cm) installed in B501 base

Electrical
Operating Voltage: 15–32 VDC
Standby Current:
300 µA @ 24 VDC Maximum
Alarm Current: 6.5 mA @ 24 VDC max (with LED on)

Environmental
Operating Temperature
SK-Photo: 32º – 120ºF (0ºC – 49ºC)
SK-Photo-T: 32º – 100ºF (0ºC – 38ºC)
Humidity: 10% – 93% non-condensing

Other Ratings
SK-Photo-T Thermal: Fixed temperature set point 135ºF (57ºC)
Velocity: 0 – 4000 fpm (0 – 20 m/sec)

SK-Photo (Base included)

Installation

The SK-Photo and SK-Photo-T plug into a compatible IntelliKnight-series detector base. The SK-PhotoR is a remote test capable detector head included within the DNR (W) duct smoke detector.

Compatibility

SK-Photo, and SK-Photo-T are compatible with the following detector bases:
B210LP   6" base (included)
B501   2 wire base
B224RB   Relay base
B224BI   Isolator base
B200SR   Sounder base

The SK-Photo, SK-Photo-T, and SK-PhotoR are compatible with the following IntelliKnight FACPs:
5820XL
5820XL-EVS
5808
5700
5600 (Rev 2.0 or higher)

Model SK-Photo, SK-Photo-T and SK-PhotoR
Intelligent Photoelectric Smoke Sensors

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Intelligent photoelectric smoke sensors Silent Knight SK-Photo or SK-Photo-T with thermal. The combination detector head, and twist-lock base, shall be UL listed and compatible with Silent Knight's IntelliKnight fire control panels.

The base shall permit direct interchange with SK-Photo or SK-Photo-T. Base shall be the appropriate twist-lock base part number B210LP (included).

The PhotoR is a remote test capable detector for use with DNR(W) duct smoke detectors. (not included).

The smoke detector shall have a flashing status LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady. The detector may be reset by actuating the control panel reset switch.

The calibration of the detector shall be capable of being selected and measured by the control panel without the need for external test apparatus.

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be field selectable as required.

The SK-Photo shall automatically perform a functional test of the detector. The test method shall simulate effects of products of combustion in the chamber to ensure testing of detector circuits.
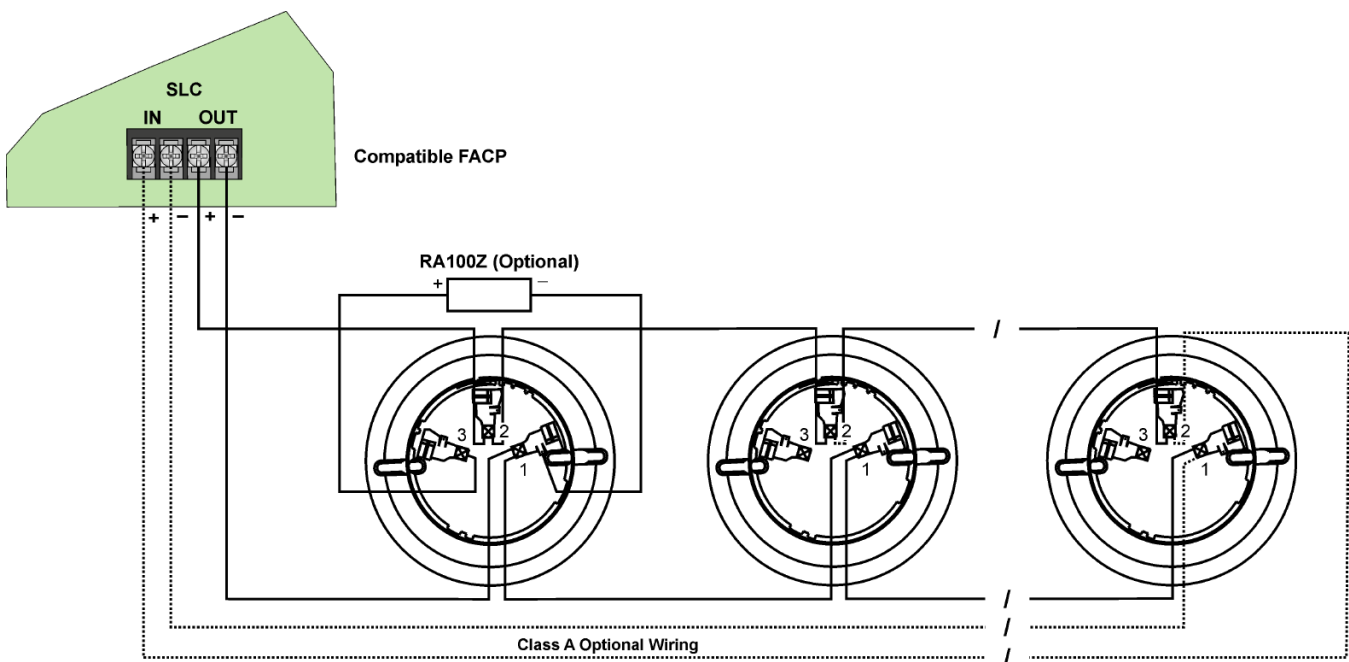
Wiring SK-Series Detector Mounting Bases

SILENT KNIGHT
by Honeywell

SILENT KNIGHT

by Honeywell

SK-Pull-SA and SK-Pull-DA

Intelligent Pull Stations

The SK-Pull-SA and SK-Pull-DA are a single action or dual action addressable fire alarm pull station for use with Silent Knight's IntelliKnight fire control panel. Extremely easy to operate, the SK-Pull-DA and SK-Pull-SA provide a fast and practical means of manually initiating a fire alarm signal. The IntelliKnight panel recognizes each manual pull station by its specific address saving precious seconds in determining the location of an alarm.

For more information about the IntelliKnight system, or to locate you nearest source, please call 1-800-328-0103.

Description

The SK-Pull-SA is a single action pull station requiring only one motion to activate the station. The SK-Pull-DA is a dual action pull station requiring two motions to active the station. Both pull stations are designed to work with Silent Knight Intelliknight series fire alarm control panels (FACPs).

Features

• Installer can open station without causing an alarm condition

• Dual-color LED is visible through handle of station blinks green to indicate normal operation and remains steady red in an alarm condition

• Key operated test and reset lock using lock plate actuator

• Key matches compatible FACP locks

• Meets the Americans with Disabilities Act Accessibility Guidelines (ADAAG) controls and operating mechanisms guidelines (Section 4.1.3[13])

• Meets ADA requirement for 5 lbs maximum pull force to active

• Shell, door, and handle molded from durable LEXAN®

• Reliable analog communications for trouble-free operation

• Braille text on station handle

• Handle latches in down position and the word *Activated* appears, clearly indicating the station has been pulled

• Rotary address switches for fast installation

• UL Listed, including UL 38, Standard of Manually Actuated Signaling System

SK-Pull-SA

SK-Pull-DA

Compatibility

The SK-Pull-SA and SK-Pull-DA are compatible with the following IntelliKnight FACP's:

5600
5700
5808
5820XL

Model SK-Pull-DA and SK-Pull-SA Intelligent Pull Stations

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Addressable Pull Stations, Silent Knight model SK-Pull-SA single action pull station or SK-Pull-DA, dual action pull station.

SK-Pull-DA or SK-Pull-SA meet the ADAAG controls and operating mechanisms guidelines, and the ADA requirements for a 5 lb. maximum pull force to activate the pull station.
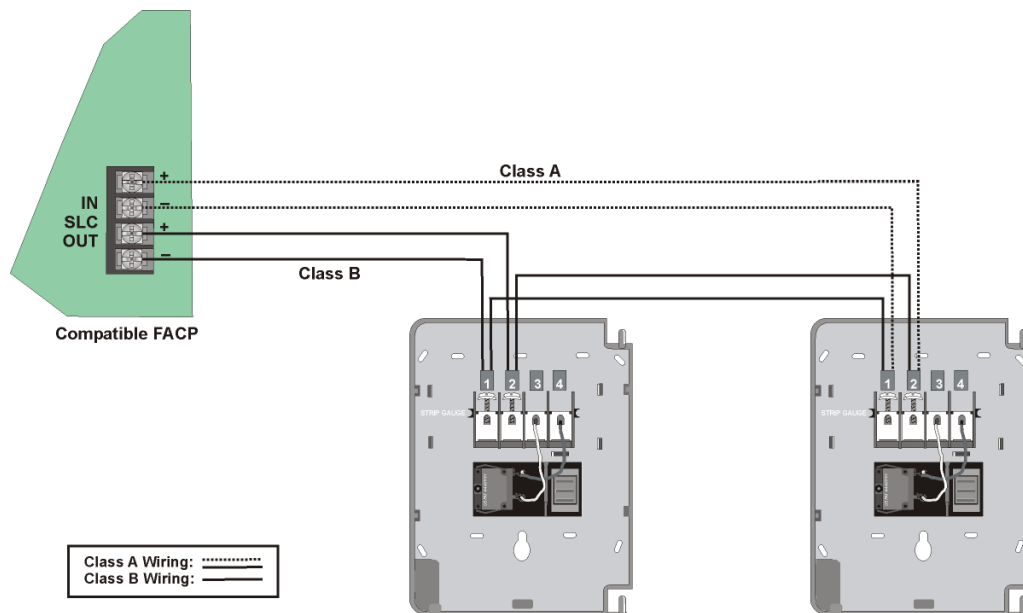
Wiring SK-Pull-SA & SK-Pull-DA Pull Stations

Specifications

Physical

Height: 5.5" (14 cm)

Width: 4" (10.2 cm)

Depth: 5.4 oz. (3.7 cm)

Housing Material: LEXAN polycarbonate resin

Bi-Colored LED:
   Blinking Green: Normal

   Steady Red: Alarm

Switch: Single pole, single throw (SPST) normally open (N/O) switch which closes upon activation of the pull station

Electrical

Operating Voltage: 15–32 VDC

Average Operating Current (LED flashing): 300 µA

Wire Gauge: Up to 12 AWG (3.1 mm^2)

Environmental

Operating Temperature 32º – 120ºF (0ºC – 49ºC)

Humidity: 10% – 93% non-condensing

Accessories

BG-TR   Optional trim ring.

SB-I/O   Surface backbox

SILENT KNIGHT

by Honeywell

SK-DUCT
Intelligent Air Duct
Smoke Detector

Detect smoke in air handling systems and air handling equipment with Silent Knight's addressable duct smoke detector

The SK-Duct Intelligent air duct smoke detector is used with SK-PhotoR (included) for detecting smoke and products of combustion present in air moving through an HVAC air handling system. When smoke is detected in a duct, the unit communicates the condition to the IntelliKnight control panel. The panel, in turn, depending on programming and wiring, turns off fans, blowers, and other devices. The duct housing allows for mounting of SK-Relay addressable relay module. Now there's even more power and flexibility available to the IntelliKnight family of products!

Description

The Model SK-Duct Air Duct Smoke Detector utilizes photoelectric technology for the detection of smoke. It provides early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial and Industrial applications.

The SK-Duct is in a heavy duty gray steel back box with a clear cover. It features a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct. It installs quickly and easily.

The unit senses smoke in the most challenging conditions, operating in airflow speeds of 100 to 4000 feet per minute, temperatures of -4°F to 158°F, and a humidity range of 0 to 95 percent (non-condensing).

Features

- Versatile mounting options: square or rectangular configuration
- New Cover tamper signal
- LED alarm indication and communication on sensor head
- Detects and limits the spread of smoke
- Rugged steel back box with clear plastic cover
- Easy to clean
- Large terminal connection screws
- Transparent cover for convenient visual inspection
- Patented sampling tube installs from front or back of the detector with no tools required
- Available space within housing to accommodate mounting of relay module
- UL listed

SK-DUCT

Specifications

Physical

(Rectangular): 14.38 in (37 cm) Length; 5in (12.7 cm) Width; 2.5 in (6.6 cm) Depth

(Square): 7.75 in (19.7cm) Length; 9 in (22.9cm) Width; 2.5 in (6.35cm) Depth

Weight: 1.6lb (0.73kg)

Environmental

Operating Temperature: -4ºF – 158ºF (-20ºC – 70ºC)

Humidity: 0% – 95% (non-condensing)

Air Velocity

100 to 4000 ft/min (0.5 – 20.3 m/sec.)

Electrical (using SK-Photo or SK-PhotoR)

Operating Voltage:	15–32 VDC
Standby Current:	300 μA @ 24 VDC max.
Alarm Current:	6.5 mA @ 24 VDC max (with LED on)

Model SK-DUCT
Air Duct Smoke Detector

Engineering Specifications

The air duct smoke detector shall be a SK-Duct photoelectric duct smoke detector. The detector housing shall be UL listed per UL 268A specifically for use in air handling systems. The flexible housing of the duct smoke detector fits both square and rectangular footprints. The detector shall operate at air velocities of 100 ft/min to 4000 ft/min (0.5 m/sec to 20.32 m/sec).

The unit shall be capable of providing a trouble signal in the event that the sensor cover is removed or improperly installed. It shall be capable of local testing via magnetic switch or remote testing using the RTS151KEY remote test station. Terminal connections shall be of the strip and clamp method suitable for 12–18AWG wiring.

The unit housing shall be capable of mounting a relay module.

Ordering Information

SK-Duct	Intelligent non-relay duct smoke detector
SK-Photo	Addressable Photo Detector
SK-PhotoR	Addressable Photo Detector with remote test capability (included with SK-Duct)
SK-Relay	Addressable Relay Module, must be added if relay function is required, (fits in housing)

Accessories†

DST1	Metal Sampling Tube Duct Width up to 1'
DST1.5	Metal Sampling Tube Duct Widths 1' - 2'
DST3	Metal Sampling Tube Duct Widths 2' – 4'
DST5	Metal Sampling Tube Duct Widths 4' – 8'
DST10	Metal Sampling Tube Duct Widths 8' – 12'
DH400OE-1	Weatherproof Enclosure
ETX	Metal Exhaust Tube Duct width 1'
RA100Z	Remote LED Annunciator
DCOIL	Duct accessory coil, required if using with SK-Photo and not SK-PhotoR (included) with SK-Duct
RTS151	Magnetic Remote Test station
RTS151KEY	Key-Activated Remote Test station

M02-04-00	Test Magnet
P48-21-00	Replacement End Cap for Metal Sampling Tube
APA151	Remote annunciator with piezo alarm

Important Notes:

• The use of either RTS151 or RTS151KEY requires the installation of an accessory coil, DCOIL, sold separately. Please refer to the SK-Duct installation instructions for more information

• The RTS151/RTS151KEY test coil circuit requires an external 24VDC power supply which must be UL listed.

Accessory Current Loads at 24 VDC		
Device	**Standby**	**Alarm**
RA100Z	0mA	12mA Max.
RTS151	0mA	12mA Max.
RTS151KEY	12mA	12mA Max.

SILENT KNIGHT

by Honeywell

SK-Relay

Intelligent Relay Module

The SK-Relay Module is intended for use in intelligent, two-wire systems where the individual address of each module is selected using the built in rotary switches.

For more information about the Intelliknight system, or to locate you nearest source, please call 800-328-0103.

Description

The SK-Relay is an addressable relay module for use with Silent Knight IntelliKnight series fire alarm control panels (FACPs).

The SK-Relay allows a Silent Knight FACP to switch discrete contacts by code command. The relay contains two isolated sets of Form C contacts, which operate as a DPDT switch. No supervision is provided for the notification appliance circuit.

The SK-Relay contacts can be used for virtually any normally open or normally closed application. Each SK-Relay is programmed with a unique signaling line circuit (SLC) loop address. When an event occurs that controls the SK-Relay, the relay is triggered by the FACP.

Features

- Two sets of Form C contacts

- Rotary address switches for fast installation

- Contacts are rated for a variety of amps (see Specifications)

- Panel controlled status LED that flashes green in normal state and is solid red in alarm

- Relay programming is completely flexible–can be mapped to zone conditions

- Polling LED visible through the cover plate

- Attractive ivory cover plate

- SEMS screws for easy wiring
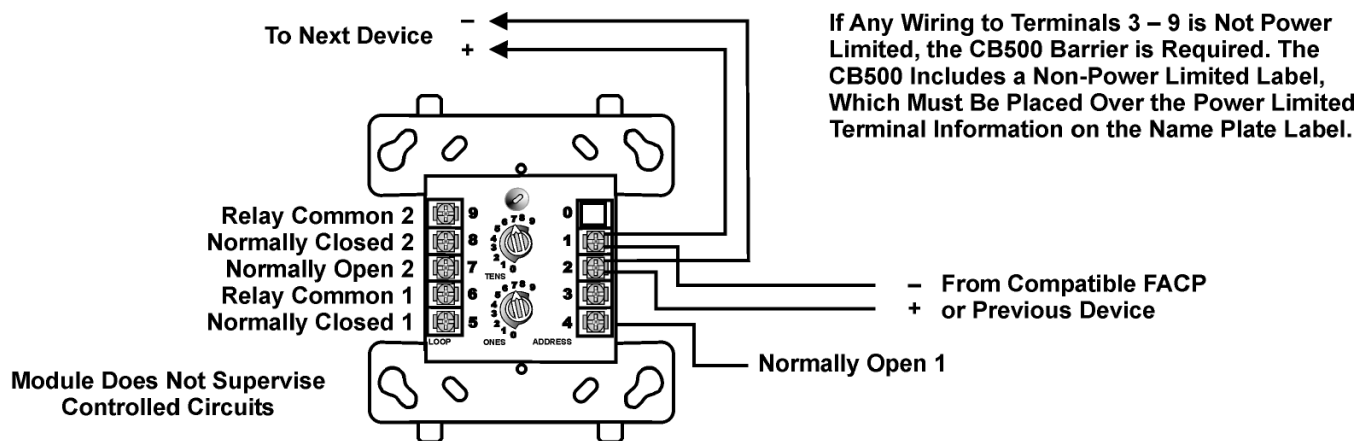
- UL Listed

SK-Relay

Installation

The SK-Relay mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight

Compatibility

The SK-Relay is compatible with the following IntelliKnight FACP's:

5820XL
5808
5700
5600 (Rev 2.0 or higher)

Model SK-Relay
Intelligent Relay Module

To Next Device

If Any Wiring to Terminals 3 – 9 is Not Power Limited, the CB500 Barrier is Required. The CB500 Includes a Non-Power Limited Label, Which Must Be Placed Over the Power Limited Terminal Information on the Name Plate Label.

Relay Common 2
Normally Closed 2
Normally Open 2
Relay Common 1
Normally Closed 1

– From Compatible FACP
+ or Previous Device

Module Does Not Supervise Controlled Circuits

Normally Open 1

Wiring the SK-Relay Module

Specifications

Physical
Height: 4.65"

Width: 4.25"

Depth: 1.1"

Shipping Weight: 6.3 oz (196 g)

Electrical
Operating Voltage: 15 – 32 VDC

Current Draw: 6.5 mA max (LED on)

Operating Current:

   230 µA (LED flashing) direct poll

   255 µA (LED flashing) group poll

End-of-Line Resistance: not used

Standby Current: 300 µA max @ 24 VDC (one communication every 5 sec with LED enabled)

LED Current: 5.5 mA (with LED latched on)

SLC Loop Resistance: 40Ω max.

Relay Contact Ratings
3.0A @ 30 VDC resistive

0.9A @ 110 VDC resistive

0.9A @ 125 VAC resistive

0.5A @ 125 VAC inductive (PF = .35)

0.7A @ 75 VAC inductive (PF = .35)

SILENT KNIGHT

by Honeywell

SK-Monitor

Intelligent Monitor Module

The SK-Monitor module provides an interface to contact devices, such as security contacts, waterflow switches, or pull stations.

For more information about the IntelliKnight system, or to locate you nearest source, please call 1-800-328-0103.

Description

The SK-Monitor is an addressable monitor module for use with Silent Knight IntelliKnight series fire alarm control panels (FACPs). The SK-Monitor is intended for use in intelligent, two-wire systems, where individual address of each module is selected using the built-in rotary switches.

The SK-Monitor supports Class A supervised or Class B supervised wiring to the load device. Conventional 4-wire smoke detectors can be monitored for alarm and trouble conditions.

Features

- Single contact monitor
- Support for Class A and Class B wiring
- Fully supervised
- Panel controlled status LED that flashes green in normal state and is solid red in alarm
- Attractive ivory cover plate
- Rotary address switches for fast installation
- SEMS screws for easy wiring
- UL Listed

Installation

The SK-Monitor mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight.

Compatibility

The SK-Monitor is compatible with the following IntelliKnight FACP's:

5700
5808
5820XL

SK-Monitor

Specifications

Physical
Height: 4.5" (11.4 cm)

Width: 4" (10.2 cm)
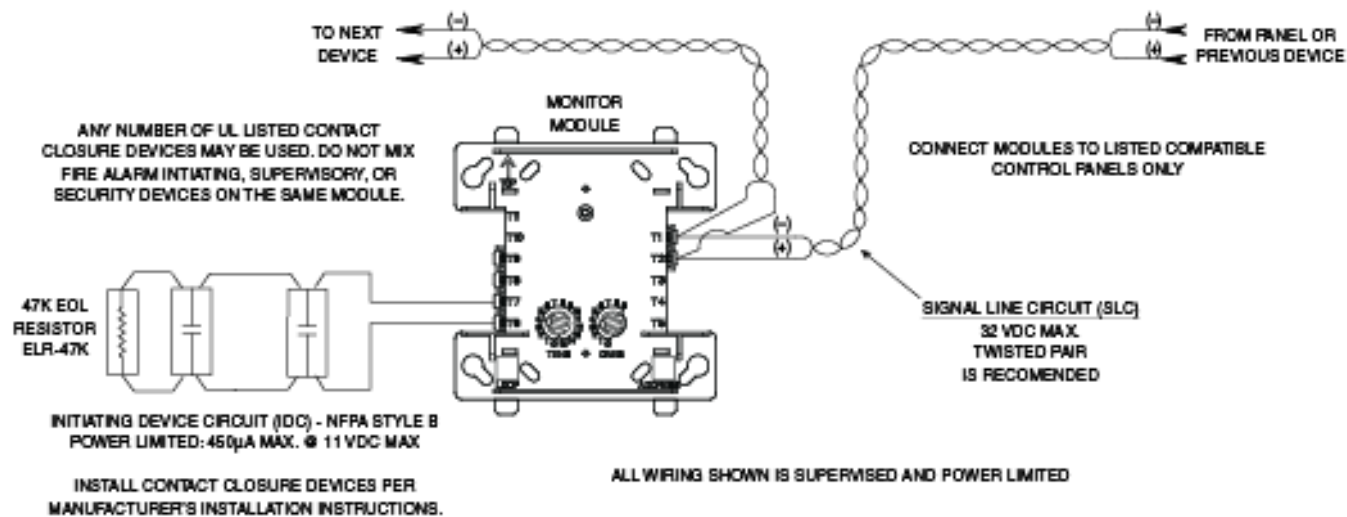
Depth: 1.25" (3 cm)

Shipping Weight: 6.3 oz (196 g)
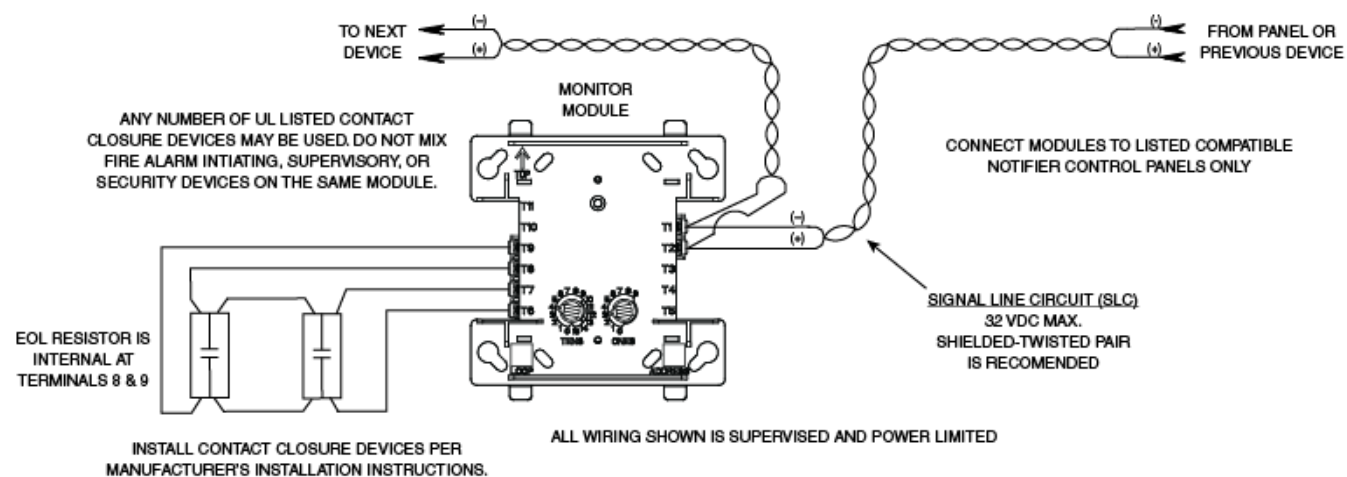
Electrical
Operating Voltage: 15 – 32 VDC

Current Draw (LED on): 5.0 mA max

Operating Current (LED flashing): 375 µA

Model SK-Monitor
Intelligent Monitor Module

TO NEXT DEVICE (−) (+)

FROM PANEL OR PREVIOUS DEVICE (−) (+)

MONITOR MODULE

ANY NUMBER OF UL LISTED CONTACT CLOSURE DEVICES MAY BE USED. DO NOT MIX FIRE ALARM INTIATING, SUPERVISORY, OR SECURITY DEVICES ON THE SAME MODULE.

CONNECT MODULES TO LISTED COMPATIBLE CONTROL PANELS ONLY

47K EOL RESISTOR ELR-47K

SIGNAL LINE CIRCUIT (SLC) 32 VDC MAX. TWISTED PAIR IS RECOMENDED

INITIATING DEVICE CIRCUIT (IDC) - NFPA STYLE B POWER LIMITED: 450µA MAX. @ 11 VDC MAX

ALL WIRING SHOWN IS SUPERVISED AND POWER LIMITED

INSTALL CONTACT CLOSURE DEVICES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

2-Wire Initiating Circuit Configuration, NFPA Style B

TO NEXT DEVICE (−) (+)

FROM PANEL OR PREVIOUS DEVICE (−) (+)

MONITOR MODULE

ANY NUMBER OF UL LISTED CONTACT CLOSURE DEVICES MAY BE USED. DO NOT MIX FIRE ALARM INTIATING, SUPERVISORY, OR SECURITY DEVICES ON THE SAME MODULE.

CONNECT MODULES TO LISTED COMPATIBLE NOTIFIER CONTROL PANELS ONLY

EOL RESISTOR IS INTERNAL AT TERMINALS 8 & 9

SIGNAL LINE CIRCUIT (SLC) 32 VDC MAX. SHIELDED-TWISTED PAIR IS RECOMENDED

ALL WIRING SHOWN IS SUPERVISED AND POWER LIMITED

INSTALL CONTACT CLOSURE DEVICES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

4-Wire Initiating Circuit Configuration, NFPA Style D

Standby Current:

400 µA max @ 24 VDC (one communication every 5 sec with 47K EOL)

550 µA max @ 24 VDC (one communication every 5 sec with EOL <1K)

5.5 mA (with LED latched on)

LED Current: 5.5 mA (with LED latched on)End-of-Line Resistance: 47K Ω

Initiating Device Circuit Wiring Resistance: 1,500 Ω max

SLC Loop Resistance: 40 Ω max.

Environmental

Operating Temperature: 32ºF – 120ºF (0ºC – 49ºC)

Humidity: 10% – 93% non-condensing

Ordering Information

SK-Monitor   Monitoring Module

Accessories

SMB500   4" Square Surface Mount Electrical Box

SILENT KNIGHT

by Honeywell

SK-Monitor-2

Intelligent Dual Monitor Module

The SK-Monitor-2 module is capable of monitoring two separate Class B circuits simultaneously, making it ideal for waterflow tamper switch and flow switch monitoring.

For more information about the IntelliKnight system, or to locate you nearest source, please call 1-800-328-0103.

Description

The SK-Monitor-2 is an addressable monitor module with two initiating circuits for use with Silent Knight IntelliKnight series fire alarm control panels (FACPs). The SK-Monitor-2 acts as an interface to contact devices, such as waterflow switches and pull stations.

The SK-Monitor-2 supports Class B supervised wiring to the load device. Conventional 4-wire smoke detectors can be monitored for alarm and trouble conditions.

Features
• Monitor two circuits, with unique addresses, simultaneously
• Support for Class B wiring
• Fully supervised
• Panel controlled status LED that flashes green in normal state and is solid red in alarm
• Attractive ivory cover plate
• Rotary address switches for fast installation
• SEMS screws for easy wiring
• UL Listed

SK-Monitor-2

Installation
SK-Monitor-2 mounts directly into a 4" square electrical box. The box must have a minimum depth of 2-1/8". A surface mount electrical box (System Sensor® part number SMB500) is available from Silent Knight.
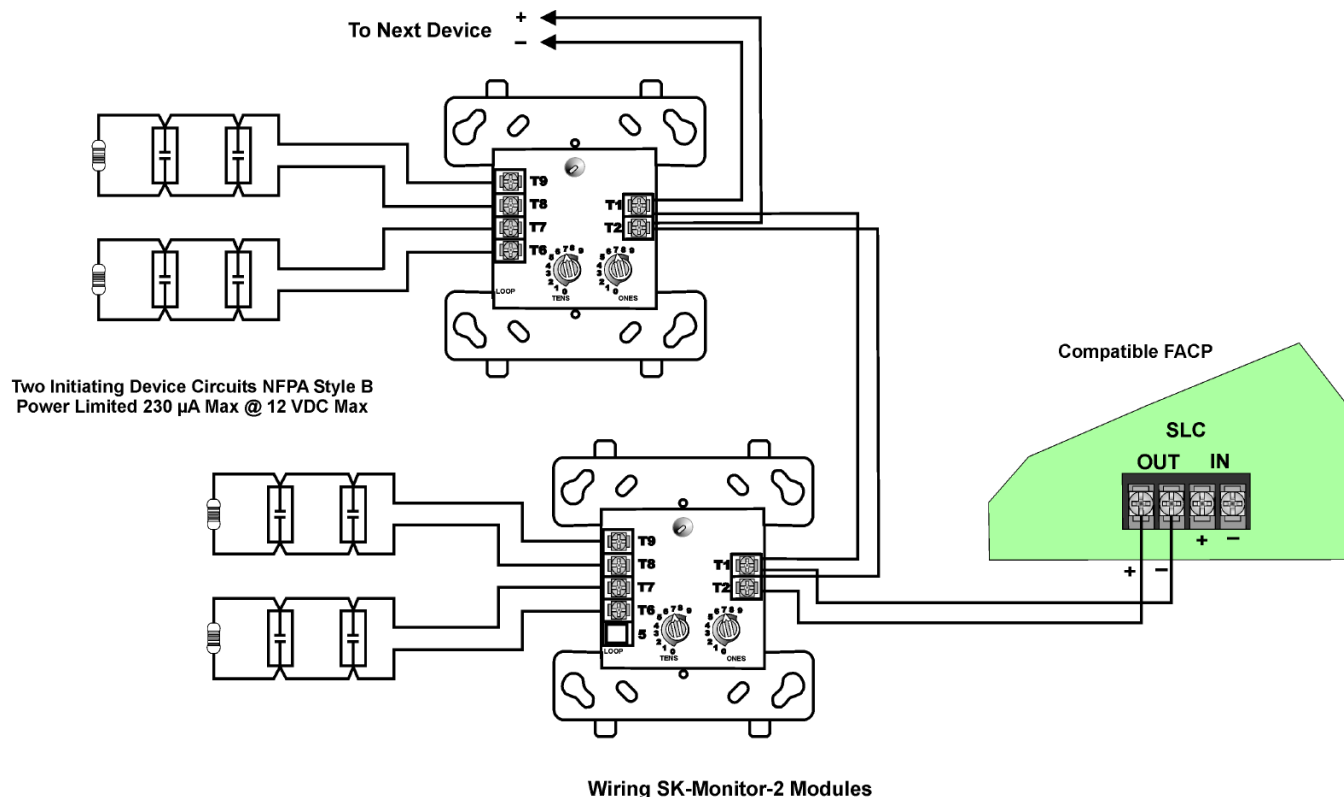
Compatibility
The SK-Monitor-2 is compatible with the following IntelliKnight FACP's:
5700
5808
5820XL

Model SK-Monitor-2
Intelligent Dual Monitor Module

To Next Device

Two Initiating Device Circuits NFPA Style B
Power Limited 230 µA Max @ 12 VDC Max

Compatible FACP

SLC
OUT   IN

Wiring SK-Monitor-2 Modules

Specifications

Physical
Height: 4.5" H x 4" W x 1.25" D

Shipping Weight: 6.3 oz (196 g)

Electrical
Operating Voltage: 15 – 32 VDC

Current Draw (LED on): 6.4 mA max

Operating Current (LED flashing): 750 µA

End-of-Line Resistance: 47K Ω

Max IDC wiring resistance: 1,500Ω

SLC Line Loop Resistance: 40Ω max.

Environmental
Operating Temperature: 32ºF – 120ºF (0ºC – 49ºC)

Humidity: 10% – 93% non-condensing

Accessories
SMB500 4" Square Surface Mount Electrical Box

SILENT KNIGHT®
by Honeywell

Wheelock E50H & E60H High Fidelity Speakers & Speaker Strobes

Description

The Wheelock E50H Wall and E60H Ceiling Speakers and Speaker Strobes are designed for high fidelity sound output for indoor applications. With the widest frequency response range (300 to 8000 Hz) in the industry, the EH product line features leading intelligibility with crisp, clear voice messages and tone signaling, ideal for emergency communications, mass notification, and voice evacuation.

Providing a sleek aesthetic appearance, the wall and ceiling appliances feature dual voltage (25/70 VRMS) capability and field-selectable taps from 1/8 to 2 watts. For faster and easier installation, the low profile design incorporates a speaker mounting plate, and each model has a built-in level adjustment feature and snap-on cover with no visible mounting screws.

For visible signaling to meet the hearing impaired, the Series EH Speaker Strobe models incorporate the low current draw of the RSS Strobes.

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

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

The strobe portion of all Series EH Speaker Strobes may be synchronized when used in conjunction with the Wheelock DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. Wheelock synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.

Series EH Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances), and ULC listed under CAN/ULC-S526 (Visual-audible Signal Appliances, Fire Alarm) and under CAN/ULC-S541 (Speakers, Fire Alarm).   All inputs employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.

Color options for the Series EH Speakers and Speaker Strobes are red and white.

Features

- High Fidelity Sound Output
  - Efficient design for high intelligibility at minimum wattage across a frequency range of 300 to 8000 HZ
- 6 Field Selectable Settings in 1 Device
  - Wall mount models are available with Field Selectable Candela Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (Single Candela model)
  - Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (Multi-candela models)
- Field Selectable Taps
  - 1/8 watt up to 2 watts
  - 25 or 70 VRMS operation
- Easy-to-Install
  - Low profile design incorporates speaker mounting plate for faster and easier installation
  - Snap on grille cover with no visible mounting screws
  - Quick installation with IN/OUT screw terminals using #12 to #18 AWG wires
  - 4" square backbox prevents wire damage
  - Series E50H- No extension ring required
  - Series E60H- Optional Extender (E60 Ext) is available for mounting to 4" square backboxes
- Strobe Synchronization Components
  - Meet synchronizing standards with Wheelock's DSM Sync Modules, PS Power Supplies or SAFEPATH products
- Compliance
  - UL 1971, UL 1480, ULC-S526, ULC-S541
  - Low frequency requirements of UL 464 (520 Hz) to meet NFPA's 520 Hz tone requirements for sleeping areas
  - California State Fire Marshal (CSFM)
  - ADA/NFPA/ANSI/OSHA
  - FCC Part 15, ICES

Note: All CAUTIONS and WARNINGS are identified by the symbol ⚠. All warnings are printed in bold capital letters.

⚠ WARNING

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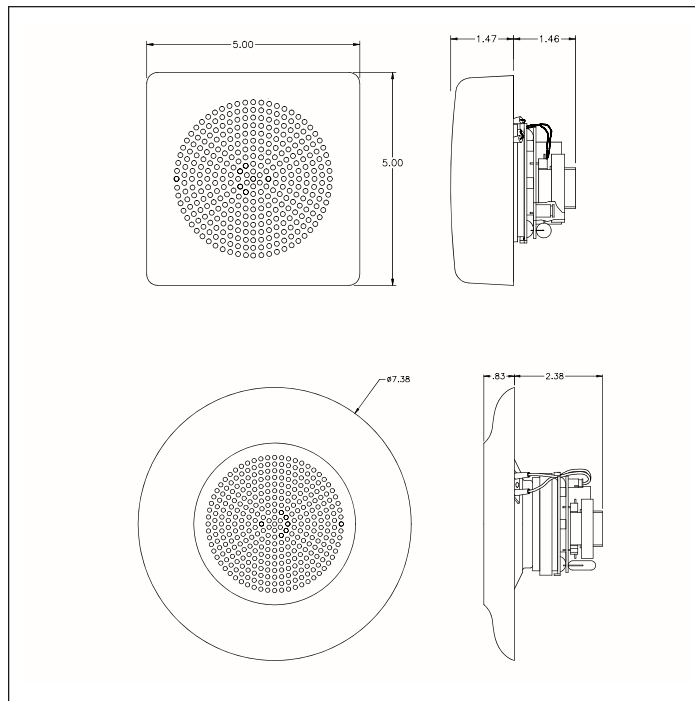

Drawings

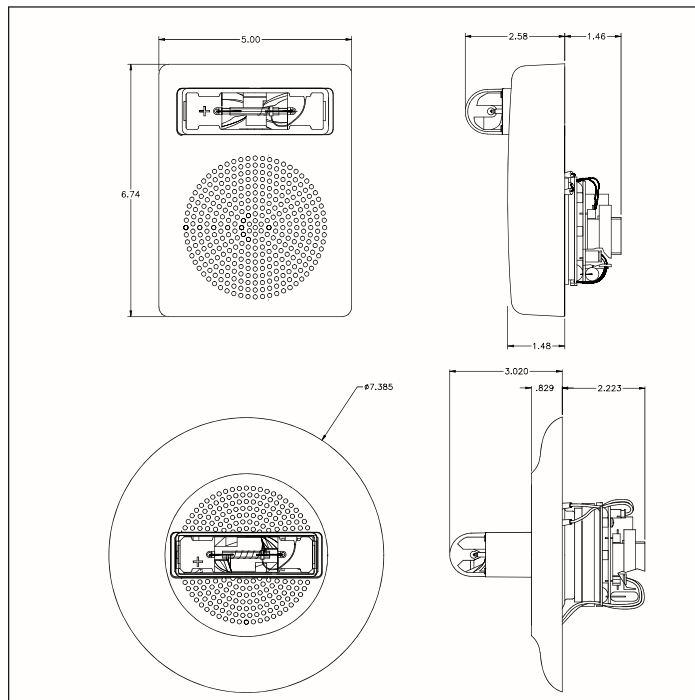Figure 1. E50H (top) and E60H (bottom) Speakers - Front & Side Views

Figure 2. E60H (top) and E60H (bottom) Speaker Strobes - Front & Side Views

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.

Table 1. Maximum RMS Current

| | | UL/ULC Max Current [a] | | | | | | | | |
| | | 24MCW/24MCC 241575W | | | | | 24MCWH/24MCCH | | | |
Model	Regulated Voltage Range VDC	15	30	75	95	110	115	135	177	185
E50H	16.0-33.0	0.060	0.092	0.165		0.220		0.300		0.420
E60H	16.0-33.0	0.060	0.105	0.189	0.249		0.300		0.420	

Table 2. UL Listed Models and Ratings

| | UL Reverberant dBA at 10 Feet [b] | | | | |
Model	1/8 watts [c]	1/4 watts	1/2 watts	1 watts	2 watts
E50H Speaker Strobe	73	76	79	82	84
E60H Speaker	74	77	80	83	85
E60H Speaker Strobe	74	77	80	82	85

Table 3. Specification & Ordering Information

Model	Order #	Strobe Candela	Red	White	Lettering	Wall	Ceiling	Mounting Options	Sync w/ DSM or Wheelock Power Supplies
Speakers									
E50H-R	9863		X		No Lettering	X		E, AA	
E50H-W	9864			X	No Lettering	X		E, AA	
E50H-ALW	3577			X	ALERT	X		E, AA	
E60H-R	9867		X		No Lettering		X	E	
E60H-W	9874			X	No Lettering		X	E	
E60H-ALW	3554			X	ALERT		X	E	
Speaker Strobes									
E50H-24MCW-FR	0092	15/30/75/110	X		FIRE	X		E, BB	X
E50H-24MCW-FW	0093	15/30/75/110		X	FIRE	X		E, BB	X
E50H-24MCW-ALR	3559	15/30/75/110	X		ALERT	X		E, BB	X
E50H-24MCW-ALW	3560	15/30/75/110		X	ALERT	X		E, BB	X
E50H-24MCW-NW	3575	15/30/75/110		X	No Lettering	X		E, BB	X
E50H-24MCWH-FR	0094	135/185	X		FIRE	X		E, BB	X
E50H-24MCWH-FW	0097	135/185		X	FIRE	X		E, BB	X
E50H-24MCWH-ALW	3561	135/185		X	ALERT	X		E, BB	X
E60H-24MCC-FR	0187	15/30/75/95	X		FIRE		X	E	X
E60H-24MCC-FW	0188	15/30/75/95		X	FIRE		X	E	X
E60H-24MCC-NW	0950	15/30/75/95		X	No Lettering		X	E	X
E60H-24MCC-ALW	3555	15/30/75/95		X	ALERT		X	E	X
E60H-24MCCH-FR	0189	115/177	X		FIRE		X	E	X
E60H-24MCCH-FW	0190	115/177		X	FIRE		X	E	X
Extender Ring									
E60EXT-R [d]	3578		X						
E60EXT-W [d]	3757			X					

Table 4. Specifications

Physical	
Material / Lens (Material type)	Red or white textured UV stabilized, colored impregnated engineered plastic. Exceeds 94V-0 UL flammability rating. / GE LEXAN 943A
Weight	E50H Speaker:1.5 lbs (0.68 kg); E50H Speaker Strobe 1.6 lbs (0.73 kg); E60H Speaker: 1.6 lbs (0.73 kg); E60H Speaker Strobe 1.7 lbs (0.77 kg);
Dimensions	E50H Speaker: 5" W x 5" H x 1.47"D; E50H Speaker Strobe: 5" W x 6.74" H x 2.58"D; E60H Speaker: 7.38" Diameter x .83" D; E60H Speaker Strobe: 7.38" Diameter x 3.02" D
Operating Temperature	Indoor: 33.8°F to 120.2°F (0°C to 49°C) and maximum humidity of 93%
Mounting & Wire Connections	
Mounting (indoor only)	4" square backbox prevents wire damage; Series E50H - No extension ring required; Series E60H - Optional Extender (E60 Ext) is available for mounting to 4" square backboxes, E50 SSB, E50 SB for surface mount of E50H
Wire Connections	#12 through #18 AWG
Power & General	
Operating voltage	25/70 VRMS
Strobe Output Rating	UL 1971, ULC S526
Strobe Flash Rate	Strobes are designed to flash at 1 flash per second
Synchronization Models	Strobes can be synchronized with Wheelock's DSM Sync Modules, PS Power Supplies or SAFEPATH products, using Wheelock patented sync protocol
Frequency Range	300 Hz to 8000 Hz

[a] 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.

[b] dBA ratings are based on testing under UL Standard 1480.

[c] 1/8 watt tap is for private mode only.

[d] E60 EXT is an attractive extender ring that mounts behind the speaker to permit mounting to a 4" square x 2 1/8" deep electrical box without need for an extension ring on the box.

Architects and Engineers Specifications

Wheelock E50H - The speaker appliances shall be Wheelock E50H High Fidelity Speakers, and the High Fidelity Speaker Strobe appliances shall be Wheelock E50H Speaker Strobes or approved equals. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 87 dBA at 10 feet and a listed frequency response of 300 to 8000 Hz. The speaker shall incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL 1971 at 15/30/75/110cd or 135/185cd for wall mounting. The selector switch for selecting the candela shall be tamper resistant.

When synchronization is required, the strobe portion of the appliance shall be compatible with the Wheelock's DSM sync modules or Wheelock Power Supplies with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor flush mounting to 4" x 2-1/8" electrical boxes without need for an extension ring or surface mounting to Wheelock's E50SB or E50SSB surface boxes. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover. The finish of the Series E50H speakers and speakers strobes shall be white or red.

The speaker shall be listed to the low frequency requirements of UL 464 (520 Hz) to meet NFPA's 520 Hz tone requirements for sleeping areas.

UL 1971, UL 1480, ULC-S526, ULC-S541, CSFM, FCC.

Wheelock E60H - The speaker appliances shall be Wheelock E60H High Fidelity Speakers, and the High Fidelity Speaker Strobe appliances shall be Wheelock Series E60H Speaker Strobes or approved equals. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 87 dB at 10 feet and a listed frequency response of 300 to 8000 Hz. The speaker shall also incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range. The strobe shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL 1971 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. When synchronization is required, the strobe portion of the appliance shall be compatible with Wheelock DSM sync modules or the Wheelock Power Supplies with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor flush mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover with no visible screws for a level, aesthetic finish and shall mount to standard electrical hardware. The finish of the Series E60H Speakers and Speaker Strobes shall be white or red. All speaker and speaker strobe appliances shall be backward compatible.

The speaker shall be listed to the low frequency requirements of UL 464 (520 Hz) to meet NFPA's 520 Hz tone requirements for sleeping areas.

UL 1971, UL 1480, ULC-S526, ULC-S541, CSFM, FCC.

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.

WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

Powering Business Worldwide

Weatherproof appliances

Description

Designed for life safety, performance and reliability, Eaton's Wheelock cost-effective weatherpoof notification appliances include:

Weatherproof Appliances	Series
Strobes	RSSWP
Horn strobes	ASWP
Horn	AH-24WP, AH-12WP
Multitone horn strobes	MTWP
Multitone horns	MT
Speaker strobes	ET70WP
Speakers	ET-1010

All strobe models are UL dual listed—meeting both UL1638 and UL1971 requirements. As dual listed appliances, these weatherproof strobes, horn strobes and speaker strobes are listed for outdoor applications under UL 1638 as well as under UL 1971, the Standard for Safety Signaling Devices for Hearing Impaired. With an extended temperature range of –31°F to 150°F (–35°C to 66°C), Wheelock weatherproof appliances meet or exceed UL outdoor test requirements for rain, humidity and corrosion resistance while providing multiple strobe intensity options, including the highest strobe ratings available for area coverage per NFPA 72 strobe spacing tables (up to 185 candela for wall mounting and 177 candela for ceiling mounting).

To enable weatherproof mounting, Eaton provides the industry's widest choice of mounting options for surface or unique semi-flush installation. Models are available for surface mounting to Wheelock weatherproof backboxes on walls or ceilings. The optional WP-KIT allows the weatherproof backboxes (IOB, WPBB or WPSBB) to be mounted to a recessed electrical box for concealed conduit installation. For semi-flush installation, the WPA* and WFPA* kits allow a customer to mount the weatherproof appliances to a recessed electrical box without the need for an external weatherproof backbox. See Table 10 on page three of this document for a summarization of these mounting options and the required accessories.

All models may be synchronized using the Wheelock DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. The horn output of horn strobes can be independently controlled on 2-wire circuits using the Wheelock patented sync protocol. MTWP horn strobe models are 4-wire appliances; the strobes can be synchronized while the audible can be connected to a coded fire alarm system or can be set to produce any of eight selectable tones.

FAT•N

Powering Business Worldwide

Features & benefits

- Weatherproof with extended temperature range of –40°F to 150°F (–40°C to 66°C)*

- Dual Listed strobe models (UL 1638 and UL 1971)

- Industry's highest strobe candela options

- Synchronize using the Wheelock Sync Modules or panels with built-in Wheelock Patented Sync Protocol

- Models with field selectable tone, dBA and candela settings

- Wall or ceiling mounting options

- Surface of semi-flush mounting

- IN/OUT wiring termination accepting two #12-18 AWG wires at each terminal

Note: All CAUTIONS and WARNINGS are identified by the symbol ⚠. All warnings are printed in bold capital letters.

⚠ WARNING

PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

Approvals & compliances

- Approvals include: UL Standards 1971, 1638, 464 and 1480; California State Fire Marshal (CSFM); New York City (MEA); Factory Mutual (FM); Chicago (BFP) and ULC (see agency approvals by model number on pages 4 and 5 of this document)

  - The series RSSWP, ASWP, AH-24WP, MTWP-2475W, and MT-12/24 have UL/ULC approval down to –40°F. The ET-1010 and ET70WP have UL approval down to –40°F. The AH-12WP has UL approval down to -31°F.

- Compliance with the following requirements: NFPA; UFC; ANSI 117.1; OSHA Part 29, 1910.165; AD

General notes

- Strobes are designed to flash at 1 flash per second minimum over their UL Listed Regulated Voltage Range.

- All candela ratings represent minimum effective Strobe intensity based on UL Standards 1971 and 1638 as indicated in candela ratings table.

- Models are available in red or white. Contact Customer Service for order code and delivery.
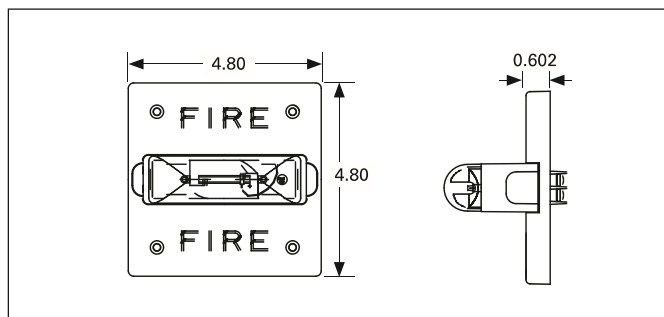
Drawings

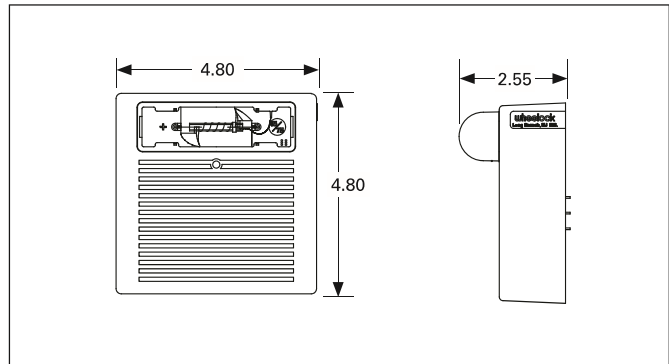**Figure 1. RSSWP front and side views**
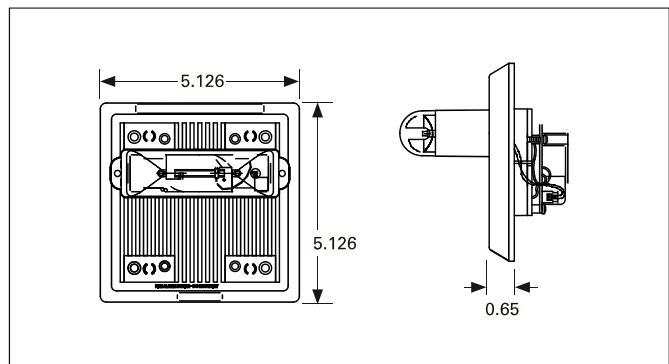

Figure 2. ASWP front and side views

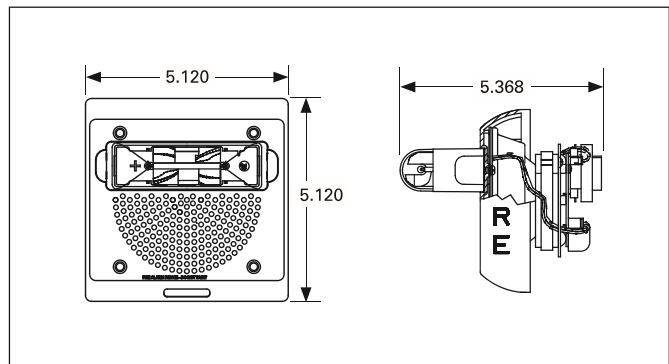**Figure 3. MTWP front and side views**
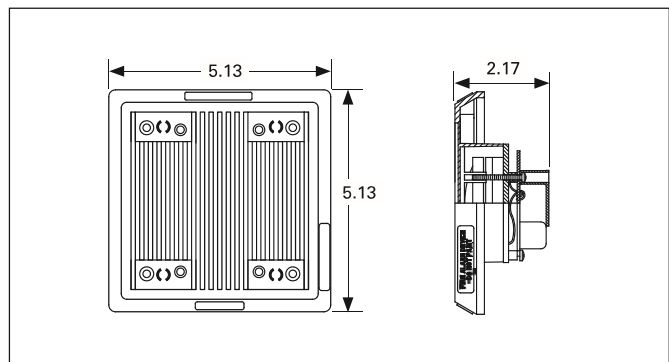

Figure 4. ET70WP front and side views

Figure 5. MT front and side views
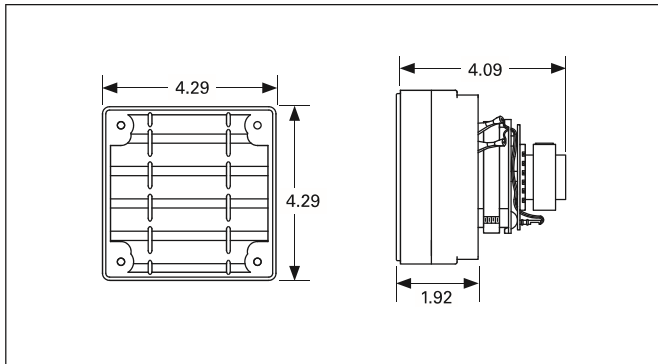
Figure 6. ET-1010 front and side views

Table 1. Maximum UL current for AH models

	UL Max Current for AH	
	24 VDC	12 VDC
High (99) dBA	0.080	0.192
Med (95) dBA	0.043	0.108
Low (90) dBA	0.021	0.058

Table 2. dBA ratings for ET-1010 and ET70WP models

	UL Reverberant dBA @ 10 ft.						
	Watts						
Model	1/8	1/4	1/2	1	2	4	8
ET-1010	77	80	83	86	87	92	94
ET70WP	78	81	84	87	90	93	95

Table 3. Maximum UL current (audible)

	MTWP/MT 24 VDC		MT 12 VDC	
dBA	HI	STD	HI	STD
Horn	0.108	0.044	0.177	0.034
Bell	0.053	0.024	0.095	0.020
March Time	0.104	0.038	0.142	0.034
Code 3 Horn	0.091	0.035	0.142	0.034
Code 3 Tone	0.075	0.035	0.105	0.021
Slow Whoop	0.098	0.037	0.142	0.035
Siren	0.104	0.036	0.152	0.030
Hi/Lo	0.057	0.025	0.114	0.026

Table 4. Candela ratings

Series	UL 1971	UL 1638 @ 77°F	UL 1638 @ –40°F	RSS, ET70WP and MTWP UL Max Current (strobe only)	ASWP		
					High	Med	Low
2475W	30	180	115	0.138	0.168	0.155	0.150
2475C	15	180	115	0.138	0.168	0.155	0.150
MCWH	135	135	56	0.300	0.355	0.340	0.335
	185	185	77	0.420	0.480	0.465	0.460
MCCH	115	115	47	0.300	0.355	0.340	0.335
	177	177	73	0.420	0.480	0.465	0.460
24185	185	185	77	0.420			
24177	177	177	73	0.420			

Wall mount rating only

Wall mount models

Table 5. Specification and ordering information

Model Number		Finish	Order Code	Agency Approvals				
				UL	MEA	CSFM	FM	BFP
Strobe								
RSSWP-2475W-FR		Red	9013	X	X	X	X	–
RSSWP-2475W-FW		White	3034	X	X	X	X	–
RSSWP-24MCWH-FR		Red	5161	X	–	X	–	–
RSSWP-24MCWH-FW		White	5165	X	–	X	–	–
Audible strobe								
ASWP-2475W-FR		Red	9012	X	X	X	X	X
ASWP-24MCWH-FR		Red	5137	X	–	X	–	–
ASWP-24MCWH-FW		White	5140	X	–	X	–	–
Multitone strobe								
MTWP-2475W-FR		Red	8420	X	X	X	X	–
MTWP-2475W-FW		White	3112	X	X	X	X	–
MTWP-24MCWH-FR		Red	5132	X	–	X	–	–
MTWP-24MCWH-FW		White	5134	X	–	X	–	–
Speaker strobe								
ET70WP-2475W-FR		Red	9077	X	–	X	X	–
ET70WP-2475W-FW		White	3179	X	–	X	X	–
ET70WP-24185W-FR		Red	4885	X	–	X	X	–
ET70WP-24185W-FW		White	4891	X	–	X	X	–

Ceiling mount models

Table 6. Specification and ordering information

Model Number		Finish	Order Code	Agency Approvals				
				UL	MEA	CSFM	FM	BFP
Strobe								
RSSWP-2475C-FR		Red	4338	X	X	X	X	–
RSSWP-2575C-FW		White	4446	X	X	X	X	–
RSSWP-24MCCH-FR		Red	5167	X	–	X	–	–
RSSWP-24MCCH-FW		White	5187	X	–	X	–	–
Audible strobe								
ASWP-2475C-FR		Red	4251	X	X	X	X	X
ASWP-2475C-FW		White	4502	X	X	X	X	X
ASWP-24MCCH-FR		Red	5149	X	–	X	–	–
ASWP-24MCCH-FW		White	5157	X	–	X	–	–
Multitone strobe								
MTWP-2474C-FR		Red	4457	X	X	X	X	–
MTWP-2475C-FW		White	4458	X	X	X	X	–
MTWP-24MCCH-FR		Red	5102	X	–	X	–	–
MTWP-24MCCH-FW		White	5122	X	–	X	–	–
Speaker strobe								
ET70WP-2475C-FR		Red	4452	X	–	X	X	–
ET70WP-2475C-FW		White	4454	X	–	X	X	–
ET70WP-24177C-FR		Red	4845	X	–	X	X	–
ET70WP-24177C-FW		White	4859	X	–	X	X	–

Wall or ceiling mount models

Table 7. Specification and ordering information

Model Number		Finish	Order Code	Agency Approvals				
				UL	MEA	CSFM	FM	BFP
Audible								
AH-24WP-R		Red	7416	X	X	X	X	X
AH-12WP-R		Red	7415	X	X	X	X	X
Horn								
MT-12/24-R		Red	5023	X	X	X	X	X
Speaker								
ET-1010-R		Red	3135	X	X	X	X	X
ET-1010-W		White	3137	X	X	X	X	X

Mounting accessories

Table 8. Ordering information

Model Number		Finish	Order Code
Backboxes			
IOB-R		Red	5046
IOB-W		White	5047
WPSBB-R		Red	9751
WPSBB-W		White	3033
WPBB-R		Red	9014
WPBB-W		White	4692
WBB-R		Red	2959
WBB-W		White	2960

IOB, WPSBB and WPBB models include weep holes and plug in the event that moisture may have entered the appliance.

Model Number		Finish	Order Code
Gasket kit			
WP-KIT		N/A	4486
Flush plates			
WFPA-R		Red	4698
WFPA-W		White	4701
WFP-R		Red	4696
WFP-W		White	4697

Table 9. Mounting options

Mounting Options	Surface Mount		Flush Mount
	Exposed Conduit	Concealed Conduit	
RSSWP Strobes	WPSBB	WPSBB + WP-KIT	WFP
ET70WP Speaker Strobes	IOB	IOB + WP-KIT	WFP
ASWP Horn Strobes	WPBB	WPBB + WP-KIT	WFPA
AHWP Horns	WBB	-–-	WFP
ET-1010 Speakers	WBB	-–-	WFP
MTWP Multitone Strobes	IOB	IOB + WP-KIT	WFP
Multitone	IOB	IOB + WP-KIT	WFP

Note: Refer to Data Sheet TD450028EN for mouting options

Architects and engineers specifications

General

Weatherproof notification appliances shall be UL listed for outdoor use. Weatherproof Strobe appliances shall be listed under UL Standard 1638 (Standard for Visual Signaling Appliances) for Indoor/Outdoor use and UL Standard 1971 (Standard for Safety Signaling Devices for Hearing Impaired). The appliances shall be available for optional wall mounting or ceiling mounting to weatherproof backboxes using either exposed conduit, concealed conduit, or semi-flush mounting to a recessed electrical box in walls or ceilings using Wheelock mounting accessories.

Weatherproof Strobes

Weatherproof Strobe appliances shall produce a minimum flash rate of 60 flashes per minute over the UL Regulated Voltage Range of 16 to 33 VDC and shall incorporate a Xenon flashtube. The weatherproof strobes shall be available with UL 1971 candela ratings up to 185 cd for wall mounting and 177 cd for ceiling mounting. UL 1638 candela ratings up to 180 cd at 77°F shall be available. The strobes shall operate over an extended temperature range of –40°F to 150°F (–40°C to 66°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Weatherproof Audibles and Audible/Strobe Combinations Weatherproof horns and multitone audibles shall be listed for Indoor/Outdoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. The horns shall have at least 3 sound level settings. Horn/Strobe combinations shall be able to be synchronized on a single NAC.

Multitone audibles shall be able to produce 8 distinct tones selectable by dip switch and shall have at least 2 sound level settings. Multitone Audible/Strobe combinations shall have independent inputs for the audible and strobe. The strobes shall be able to be synchronized. The audibles shall be able to be coded when operated on a separate NAC.

Weatherproof Speakers and Speaker/Strobes

Weatherproof speakers and speaker/strobes shall be listed for Indoor/Outdoor use under UL Standard 1480. All speakers shall provide field selectable taps for 1/8W to 8W operation for either 25 VRMS or 70 VRMS audio systems and shall incorporate a sealed back construction for extra protection and improved audibility. Speakers without strobes shall be Wheelock Series ET-1010. They shall be listed to produce up to 94 dBA and shall incorporate a vandal resistant grille design. Speaker with strobes shall be Wheelock Series ET70WP. They shall be available for surface or semi-flush mounting to walls or ceilings and shall be listed to produce up to 93 dBA.

Synchronization Modules

When synchronization of strobes or temporal code-3 audibles is required, the appliances shall be compatible with the Wheelock Series DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels with built-in Wheelock Patented Sync Protocol. The strobes and audibles shall not drift out of synchronization at any time during operation.

Series ASWP audibles and strobes shall be able to be synchronized on a 2-wire circuit with the ability to silence the audible if required. The strobes on Series MT multitone audible/strobe appliances shall be able to be synchronized and shall be able to be operated on a separate circuit from the audibles while the audible circuit is connected to a coded or continuous NAC.

Weatherproof Mounting Accessories

Weatherproof mounting options shall include surface mounting or semi-flush mounting to walls or ceilings. Surface mounted appliances shall mount to Wheelock IOB, WBB, WPBB or WPSBB weatherproof backboxes using either exposed conduit or concealed conduit. For concealed conduit the weatherproof backbox shall be mounted to a recessed electrical box with Wheelock's WP-KIT to provide a weatherproof seal for the electrical box. Semi-flush mounted appliances shall mount to a recessed electrical box using Wheelock WFP or WFPA flush plates to provide a weatherproof seal between the electrical box and the appliance.

NEMA
Member

WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3-YEAR WARRANTY

EA·T·N
Powering Business Worldwide

DTK-120SRD

Series Connected Surge Protector with Dry Contacts

DITEK®

DITEK's DTK-120SRD protects dedicated 120VAC power circuits that feed control panels and other critical equipment. The hybrid series design provides maximum critical load protection, and includes dry contacts for remote notification of surge protection status. EMI/RFI filtering ensures clean power for connected equipment.

Product Features

- Series design for fast response and best protection
- Compact design fits in a variety of control panels
- Suitable for use on circuit breakers rated at 10kA AIC
- Multi-stage hybrid circuit design
- UL1283 EMI/RFI filtering
- LED indicates protection status
- Form C Dry Contact circuit

Application

- Fire Alarm Panels
- Control Panels
- 120VAC Single Phase Critical Loads
- UL Listed Control Panels where UL Recognized Components are Required

Accessories

- DIN Rail Mounting Kit – Part Number DTK-DRK

Technical Specifications

Service Voltage:	120VAC Single Phase
MCOV:	150VAC
Protection Modes:	All modes – L-G, L-N, N-G
Voltage Protection Rating:	600VAC
Surge Current Rating:	54,000 Amps per phase
Max. Continuous Current:	20 Amps
SCCR:	10kA
Nominal Discharge Current Rating (I_n):	3kA
Operation Frequency:	40Hz – 400Hz
EMI/RFI Filtering Attenuation:	Up to 35dB, 100kHz -100MHz

Mechanical Characteristics

Connection Method:	Hardwired, series configuration
Housing:	ABS
Operating Temperature:	-40°F - 185°F (-40°C - 85°C)
Maximum Humidity:	95% non-condensing
Dimensions:	6.87"L x 3.5W x 2.5"H (174050mm x 88.90mm x 63.50mm)
Weight:	12.16 oz (0.35kg)

Quality, Standards & Approval

Agency Approvals:	UL1449, cUL, UL1283
SPD Type:	Type 2 Component Assembly
Standards Compliance:	IEEE C62.41.1 –2, IEEE C62.45
Warranty:	Ten Year Limited Warranty

ISO 9001 NFPA cULus MADE IN U.S.A.

DTK-LVLP Series
Voice, Data and Signaling Circuit Surge Protection

DITEK®

DTK-4LVLPX

DTK-2LVLPLV

DITEK's DTK-LVLP Low Voltage Line Protector series of signal, data and loop circuit surge protectors provide strong protection in a compact hard wired package. Models are available to protect up to 8 pairs. LVLAWG models can handle #14-#10 AWG wiring connections. Both are suitable for AC and DC circuits.

Product Features

- Protect 1, 2, 4 or 8 pairs to match your specific configuration needs
- Series connection, parallel function adds no resistance to loop circuits
- Seven voltage levels available to protect all types of voice/data/signaling applications
- "SCP" models provide automatic resetting fuse and sneak current protection

Applications

- 4-20mA Current Loops
- Alarm Panel NAC, SLC, PIV and IDC Loops
- Burglar Alarm Panels
- Speakers and Phones

Accessories

- DIN Rail Kit (DTK-DRK)

Technical Specifications

Protection Modes:	Line-Ground (All)
Surge Current Rating:	2,000 Amps per pair (5V – 48V)
	9,000 Amps per pair (75V – 130V)
Max. Continuous Current:	5 Amps, 0.15 Amps (SCP)

Mechanical Characteristics

Connection Method:	Screw Terminals : #22 - #16 AWG (LVLP), #14 - #10 AWG (LVLAWG)
Housing:	ABS
Operating Temperature:	-40°F - 158°F (-40°C - 70°C)
Maximum Humidity:	95% non-condensing
Dimensions (1LVL – 4LVL):	3.0L x 1.6"W x 1.6"H (76mm x 41mm x 41mm)
Dimensions (8LVL):	4.8"L x 2.3"W x 1.5"H (122mm x 58mm x 35mm)
Weight:	2.4 oz (68g)

Quality, Standards & Approval

Agency Approvals:	UL497A, UL497B
Warranty:	Ten Year Limited Warranty

Selection Guide

Example: DTK-2LVLPSCPLV

DTK-**2**LVLP**SCP****LV**

2 Pairs   **24 Volts**

VOLTAGE LEVEL	D	X	LV	OPX	RUV
Pairs Available:	2, 4, 8	1, 2, 3, 4	1, 2, 4, 8	2, 4	2, 4
Service Voltage:	5V	12V	24V	48V	130V
Sneak Current Protection Available? (SCP):	Yes	Yes	Yes	No	Yes
MCOV:	8VDC	18VDC	38VDC	66VDC	175VDC
Clamping Voltage:	12V	22V	47V	82V	204V

Every precaution has been taken to ensure that this literature is accurate and complete. DITEK Corporation assumes no responsibility and disclaims all liability for damages resulting from the use of this information or for any errors or omissions.

ISO 9001   UL LISTED   c UL us   MADE IN U.S.A.

PRODUCT DATA SHEET

1530 Shields Drive
Waukegan, IL 60085
Toll-Free (800) 323-9355
Fax: (847) 689-1192

PART NUMBER:	98430
DESCRIPTION:	14/2 SOLID SHIELDED FPLR
CONSTRUCTION:	This cable consists of two bare copper insulated conductors with an overall shield with a drain. The overall assembly has an overall jacket.
APPROVALS:	UL Standard 1424 , NEC Articles 760.
APPLICATION:	Power Limited Fire Alarm Cable for Riser Applications

Construction Parameters:

Cable Cross-Section

Conductor	14 AWG Bare Copper
Stranding	Solid
Insulation Material	PVC
Insulation Thickness	0.008" Nom.
Insulated Conductor Diameter	0.080" Nom.
Number of Conductors	2
Lay Length	4.00" Nom.
Shield	Alum/Mylar
Drain	24 AWG Solid Tinned Copper
Jacket Material	PVC
Jacket Thickness	0.017" Nom.
Overall Cable Diameter	0.204" Nom.
Approximate Cable Weight	38.7 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test
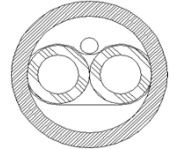
Electrical & Enviromental Properties:

Temperature Rating	$-20^{O}C$ to $60^{O}C$
Operating Voltage	300 V RMS Max.
Capacitance Between Conductors @ 1 KHz	79 pF/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	146 pF/ft Nom.
DC Resistance per Conductor @ $20^{O}C$	2.54 Ohms/1M' Nom.

Insulation Colors	Black Red
Jacket Color	Red (Other colors available for minimum order)
Legend (Surface Ink Print)	COLEMAN CABLE * 98430 14 AWG 2/C (ETL)US (ETL CODE) TYPE FPLR SUN RES TYPE CMG FT4

This product complies with European Directive 2002/95/EC (RoHS)

On special orders, the customer will accept all factory lengths and +/- 10 percent of total order requested.

The jacket is sequentially footmarked. Rip cord added under jacket for ease of jacket removal.

The information presented here is, to the best of our knowledge, true and accurate. Since conditions of use are beyond Coleman Cable's control, all product data presented is for informational purposes only and does not create a binding obligation or liability on Coleman Cable or confer any rights on any customer. The sale of product(s) is conditioned upon acceptance of a purchase order subject to Coleman Cable's standard terms and conditions contained therein, including without limitation Coleman Cable's standard warranty. Coleman Cable disclaims all liability in connection with the use of information contained herein or otherwise.

This specification is proprietary intellectual property of Coleman Cable. Any information contained herein shall not be disclosed to any party without written consent of Coleman Cable.

Customer Name_____ Date Signed _____

Customer Approval _____

Specification Issue Date: December 29, 2010

# PRODUCT DATA SHEET

Controlled Document - Engineering Drive

PART NUMBER: 98630
DESCRIPTION: 16/2 SOLID SHIELDED FPLR
CONSTRUCTION: This cable consists of two bare copper insulated conductors with an overall shield with a drain. The overall assembly has an overall jacket.
APPROVALS: UL Standard 1424 and 444, NEC Articles 760 and 800.
APPLICATION: Power Limited Fire Alarm Cable and Communications Cable for Riser Applications

Construction Parameters:

Cable Cross-Section

Conductor	16 AWG Bare Copper
Stranding	Solid
Insulation Material	PVC
Insulation Thickness	0.008" Nom.
Insulated Conductor Diameter	0.067" Nom.
Number of Conductors	2
Lay Length	4.00" Nom.
Shield	Alum/Mylar
Drain	24 AWG Solid Tinned Copper
Jacket Material	PVC
Jacket Thickness	0.014" Nom.
Overall Cable Diameter	0.172" Nom.
Approximate Cable Weight	25.9 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test
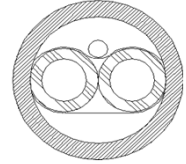
Electrical & Enviromental Properties:

Temperature Rating	-20°C to 60°C
Operating Voltage	300 V RMS Max.
Capacitance Between Conductors @ 1 KHz	71 pF/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	130 pF/ft Nom.
Inductance	0.07 uH/ft Nom.
DC Resistance per Conductor @ 20°C	4.02 Ohms/1M' Nom.

Insulation Colors	Black Red
Jacket Color	Red (Other colors available for minimum order)
Legend (Surface Ink Print)	COLEMAN CABLE 98630 16 AWG 2/C C(ETL)US (ETL CODE) TYPE CMR/CL3R/FPL SUN RES TYPE CMG FT4

This product complies with European Directive 2002/95/EC (RoHS)

On special orders, the customer will accept all factory lengths and +/- 10 percent of total order requested.

The jacket is sequentially footmarked. Rip cord added under jacket for ease of jacket removal.

Customer Name_____ Date Signed _____

Customer Approval _____

Specification Issue Date: January 19, 2010

PRODUCT DATA SHEET

Controlled Document - Engineering Drive

**PART NUMBER:** 98300
DESCRIPTION: 18/2 SOLID SHIELDED FPLR
CONSTRUCTION: This cable consists of two bare copper insulated conductors with an overall shield with a drain. The overall assembly has an overall jacket.
APPROVALS: UL Standard 1424 and 444, NEC Articles 760 and 800.
APPLICATION: Power Limited Fire Alarm Cable and Communications Cable for Riser Applications

Construction Parameters:

Cable Cross-Section

Conductor	18 AWG Bare Copper
Stranding	Solid
Insulation Material	PVC
Insulation Thickness	0.008" Nom.
Insulated Conductor Diameter	0.056" Nom.
Number of Conductors	2
Lay Length	4.00" Nom.
Shield	Alum/Mylar
Drain	24 AWG Solid Tinned Copper
Jacket Material	PVC
Jacket Thickness	0.014" Nom.
Overall Cable Diameter	0.151" Nom.
Approximate Cable Weight	19.2 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test
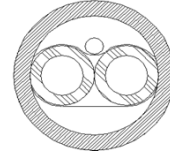
Electrical Properties:

Temperature Rating	-20°C to 60°C
Operating Voltage	300 V RMS Max.
Capacitance Between Conductors @ 1 KHz	63 pF/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	115 pF/ft Nom.
DC Resistance per Conductor @ 20°C	6.32 Ohms/1M' Nom.

Insulation Colors	Black Red
Jacket Color	Red (Other colors available for minimum order)
Legend (Surface Ink Print)	COLEMAN CABLE 98300 18 AWG 2/C C(ETL)US (ETL CODE) TYPE CMR/CL3R/FPLR SUN RES - TYPE CMG FT4

This product complies with European Directive 2002/95/EC (RoHS)

On special orders, the customer will accept all factory lengths and +/- 10 percent of total order requested.

The jacket is sequentially footmarked. Rip cord added under jacket for ease of jacket removal.

The information presented here is, to the best of our knowledge, true and accurate. Since conditions of use are beyond Coleman Cable's control, all product data presented is for informational purposes only and does not create a binding obligation or liability on Coleman Cable or confer any rights on any customer. The sale of product(s) is conditioned upon acceptance of a purchase order subject to Coleman Cable's standard terms and conditions contained therein, including without limitation Coleman Cable's standard warranty. Coleman Cable disclaims all liability in connection with the use of information contained herein or otherwise.

This specification is proprietary intellectual property of Coleman Cable. Any information contained herein shall not be disclosed to any party without written consent of Coleman Cable.
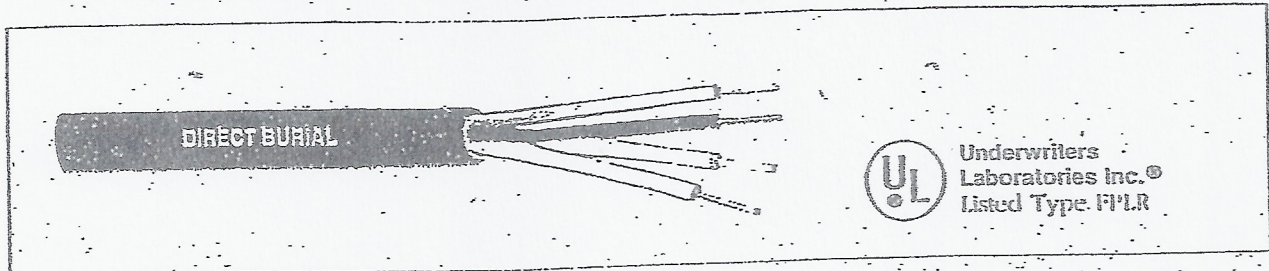
Customer Name_____ Date Signed _____

Customer Approval _____

Specification Issue Date: January 19, 2010

Series 213
Fire Protective

Solid Direct Burial/Sunlight Resistant Fire Alarm Cable

DIRECT BURIAL

Underwriters Laboratories Inc.® Listed Type FPLR

- ASTM solid bare copper, 60 degree C PVC insulation.

- Fully color coded, cabled construction.

- Black 60 degree C direct burial and sunlight resistant PVC jacket (part numbers ending in SJ have an

Aluminum Mylar Shield and a stranded tin copper drain wire).

- Underwriter's Laboratories FPLR subject UL 1424 NEC 760 direct burial/sunlight resistant.

- Fire Alarm Systems, with a need to run cable in direct sunlight or underground without the use of conduit. These cables can be used in a Riser application between floors in a building.

CATALOG NUMBER	NUMBER OF COND'S	NOMINAL O.D.	WEIGHT LBS/MFT
#18 AWG SOLID			
213-18-1-2J	2	.221	25
213-18-1-2SJ	2	.226	29
213-18-1-4J	4	.246	41
213-18-1-4SJ	4	.255	45
#16 AWG SOLID			
213-16-1-2J	2	.242	33
213-16-1-2SJ	2	.247	40
213-16-1-4J	4	.281	56
213-16-1-4SJ	4	.286	62

CATALOG NUMBER	NUMBER OF COND'S	NOMINAL O.D.	WEIGHT LBS/MFT
#14 AWG SOLID			
213-14-1-2J	2	.270	45
213-14-1-2SJ	2	.275	54
213-14-1-4J	4	.314	79
213-14-1-4SJ	4	.320	89
#12 AWG SOLID			
213-12-1-2J	2	.304	64
213-12-1-2SJ	2	.310	78
213-12-1-4J	4	.347	115
213-12-1-4SJ	4	.362	129

Color code: #1-Black, #2-Red, #3-Brown, #4-Blue (Color Code V)

Color code: #1-Black, #2-Red, #3-Brown, #4-Blue (Color Code V)

Note: California State Fire Marshal Listing # 7160-0972:100
Higher Conductor Counts Available Subject to Minimum Orders.

atlas
WIRE & CABLE CORP.

133 South Van Norman Rd. • Montebello, CA 90640 • (800) 123-1050 • (800) 352-1335
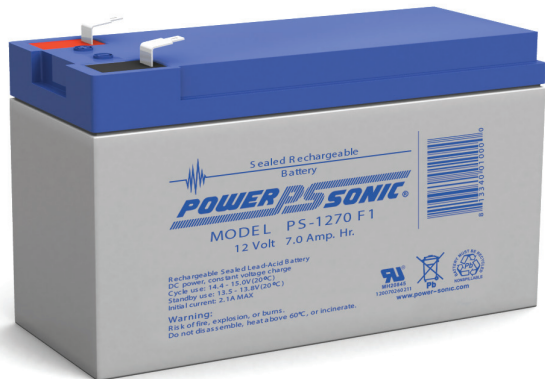
POWER PS SONIC®

PS-1270   12 Volt 7.0 AH
Rechargeable Sealed Lead Acid Battery

We've Got The Power.™

Features

- Absorbent Glass Mat (AGM) technology for superior performance

- Valve regulated, spill proof construction allows safe operation in any position

- Power/volume ratio yielding unrivaled energy density

- Rugged impact resistant ABS case and cover (UL94-HB)

- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified

- U.L. recognized under file number MH 20845

Terminals: (mm)

- F1 - Quick disconnect tabs, 0.187" x 0.032"- Mate with AMP. INC. FASTON "187" series
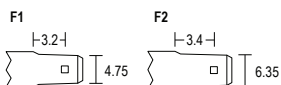
  — OR —

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

F1 3.2 4.75 6.35 0.8

F2 3.4 6.35 7.95 0.8
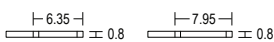
Physical Dimensions: in (mm)
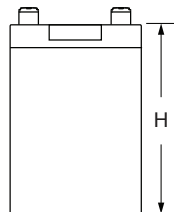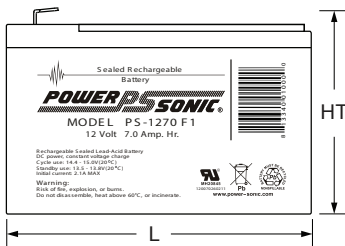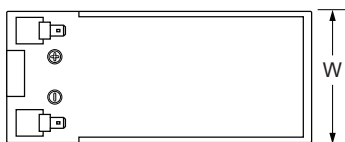
L: 5.95 (151)   **W:** 2.56 (65)   **H:** 3.70 (94)   **HT:** 3.86 (98)

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.	(350mA to 10.50 volts)	7.00 AH
10-hr.	(650mA to 10.50 volts)	6.50 AH
5-hr.	(1.2A to 10.20 volts)	6.00 AH
1-hr.	(4.5A to 9.00 volts)	4.50 AH
15-min.	(14A to 9.00 volts)	3.50 AH

Approximate Weight .... 4.80 lbs. (2.18 kg)

Energy Density (20-hr. rate) .... 1.49 W-h/in3 (90.95 W-h/l)

Specific Energy (20-hr. rate) .... 17.50 W-h/lb (38.58 W-h/kg)

Internal Resistance (approx.) .... 23 milliohms

Max Discharge Current (7 Min.) .... 21.0 amperes

Max Short-Duration Discharge Current (10 Sec.) .... 70.0 amperes

Shelf Life (% of nominal capacity at 68°F (20°C)

1 Month	97%
3 Months	91%
6 Months	83%

Operating Temperature Range

Charge	-4°F (-20°C) to 122°F (50°C)
Discharge	-40°F (-40°C) to 140°F (60°C)

Case ....ABS Plastic

Power-Sonic Chargers................................PSC-12800A, 12800A-C

www.power-sonic.com

Shelf Life & Storage

Capacity Retention Ratio (%) vs. Standing Period (Months)

5°C (41°F) — Charging is not necessary unless 100% of capacity is required.

Charging before use is necessary to help recover full capacity.

40°C (104°F)   30°C (86°F)   20°C (68°F)

Charge may fail to restore full capacity. Do not let batteries reach this state.
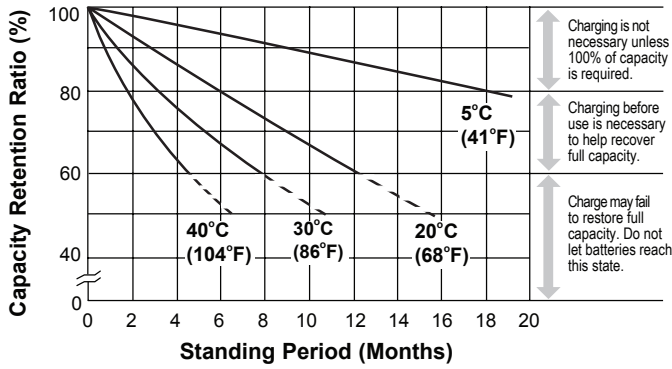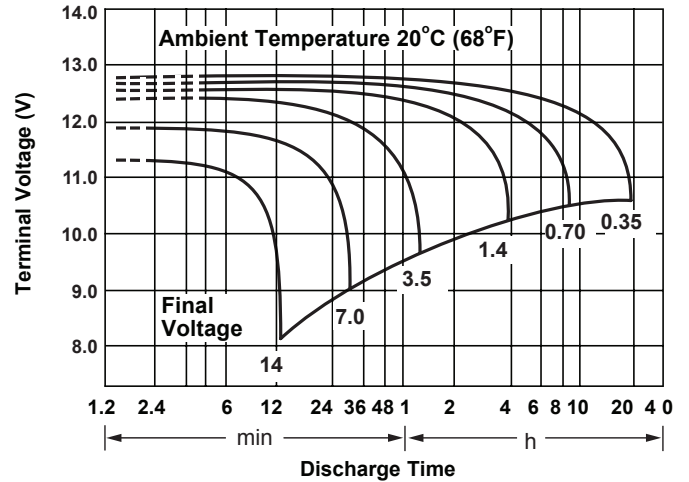
Discharge Time vs. Discharge Current

Discharge Time (h / min) vs. Discharge Current (A)

Final Voltage 10.5V

10.2V

9.6V

9.0V

8.1V

40°C (104°F)
20°C (68°F)
0°C (32°F)

Discharge Characteristics

Terminal Voltage (V) vs. Discharge Time

Ambient Temperature 20°C (68°F)

Final Voltage

14   7.0   3.5   1.4   0.70   0.35

min — h
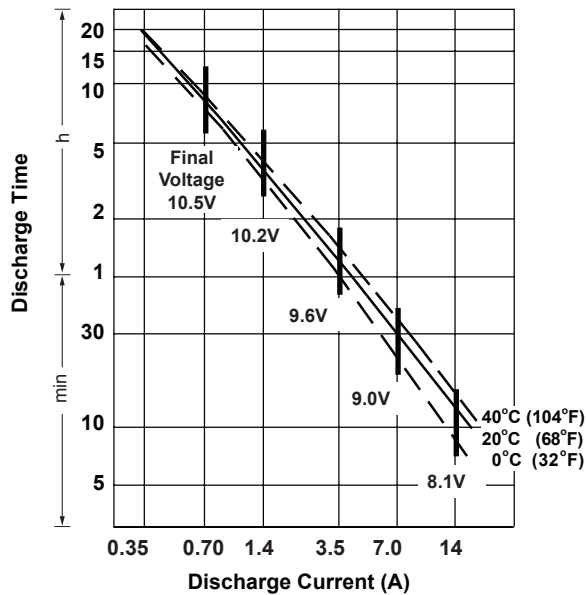
Life Characteristics in Stand-By Use

Retention Capacity (%) vs. Years

Ambient Temperature 20°C (68°F)

Float Charging Voltage 2.25 - 2.30 V/Cell
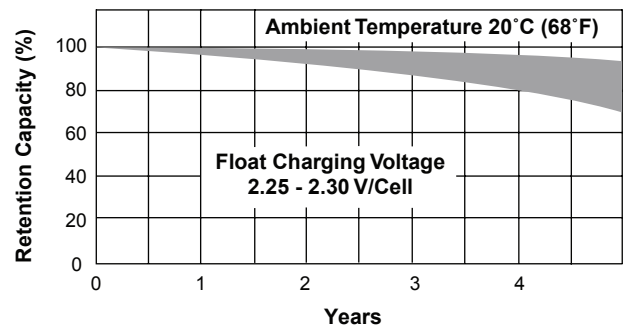
Life Characteristics in Cyclic Use

Retention Capacity (%) vs. Number of Cycles

Discharge Depth 100%   Discharge Depth 50%   Discharge Depth 30%

1. Discharge Current 0.2C (Final Voltage 1.7V/Cell)
2. Charge Current: 0.1C
3. Ambient Temperature: 20°C to 25°C (68°F to 77°F)
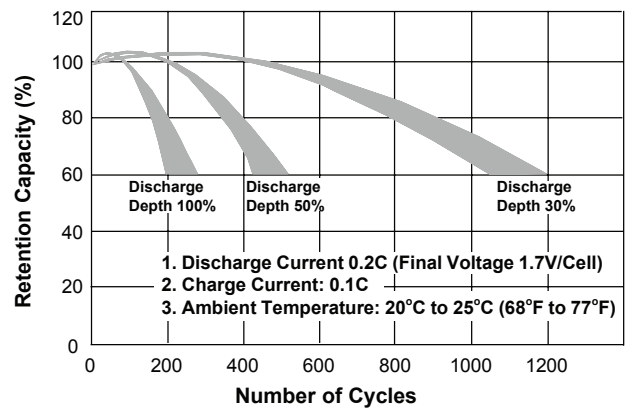
Charging

Cycle Applications: Limit initial current to 2.1A. Charge until battery voltage (under charge) reaches 14.4 to 14.7 volts at 68°F (20°C). Hold at 14.4 to 14.7 volts until current drops to under 70mA. Battery is fully charged under these conditions, and charger should be disconnected or switched to "float" voltage.

"Float" or "Stand-By" Service: Hold battery across constant voltage source of 13.5 to 13.8 volts continuously. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Note: Due to the self-discharge characteristics of this type of battery, it is imperative that they be charged within 6 months of storage, otherwise permanent loss of capacity might occur as a result of sulfation.

Chargers

Power-Sonic offers a wide range of chargers suitable for batteries up to 100AH. Please refer to the Charger Selection Guide in our specification sheets for "C-Series Switch Mode Chargers" and "Transformer Type A and F Series". Please contact our Technical department for advice if you have difficulty in locating suitable models.

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..

StarLink Fire

Commercial Fire Alarm Communicators:
Sole & Dual Path Cellular &/or IP

- **Universal full event sole path cellular & dual path cellular &/or IP commercial fire alarm reporting from any panel brand, virtually anywhere**

- **For use as primary or backup communications on all 12V-24V control panels and FACPs** that communicate using Contact ID and 4/2 (such as on legacy panels)

- **Reports to any Central Station nationwide**, via dial up or IP

- **Communicate critical life and safety alarm reports on cyber-protected multibillion-dollar cellular nationwide reliable networks**, Verizon Network Certified or AT&T, for maximum security & liability protection

- **Easy, flexible installation, activation & online account management**

- **Cost-saving models and plans for any code requirement.** Substantial savings over monthly dedicated landline charges. And, $100 saving incentive for system upgrades from old radios (all makes) and old POTs landlines, as well as new installations

UL and NFPA 72 Fire Code-Compliant, the StarLink Series Wireless Commercial Fire Alarm Sole Path & Dual Path Communicators provide universal support for any brand 12V to 24V fire alarm control panel, reporting in Contact ID and 4/2. With broadest coverage footprint available in Verizon Network Certified™ CDMA or GSM 3/4G models on the AT&T network, as well as mercantile models, all provide the most economical solution and for easy, versatile installation.

Safeguard Accounts & Reliability. For applications currently relying upon quickly-disappearing traditional phone lines, StarLink wireless communicators can be used for primary or backup communications, and will not only safeguard the fire alarm reporting transmissions for the future, but provide the end-user monthly savings for each costly FACP-dedicated landline they replace. And, for upgrading older wireless fire alarm communicators on 2G and other phased-out cellular networks, all StarLink Fire radios, offer a $100 tradeup incentive to help defray the cost of the hardware replacement to the advanced state-of-the-art StarLink model of choice.

Flexible Performance & Reporting Options. StarLink Fire provides full data reporting, in sole and dual path, as a primary or backup, to any central station of your choice, without requiring any special equipment on premises. Ultra-affordable plans are available to meet various codes and requirements, with supervisory check-ins from 200 seconds, to 5-minutes, to an hour. The units are very easily activated, plans and options are selected, and 24/7 account management is provided all through www.napcocomnet.com. And, StarLink Fire Communicators are easily connected to any panel or Fire Alarm Control Panel (FACP) standardly operating between 12V and 24V. Flexible in any application, StarLink Fire also comes in standard, or Mercantile Models in metal housings, with code-compliant supervision, with or without using conduit; and choice of power options, powered by the panel or using its own 120V Power Supply.

Code-compliant standard or mercantile metal models (right and left, respectively) .

Napco StarLink Universal Fire Alarm Communicators

- **Sole Path Cellular and Dual Path** Cellular &/or IP Models

- **Choice of plans** (varies by model) - check-ins from 200 seconds, to 5-minutes to 1 hour, Verizon or AT&T

- **Patented Signal Boost™** signal amplification circuit and high-gain performance antenna for longer range and reliability nationwide

- **Money-saving Tradeup incentive credit**

- **Bonus: Full High-Speed Napco Panel remote uploading/ downloading**

- **COMPLIANCES:** NFPA72 Editions: 2016, 2013, 2010, 2007; UL 864, 9th Ed., UL1610, UL985, UL1023, NYCFD; CSFM

NAPCO
COMMERCIAL

StarLink Fire Specifications

STANDARD MODELS:

- Durable ABS plastic housing includes three keyhole slots for mounting (for commercial application, aligns with triple gang boxes.)
- Dimensions: 5-3/8"x 7-7/8"x 1-7/8" (HxWxD)
- Weight: 13.5 oz
- 3 LED Indicators - Green, Signal Strength; Amber- Busy/Activation; Red-Trouble
- Patented Signal Boost™ signal amplification circuit and high-gain performance antenna
- Operating Environment: 0 to 49º C (32-120ºF), up to 93% humidity (non-condensing)
- 12V - 24V Universal FACP Support, auto-current sensing. Support all brands communicating in Contact ID and 4/2
- Powered by Panel, Low current draw, 71mA standby, 200mA transmit

MERCANTILE MODELS (similar to above, with):

- Locking Metal Enclosure with Hinged door & 2 key-slots for wall mounting (LED indicators, inside).
- Dimensions: 9-5/8"x 11-3/4" x 3-3/8"D (HxWxD)
- Weight: 8 lbs (max., power supply models)
- **Electrical Ratings for 120VAC, 60Hz**
- **For Models with Power Supply:**
  - Input Voltage: 120VAC Nominal
  - Input Current: 400mA maximum
  - Maximum Charging Current: 200mA
- **Electrical Ratings for +12V**
- **For Models without Power Supply:**
  - Input Voltage: 11-15VDC (power-limited output from listed control panel)
  - Input Current: 71mA with peak RF transmission current of 200mA.
- **Electrical Ratings for the IN 1 Burg/Fire Input:**
  - Input Voltage: 9-15VDC
  - Maximum Input Current: Up to 2mA from FACP NAC circuit
- **Electrical Ratings for IN 2 and IN 3:**
  - Maximum Loop Voltage: 15VDC
  - Maximum Loop Current: 1.2mA
- **Electrical Ratings for 3 PGM Outputs:**
  - Open Collector Outputs: Maximum voltage 3V when active; 15V maximum when not active
  - Maximum PGM Sink Current: 50mA mount.
- Operating Environment 0 to 49º C (32-120ºF), up to 93% humidity (non-condensing)
- 12V - 24V Universal FACP Support, auto-current sensing. Support all brands communicating in Contact ID and 4/2.

Ordering Information

COMMERCIAL FIRE SOLE PATH CELLULAR & DUAL PATH CELLULAR &/OR IP ("I" MODELS):*

SLE-CDMA-FIRE Standard ABS (Red) Fire Sole Path Alarm Communicator, Cellular CDMA, Verizon-Network Certified

SLE-CDMAI-FIRE as above, Dual Path Alarm Communicator, Cellular &/or IP (primary or backup, selectable)

SLECDMA-CFB-PS Commercial Fire Mercantile model in red metal housing, CDMA, Verizon-Network Certified. Direct 120VAC Powered (w/ provisions for backup battery/charger). Or, Optional TRF12 plug-in transformer may be used, where codes permit

SLECDMA-CFB Commercial Fire Mercantile model in red metal housing on CDMA, Verizon-Network Certified Powered directly from control panel

Note: Substitute prefix "SLE3/4G-" on any models above for AT&T 3/4G Network

ACCESSORIES:

SLE-DLEXT Optional, as above, for downloading, extends distance to Napco panel up to 100'

TRF12 Optional Plug in AC Transformer, 16.5V / 20VA (use is subject to local code compliance)

SLE-DLCBL Optional High-Speed Napco Panel Up/download cable

Also Available: StarLink Intrusion Radios in standard and mercantile versions

SLE-GSM-3/4G Standard Burglary Radio (Black), GSM 3/4G on AT&T Network powered by panel.

SLE-CDMA as above, but CDMA communications, Verizon-Network Certified.

SLECDMA-CB Commercial Burglary CDMA Radio, Verizon Certified, in white metal housing. Powered directly from control panel.

SLE3/4G-CB as above, but GSM 3/4G on AT&T Network.

SLE3/4G-CB-TF Commercial Burglary CDMA, Verizon Certified in white metal housing with power supply powered by plug-in 16.5V / 20VA transformer & provision for battery.

StarLink Fire®

COMMERCIAL FIRE CELLULAR & IP

veri**z**on
NETWORK
CERTIFIED

333 Bayview Ave., Amityville, NY 11701 USA
1-800-645-9445 • Fax: 1-631-789-9292
www.napcosecurity.com

COMPLIANCES: NFPA 72 Editions: 2016, 2013, 2010, 2007; **UL** 864, 9th Ed., UL1610, UL985, UL1023; **NYCFD**; **CSFM**