FIRE ALARM SUBMITTAL

PROJECT

AVESTA HOUSING
409 CUMBERLAND AVE.

CONTRACTOR

B.H. Milliken
175 Anderson St.
Portland, ME. 04101

PROVIDED BY:

4 THOMAS DRIVE
WESTBROOK, ME 04092
(207) 828-0022

FIRE ALARM
CONTACT INFORMATION

Project:	**Avesta Housing** **409 Cumberland Ave.** **Portland, ME.**
Customer:	**BH Milliken** **175 Anderson St.** **Portland, ME. 04101**
Date:	**02/21/14**
Sales Representative:	**Kevin Inman**

Please contact the Securadyne Systems Service Department TWO WEEKS PRIOR to schedule a technician for final testing and inspection. Monitoring must be arranged before final testing can be completed.

Contact Information:

Operations Manager:	**Scott Johnson**
Project Manager:	**Dan Hawxwell**

Securadyne Systems	**Sales &**
4 Thomas Drive	**Service: 888-826-8567**
Westbrook, ME 04092	**Fax: 207-828-0044**

Prepared by:

Zachary Davis
Securadyne Systems
Sales Engineering
4 Thomas Drive
Westbrook, ME. 04092

Submittal Approval:

Approved By: **Date:**

Please return one copy of the approved submittals to the above Securadyne Systems Sales Representative.

409 Cumberland Ave.
- Fire Alarm -

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SILENT KNIGHT
by Honeywell

IntelliKnight® Model 5820XL Addressable Fire Alarm Control System

The IntelliKnight System is the easy way to make the most of fire alarm technology.

IntelliKnight 5820XL is the first fire alarm system to provide you with revolutionary value and performance in addressable sensing technology. The 5820XL FACP offers exclusive, built-in digital communication, distributed intelligent power, a modular design and an expanded, 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 5820XL system, or to locate your nearest source, please call 800-328-0103.

Description

5820XL is an intelligent addressable fire alarm control panel (FACP). The basic 5820XL system can be expanded by adding modules such as 5860 remote annunciator, 5815XL signalling line circuit expander, 5824 serial/parallel printer interface module (for printing system reports), and 5895XL intelligent power module. 5820XL supports SD or SK devices. 5820XL 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 99 SK detectors and 99 SK modules, expandable to 396 SK detectors and 396 SK modules using System Sensor protocol
- Built in support for 127 SD devices, expandable to 508 SD devices using the SD protocol.
- Uses standard wire—no shielded or twisted pair required
- Built-in digital communicator
- Central station reporting by point or by zone
- Built-in synchronization for appliances from AMSECO®, Gentex®, Faraday, System Sensor, and Wheelock®
- Flexput™ I/O circuits
- Supports Class B (Style 4) and Class A (Style 6) configuration for SLC, SBUS, and Flexput circuits
- 13 pre-programmed output cadences (including ANSI-3.41) and 4 programmable outputs
- 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 PC
- Built-in Form C trouble relay rated at 2.5 amps at 27.4 VDC
- Improvements in SKSS software deliver five times faster uploads/downloads
- Two built-in Form C programmable relays rated at 2.5 amps at 27.4 VDC
- Plex-1 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

Model 5820XL

- 6 amp power supply and maximum charging capacity of 35 amp hours (An additional cabinet enclosure is required for batteries in excess of 18 amp hours)
- Programmable date setting for Daylight Saving Time

Installation

The 5820XL can be surface or flush mounted

Compatibility

The 5820XL 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.

IntelliKnight Model 5820XL
Addressable Fire Alarm Control Panel

Indicator Lights

General Alarm (Red): Flashes when in alarm; solid when alarm silenced

Supervisory (Yellow): Flashes when a supervisory condition exists; solid when supervisory silenced

System Troubles (Yellow): Flashes when a trouble condition exists; solid when trouble silenced

System Silenced (Yellow): On when an alarm, trouble or supervisory condition has been silenced but not yet cleared

System Power (Green): Flashes for AC failure; solid when power systems are normal

System Application

5820XL has one built-in signalling line circuit (SLC) which supports multiple devices dependent on protocol being used. Three additional loops can be added using the 5815XL SLC expanders to increase overall capacity.

The 5820XL SLC loops support multiple device types, including:

- Addressable photoelectric smoke detector
- Addressable ionization smoke detector
- Addressable heat sensor
- Addressable duct smoke detector
- Contact module
- Relay output module
- Addressable notification module
- Addressable beam detector (SK protocol only)
- Addressable multi-criteria smoke detector (SK protocol only)
- Addressable multi modules (SK protocol only)

The following advanced sensor capabilities are available with 5820XL:

- Automatic drift compensation
- Maintenance alert
- Built-in sensor test to comply with NFPA 72 calibration testing requirements

5820XL features a 6 amp power supply and maximum battery charging capacity of 35 amp hours. An additional cabinet enclosure (PN RBB) is required for batteries in excess of 18 amp hours. Flexput circuits on 5820XL control can be individually programmed to function as notification circuits, auxiliary power outputs, or initiation circuits that support both 2- and 4-wire smoke detectors.

The 5820XL system operates on non-twisted, unshielded cable when wired in compliance with standard wiring practices as called out in the National Electric Code 760-51 specifications for power-limited fire protective signalling cables. No special wiring is required.

5820XL provides 13 preset notification cadence patterns (including ANSI 3.41) and four user programmable selections for fire alarm notification.

Two programmable general purpose Form C relay outputs are provided on 5820XL.

Additionally, the IntelliKnight system features a built-in walk test and auto-programming. Its innovative, dead-front cabinet design allows for flush or surface mounting. System maintenance is easy to perform.

User Interface

The 5820XL built-in annunciator with 80 character LCD display and large easy-to-use tactile touchpad can be used for system operation, programming and maintenance. It has five LEDs for alarm, supervisory, system trouble, system silenced and system power. System operations include silencing alarms and troubles, resetting alarms and the display of alarm troubles and memory. The system's non-volatile event history buffer stores 1000 events for viewing from the built-in or remote annunciator. System operation can be initiated with a mechanical firefighter's key or a valid 4- to 7-digit operator's code.

Programming

The IntelliKnight system offers several options to simplify and speed up programming. The JumpStart® feature minimizes programming required to start a new system. The built-in keypad and 5860 remote annunciator give on-site access to all programming. You can also program remotely using the 5660 Silent Knight Software Suite, which is Windows®-based software.

Built-In Digital Communicator

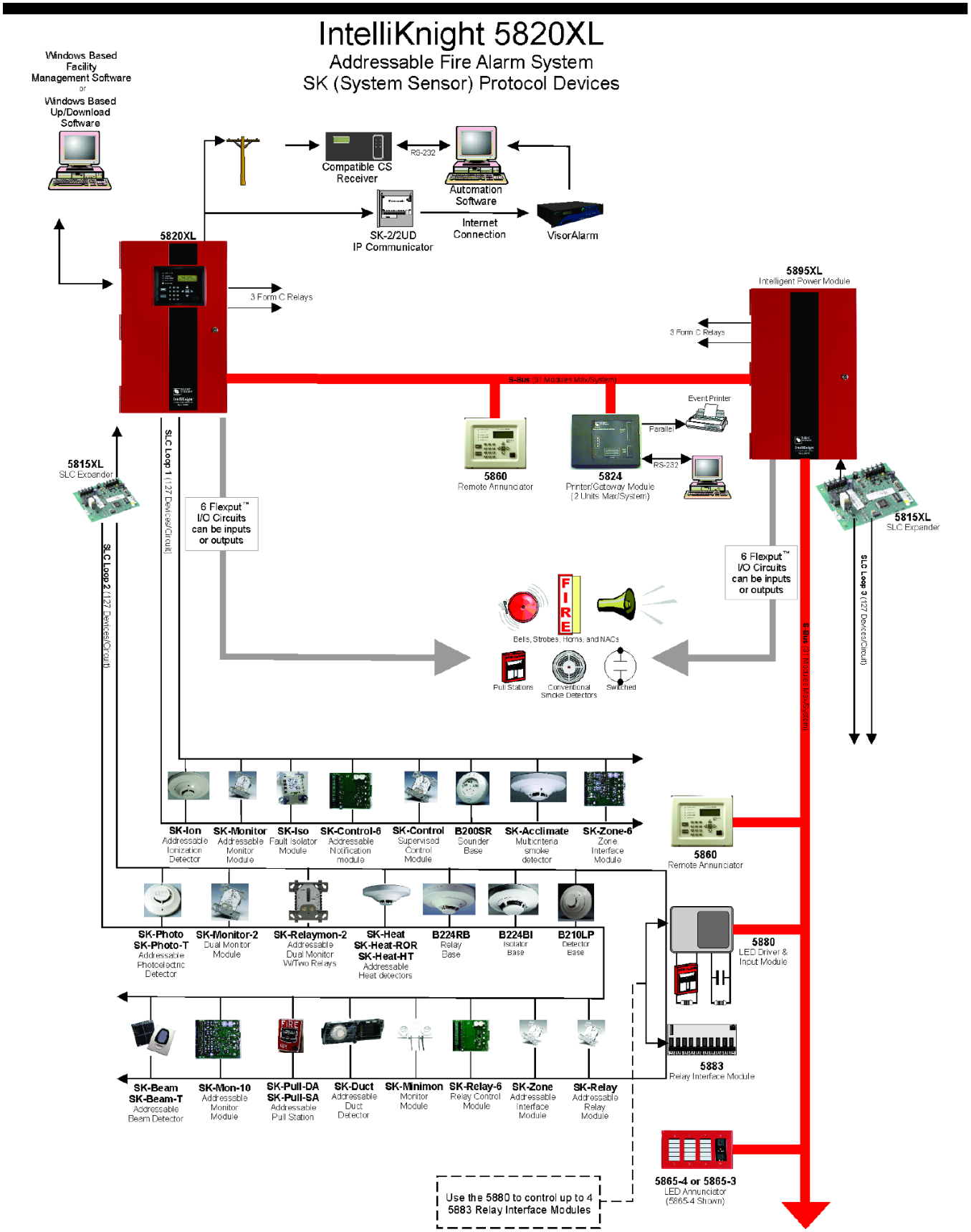
5820XL features a built-in UL listed digital communicator for remote reporting of system activity and system programming. The communicator has the ability to seize two telephone lines to report alarms and troubles to a monitoring facility. The communicator supervises two phone lines and will activate a trouble signal if a line failure is sustained for more than 45 seconds. Other communication features include: retry if communication fails, two phone number capability, download phone number capability and Touch-Tone or rotary dialing. The communicator is compatible with SIA and Ademco Contact ID. The format is selectable by account number.

Approvals

NFPA 13, NFPA 15, NFPA 16, 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.

Other Approvals: UL Listed; CSFM 7170-0559: 135; MEA 429-92-E Vol. VI; FM Approved

IntelliKnight Model 5820XL
Addressable Fire Alarm Control Panel



IntelliKnight Model 5820XL
Addressable Fire Alarm Control Panel

Specifications

Electrical

Primary AC:
120 VRMS at 50/60 Hz, 2.5A or
240 VRMS at 50/60 Hz, 1.4A

Total Accessory Load: 6A @ 27.4 VDC, power-limited

Standby Current: 215 mA

Alarm Current: 385 mA

Flexput Circuits:

Six programmable circuits which can be programmed individually as:

Notification circuits: 3A @ 27.4 VDC per circuit, power-limited

Auxiliary power circuits: 3A @ 27.4VDC per circuit, power-limited

Initiation Circuits: 100 mA @ 27.4VDC per circuit, power limited

Physical

Flush Mount Dimensions:
14.5”W x 24.75”H x 3.9”D
(36.8 W x 62.9 H x 9.8 D cm)

Overall Dimensions:
16.2”W x 26.4”H x 4.2”D
(40.6 W x 67 H x 11.8 D cm)

Weight: 28 lbs. (12.8 kg)

Color: Red

Battery Charging Capacity: 7.0-35 AH

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

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

S-BUS Accessories

5860/R Remote Fire Annunciator
Features the same 80 character backlit LCD display keypad and firefighter's keyswitch as the 5820XL. 5860 is gray and 5860R is red.

5815XL Signal Line Circuit Expander
The SLC expander is used to add more addressable devices to the IntelliKnight system. 5820XL supports three 5815XL’s. Each 5815XL can support 99 SK detectors and 99 SK modules or 127 SD devices.

5895XL Intelligent Power Module
Adds 6 amps of power, 6 Flexput I/O circuits and 2 Form C relay circuits to a 5820XL system.

5496 Intelligent Power Module
A 6 amp notification power expander that provides four 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.

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

5824 Serial/Parallel Printer Interface Module
Provides one parallel and one RS-232 serial port for connecting a printer to the 5820XL. Use to print a real-time log of system events, detector status reports, and event history. Interfaces with building control system.

Miscellaneous Accessories

5660 Silent Knight Software Suite (SKSS)
User-friendly Windows software for remote programming of 5820XLs using a PC. Upload and view panel account information, event history, and detector status.

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

Plex-1
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)

SD505-DTS-K
Remote test switch. Used with SD505-DUCTR. Provides remote key operated test function and annunciation of detector alarm.

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

SILENT KNIGHT
by Honeywell

For more information, contact Silent Knight 12 Clintonville Road, Northford, CT 06472
Phone: (203) 484-7161, Fax: (203) 484-7118. **www.silentknight.com**.

Made in America

PN 350210 Rev H2

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 with the following FACP's:

- 5820XL Addressable Fire Control Panel
- 5820XL-EVS FACP with Emergency Voice System
- 5808 Addressable Fire Control Panel
- 5700 Addressable Fire Control Panel

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

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact Silent Knight 12 Clintonville Road, Northford, CT 06472-1610. Phone: (800) 328-0103, Fax: (203) 484-7118. For Technical Support, Please call 800-446-6444. **www.silentknight.com**

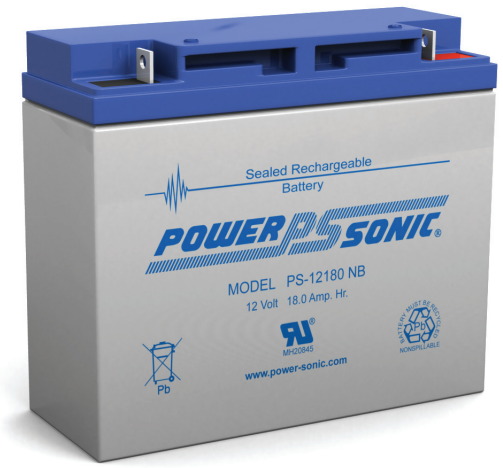
MADE IN AMERICA

FORM# 350224 Rev F

PS-12180 12 Volt 18.0 AH

Rechargeable Sealed Lead Acid Battery

We've Got The Power.™

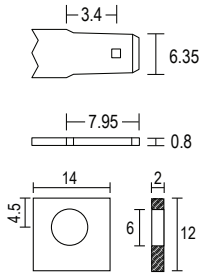


Features

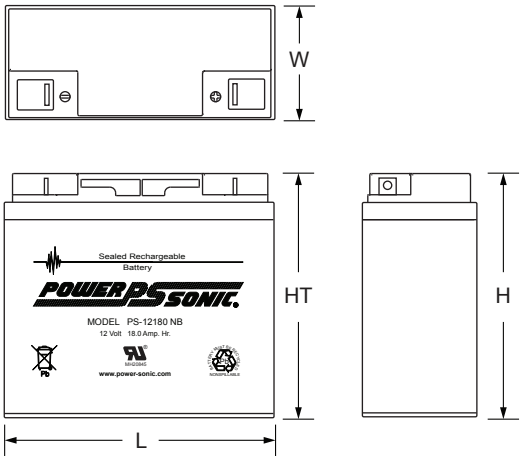
- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, spill proof construction allows safe operation in any position
- Power/volume ratio yielding unrivaled energy density
- Rugged impact resistant ABS case and cover (UL94-HB)
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized under file number MH 20845

Terminals (mm)

- PS-12180 F2: Quick disconnect AMP, INC. Faston tabs, 0.250" x 0.032"
- PS-12180 NB2: Tin plated brass post with 5mm nut & bolt connectors



Physical Dimensions: in (mm)



L: 7.13 (181) **W:** 3.00 (76) **H:** 6.59 (167) **HT:** 6.59 (167)

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. (900mA to 10.50 volts) ..... 18.0 AH
10-hr. (1.7A to 10.50 volts) ..... 17.0 AH
5-hr. (3.2A to 10.20 volts) ..... 16.0 AH
1-hr. (11.1A to 9.00 volts) ..... 11.1 AH
15-min. (34.3A to 9.00 volts) ..... 8.58 AH

Approximate Weight ..... 12.60 lbs. (5.72 kg)

Energy Density (20-hr. rate) ..... 1.53 W-h/in3 (93.51 W-h/l)

Specific Energy (20-hr. rate) ..... 17.14 W-h/lb (37.79 W-h/kg)

Internal Resistance (approx.) ..... 14 milliohms

Max Discharge Current (7 Min.) ..... 54.0 amperes

Max Short-Duration Discharge Current (10 Sec.) ..... 180.0 amperes

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

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

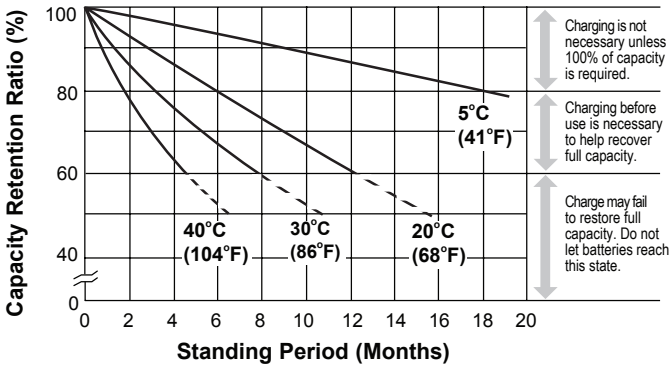
Operating Temperature Range

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

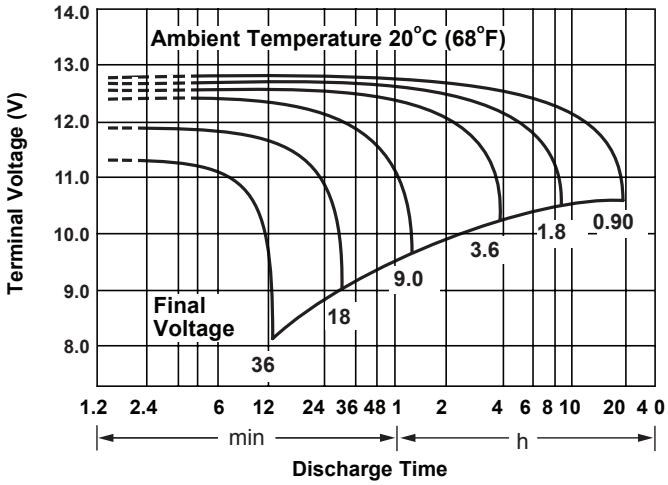
Case ..... ABS Plastic

Power-Sonic Chargers PSC-122000A, 124000A, 122000A-C, 124000A-C

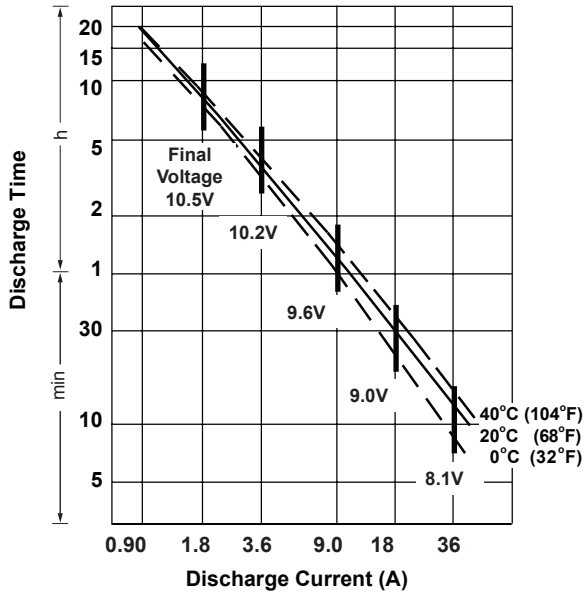
Shelf Life & Storage



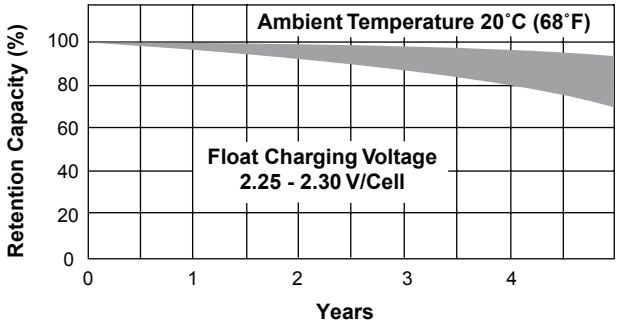
Discharge Characteristics



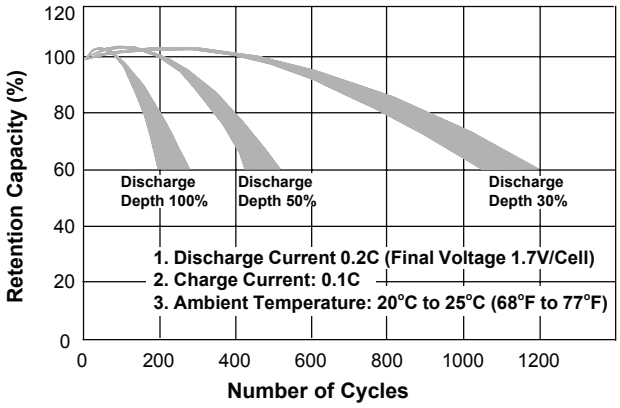
Discharge Time vs. Discharge Current



Life Characteristics in Stand-By Use



Life Characteristics in Cyclic Use



Charging

Cycle Applications: Limit initial current to 5.4A. 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 180mA. 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..

Contact Information

www.power-sonic.com

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SILENT KNIGHT
by Honeywell

5496 Intelligent Power Module

A dynamic combination of power and intelligence for your notification expansion needs.

The Model 5496 Intelligent Power Module by Silent Knight is the most-powerful and cost-effective power supply available today. It delivers 6 amps of notification appliance circuit power and built-in synchronization for appliances from System Sensor®, Gentex®, Faraday, AMSECO and Wheelock® — what you need to drive power-hungry components like ADA notification appliances. The 5496's advanced microprocessor design is years ahead of the competition. Its switch mode power supply design is up to 50% more efficient than competitive linear mode power supplies.

For the most sophisticated and cost-effective notification power supply available, you need Model 5496. Call Silent Knight today for more information at 1-800-328-0103.

Model 5496 Intelligent Power Module

The model 5496 is a 6 amp notification power expander that provides its own AC power connection, battery charging circuit, and backup battery for use with fire and security controls such as the IntelliKnight Model 5808 Fire Control /Communicator. The 5496 is the cost-effective solution for powering notification appliances required by the Americans with Disabilities Act (ADA). The 5496 has built-in ANSI cadence pattern, which can upgrade older control panels that lack cadence capability. The Output circuits can be programmed as Notification Appliance Circuits, or as Auxiliary Power (configurable for, constant, resettable, or door holder power).

Features

- UL Listed for 6 amps of notification power
- Power supply's advanced switch mode design reduces damaging heat and manages power up to 50% more efficiently than other systems
- Built-in synchronization for appliances from AMSECO, Gentex®, Faraday, System Sensor®, and Wheelock®
- 24 VDC filtered output voltage
- Four power-limited notification outputs; 2 Class A or 4 Class B, or 1 Class A and 2 Class B
- NACs are programmable as Notification Appliance Circuits, or as auxiliary power to be used as constant, resettable, or door holder power
- 3 amps per output circuit
- Ground fault detector
- Communicates to the FACP via 4-wire SBUS (wire runs up to 6000 ft)
- AC loss delay option shuts off power to non-essential high-current accessories like magnetic door holders
- Lightweight design adds to ease of installation and reduces shipping costs
- UL 864,1481 & 1971 listed
- ANSI Cadence pattern output capability built-in

Specifications

AC Input: 120 VAC at 2.7 A

Output: 24 VDC at 6 amps

Current:
Standby 40 mA
Alarm 160 mA

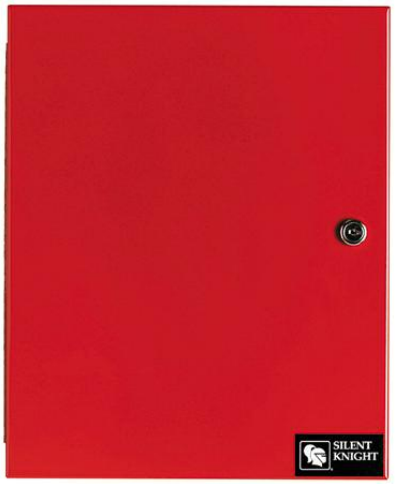
Notification/Aux.Power circuits: 4

Output configuration:
- 2 Class A (Style Z)
- 4 Class B (Style Y) (1 Class A & 2 Class B)

Amps per output circuit:
3.0 (6.0 amps total)

Notification circuit output:
20.4 to 27.3 VDC, 3.0 amps each, 4.7k EOL resistor required on each Class B circuit

Battery charging capacity: 35.0 AH



5496 Intelligent Power Module

Ambient Temp.:
32° to 120° F (0° to 49° C)

Dimensions:
12.25" W x 16" H x3" D
(30.88 Wx 40.64 H x7.62 D cm)

Listings:
UL
CSFM
MEA 429-92-E vol. XIV

Compatible FACPs

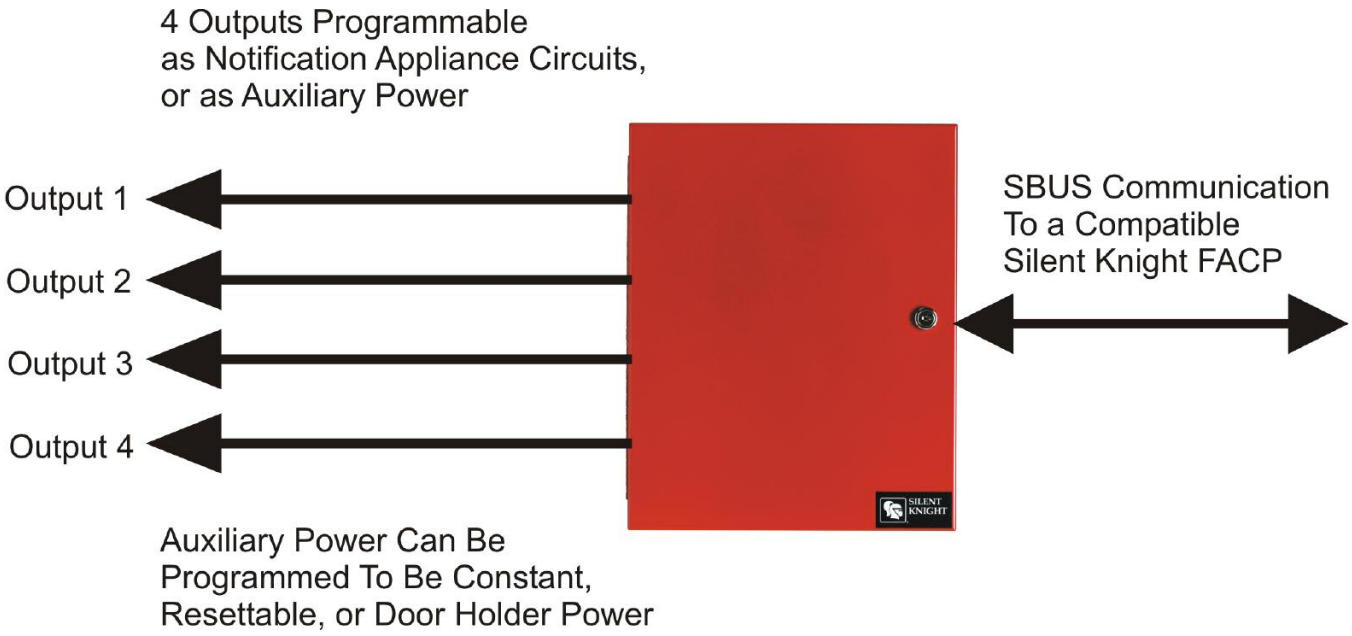
- IntelliKnight 5700
- IntelliKnight 5808
- IntelliKnight 5820XL
- IntelliKnight 5820XL-EVS

Firepower 5496
Distributed Power Module

Engineering Specifications

The contractor shall supply a power module compatible with the Silent Knight FACP. The power module must have 6.0 amps of output power. The power module shall connect to the main FACP via an RS 485 system bus (SBUS). The Outputs shall be programmable as Notification Appliance Circuits, or as Auxiliary Power (configurable for, constant, resettable, or door holder power). The power module shall have four separate outputs.

The power module RS 485 bus shall be optically isolated providing ground loop isolation and transient protection.



SILENT KNIGHT
by Honeywell

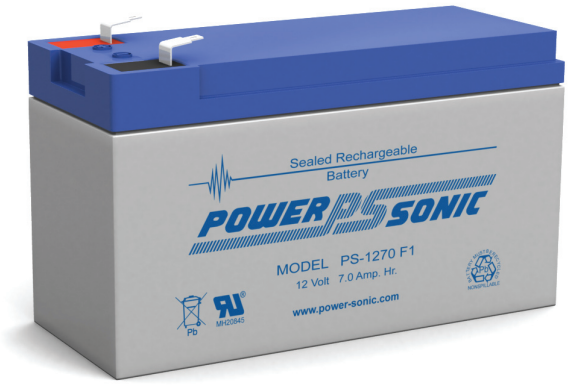
MADE IN AMERICA

FORM# 350387 Rev E

PS-1270 12 Volt 7.0 AH

Rechargeable Sealed Lead Acid Battery

We've Got The Power.™



Features

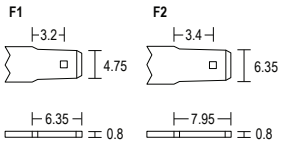
- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, spill proof construction allows safe operation in any position
- Power/volume ratio yielding unrivaled energy density
- Rugged impact resistant ABS case and cover (UL94-HB)
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized under file number MH 20845

Terminals (mm)

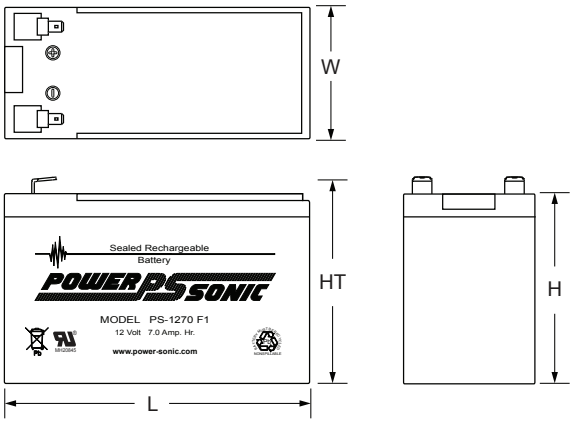
- F1 - Quick disconnect tabs, 0.187" x 0.032"- Mate with AMP. INC. FASTON "187" series

— OR —

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



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%

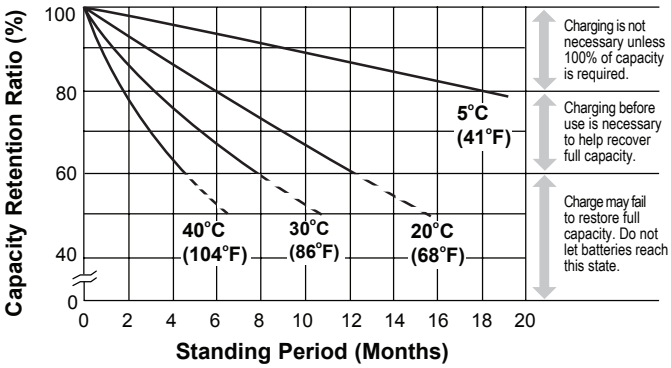
Operating Temperature Range

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

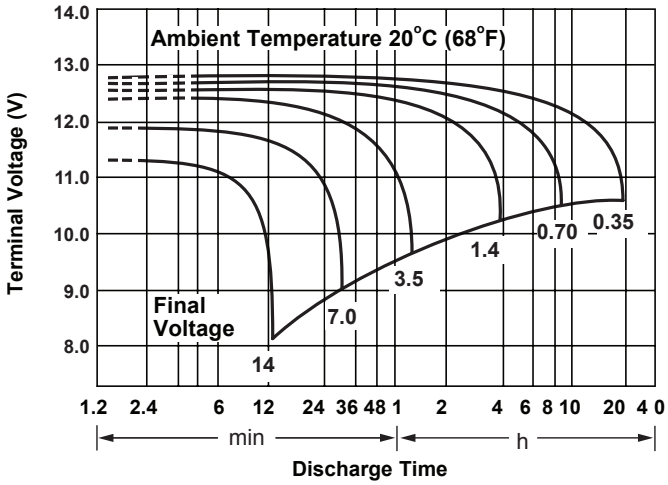
Case ..... ABS Plastic

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

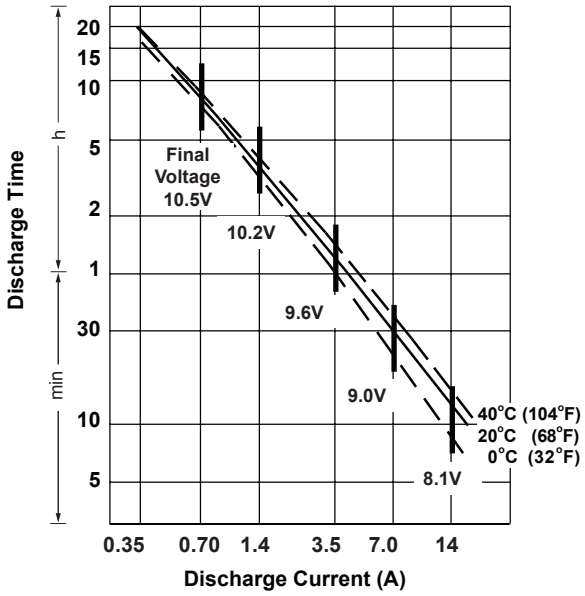
Shelf Life & Storage



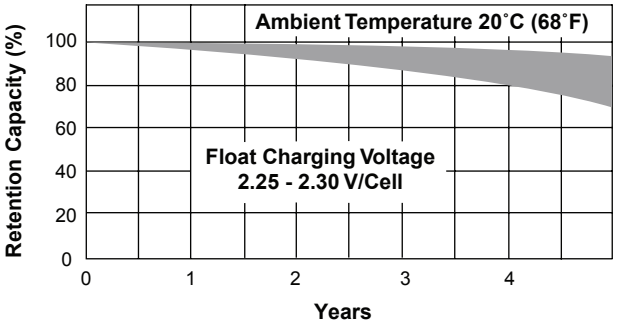
Discharge Characteristics



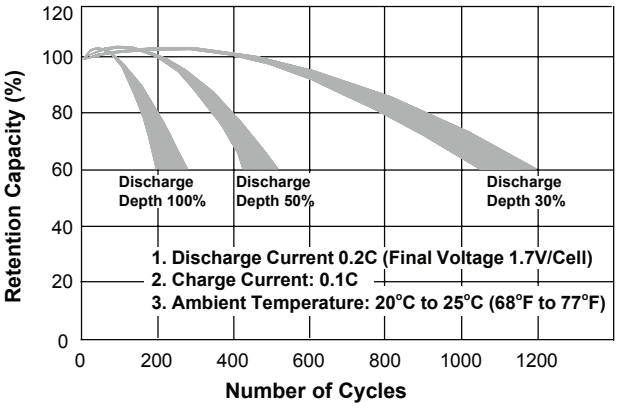
Discharge Time vs. Discharge Current



Life Characteristics in Stand-By Use



Life Characteristics in Cyclic Use



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..

Contact Information

www.power-sonic.com

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national-sales@power-sonic.com	customer-service@power-sonic.com	support@power-sonic.com	international-sales@power-sonic.com

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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.

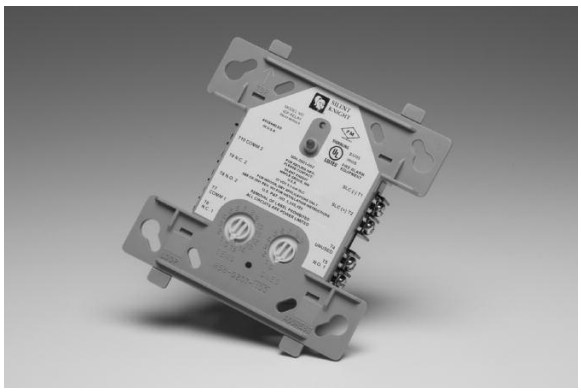
For more information about the IntelliKnight system, or to locate you nearest source, please call 800-328-0103.

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.



SK-Relay

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

Installation

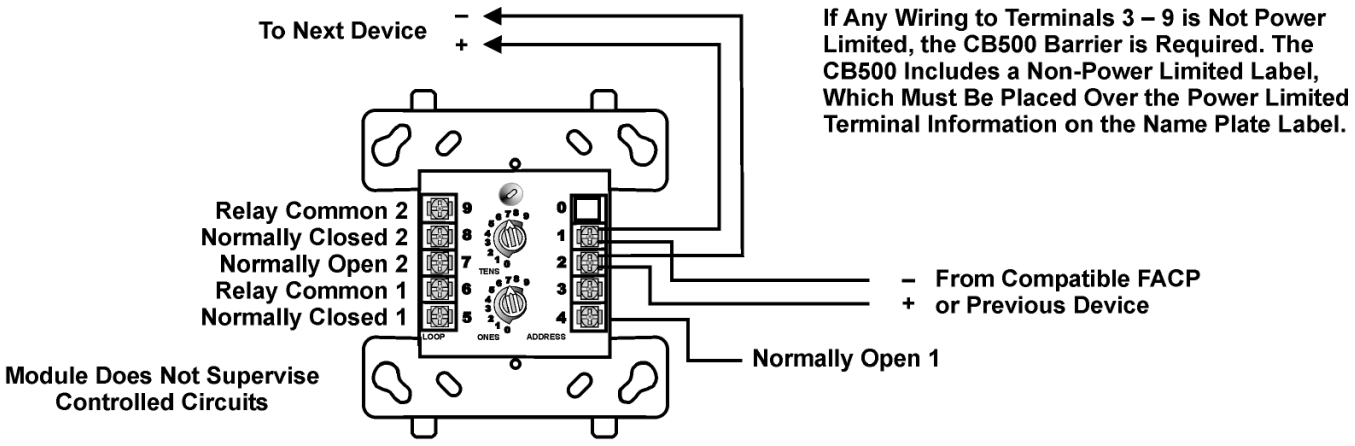
The SK-Relay mounts directly into a 4” square electrical box. The box must have a minimum depth of 2-1/8”. A surface mount electrical box (System Sensor® PN SMB500) is available from Silent Knight

Compatibility

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

5820XL
5820XL-EVS
5808
5700
5600 (Rev 2.0 or higher)

Model SK-Relay
Intelligent Relay Module



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

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact Silent Knight 12 Clintonville Road, Northford, CT 06472-1610 Phone: (800) 328-0103, Fax: (203) 484-7118. For Technical Support, Please Call 800-446-6444. **www.silentknight.com**

MADE IN AMERICA

FORM# 350127 Rev D

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
5820XL-EVS

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)

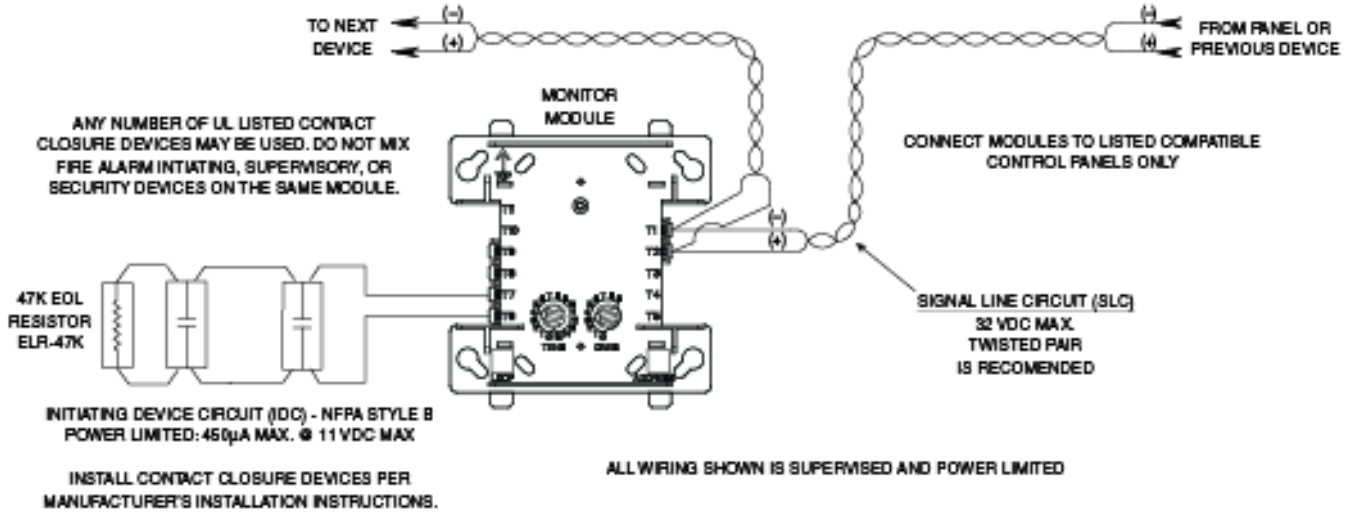
Electrical

Operating Voltage: 15 – 32 VDC

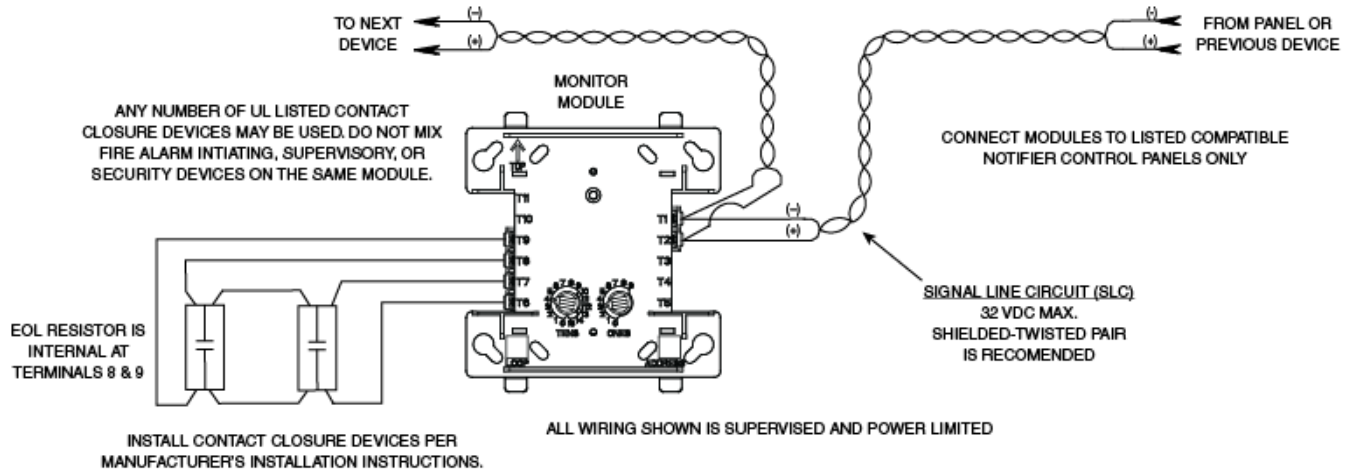
Current Draw (LED on): 5.0 mA max

Operating Current (LED flashing): 375 µA

Model SK-Monitor
Intelligent Monitor Module



2-Wire Initiating Circuit Configuration, NFPA Style B



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

MADE IN AMERICA

FORM# 350131 Rev D

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:

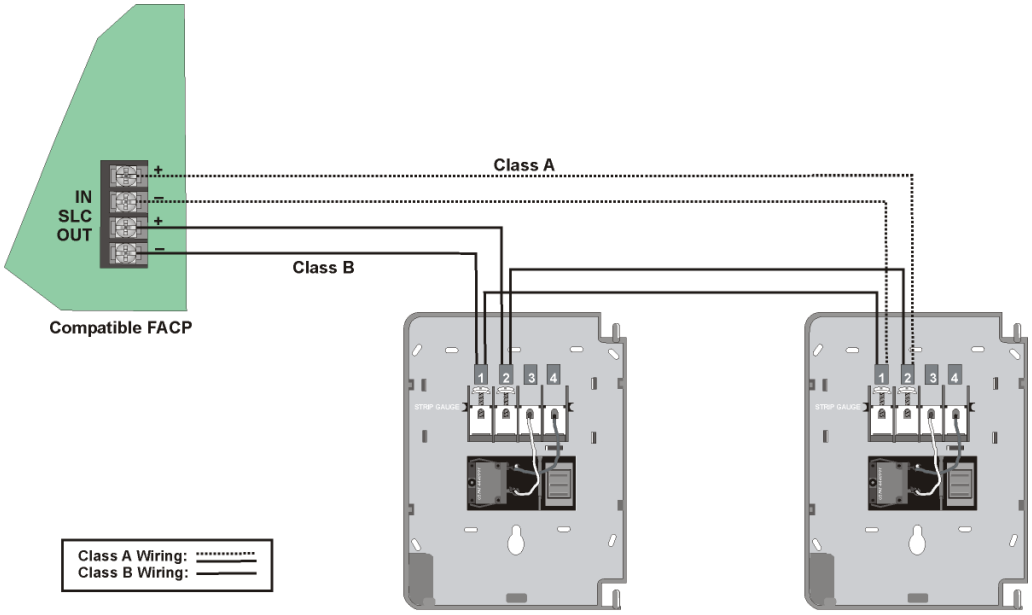
5600
5700
5808
5820XL
5820XL-EVS

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

MADE IN AMERICA

FORM# 350135 Rev C

SILENT KNIGHT by Honeywell

SK-FIRE-CO

Advanced Multi-Criteria Fire/CO Detector

SK-FIRE-CO offers world-class fire and carbon monoxide (CO) detection combined in a single addressable device to provide a practical and cost-effective solution for today's market.

For more information about the SK-FIRE-CO, or to locate you nearest source, please call 800-328-0103.

SK-FIRE-CO

The SK-FIRE-CO is a plug-in, addressable device that provides both fire and carbon monoxide (CO) detection. For fire, the detector combines four separate sensing elements in one unit (smoke, CO, light/flame, and heat) to sense multiple components of a fire. This approach enables enhanced sensitivity to real fire with heightened immunity to nuisance particulate. For CO, the detector's electrochemical sensing cell creates a separate signal for life safety CO detection.

Released through the incomplete burning of various fuels, CO is a colorless, odorless and deadly gas that is virtually impossible to detect with the human senses. Because the potential exists for dangerous levels of CO to accumulate in almost any building, legislation mandating the use of CO detection in commercial spaces continues to increase across the U.S. and Canada. The SK-FIRE-CO is listed to the UL 2075 standard for system-connected life safety carbon monoxide monitoring.

The SK-FIRE-CO should be used in conjunction with the B200S intelligent sounder base (sold separately), which can generate either a Temp 3 pattern for fire or a Temp 4 pattern for CO alarm indication. With each sounder base learning the address of the detector connected, the FACP can then command an individual sounder, or a group of sounders, to activate. The command set from the panel can be tailored to the specific event, allowing selection of tone, and group. For more information on the B200S refer to Data Sheet P/N 351183.

SK-FIRE-CO can also be used with the B210LP 6" standard base, the B200SR sounder base or the B224RB relay base.

Features

- Unique ability to detect all four major elements of a fire:
  - Smoke - Carbon Monoxide (CO)
  - Light/flame - Heat
- Separate CO detection signal
- Highest nuisance alarm immunity
- Automatic drift compensation of smoke sensor and CO cell
- Uses only one address on the SLC

SK-FIRE-CO installed in a B200S Sounder Base (sold separately)

- RealTest® CO testing capability
- UL 268 and UL 2075 listed
- Separates audible signal for fire or CO alarm when used with the B200S base
- CO cell end-of-life warning and fault

Compatibility

The SK-FIRE-CO is compatible with the following IntelliKnight FACP's programmed for System Sensor protocol: (Firmware version 13.0 or higher).

- 5700
- 5808
- 5820XL
- 5820XL-EVS

Model SK-FIRE-CO
Multi-Criteria CO Detector

Specifications

Physical

Diameter:	6.875” (17.46 cm) installed in a B200S base
Height:	3.46” (8.79 cm) installed in B200S base
Shipping Weight:	4.6 oz
Color:	Ivory

Operating

Temperature Range:	32° F to 100° F (0° C to 38° C)
Humidity:	15 to 90% relative humidity (non-condensing)
Air Velocity:	0 to 4,000 ft/min (0 to 20 m/sec)

Electrical

Operating Voltage:	15 to 32 VDC
Maximum Standby:	300µA at 24 VDC (no communication every 5 seconds with LED blink enabled)
Maximum Alarm Current (LED on):	7.2 mA at 24 VDC

CO Monitoring UL Standard Reference - Alarm Thresholds are as follows:

Parts Per Million	Detector Response Time
70 ± 5 ppm	60-240 min.
150 ± 5 ppm	10-50 min.
400 ± 10 ppm	4-15 min.

Note: Per UL Standard 2075, the SK-FIRE-CO has been tested to the sensitivity limits defined in UL Standard 2034.

Ordering Information

SK-FIRE-CO	Multi-Criteria CO Detector (base not included)

Optional Accessories

B200S	Intelligent sounder base
B210LP	6” mounting base
B200SR	Sounder base
B224RB	Relay base
M02-04-01	Detector test magnet
M02-09-01	Telescoping test magnet

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

FORM# 351181 Rev C

SILENT KNIGHT
by Honeywell

B200S

Sounder Base with CO Support

The B200S sounder base sets a new standard for performance, installation ease, and aesthetics. It offers maximum flexibility in installation, configuration, and operation to meet or exceed UL 268 and UL 464 requirements.

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

B200S

The B200S sounder base series is designed for new and existing commercial dwelling unit applications. It offers maximum flexibility in installation, configuration, and operation to meet or exceed UL 268 and UL 464 requirements.

The sounder base “listens in” to the communication between the attached sensor head and the fire alarm control panel (FACP) to adopt the same address as the detector, but as a unique device type on the loop. The FACP can then use that address to command an individual sounder — or a group of sounders — to activate.

When programmed for multi-station with a monitored conventional CO detector, the B200S can generate either a Temporal 3 pattern for fire or a Temporal 4 pattern for CO alarm indication.

With its attractive aesthetics, the B200S is ideal to use for applications where the appearance is critical. For example, to eliminate unsightly surface-mount boxes, the sounder base employs a separate mounting plate that can be installed on various junction box sizes. In addition, the mounting plate enables pre-wiring of all connections to simplify the installation. The housing is installed with the mounting plate and is locked in position with two retaining screws. The retaining screws are covered by the installed sensor head for added tamper resistance.

Features

- Addressability for maximum configuration flexibility
- Complies with UL® Standard 268 and UL® Standard 464
- Offers a programming option to control and activate the sounder base independently
- Supports Continuous, ANSI Temporal 3, ANSI Temporal 4, and March Time tones
- Employs multiple event-driven tone outputs
- Uses a mechanical locking feature that prevents the removal of the attached sensor head
- Capable of synchronizing with all notification appliance circuits on the same control panel on a general fire alarm condition

B200S Sounder Base

Compatibility

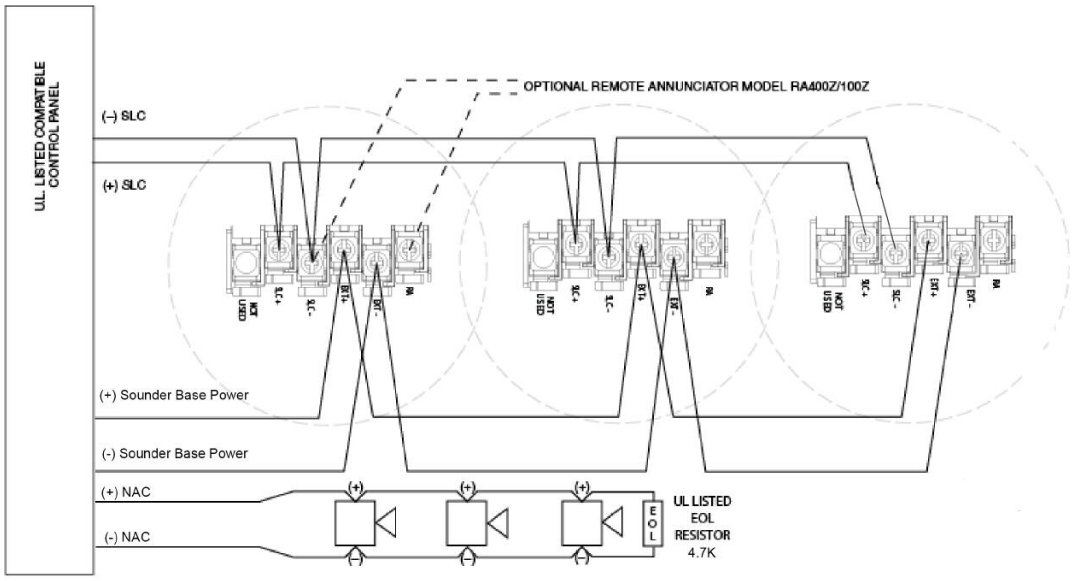
The B200S is compatible with the following SK-series detectors:

- SK-Photo Photoelectric Smoke Detector and SK-Photo-T Photoelectric Smoke Detector with Thermal
- SK-Acclimate Multicriteria Photoelectric Smoke Detector
- SK-Ion Ionization Smoke Detector
- SK-Heat Fixed Temperature Thermal Detector, SK -Heat-ROR Rate-of-Rise Detector with Thermal, and SK-Heat-HT Fixed High Temperature Thermal Detector

The B200S is compatible with the following IntelliKnight FACP’s programmed for System Sensor protocol: (Firmware version of 13.0 or higher)

5700
5808
5820XL
5820XL-EVS

Model B200S
Sounder Base



Wiring B200S

Installation

The B200S can be mounted directly to 4” (10.16 cm) square, 4” (10.16 cm) octagon, 3 1/2” (8.9 cm) octagon, single-gang or double-gang junction boxes.

Specifications

Physical

Height:	2.0” (5.08 cm) less sensor
Width:	6.875” (17.46 cm)
Shipping Weight:	0.50 lb. (227 gm)

Electrical

External Supply Voltage	16 to 33 VDC (VFWR)
External Supply Standby Current	500 µA maximum
Alarm Current	35 mA maximum
SLC Operating Voltage	15 to 32 VDC
SLC Standby Current	300 µA maximum

Environmental

Operating Temperature:	32ºF – 120ºF (0ºC – 49ºC)
Humidity:	10% – 93% non-condensing

Sound Output

High Volume	Greater than 85 dBA minimum - measured in a UL reverberant room at 10 feet, 24 Volts (in continuous tone).

Ordering Information

B200S	Intelligent Sensor Sounder Base
M02-04-01	Detector Test Magnet
M02-09-01	Telescoping Test Magnet

SILENT KNIGHT
by Honeywell

MADE IN AMERICA

FORM# 351183 Rev B

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).

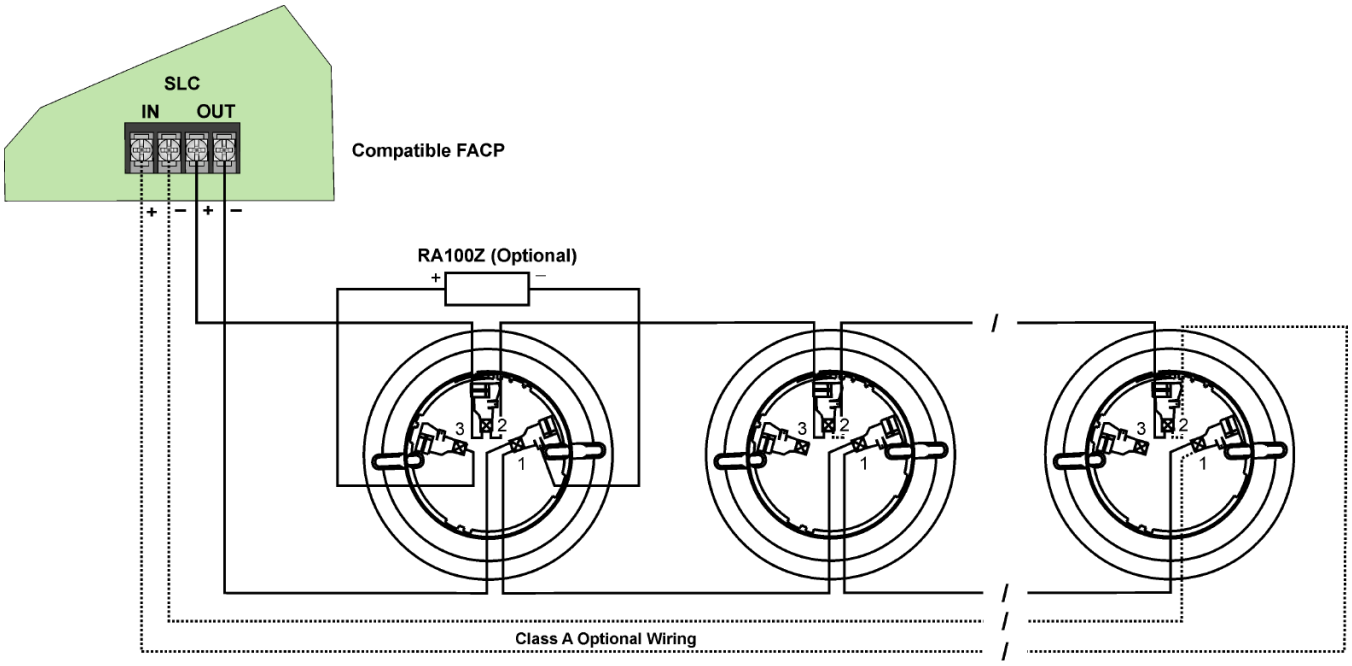
The PhotoR is a remote test capable detector for use with DNR(W) duct smoke detectors. (not included).

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

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www.silentknight.com

MADE IN AMERICA

FORM# 350118 Rev E

SILENT KNIGHT
by Honeywell

SK-Heat, SK-Heat-HT and SK-Heat-ROR

Addressable Thermal Heat and Rate-of-Rise Detectors

The SK-Heat, SK-Heat-HT, and SK-Heat-ROR are plug in thermal detectors, with integral communication, that provide features that surpass conventional detectors. These thermal detectors are for use with Silent Knight IntelliKnight series Fire Alarm Control Panels (FACPs).

IntelliKnight heat detectors are an essential component in virtually any IntelliKnight installation. The IntelliKnight panel recognizes each detector by its specific address, so precious seconds are not wasted in determining location of an alarm.

Description

SK-Heat, SK-Heat-HT and SK-Heat-ROR are intelligent sensors that utilize a state-of-the art thermistor sensing circuit for fast response. Sensitivity is continuously monitored and reported to the FACP. 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-Heat is a fixed temperature sensor that uses a thermistor sensing circuit to produce 135ºF (57ºC) fixed temperature alarm.

SK-Heat-HT is a variable high temperature detector that provides high temperature detection at 135°F - 190ºF. (57°C - 88°C)

SK-Heat-ROR is a rate-of-rise temperature sensor with 135ºF (57ºC) fixed temperature alarm.

Features

- Reliable analog communications for trouble-free operation
- Age resistant polymer housing
- Innovative thermistor sensing circuit
- Superior EMI resistance for reliability
- Variety of mounting options to meet any application
- Dual LED indicators for 360º visibility
- Detector transmits signal to indicate maintenance is required
- Plug-in mounting provides ease of installation
- Optional remote LED annunciator (System Sensor® PN RA100Z)
- Tamper-proof feature available on mounting bases
- Rotary address switches for fast installation
- UL Listed

Specifications

Physical

Height: 2.0" (51 mm)
Diameter: 6.1" (155 mm) installed in B210LP base
Shipping Weight: 4.8 oz (137 g)

Electrical

Operating Voltage:
15 to 32 Volts DC Peak

Standby Current:
300µA @ 24 VDC

LED Current: 6.5 mA@ 24 VDC

Environmental

Operating Temperature

SK-Heat & SK-Heat-ROR:
-4º – 100ºF (-20ºC– 38ºC)

SK-Heat-HT: -4º – 150ºF (-20ºC – 66ºC)

Humidity: 10% – 93% noncondensing

Thermal Ratings

SK-Heat: Fixed temperature alarm 135ºF (57ºC)

SK-Heat (base included)

SK-Heat-HT: High temperature heat sensor 135°F - 190ºF (57°C - 88ºC)

SK-Heat-ROR: Rate-of-rise detection 15ºF/min (8.3ºC/min)

Compatibility

The SK-Heat-HT and SK-Heat-ROR are compatible with the following IntelliKnight FACP's:

5820XL
5808
5700

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

5820XL
5808
5700
5600 (Rev 2.0 or higher)

The SK-Heat, SK-Heat-HT and SK-Heat-ROR are compatible with the following detector bases:

B210LP	6" base (included)
B501	2 wire base
B224BI	Isolator base
B224RB	Relay base
B200SR	Sounder base

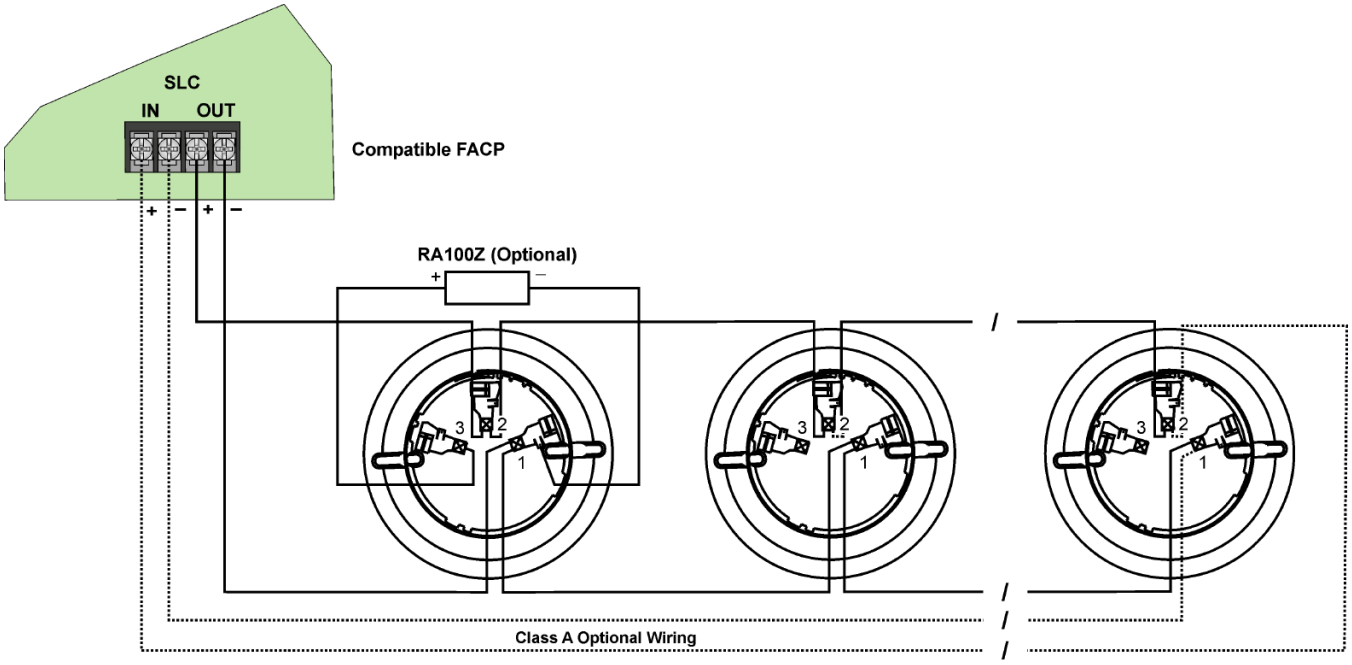
Model SK-Heat, SK-Heat-HT, SK-Heat ROR Addressable Thermal and Rate-of-Rise Thermal Detectors

Engineering Specifications

The contractor shall furnish and install where indicated on the plans, Intelligent Thermal Sensor Silent Knight Model SK-Heat, SK-Heat-HT or SK-Heat-ROR. The base included shall be B210LP.

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

The vandal-resistant, security locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be field removable when not required.Voltage and RF/transient suppression techniques shall be employed to minimize false alarm potential.



Wiring SK-Series Detector Mounting Bases

Accessories

RA100Z - Remote LED Annunciator.

RMK400 - Recessed Mounting Kit. Provides low profile for use with B501.

XR2B - Detector Removal Tool. A removal and re- placement tool for SK plug-in detectors. Includes the T55-127-000.

M02-04-01 - Replacement Test Magnet.

M02-09-00 - Test Magnet with Telescoping Handle.

XP-4 - Extension Pole for XR2B. Extends from 5 – 15 ft.

T55-127-000 - Detector Removal Head.

BCK-200B - Black Detector Kit. For SK-series detectors.

* Unless otherwise noted, specifications apply to all SK thermal detectors.

SILENT KNIGHT by Honeywell

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MADE IN AMERICA

FORM# 350120 Rev. D1

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

MADE IN AMERICA

FORM# 350122 Rev D

Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

SPECTRAlert ADVANCE from System Sensor

SpectrAlert® Advance audible visible notification products are rich with features guaranteed to cut installation times and maximize profits.

Features

- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Field-selectable candela settings on wall units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and three volume selections
- Universal mounting plate for wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically Compatible with legacy SpectrAlert devices
- Compatible with MDL sync module
- Listed for ceiling or wall mounting

The SpectrAlert Advance series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry. With white and red plastic housings, wall and ceiling mounting options, and plain and FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement.

Like the entire SpectrAlert Advance product line, wall-mount horns, strobes, and horn strobes include a variety of features that increase their application versatility while simplifying installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, SpectrAlert Advance utilizes a universal mounting plate with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to a suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with three volume selections.

Agency Listings

SIGNALING UL LISTED
S4011 (chimes, horn strobes, horns)
S5512 (strobes)

FM APPROVED
3023572

MEA approved
MEA452-05-E

7125-1653:186 (indoor strobes)
7125-1653:188 (horn strobes, chime strobes)
7135-1653:189 (horns, chimes)

SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance horns, strobes, and horn strobes shall mount to a standard 4 × 4 × 1½-inch back box, 4-inch octagon back box, or double-gang back box. Two-wire products shall also mount to a single-gang 2 × 4 × 17/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 8 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185.

Strobe

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

Horn Strobe Combination

The horn strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn strobe models shall operate on a coded or non-coded power supply.

Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. The module shall mount to a 411/16 × 411/16 × 21/8-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/Electrical Specifications	
Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12 DC/FWR or regulated 24 DC/FWR[1]
Operating Voltage Range[2]	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6″L × 4.7″W × 2.5″D (142 mm L × 119 mm W × 64 mm D)
Horn Dimensions	5.6″L × 4.7″W × 1.3″D (142 mm L × 119 mm W × 33 mm D)
Wall-Mount Back Box Skirt Dimensions (BBS-2, BBSW-2)	5.9″L × 5.0″W × 2.2″D (151 mm L × 128 mm W × 56 mm D)
Wall-Mount Trim Ring Dimensions (sold as a 5 pack) (TR-HS, TRW-HS)	5.7″L × 4.8″W × 0.35″D (145 mm L × 122 mm W × 9 mm D)

Notes:

1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.
2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

		8–17.5 Volts		16–33 Volts	
	Candela	DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	NA	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205
High Candela Range	135	NA	NA	228	207
	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

UL Max. Horn Current Draw (mA RMS)

		8–17.5 Volts		16–33 Volts	
Sound Pattern	dB	DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-temporal	High	57	56	69	75
Non-temporal	Medium	42	50	60	69
Non-temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)

	8–17.5 Volts		16–33 Volts						
DC Input	15	15/75	15	15/75	30	75	95	110	115
Temporal High	137	147	79	90	107	176	194	212	218
Temporal Medium	132	144	69	80	97	157	182	201	210
Temporal Low	132	143	66	77	93	154	179	198	207
Non-Temporal High	141	152	91	100	116	176	201	221	229
Non-Temporal Medium	133	145	75	85	102	163	187	207	216
Non-Temporal Low	131	144	68	79	96	156	182	201	210
FWR Input									
Temporal High	136	155	88	97	112	168	190	210	218
Temporal Medium	129	152	78	88	103	160	184	202	206
Temporal Low	129	151	76	86	101	160	184	194	201
Non-Temporal High	142	161	103	112	126	181	203	221	229
Non-Temporal Medium	134	155	85	95	110	166	189	208	216
Non-Temporal Low	132	154	80	90	105	161	184	202	211

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, High Candela Range (135–185 cd)

	16–33 Volts					16–33 Volts			
DC Input	135	150	177	185	FWR Input	135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

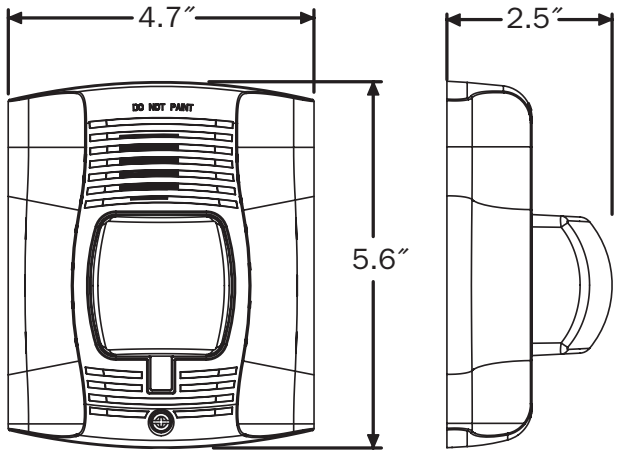
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

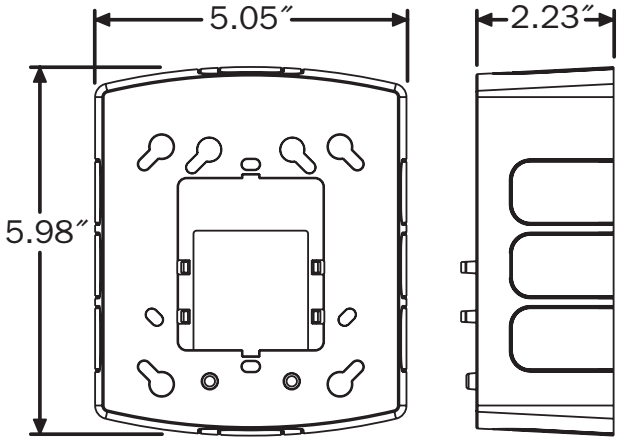
			8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
Switch Position	Sound Pattern	dB	DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	89
4	Non-Temporal	High	82	82	88	88	93	92	100	100
5	Non-Temporal	Medium	78	78	85	85	90	90	98	98
6	Non-Temporal	Low	75	75	81	81	88	84	96	92
7†	Coded	High	82	82	88	88	93	92	101	101
8†	Coded	Medium	78	78	85	85	90	90	97	98
9†	Coded	Low	75	75	81	81	88	85	96	92

†Settings 7, 8, and 9 are not available on 2-wire horn strobes.

SpectrAlert Advance Dimensions



Wall-mount horn strobes



Wall back box skirt

SpectrAlert Advance Ordering Information

Model	Description
Wall Horn Strobes	
P2R*†	2-Wire Horn Strobe, Standard cd‡, Red
P2RH*	2-Wire Horn Strobe, High cd, Red
P2W*	2-Wire Horn Strobe, Standard cd, White
P2WH*	2-Wire Horn Strobe, High cd, White
P4R*	4-Wire Horn Strobe, Standard cd, Red
P4RH	4-Wire Horn Strobe, High cd, Red
P4W	4-Wire Horn Strobe, Standard cd, White
Wall Strobes	
SR*†	Strobe, Standard cd, Red
SRH*†	Strobe, High cd, Red
SW*	Strobe, Standard cd, White
SWH*	Strobe, High cd, White

Model	Description
Horns	
HR	Horn, Red
HW	Horn, White
Accessories	
BBS-2	Back Box Skirt, Wall, Red
BBSW-2	Back Box Skirt, Wall, White
TR-HS	Trim Ring, Wall, Red
TRW-HS	Trim Ring, Wall White

Notes:

* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P.
† Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP.
‡ "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings.

SYSTEM SENSOR®

3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

AVDS00601 • 3/12

Outdoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

SpectrAlert® Advance outdoor audible visible products are rich with features that cut installation times and maximize profits.

Features

- Weatherproof per NEMA 4X, IP56
- Listed to UL 1638 (strobe) and UL 464 (horn)
- Compatible with System Sensor synchronization protocol and legacy SpectrAlert products
- Field-selectable candela settings: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Rotary switch for horn tone and three volume selections
- Horn rated at 88+ dBA at 16 volts
- Rated from –40°F to 151°F
- Universal mounting plate with an onboard shorting spring that tests wiring continuity before devices are installed
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Listed for ceiling or wall mounting

Agency Listings

SIGNALING UL LISTED
S4011 (chimes, horn strobes, horns)
S3593 (outdoor and alert strobes)

FM APPROVED
3023572

MEA approved
MEA452-05-E

7300-1653:187 (outdoor strobes)
7125-1653:188 (horn strobes, chime strobes)
7135-1653:189 (horns, chimes)

SpectrAlert Advance offers the broadest line of outdoor horns, strobes, and horn strobes in the industry. With white or red plastic housings, wall or ceiling mounting options, and plain or FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement, including indoor, outdoor, wet, and dry applications in temperatures from –40°F to 151°F.

Like the entire SpectrAlert Advance line, outdoor horns, strobes, and horn strobes for wall applications include a variety of features that increase application flexibility and simplify installation. First, field-selectable settings, including candela, automatic selection of 12- or 24-volt operation, horn tones, and three volume options enable installers to easily adapt devices to meet requirements.

Next, SpectrAlert Advance devices use a universal mounting plate for both wall and ceiling applications. This mounting plate includes an onboard shorting spring that ensures wiring continuity before devices are installed, so installers can verify proper wiring without mounting the devices and exposing them to potential construction damage. Once the plates are mounted, all SpectrAlert Advance devices utilize a plug-in design with a single captured screw to speed installation and virtually eliminate costly ground faults.

Outdoor devices ship with weatherproof plastic back boxes (metal back boxes are available separately) that accommodate in-and-out wiring for daisy chaining devices. Plastic back boxes feature removable side flanges and improved resistance to saltwater corrosion. Knock-outs located on the back eliminate the need to drill holes for screw-in mounting. Plastic and metal weatherproof back boxes come with ¾-inch top and bottom conduit entries and ¾-inch knock-outs at the back. A screw-in NPT plug with an O-ring gasket for a watertight seal is included with each back box.

SpectrAlert Advance Outdoor Horn, Strobe, and Horn Strobe Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance outdoor horns, strobes, and horn strobes shall mount to a weatherproof back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 17 and 33 volts. Outdoor SpectrAlert Advance products shall operate between –40 and 151 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185.

Strobe

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The strobe shall be suitable for use in wet environments.

Horn Strobe Combination

The horn strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three pattern and a non-temporal (continuous) pattern. These options shall be set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn or horn strobe models shall operate on a coded or non-coded power supply. The horn strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The horn strobe shall be suitable for use in wet environments.

Physical/Electrical Specifications

Operating Temperature	–40°F to 151°F (–40°C to 66°C)
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12 DC/FWR or regulated 24 DC/FWR[1]
Operating Voltage Range[2]	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6″L × 4.7″W × 2.5″D (142 mm L × 119 mm W × 64 mm D)
Horn Dimensions	5.6″L × 4.7″W × 1.3″D (142 mm L × 119 mm W × 33 mm D)
Wall-Mount Weatherproof Back Box Dimensions (SA-WBB)	5.7″L × 5.1″W × 2.0″D (145 mm L × 130 mm W × 51 mm D)

Notes:

1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.
2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

		8–17.5 Volts		16–33 Volts	
	Candela	DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	NA	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205
High Candela Range	135	NA	NA	228	207
	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

UL Max. Horn Current Draw (mA RMS)

		8–17.5 Volts		16–33 Volts	
Sound Pattern	dB	DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-Temporal	High	57	56	69	75
Non-Temporal	Medium	42	50	60	69
Non-Temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)

	8–17.5 Volts		16–33 Volts						
DC Input	15	15/75	15	15/75	30	75	95	110	115
Temporal High	137	147	79	90	107	176	194	212	218
Temporal Medium	132	144	69	80	97	157	182	201	210
Temporal Low	132	143	66	77	93	154	179	198	207
Non-Temporal High	141	152	91	100	116	176	201	221	229
Non-Temporal Medium	133	145	75	85	102	163	187	207	216
Non-Temporal Low	131	144	68	79	96	156	182	201	210
FWR Input									
Temporal High	136	155	88	97	112	168	190	210	218
Temporal Medium	129	152	78	88	103	160	184	202	206
Temporal Low	129	151	76	86	101	160	184	194	201
Non-Temporal High	142	161	103	112	126	181	203	221	229
Non-Temporal Medium	134	155	85	95	110	166	189	208	216
Non-Temporal Low	132	154	80	90	105	161	184	202	211

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, High Candela Range (135–185 cd)

	16–33 Volts					16–33 Volts			
DC Input	135	150	177	185	FWR Input	135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

Strobe Output (cd)	
Listed Candela	Candela rating at –40°F
15	Do not use below 32°F
15/75	
30	
75	44
95	70
110	110
115	115
135	135
150	150
177	177
185	185

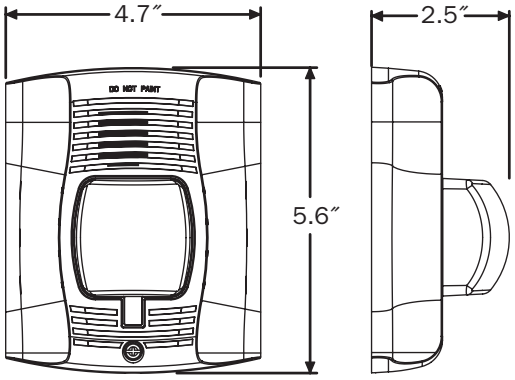
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

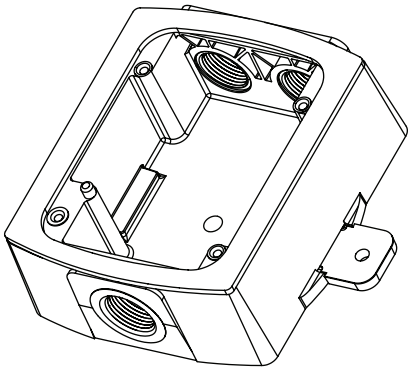
			8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
Switch Position	Sound Pattern	dB	DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	89
4	Non-Temporal	High	82	82	88	88	93	92	100	100
5	Non-Temporal	Medium	78	78	85	85	90	90	98	98
6	Non-Temporal	Low	75	75	81	81	88	84	96	92
7†	Coded	High	82	82	88	88	93	92	101	101
8†	Coded	Medium	78	78	85	85	90	90	97	98
9†	Coded	Low	75	75	81	81	88	85	96	92

†Settings 7, 8, and 9 are not available on 2-wire horn strobe.

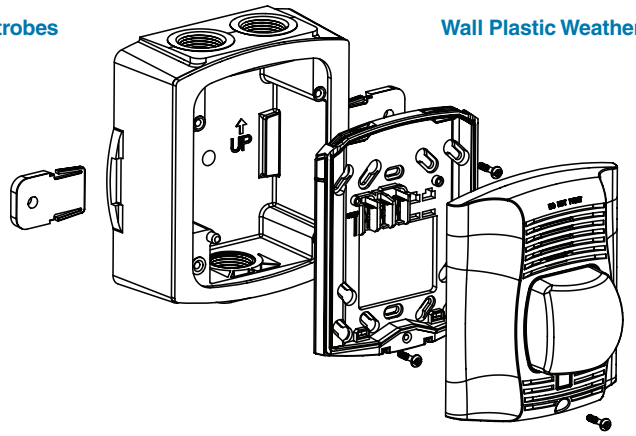
SpectrAlert Advance Diagrams



Wall-Mount Horn Strobes



Wall Plastic Weatherproof Back Box



Wall-Mount Horn Strobe with Plastic Weatherproof Back Box

SpectrAlert Advance Ordering Information

Model	Description
Wall Horn Strobes	
P2RK*†	2-Wire Horn Strobe, Standard cd, Red, Outdoor (includes plastic weatherproof back box)
P2RHK*†	2-Wire Horn Strobe, High cd, Red, Outdoor (includes plastic weatherproof back box)
P2WK*†	2-Wire Horn Strobe, Standard cd, White, Outdoor (includes plastic weatherproof back box)
P2WHK*†	2-Wire Horn Strobe, High cd, White, Outdoor (includes plastic weatherproof back box)
P4RK†	4-Wire Horn Strobe, Standard cd, Red, Outdoor (includes plastic weatherproof back box)
P4WK	4-Wire Horn Strobe, Standard cd, White, Outdoor (includes plastic weatherproof back box)
P2RHK-120	2-Wire Horn Strobe, High cd, Red, Outdoor, 120 V (includes plastic weatherproof back box)
Wall Strobes	
SRK*†	Strobe, Standard cd, Red, Outdoor (includes plastic weatherproof back box)
SRHK*†	Strobe, High cd, Red, Outdoor (includes plastic weatherproof back box)
SWK*†	Strobe, Standard cd, White, Outdoor (includes plastic weatherproof back box)
SWHK*†	Strobe, High cd, White, Outdoor (includes plastic weatherproof back box)
Horns	
HRK†	Horn, Red, Outdoor (includes plastic weatherproof back box)
Accessories	
SA-WBB	Red, Metal Weatherproof Back Box
SA-WBBW	White, Metal Weatherproof Back Box

Notes:
* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2RK-P.
† Add "-R" to model number for weatherproof replacement device (no back box included), only for use with weatherproof outdoor flush mounting plate, WTP and WTPW.
"Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings. **When replacing standard outdoor units both the device and back box must be replaced.**

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AVDS01201 • 3/12

Mini-Horns

The SpectrAlert® Advance series of mini-horn sounders are designed to simplify installations to provide primary and secondary signaling for fire and security applications.

Features

- 12 and 24V operation
- High and low volume settings
- Temporal and non-temporal tones
- Mounts to single gang back box
- Compatible with MDL sync module
- Mechanically and electrically compatible with PA400 series Mini-Alert™ sounders
- Listing for ceiling or wall mounting

The MHR and MHW mini-horns operate at 12 and 24 volts and are ideal for hotel, motel or residential fire system applications, where a smaller notification device is desired. The mini-horns offer high and low volume settings, and temporal or non-temporal tones. The horns can be mounted to single gang back boxes for aesthetically sensitive applications. Synchronization is also provided when using the MDL module.

The MHR and MHW mini-horns can operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified, unfiltered power supply. They are listed to Underwriter's Laboratories Standard UL 464 for fire protective signaling systems.

Agency Listings

UL LISTED S4011 | FM APPROVED 3028007 | ULC CS1099 | 7135-1653:196

SpectrAlert® Advance Mini-Horn Specifications

Architectural/Engineering Specifications
Mini-horns shall be a System Sensor Model MHR or MHW capable of operating at nominal 12 or 24VDC and shall mount to a deep single gang back box. Mini-horn shall be listed to Underwriter's Laboratories Standard UL464 for fire protective signaling systems. Mini-horns shall operate between 32 and 120 degrees Fahrenheit from a regulated DC, or full-wave rectified, unfiltered power supply. When used with the Sync•Circuit™ Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts.

Physical Specifications	
Dimensions	4.6˝L × 2.9˝W × .45˝D
Weight	2.67 oz.
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Mounting	Surface: deep single-gang back box (2¾˝ deep) Flush: Standard 4˝ × 4˝ back box with single gang mud ring, which allows sufficient clearance for conduit entrance.

Electrical Specifications	
Input Terminals	12 to 18 AWG
Nominal Voltage	Regulated 12DC/FWR or regulated 24DC/FWR
Operating Voltage	8–33
Operating Voltage with MDL	9–33

UL Sound Output and Current Draw Data

Sounder Output (dBA)

Switch Setting	Pattern	Output Level	8–17.5 VDC	8–17.5 VFWR	Nominal 12 VDC	Nominal 12 VFWR	16–33 VDC	16–33 VFWR
1	Temporal	High	68	67	71	70	78	76
2	Temporal	Low	66	65	69	68	76	75
3	Non-temporal	High	72	71	75	74	80	79
4	Non-temporal	Low	70	69	73	72	78	77

Sounder Current Draw (mA RMS)

			8–17.5 Volts		16–33 Volts	
Switch Position	Sound Pattern	Volume	DC	FWR	DC	FWR
1	Temporal	High	12	10	17	15
2	Temporal	Low	10	9	14	13
3	Non-temporal	High	22	17	29	25
4	Non-temporal	Low	17	13	21	19

Ordering Information

Part No.	Description
MHR	Mini-Horn, Red
MHW	Mini-Horn, White

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GENTEX CORPORATION

Photoelectric Smoke Alarm

120VAC and 220VAC with 9VDC Battery Back-Up Single/Multiple Station Smoke Alarm

9000/ 9003 SERIES

Applications

The 9000/9003 Series of photoelectric smoke alarms is designed for residential and commercial residential applications, including homes, apartments, hospitals, hotels and motels, in compliance with UL 217, UL 1730 applicable IBC/IFC Standards and NFPA 72.

Available in many different models, the 9120/9123 Series is engineered to virtually eliminate nuisance alarms and deliver outstanding performance wherever reliable fire protection is required. The 9000/9003 Series is provided with a 9VDC alkaline battery for back-up in the event building power is lost. The battery impedance is verified and the alarm provides a low or missing battery warning.

The Gentex 9000/9003 Series provides an exclusive patented three position test feature that simulates a 0.85% and 3.5% actual smoke condition in full compliance with NFPA 72 and UL Standards.

Options include self-restoring 135°F integral or isolated heat thermals and Form A/Form C dry contacts for remote annunciation. Tandem interconnection of up to 12 units is available on several models; tandem interconnection of up to 6 units is available on "F" models, which activate the dry contacts from the tandem wire or a local alarm.

Easy Wash™ - On Site Maintenance Program

Standard Features

- Available in 120VAC and 220VAC with 9VDC battery back-up
- Horn frequency 3100 Hz (nominal)
- Nominal 2.5% sensitivity
- Patented three position test switch
- Relays operate on battery back-up
- Quick-disconnect wiring harness
- 90dBA continuous piezo horn (9120/9220 Series)
- 90dBA temporal 3 evacuation piezo horn (9123/9223 Series)
- 5-to-1 signal-to-noise ratio
- Pulsing LED sensing chamber
- Fully insect screened
- Interconnect with all Gentex tandem capable smoke alarms
- Easy Wash™ on-site maintenance washing program
- Red LED pulses every 30 seconds, green LED for AC power on
- Mounting hardware adapts to standard junction boxes
- Dust cover to prevent contamination during installation
- Low or missing battery indicator
- 1 year warranty from date of purchase

Product Listings

SIGNALING UL LISTED

- **UL 217 and UL 1730 Listed**
- **CSFM #7257-569:117**
- **BS+A/MEA #285-91-E**
- **BFP (City of Chicago)**
- **MSFM Listing #1929**
- **Hong Kong FSD Listed (9220 Series ONLY)**

Product Compliance

- **NFPA 72**
- **IBC/IFC/IRC**

NEMA MEMBER

ASSEMBLED IN THE USA

9000 (9120/9220) Series - Continuous Piezo Sounder

Model Number	Part Number	Voltage	Integral 135°F Thermal	Isolated 135°F Thermal	Tandem Up To 12 Units	Tandem Up To 6 Units	Form A/C Contacts
9120	917-0001-002	120VAC			●		
9120T	917-0002-002	120VAC	●		●		
9120H	917-0003-002	120VAC		●	●		
9120F	917-0004-002	120VAC				●	●
9120TF	917-0009-002	120VAC	●			●	●
9120HF	917-0005-002	120VAC		●		●	●
9220	917-0026-002	220VAC			●		
9220T	917-0027-002	220VAC	●		●		
9220H	917-0028-002	220VAC		●	●		
9220F	917-0029-002	220VAC				●	●
9220TF	917-0031-002	220VAC	●			●	●
9220HF	917-0030-002	220VAC		●		●	●

9003 (9123/9223) Series - Temporal 3 Evacuation Piezo Sounder

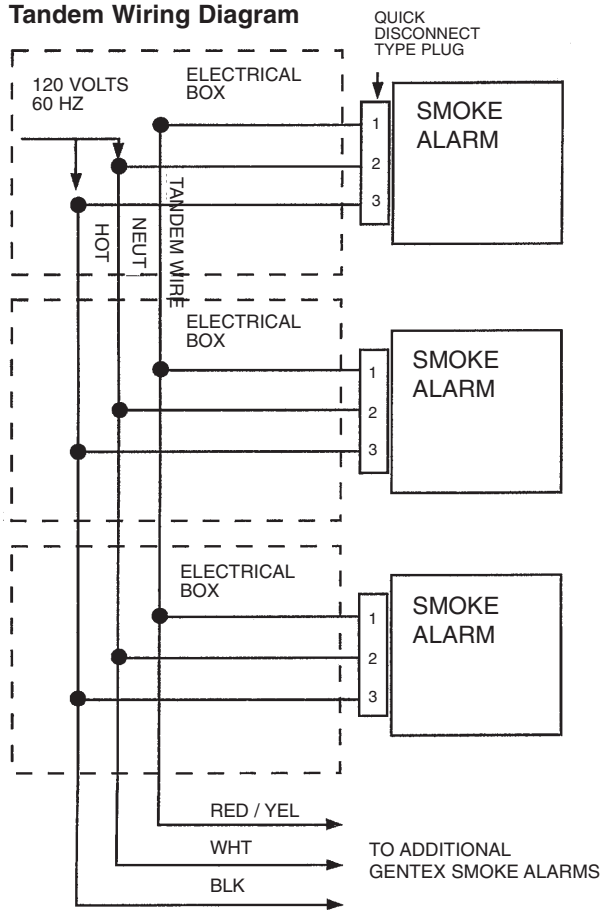
Model Number	Part Number	Voltage	Integral 135°F Thermal	Isolated 135°F Thermal	Tandem Up To 12 Units	Tandem Up To 6 Units	Form A/C Contacts
9123	917-0012-002	120VAC			●		
9123T	917-0013-002	120VAC	●		●		
9123H	917-0014-002	120VAC		●	●		
9123F	917-0015-002	120VAC				●	●
9123TF	917-0017-002	120VAC	●			●	●
9123HF	917-0016-002	120VAC		●		●	●
9223	917-0032-002	220VAC			●		
9223T	917-0033-002	220VAC	●		●		
9223H	917-0034-002	220VAC		●	●		
9223F	917-0035-002	220VAC				●	●
9223TF	917-0037-002	220VAC	●			●	●
9223HF	917-0036-002	220VAC		●		●	●

NOTES:

- Series available in round configuration only.
- When testing 9123 Series, it may take up to 16 seconds longer for smoke alarm to go in or out of alarm mode.
- It is recommended that 9000/9003 Series smoke alarm be tested weekly.
- Refer to Technical Bulletin 002 for *Easy Wash*™ on site washing instructions
- 9120/9220 units produce a non-temporal audible alarm and are therefore not intended for locations where the desired action of the occupant(s) is evacuation.
- 9123/9223 units produce a temporal 3 audible alarm. Per NFPA 72, the American National Standard Audible Emergency Evacuation Signal as defined in ANSI S3.41, is required whenever the intended response is to evacuate the building.

9000/9003 Series Wiring Diagrams

Tandem Wiring Diagram

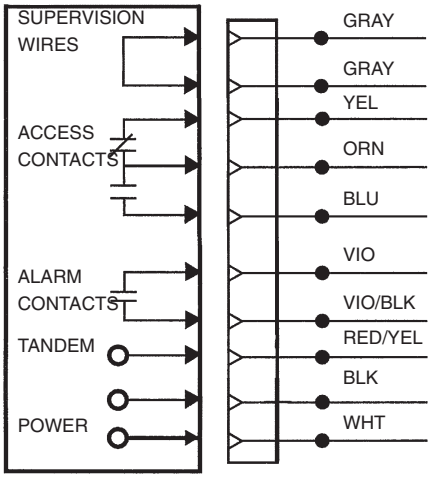


LIMITATIONS:
Maximum of 12 alarms (9120/9123, 9120/9123T, 9120/9123H, 9220/9223, 9220/9223T, 9220/9223H) may be connected together. Do not exceed 125 feet between each detector. Do not exceed 1125 feet between the first and last alarm. NOTE: Gentex smoke alarms can not be interconnected to detectors from other manufacturers.

A MAXIMUM OF SIX (6) ALARMS WITH A RELAY MAY BE TANDEM INTERCONNECTED. (9120/9123F, 9120/9123TF, 9120/9123HF, 9220/9223F, 9220/9223TF, 9220/9223HF)

Relay Models

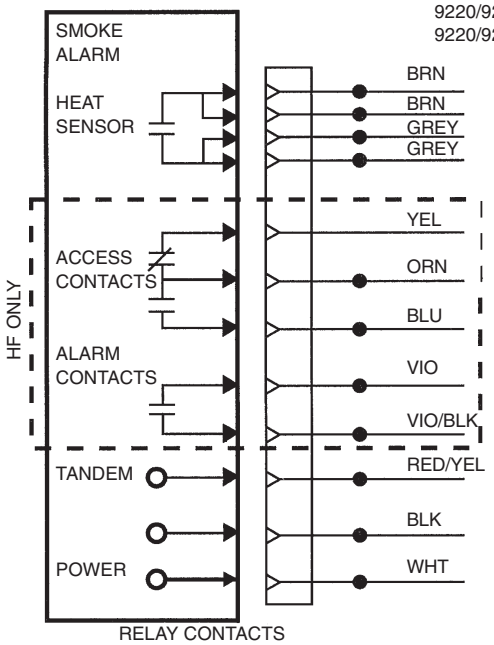
Models
9120/9123F
9120/9123TF
9230/9223F
9220/9223TF



CAUTION:
RED/YELLOW wire to be capped when not in use. This wire is for tandem connection only. Do not connect to any other circuit.

Isolated Thermal with Optional Accessory Contacts

Models
9120/9123H
9120/9123HF
9220/9223H
9220/9223HF



RELAY CONTACTS
RATED LOAD RESISTIVE
1.0 AMP @ 24 VDC
0.6 AMP @ 125 VAC MAX
0.3 AMP @ 220 VAC MAX

9000/ 9003 SERIES

Electrical Specifications

Operating Voltage (9120/9123)	120VAC, 60Hz
Operating Voltage (9220/9223)	220VAC, 50Hz
Operating Current	.045 amps
Operating Current (Relay Options)	.070 amps
Operating Ambient Temp Range	40°F to 100°F
Alarm Horn Rating	90dBA at 10 feet
Nominal Sensitivity	2.5% obscuration
"F" Auxiliary Relay	1 Form A & 1 Form C (0.6 amp)
"T" Integral Thermal (Self-Restoring)	135°F at 50 feet
"H" Isolated Thermal Form A (Self-Restoring)	135°F at 50 feet
Size	Diameter: 6.5 in. OA (5.75 in. at Ceiling) Depth: 2.625 in.
Secondary Power Source	Alkaline 9VDC battery

Architect & Engineering Specifications

The Photoelectric Smoke alarm shall be a Gentex Model 9120/9123/9220/9223 or approved equal which shall provide at least the following features and functions.

1. Nominal sensitivity shall be 2.5%.
2. The alarm shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals when subjected to smoke. After 2 consecutive pulses in smoke, the alarm will activate.
3. The alarm shall have a 9VDC alkaline battery as a back-up in the event building power is lost.
4. The 9VDC battery impedance shall be verified by the circuit of the smoke alarm.
5. The alarm shall provide an indicator when the battery is low in power or high impedance or is missing.
6. The alarm shall provide minimum 5-to-1 signal-to-noise ratio in the optics frame to assure stability of operation in environments of high RF and transient conditions.
7. The sensing chamber shall be fully screened to prevent entrance of small insects, thus reducing the probability of false alarms.
8. A solid state piezo alarm rated at 90dBA at 10ft.
9. A visual LED monitor (condition indicator) will slow pulse in normal operation and rapid pulse in alarm.
10. An easily accessible test knob shall be provided. The test knob in the TEST position will simulate an actual smoke condition of approximately 3.5% causing the detector to alarm within 20-36 seconds. It will also have the capability of testing to 0.85% as a required minimum. A magnetic switch closure or other switch closure, or smoke generating equipment which does not scatter the light beam or test sensitivity is not sufficient, as indicated in National Code.
11. The detector shall have interconnect capabilities of up to 12 units or 6 units with relay.
12. The alarm shall have interconnection capabilites of 12 units on 9120/9120T/9120H/9123/9123T/9123H/9220/922T/9220H/9223/9223T/9223H and shall have interconnection capabilites of 6 units on 9120F/9120TF/9120HF/9123F/9123TF/9123HF/9220F/9220TF/9220HF/9223F/9223TF/9223HF.
13. The manufacturer shall provide other compatible alarm models with the following optional features: a) 135°F isolated thermal with normally opened contact for remote connection to local alarm or annunciator; b) 135°F integral thermal; c) auxiliary Form A/Form C relay contacts for initiating remote functions and annunciation; d) relay option that is capable of activation by tandem interconnect wire. Thermal sensor shall be self-restoring.
14. Unit must be UL 217 and UL 1730 listed for both wall and ceiling mount.
15. Unit shall be listed by Underwriters Laboratories, California State Fire Marshal (CSFM) and the Bureau of Standards and Appeals (NYC).

All equipment shall be completely factory assembled, wired and tested, and the contractor shall be prepared to submit a certified letter testifying to this condition. Alarms which do not meet all of the requirements of this specification will not be considered.

24 units per carton
34 pounds per carton

GENTEX CORPORATION

Fire Protection Products Group • www.gentex.com
10985 Chicago Drive • Zeeland, Michigan 49464
616.392.7195 • 1.800.436.8391 • 616.392.4219 Fax

551-0040-02

NEW SERIES!!

GENTEX CORPORATION

Combination Photoelectric Smoke and Carbon Monoxide Alarm

120VAC/9VDC Single/Multiple Station Smoke and CO Alarm

GN-503 SERIES

Applications

The GN-503 (120VAC/9VDC) Series of combination photoelectric smoke and electrochemical sensor carbon monoxide alarms are for use as an evacuation device in all dwelling units, including but not limited to homes, apartments, hospitals, hotels, motels and other commercial occupancies. The GN-503 Series is listed in compliance with UL 217, UL 2034, for installation per NFPA 720 and NFPA 72.

Available in two models, the GN-503 Series is engineered to virtually eliminate nuisance alarms and deliver outstanding performance wherever reliable smoke and CO protection is required.

The GN-503 Series is provided with a 9VDC alkaline battery for electrical back-up in the event building power is lost. The battery impedance is verified and the alarm provides a low or missing battery warning. The battery drawer provides easy replacement without removing the unit from the wall or ceiling.

The Gentex GN-503 Series are provided with a self test and functionality test feature. The self test notifies if the smoke/CO alarm is functioning properly or needs attention. The functionality tests that the smoke/CO alarm is operating properly. The self and functionality tests are in compliance with NFPA 72 and UL Standards.

Features of the combination alarm series include DUALINK® differentiating tones indicating a smoke alarm (temporal 3) or a CO alarm (temporal 4), tandem capabilities with all Gentex tandem interconnect capable alarms. Options include a Form A/Form C dry contacts for remote annunciation and connection to a protected premises alarm system to provide a supervisory/trouble signal. The GN- 503 provides Temporal 3 evacuation tone for smoke alarm and all units provide Temporal 4 tone for CO alarm annunciation. The Temporal 3 evacuation tone for smoke alarm will take precedence of the Temporal 4 tone for CO alarm.

Product Listings

SIGNALING UL LISTED

- UL 217 and UL 2034 Listed
- CSFM

Product Compliance

- NFPA 72 and NFPA 720
- City & State Ordinances/Laws/Regulations
- Quality Management System is certified to: ISO 9001:2008

NEMA MEMBER

ASSEMBLED IN THE U.S.A.

Standard Product Features

- GN-503 available in 120VAC with 9VDC battery back-up
- Horn frequency 3100 Hz (nominal)
- Meets sensitivity requirements of UL 2034
- Optional Auxiliary Form A/Form C relay contacts (F model)
- Relay contacts operate on battery back-up
- Push button self test feature
- Push button functional test feature
- Quick-disconnect wiring harness
- Non-latching (self restoring) alarm
- Fully insect protected
- Tandem interconnect with current Gentex alarm models
- DUALINK® - differentiating tones indicating a smoke alarm (temporal 3) or a CO alarm (temporal 4)
- Red LED pulses every 30 seconds, green LED for AC power on
- Mounting hardware adapts to standard junction boxes, including but not limited to 4x4x2-1/8 octogan.
- Dust cover to prevent contamination during installation
- Low or missing battery indicator
- 1 year warranty from date of purchase
- 5 year limited warranty on CO sensor

Additional Smoke Alarm Features

- Photoelectric smoke alarm
- Temporal 3 evacuation sounding pattern for smoke annunciation
- Nominal 2.5% sensitivity (smoke)
- Solid State Red LED to indicate Smoke presence

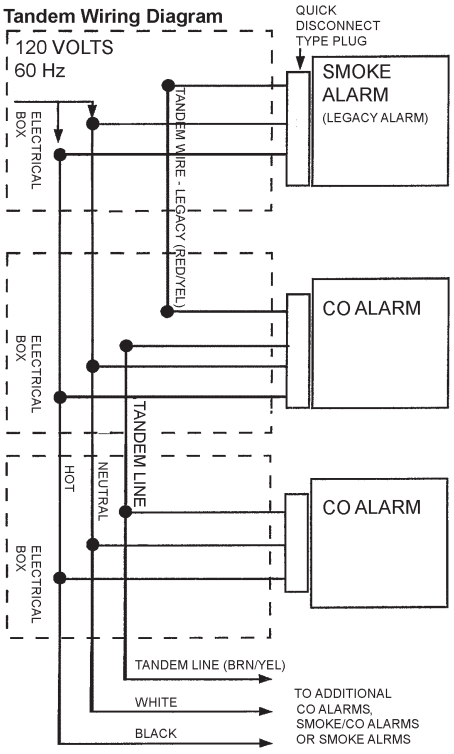
Additional CO Alarm Features

- Electrochemical sensor
- Temporal 4 sounding pattern for CO annunciation
- End of life signal indicates CO sensor has reached depletion state and time to replace

GN-503 Series Combination Smoke/CO Alarm

Model Number	Part Number	Voltage	9VDC Battery Back-Up	Form A/ Form C Relay
GN-503	918-0005-002	120VAC	●	
GN-503F	918-0007-002	120VAC	●	●

GN-503 Series Wiring Diagrams



LIMITATIONS:
Maximum of 12 combination smoke/CO alarms GN-503 may be connected together. Do not exceed 125 feet between each alarm. Do not exceed 1125 feet between the first and last alarm. NOTE: Gentex smoke alarms can not be interconnected to alarms from other manufacturers.

A MAXIMUM OF 12 ALARMS WITH A RELAY MAY BE TANDEM INTERCONNECTED.

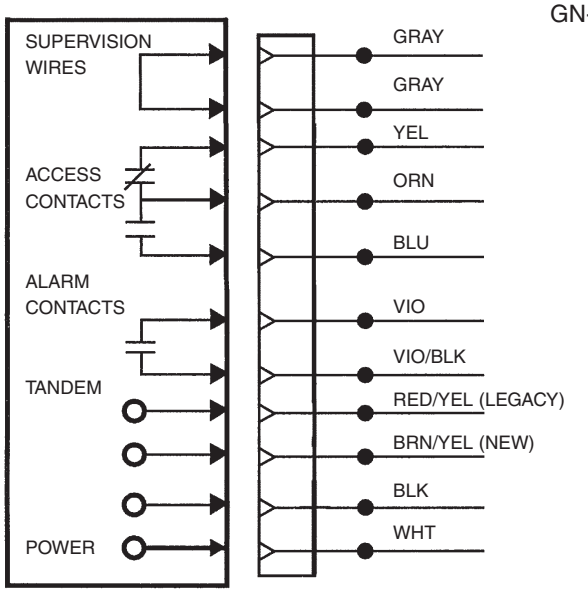
The GN-503 may be tandem interconnected with other Gentex tandem capable smoke alarms, CO alarms or smoke/co alarms. To interconnect with Gentex 9000 Series, 7000 Series, 710CS Series, 7109CS Series, GN-200 Series & GN-300 Series the LEGACY TANDEM WIRE must be used. Refer to installation manual for detailed information.

Notes:

- If CO portion of device goes into alarm, CO alarms, combination smoke/CO alarms and smoke alarms **NOT** using legacy tandem wire sound CO event warning.
- If smoke alarm portion of device goes into alarm, all smoke alarms, CO alarms or combination smoke/CO alarms tandem wired will sound smoke alarm warning.
- When both smoke and CO conditions are present, smoke condition will have priority and alarm will sound smoke annunciation.

Relay Models

Models
GN-503F



CAUTION:
RED/YELLOW & BROWN/YELLOW wire to be capped when not in use. This wire is for tandem connection only. Do not connect to any other circuit.

Electrical Specifications

Operating Voltage	120VAC, 60Hz
Operating Current	.045 amps
Operating Current (Relay Options)	.070 amps
Operating Ambient Temp Range	40°F to 100°F
Alarm Horn Rating	85dBA at 10 feet
Auxiliary Relay	1 Form A & 1 Form C (0.6 amp)
Size	Diameter: 6.25 in. OA (5.75 in. at Ceiling) Depth: 1.8 in.
Secondary Power Source	Alkaline 9VDC battery Duracell MN 1604
CO Sensing Cell	Electrochemical Cell

GN-503 SERIES

Architect & Engineering Specifications

The combination photoelectric smoke and carbon monoxide alarm shall be a Gentex Model GN-503/GN-503F or approved equal which shall provide at least the following features and functions:

1. Nominal smoke sensitivity shall be 2.5%.
2. The smoke alarm portion of device shall utilize an infrared LED sensing circuit which pulses in 4 to 5 second intervals when subjected to smoke. After 2 consecutive pulses in smoke, the alarm will activate.
3. The CO alarm shall utilize an electrochemical sensing element with a minimum 5-year life.
4. The carbon monoxide alarm portion of device is adjusted not to detect CO levels below 30PPM and will not alarm when exposed to constant levels of 30PPM for 30 days. Per UL 2034 requirements, the device will alarm at the following levels: 70 PPM CO between 1 to 4 hours, but not less than 1 hour. 150 PPM CO between 10 to 50 minutes. 400 PPM 4 to 15 minutes.
5. The GN-503 Series device shall have a Duracell MN 1604 9VDC alkaline battery as a back-up in the event building power is lost.
6. The 9VDC battery impedance shall be verified by the circuit of the smoke/CO alarm.
7. The alarm shall provide an indicator when the battery is low in power, high impedance or is missing.
8. The CO alarm will provide an audible indicator of 3 quick chirps every 30 seconds at end of life of CO sensor.
9. The sensing chamber shall be fully protected to prevent entrance of small insects, thus reducing the probability of false alarms.
10. An solid state red color LED will indicate presence of CO at the unit.
11. A solid state piezo alarm rated at 85dBA at 10ft.
12. A visual LED monitor (condition indicator) will slow pulse in normal operation and rapid pulse in alarm (red color)
13. An easily accessible test button shall be provided. Push down on button for 5 seconds causing smoke/CO alarm to activate. If device does not go into alarm, the device is not working properly.
14. The device shall have tandem interconnect capability of up to 12 smoke/CO alarms.
15. The alarm shall have the capability to tandem interconnect with all Gentex tandem capable smoke alarms, CO alarms or combination smoke/CO alarms, including 7000/70003 Series, 9000/9003 Series, 710CS/713CS Series, 7109CS/7139CS Series, GN-200/GN-300 Series, S1209 Series and CO1209 Series.
16. The manufacturer shall provide models with the optional feature of auxiliary Form A/Form C relay contacts for initiating remote functions and annunciation and the relay option that is capable of activation by tandem interconnect wire.
17. The combination smoke/CO alarm shall be non-latching (self-restoring).
18. Unit must be UL 217 and UL 2034 listed for both wall and ceiling mounting.
19. Unit shall be listed by Underwriters Laboratories and California State Fire Marshal (CSFM).

All equipment shall be completely factory assembled, wired and tested, and the contractor shall be prepared to submit a certified letter testifying to this condition. Alarms which do not meet all of the requirements of this specification will not be considered.

For complete product specifications, refer to product installation manual.

24 units per carton
24 pounds per carton

GENTEX CORPORATION

Fire Protection Products Group • www.gentex.com
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616.392.7195 • 1.800.436.8391 • 616.392.4219 Fax

551-0073-02

GENTEX CORPORATION

120VAC Remote Visual Signal

GXS-120 SERIES

Applications

The GXS-120 Series is a high quality remote visual signaling appliance that offers dependable remote annunciation. The GXS-120 is ideal for applications where a dependable visual alarm is required in applications such as hotels, dormitories and apartments.

The GXS-120 Series has a constant flash rate of 1Hz. The GXS-120 Series is provided with a two position terminal block (12-18AWG).

The GXS-120 has a 177 candela strobe that meet the requirements of the ADA. GXS-120 appliances are ANSI/UL 1971 listed and are warranted for three years from the date of purchase.

Standard Features

- Nominal voltage 120VAC
- 177 candela strobe meets the requirements of NFPA 72 and meets the requirements of ADA
- Unit Dimensions: 4.5" high x 4.56" wide x 2.25" deep
- Terminal blocks (12-18 AWG)
- Flash rate 1Hz
- Wide variety of mounting options for new construction and retrofit applications
- ANSI/UL 1971 listed for fire protective service/signal for hearing impaired
- Faceplate available in red or off-white

GXS-120 Series Remote Strobe		
Model Number	**Part Number**	**Candela (ANSI/UL 1971)**
GXS-120177WR	904-0780-002	177
GXS-120177WW	904-0758-002	177
GXS-120177CR	904-0781-002	177
GXS-120177CW	904-0759-002	177

GXS-120 Series Strobe Current Ratings	
Candela	**177cd**
UL Max	209mA

NOTES:

Operating temperature: 32° to 120°F (0° to 49°C)
GXS-120 Series is **not** listed for outdoor use

"W" = Wall mount "C" = Ceiling mount
"R" = Red faceplate "W" = Off-White faceplate
"P" = Plain (no lettering)

The plain "P" units are non-returnable.

Product Listings

SIGNALING UL LISTED

- ANSI/UL 1971
- CSFM Listing 7125-569:114
- MEA #285-91-E
- BFP (City of Chicago)

Product Compliance

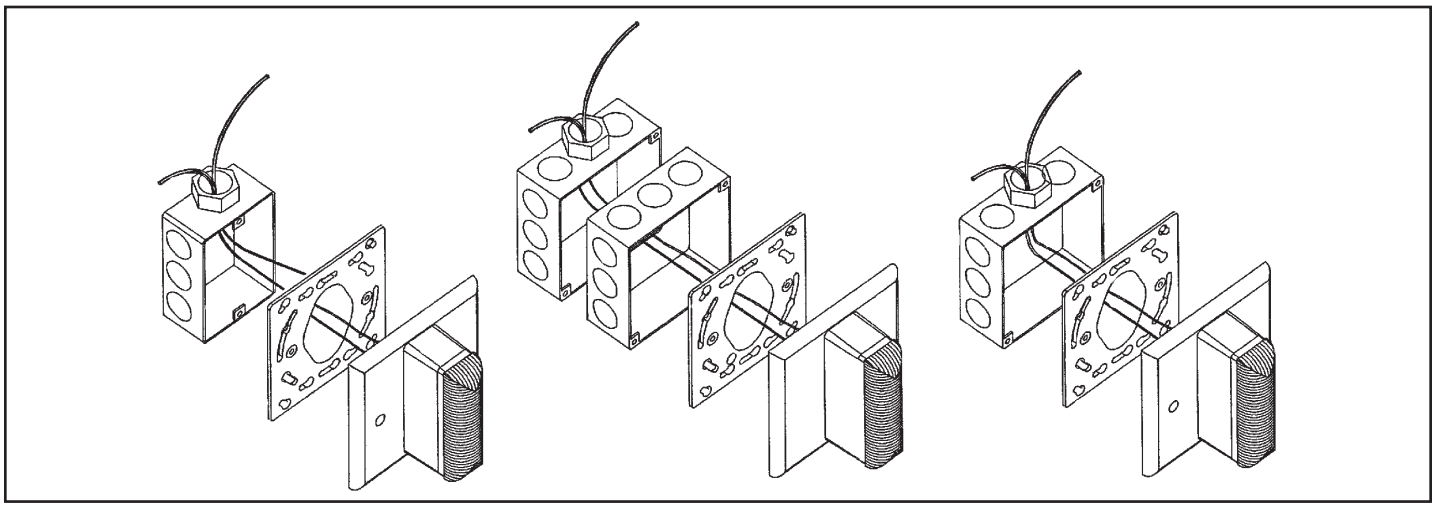
- Americans with Disabilities Act (ADA)
- NFPA 72
- IBC/IFC/IRC
- Quality Management System is certified to: ISO 9001:2008

NEMA MEMBER

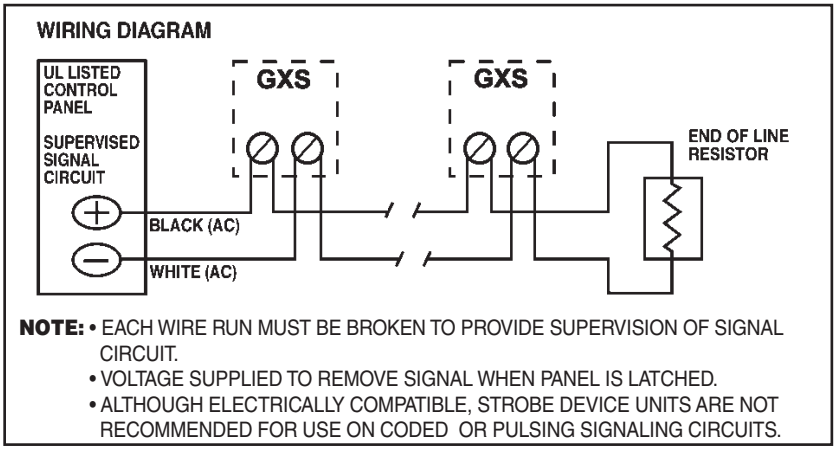
ASSEMBLED IN THE USA

GXS-120 SERIES

Mounting Rough-in Box and Run Wiring



Wiring Diagram GXS-120



NOTE: • EACH WIRE RUN MUST BE BROKEN TO PROVIDE SUPERVISION OF SIGNAL CIRCUIT.
• VOLTAGE SUPPLIED TO REMOVE SIGNAL WHEN PANEL IS LATCHED.
• ALTHOUGH ELECTRICALLY COMPATIBLE, STROBE DEVICE UNITS ARE NOT RECOMMENDED FOR USE ON CODED OR PULSING SIGNALING CIRCUITS.

Architect & Engineering Specifications

The visual signal shall be the Gentex Model GXS-120 or approved equal. The visual appliance shall be ANSI/UL 1971 listed by Underwriters Laboratories.

The visual appliance shall be installed in accordance with the appropriate provisions of the National Fire Protection Association, American National Standards or other applicable state and local requirements.

The visual signal shall be capable of mounting to a single gang, double gang, double work box or 4" square back box. The visual signal shall have a constant flash rate of 1Hz regardless of listed input voltage.

24 units per carton
12 pounds per carton

GENTEX CORPORATION
Fire Protection Products Group • www.gentex.com
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616.392.7195 • 1.800.436.8391 • 616.392.4219 Fax

Gentex Corporation reserves the right to make changes to the product data sheet at their discretion.

551-0036-03

NO EXCUSES!

FAD

FIRE ALARM DOCUMENTS

The FAD is the perfect fit to meet the demanding code requirements today. SAE's number one goal is to manufacture code compliant solutions and this product allows you to do just that. NFPA 72 2010 section 6.2.2.1 states, "A record of installed software and firmware version numbers shall be maintained at the location of the fire alarm control unit."

This durable 16 gauge steel enclosure with a solid piano hinge and key lock will keep all of your code required documents in one safe place. With a 4GB USB flash drive it stores your fire alarm software safe and secure eliminating the occurrences of the software not being on site when technicians arrive to service the system. Along with your fire alarm software you can store your test & inspection documents, service records, manuals & AS built drawings for the system. Using a standard USB B connector it allows you to plug in with any standard SB printer cable to upload or download information.

The FDB is designed to hold critical manuals and documents with a durable steel retainer. It has designated hooks to organize key rings and hold important business cards for easy access and reference. Inside the cover it has a organized note table that allows for documentation for passwords and other critical system information.

Standard Features:

- Installed with a 4 gig digital flash drive with USB B connector
- 2 Key ring hooks to hold system keys
- Business card holder for key contacts
- Overall Dimensions are 12” x 13” tall and 2 ¼ deep
- 16 gauge steel box and cover for security
- Durable powercoat baked on finish other colors available
- Standard ¾”cat 30 key lock other lock assemblies available
- Solid stainless steel piano hinge
- Permanently screened white ink 1” high “Fire Alarm Documents”
- Legend sheet for passwords and system information

NEMA NFPA Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

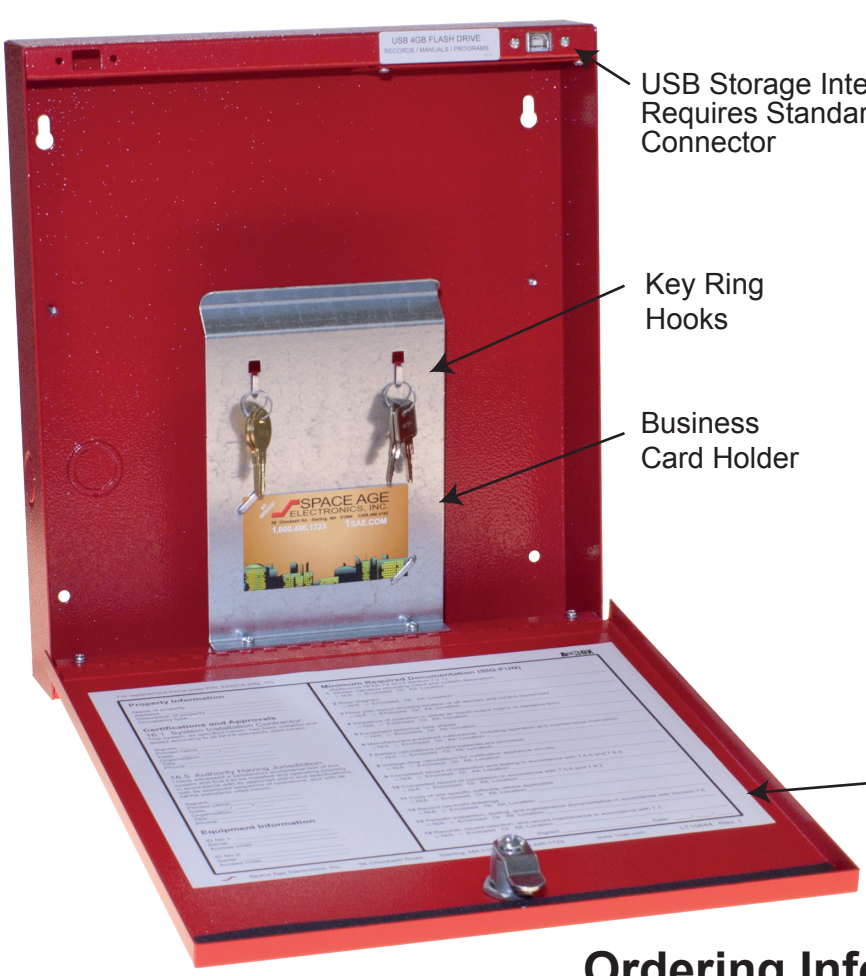
ACEBOX
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

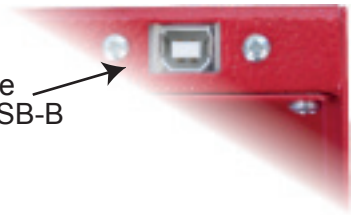
No Excuses, Just Solutions!

SPACE AGE ELECTRONICS, INC.

Specifications:

The fire alarm documents box (FAD) shall be constructed of 18 gauge cold rolled steel. It shall have a red powder coat epoxy finish. The cover shall be permanently screened with 1" high lettering "FIRE ALARM DOCUMENTS " with white indelible ink. The access door shall be locked with a 3/4" barrel lock and the hinge shall be a solid width 12" stainless steel piano hinge. The enclosure will supply 4 mounting holes. Inside the enclosure will accommodate standard 8 1/2 x 11 manuals and loose document records that will be protected within the enclosure. A legend sheet will be permanently attached to the door for system required documentation, key contacts and system information. The FAD will have securely mounted inside a minimum of 4 Gigabyte digital flash memory drive with a standard USB B connector for uploading and downloading information. The drive shall not be accessible without tools to any person whom gains access to the records. The enclosure shall also provide 2 key ring holders with a location to mount standard business type cards for key contact personnel.

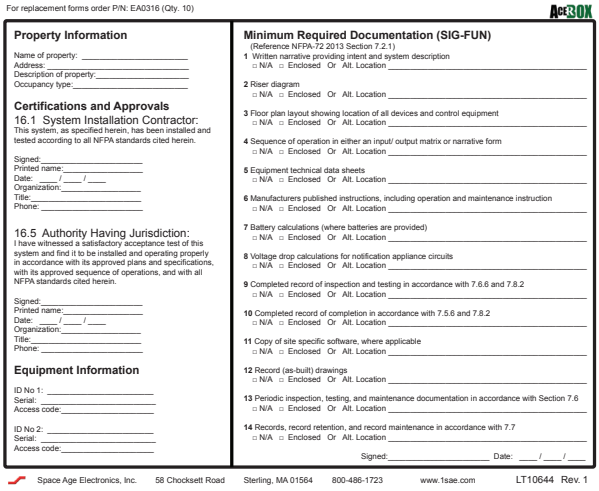




USB Storage Interface
Requires Standard USB-B
Connector

Key Ring
Hooks

Business
Card Holder



For replacement forms order P/N: EA0316 (Qty. 10)

Property Information

Name of property: _____
Address: _____
Description of property: _____
Occupancy type: _____

Certifications and Approvals

16.1 System Installation Contractor:
This system, as specified herein, has been installed and tested according to all NFPA standards cited herein.

Signed: _____
Printed name: _____
Date: ___/___/___
Organization: _____
Title: _____
Phone: _____

16.5 Authority Having Jurisdiction:
I have witnessed a satisfactory acceptance test of this system and find it to be installed and operating properly in accordance with its approved plans and specifications, with its approved sequence of operations, and with all NFPA standards cited herein.

Signed: _____
Printed name: _____
Date: ___/___/___
Organization: _____
Title: _____
Phone: _____

Equipment Information

ID No 1: _____
Serial: _____
Access code: _____

ID No 2: _____
Serial: _____
Access code: _____

Minimum Required Documentation (SIG-FUN)
(Reference NFPA-72 2013 Section 7.2.1)

1 Written narrative providing intent and system description
□ N/A □ Enclosed Or Alt. Location _____

2 Riser diagram
□ N/A □ Enclosed Or Alt. Location _____

3 Floor plan layout showing location of all devices and control equipment
□ N/A □ Enclosed Or Alt. Location _____

4 Sequence of operation in either an input/ output matrix or narrative form
□ N/A □ Enclosed Or Alt. Location _____

5 Equipment technical data sheets
□ N/A □ Enclosed Or Alt. Location _____

6 Manufacturers published instructions, including operation and maintenance instruction
□ N/A □ Enclosed Or Alt. Location _____

7 Battery calculations (where batteries are provided)
□ N/A □ Enclosed Or Alt. Location _____

8 Voltage drop calculations for notification appliance circuits
□ N/A □ Enclosed Or Alt. Location _____

9 Completed record of inspection and testing in accordance with 7.6.6 and 7.8.2
□ N/A □ Enclosed Or Alt. Location _____

10 Completed record of completion in accordance with 7.5.6 and 7.8.2
□ N/A □ Enclosed Or Alt. Location _____

11 Copy of site specific software, where applicable
□ N/A □ Enclosed Or Alt. Location _____

12 Record (as-built) drawings
□ N/A □ Enclosed Or Alt. Location _____

13 Periodic inspection, testing, and maintenance documentation in accordance with Section 7.6
□ N/A □ Enclosed Or Alt. Location _____

14 Records, record retention, and record maintenance in accordance with 7.7
□ N/A □ Enclosed Or Alt. Location _____

Signed: _____ Date: ___/___/___

Space Age Electronics, Inc. 58 Chocksett Road Sterling, MA 01564 800-486-1723 www.1sae.com LT10644 Rev. 1

Legend sheet for storing system information including contacts, sign-off , maintenance & test information, and alternate locations of additional records.

Ordering Information:

Part #	Description
SSU00685	**Fire Alarm Storage Cabinet RED**
SSU00686	**Custom screening with your Logo**

Check out our Infinity line eFAD single gang 2 Gig digital storage solutions (IAMEFAD)

ACEBOX
Space Age Electronics, Inc.
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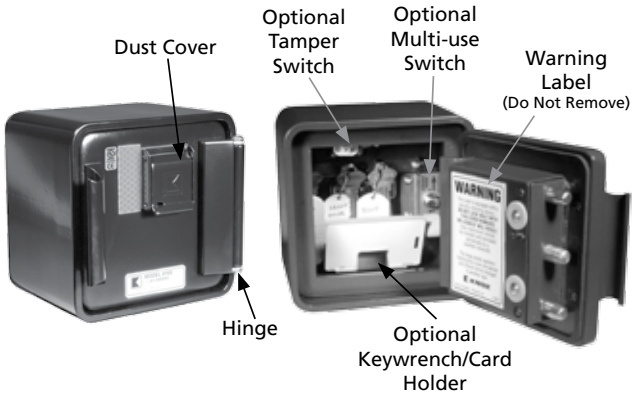
508.485.0966 Local
508.485.4740 Fax

No Excuses, Just Solutions!

KNOX®
Serving Fire Departments Since 1975

Knox-Vault 4100 Series
SINGLE LOCK MODEL

High Security Commercial Key Vault



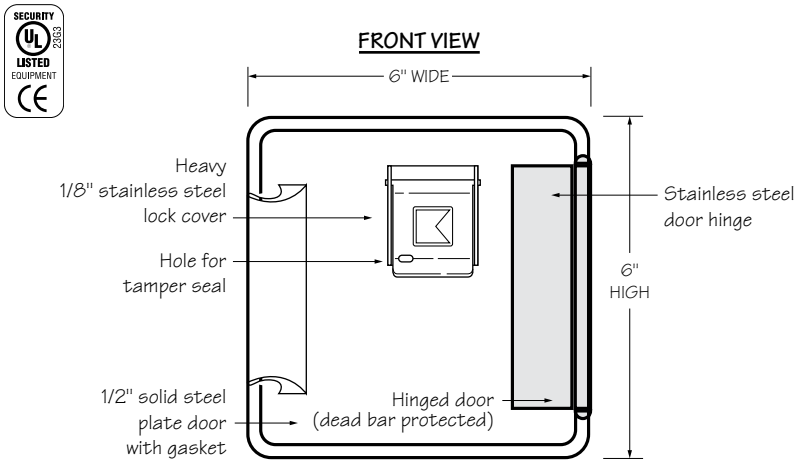
A new Knox-Box that's for those applications where a 3200 Series is too small yet the 4400 Series too large. The high security 4100 Series has a hinged-door allowing for the convenient single-handed operation. The 4100 Series Knox-Vault protects and stores building keys, access cards and the Knox FDC Keywrench allowing departments to keep a keywrench on site.

Features and Benefits

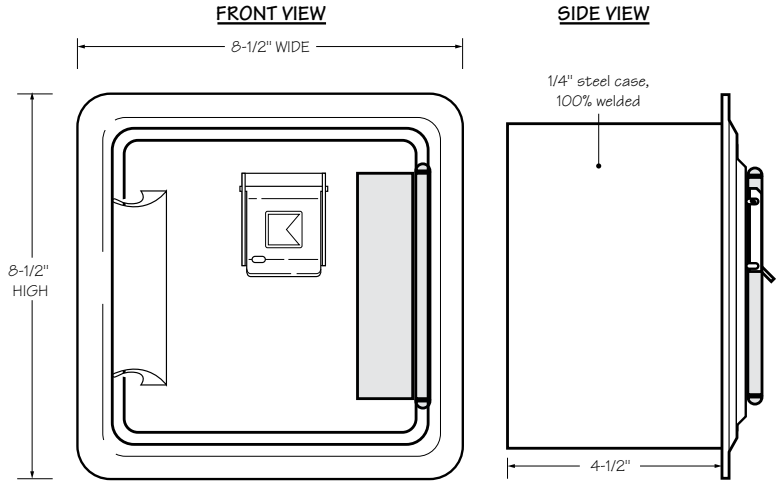
- Holds up to 24 keys in the large interior compartment
- Ensures high security with UL listed Medeco lock(s)
- Includes Knox-Coat® that is four times better than standard powder coat
- Resists moist conditions with a weather resistant silicone door gasket
- Colors: Black, Dark Bronze or Aluminum
- Weight: Surface mount - 17 lbs.
  Recessed mount - 19 lbs.

Options

- Alarm Tamper Switches (U/L listed)
- Recessed Mounting Kit (RMK) for recessed models only
- Dual lock configuration
- Access card holder
- Keywrench holder



4100 Surface Mount



4100 Recessed Mount

Ordering Specifications

To ensure procurement and delivery of the 4100 Series Knox-Vault, it is suggested that the following specification paragraph be used:

KNOX-VAULT surface/recessed mount, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick solid steel door with interior silicone gasket seal. Lock UL listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability. Vault has anti-theft re-locking mechanism with drill resistant hard-plate lock protector.

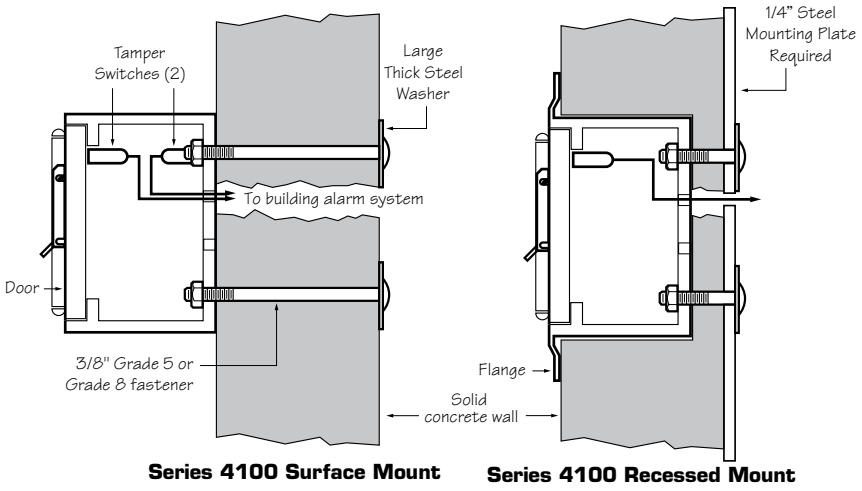
Exterior Dimensions:	Surface mount – 6"H x 6"W x 4 1/2"D Recessed mount – 8 1/2"H x 8 1/2"W x 4 1/2"D
Lock:	UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a proprietary coded biased cut key.
Finish:	Knox-Coat® proprietary finishing process Finish Color - Black, Dark Bronze or Aluminum
P/N:	4100 Series Knox-Vault (mfr's cat. ID)
Mfr's Name:	**KNOX COMPANY**

KNOX COMPANY • 1601 W. Deer Valley Road, Phoenix, AZ 85027 • (800) 552-5669 • (623) 687-2300 • Fax (623) 687-2299 • Web: www.knoxbox.com • E-mail: info@knoxbox.com

KNOX®
Serving Fire Departments Since 1975

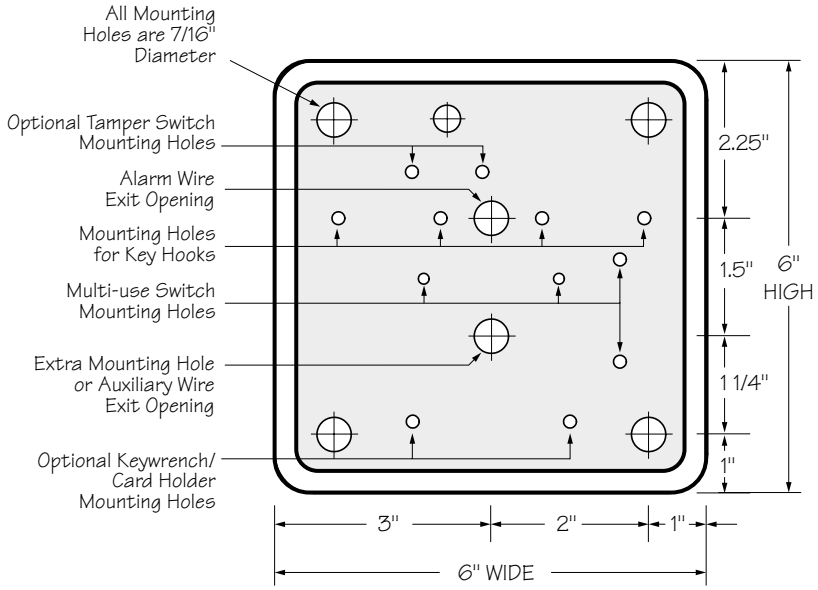
Knox-Vault® 4100 Series
MOUNTING DIAGRAM

Suggested minimum mounting height
6 feet above ground



Series 4100 Surface Mount **Series 4100 Recessed Mount**

INSIDE VIEW



Attention: KNOX-BOX® key box is a very strong device that MUST be mounted properly to ensure maximum security and resist physical attack.

Knox® Rapid Entry System
The Knox Company manufacturers a complete line of high security products including Knox-Box key boxes, key vaults, cabinets, key switches, padlocks, locking FDC caps, plugs and electronic master key security systems. For more information or technical assistance, please call Customer Service at 1-800-552-5669.

Recessed Mounting Kit

The 4100 Recessed Mounting Kit (RMK) is used for recessed models only. It contains a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction. After construction is completed, the Knox-Vault mounts inside the recessed shell housing. The RMK may only be used in new concrete or masonry construction.

Installation In Cast Concrete

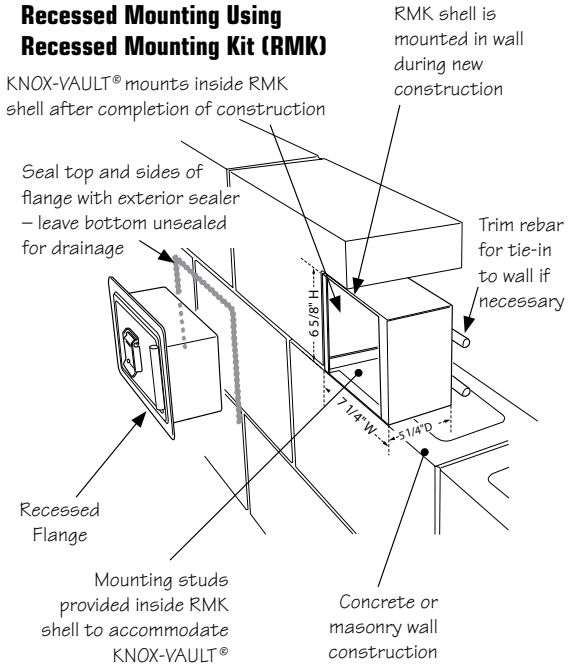
The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-VAULT is mounted into the shell housing after construction is completed.

RMK Exterior Dimensions

6 5/8" H x 7 1/4" W x 5 1/4" D

IMPORTANT: Care should be taken to insure that the front of the RMK shell housing, including the cover plate and screw heads, is flush with the finish wall. The RMK must be plumbed to insure vertical alignment of the vault.

Recessed Mounting Using Recessed Mounting Kit (RMK)



KNOX COMPANY • 1601 W. Deer Valley Road, Phoenix, AZ 85027 • (800) 552-5669 • (623) 687-2300 • Fax (623) 687-2299 • Web: www.knoxbox.com • E-mail: info@knoxbox.com

□□□□F □□□□F Series

□ ireless Fire Alarm Communicators for AES-*IntelliNet*

Model 7788F

LISTED

Advanced □ ireless Alarm Monitoring

The AES-*IntelliNet* mesh radio network offers unmatched reliability and speed in delivering wireless alarm signals to a central station without third party fees or reliance on networks owned by companies outside the security and fire alarm industry. AES-7788F/7744F Series Smart Subscriber Transceivers provide the wireless communication link between the fire alarm panel and the central station receiver. The 7788F/7744F Series is ideal for most commercial fire alarm applications. Each 7788F/7744F Series Subscriber is housed in a full sized, red, locked, steel cabinet and supports a range of alarm panel inputs including EOL fire, EOL supervised, and direct voltage from the panel (non-fire applications).

Supervised Operation

AES Smart Subscribers offer fully supervised operation that includes monitoring of operating power (both primary AC power and battery backup) and the connection to the radio network. Each Subscriber “checks in” with the AES central station receiver at least once every 24 hours. The supervision check in time can be set for as often as once per minute and, because the central station owns the wireless network, there is no additional cost for air time to transmit supervisory signals.

Full Data Reporting from Alarm Panel Digital Dialer

Models 7788F-ULP and 7744F-ULP come equipped with an IntelliPro Fire Full Data Module (AES-7794) which enables reporting of full alarm data captured from the fire alarm panel’s digital communicator. IntelliPro Fire supports most alarm communication formats including Contact ID, Pulse, as well as Bosch Modem IIe and Modem IIIa2.

Features □ All models

- UL Listed commercial fire alarm applications.
- Meets NFPA 72 requirements
- Direct reporting to AES receiver across IntelliNet wireless mesh network
- Each Subscriber acts as transmitter/receiver/repeater
- Simple and fast activation on network
- On board status LEDs for easy set up
- 8 programmable zone inputs – 7788F
- 4 programmable zone inputs and 4 reverse polarity inputs – 7744F
- Easy programming via AES handheld programmer or PC
- Rugged metal housing ideal for any commercial fire alarm application

Models □□□□F□□□□F-□□P with IntelliPro Fire also includes

- IntelliPro Fire transmits full alarm data from virtually any fire alarm panel digital communicator
- Alarm format support for Contact ID, Pulse, or Bosch Modem IIe or Modem IIIa2
- Easy installation in AES subscriber
- Operates in applications with or without a phone line

Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographic area with a high level of reliability at a low total cost of ownership.

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

□□□□F □□□□F Series

Technical Specifications

□□□□F□□□□F Series Subscribers

Dimensions
- 13.25”H x 8.5”W x 4.3”D (34cm H x 21.5cm W x 11cm D)

□ eight
- Approx. 7 pounds (3.2 kilograms), excludes battery.

Radio Fre□uency
- Standard Frequency Range: 450-470MHz (others available)
- Output Power - 2 Watts (others available)

Antenna
- Included 2.5 db tamper resistant antenna mounts on enclosure
- Multiple remote antenna options available

Power Input
- 16.5VAC, 40VA (transformer not included)

□ackup □attery
- Will charge 12V battery up to 7.5 AH. Requires 12VDC 7.5 AH battery for UL 864.

Alarm Signal Inputs (subscriber)
- 7788F – 8 individually programmable zones
- 7744F - 4 individually programmable zones and 4 reverse polarity inputs

□□ Standards
- UL 864 Edition 9 – Standard for Control Units and Accessories for Fire Alarm Systems
- UL 365 – Standard for Police Station Connected Burglar Alarm Units and Systems
- UL 1681 – Standard for Central Station Burglar Alarm Units

Antenna Cut □Communication

Trouble Output
- Form C relay; fail secure; rated for 24 VDC 1A resistive

Reset □utton
- Located on main circuit board.

Operating Temperature
- 0° to 50° C (32° to 122°F)

Storage Temperature
- -10° to 60° C (14° to 140°F)

Relative Humidity
- 0 to 85% RHC, Non Condensing

AES-□□□□ IntelliPro Fire

Input □Output Connections
- RJ11 connection to AES subscriber for module data and power
- RJ11 connector for Handheld Programmer/PC programming
- RJ31X Telco connections - T and R both in and out via terminal strip and RJ45
- Alarm Panel digital communicator T and R both in and out via terminal strip and RJ45
- Trouble output: Form C relay detects if Subscriber is off the network

Alarm Formats
- Support for Contact ID and Pulse formats as well as Modem IIe and Modem IIIa2 converted to CID

Si□e
- 2.8 x 5.0 inches (7.1cm x 12.7cm)

Power Re□uirements
- 12 VDC nominal - primary and backup power provided by the AES 7788F/7744F or other Subscriber

How to Order

Model	Description
7744F	4 Zone Fire Alarm Subscriber with 4 reverse polarity inputs
7744F-ULP	7744F Fire Alarm Subscriber with IntelliPro Fire full data module
7788F	8 Zone Fire Alarm Subscriber
7788F-ULP	7788F Fire Alarm Subscriber with IntelliPro Fire full data module

Optional Accessories

7041E	Subscriber Handheld Programmer
7794	IntelliPro Fire Full Data Module

AES-IntelliNet™ is the industry leader in delivering high quality wireless mesh networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-IntelliNet networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-IntelliNet alarm monitoring systems are deployed at hundreds of thousands of locations in over 150 countries.

For more information
Call 800-AES-NETS (800-237-6387)
AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
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Web www.aes-intellinet.com

7788F-7744F/9/7/11R3

SILENT KNIGHT

5820XL Calculations
Version 12.30.10

Global Project Values:

Project Name:	409 Cumberland Ave.	Standby Hours:	24
Project ID:		Alarm Mins:	5
Prepared By:	Securadyne Systems	Derating Factor:	1.2
Date:	2/24/2014	Voltage Drop Warning Threshold % :	10

Panel ID: 5820XL
Location: Utilities 003
Model: 5820XL 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
5820XL	5820XL CTRL Panel	1	0.215	0.385						
SK	Photo, Photo-T	59	0.016	0.016						
SK	Ion		0.000	0.000						
SK	Heat, Heat-HT		0.000	0.000						
SK	Heat ROR	3	0.001	0.001						
SK	Beam, Beam-T		0.000	0.000						
SK	Duct	4	0.001	0.001						
SK	Acclimate		0.000	0.000						
SK	Control		0.000	0.000						
SK	Control-6		0.000	0.000						
SK	Relaymon		0.000	0.000						
SK	Monitor, Minimon	8	0.003	0.003						
SK	Monitor-2		0.000	0.000						
SK	Monitor-10		0.000	0.000						
SK	Pull-SA, Pull-DA	17	0.006	0.006						
SK	Relay	16	0.004	0.004						
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	7	0.005	0.005						
SSB224RB	Relay Base		0.000	0.000						
SSRTS151	Magnetic Remote Test		0.000	0.000						
SSRTS151KEY	Key Activated Test	4	0.000	0.030						
SSRA100Z	Remote LED		0.000	0.000						
5815XL	SLC Loop Expander		0.000	0.000						
5860	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander	4	0.040	0.040						
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						
PGM-I/O #1	Notification Appl Circuit		0.000	0.500	#14 Solid	2.52	150	0.76	20.02	1.85%
PGM-I/O #2	Notification Appl Circuit		0.000	0.600	#14 Solid	2.52	200	1.01	19.80	2.96%
PGM-I/O #3	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #4	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #5	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
PGM-I/O #6	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
	Total Standby Current (Amps)		0.291	1.591	Total Alarm Current (Amps)					
	Standby Time In Hours		24	0.083	Alarm Time In Minutes / 60		(5 Mins)			
	Total Standby AH Required		6.990	0.133	Total Alarm AH Required					
	Total Combined AH Required		7.12							
	Multiply By The Derating Factor		1.20							
	Minimum Battery AmpHours Required		**8.55**							

N/A

Command Shortcuts

Configure Circuits

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SILENT KNIGHT

5496 Power Expander Calculations

Version 02.24.09

Global Project Values:

Project Name:	409 Cumberland Ave.	Standby Hours:	24
Project ID:		Alarm Mins:	5
Prepared By:	Securadyne Systems	Derating Factor:	1.2
Date:	2/24/2014	Voltage Drop Warning Threshold % :	10

Panel ID: 5496 Model: 5496 Power Expander Max NAC Current: 3.0 Amps

Location: First floor Volts: 24 VDC Max Panel Current: 6.0 Amps

Part.#	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5496	5496 Pwr Module	1	0.040	0.160						
NAC #1	Notification Appl Circuit		0.000	0.619	#14 Solid	2.52	175	0.88	19.85	2.68%
NAC #2	Notification Appl Circuit		0.000	0.732	#14 Solid	2.52	225	1.13	19.57	4.07%
NAC #3	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
NAC #4	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
	Total Standby Current (Amps)		0.040	1.511	Total Alarm Current (Amps)					
	Standby Time In Hours		24	0.083	Alarm Time In Minutes / 60		(5 Mins)			
	Total Standby AH Required		0.960	0.126	Total Alarm AH Required					
	Total Combined AH Required		1.09							
	Multiply By The Derating Factor		1.20							
	Minimum Battery AmpHours Required		**1.30**							

Command Shortcuts

Configure Circuits

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SILENT KNIGHT

5496 Power Expander Calculations

Version 02.24.09

Global Project Values:

Project Name:	409 Cumberland Ave.	Standby Hours:	24
Project ID:		Alarm Mins:	5
Prepared By:	Securadyne Systems	Derating Factor:	1.2
Date:	2/24/2014	Voltage Drop Warning Threshold % :	10

Panel ID: 5496 Model: 5496 Power Expander Max NAC Current: 3.0 Amps

Location: Second floor Volts: 24 VDC Max Panel Current: 6.0 Amps

Part.#	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5496	5496 Pwr Module	1	0.040	0.160						
NAC #1	Notification Appl Circuit		0.000	0.806	#14 Solid	2.52	250	1.26	19.38	4.98%
NAC #2	Notification Appl Circuit		0.000	0.519	#14 Solid	2.52	250	1.26	19.75	3.21%
NAC #3	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
NAC #4	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
	Total Standby Current (Amps)		0.040	1.485	Total Alarm Current (Amps)					
	Standby Time In Hours		24	0.083	Alarm Time In Minutes / 60		(5 Mins)			
	Total Standby AH Required		0.960	0.124	Total Alarm AH Required					
	Total Combined AH Required		1.08							
	Multiply By The Derating Factor		1.20							
	Minimum Battery AmpHours Required		**1.30**							

Command Shortcuts

Configure Circuits

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SILENT KNIGHT

5496 Power Expander Calculations

Version 02.24.09

Global Project Values:

Project Name:	409 Cumberland Ave.	Standby Hours:	24
Project ID:		Alarm Mins:	5
Prepared By:	Securadyne Systems	Derating Factor:	1.2
Date:	2/24/2014	Voltage Drop Warning Threshold % :	10

Panel ID: 5496 Model: 5496 Power Expander Max NAC Current: 3.0 Amps

Location: Third floor Volts: 24 VDC Max Panel Current: 6.0 Amps

Part.#	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5496	5496 Pwr Module	1	0.040	0.160						
NAC #1	Notification Appl Circuit		0.000	0.735	#14 Solid	2.52	250	1.26	19.47	4.54%
NAC #2	Notification Appl Circuit		0.000	0.761	#14 Solid	2.52	250	1.26	19.44	4.70%
NAC #3	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
NAC #4	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
	Total Standby Current (Amps)		0.040	1.656	Total Alarm Current (Amps)					
	Standby Time In Hours		24	0.083	Alarm Time In Minutes / 60		(5 Mins)			
	Total Standby AH Required		0.960	0.138	Total Alarm AH Required					
	Total Combined AH Required		1.10							
	Multiply By The Derating Factor		1.20							
	Minimum Battery AmpHours Required		**1.32**							

Command Shortcuts

Configure Circuits

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SILENT KNIGHT

5496 Power Expander Calculations

Version 02.24.09

Global Project Values:

Project Name:	409 Cumberland Ave.	Standby Hours:	24
Project ID:		Alarm Mins:	5
Prepared By:	Securadyne Systems	Derating Factor:	1.2
Date:	2/24/2014	Voltage Drop Warning Threshold % :	10

Panel ID: 5496 Model: 5496 Power Expander Max NAC Current: 3.0 Amps

Location: Fourth floor Volts: 24 VDC Max Panel Current: 6.0 Amps

Part.#	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
5496	5496 Pwr Module	1	0.040	0.160						
NAC #1	Notification Appl Circuit		0.000	0.835	#14 Solid	2.52	250	1.26	19.35	5.16%
NAC #2	Notification Appl Circuit		0.000	0.519	#14 Solid	2.52	250	1.26	19.75	3.21%
NAC #3	Notification Appl Circuit		0.000	1.182	#14 Solid	2.52	150	0.76	19.51	4.38%
NAC #4	Notification Appl Circuit		0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
	Total Standby Current (Amps)		0.040	2.696	Total Alarm Current (Amps)					
	Standby Time In Hours		24	0.083	Alarm Time In Minutes / 60		(5 Mins)			
	Total Standby AH Required		0.960	0.225	Total Alarm AH Required					
	Total Combined AH Required		1.18							
	Multiply By The Derating Factor		1.20							
	Minimum Battery AmpHours Required		**1.42**							

Command Shortcuts

Configure Circuits

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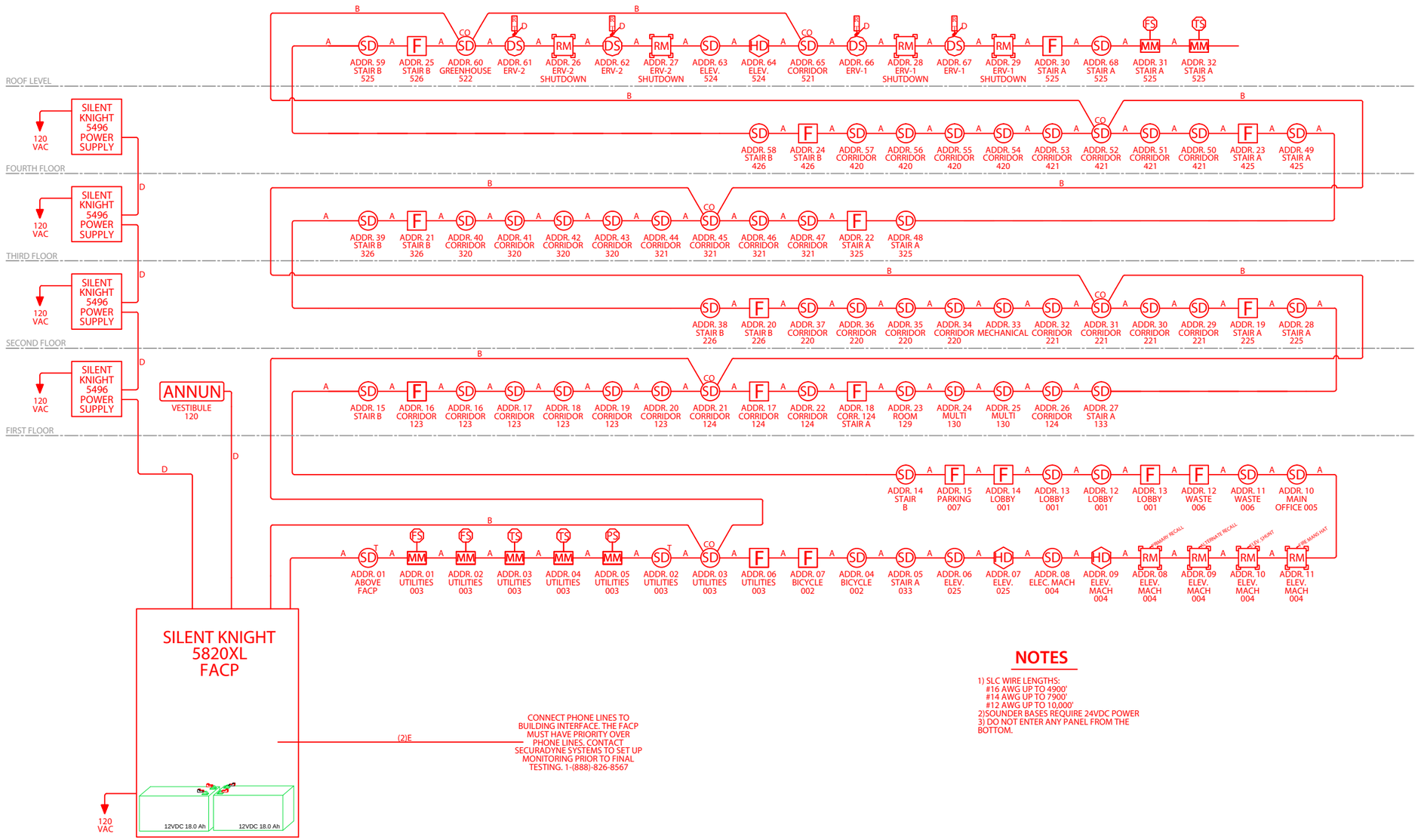


NOTES

1) SLC WIRE LENGTHS:
#16 AWG UP TO 4900'
#14 AWG UP TO 7900'
#12 AWG UP TO 10,000'
2)SOUNDER BASES REQUIRE 24VDC POWER
3) DO NOT ENTER ANY PANEL FROM THE BOTTOM.

General Notes

LEGEND

- ANNUN — FIRE ALARM ANNUNCIATOR
- DS — DUCT SMOKE DETECTOR WITH REMOTE TEST STATION
- HD — HEAT DETECTOR RATE OF RISE
- SD — SMOKE DETECTOR PHOTO
- SD — SMOKE DETECTOR PHOTO THERMAL
- SD — SMOKE/CO DETECTOR COMBO WITH SOUNDER 24VDC REQUIRED
- F — DUAL ACTION PULL STATION
- RM — RELAY MODULE
- MM — MONITOR MODULE
- FS — SPRINKLER FLOW SWITCH FBO
- TS — SPRINKLER TAMPER SWITCH FBO
- PS — SPRINKLER PRESSURE SWITCH FBO

FBO= FURNISHED BY OTHERS

WIRE TYPES

- A 2 COND. FPL SEE NOTES FOR AWG
- B 2 COND. #14 AWG FPL
- D 4 COND. #18 AWG FPL
- E CAT 3,5 OR 6 FOR TELCO

FIRE ALARM RISER SUBMITTAL

NO.	DATE	DESCRIPTION

REVISIONS

securadyne systems

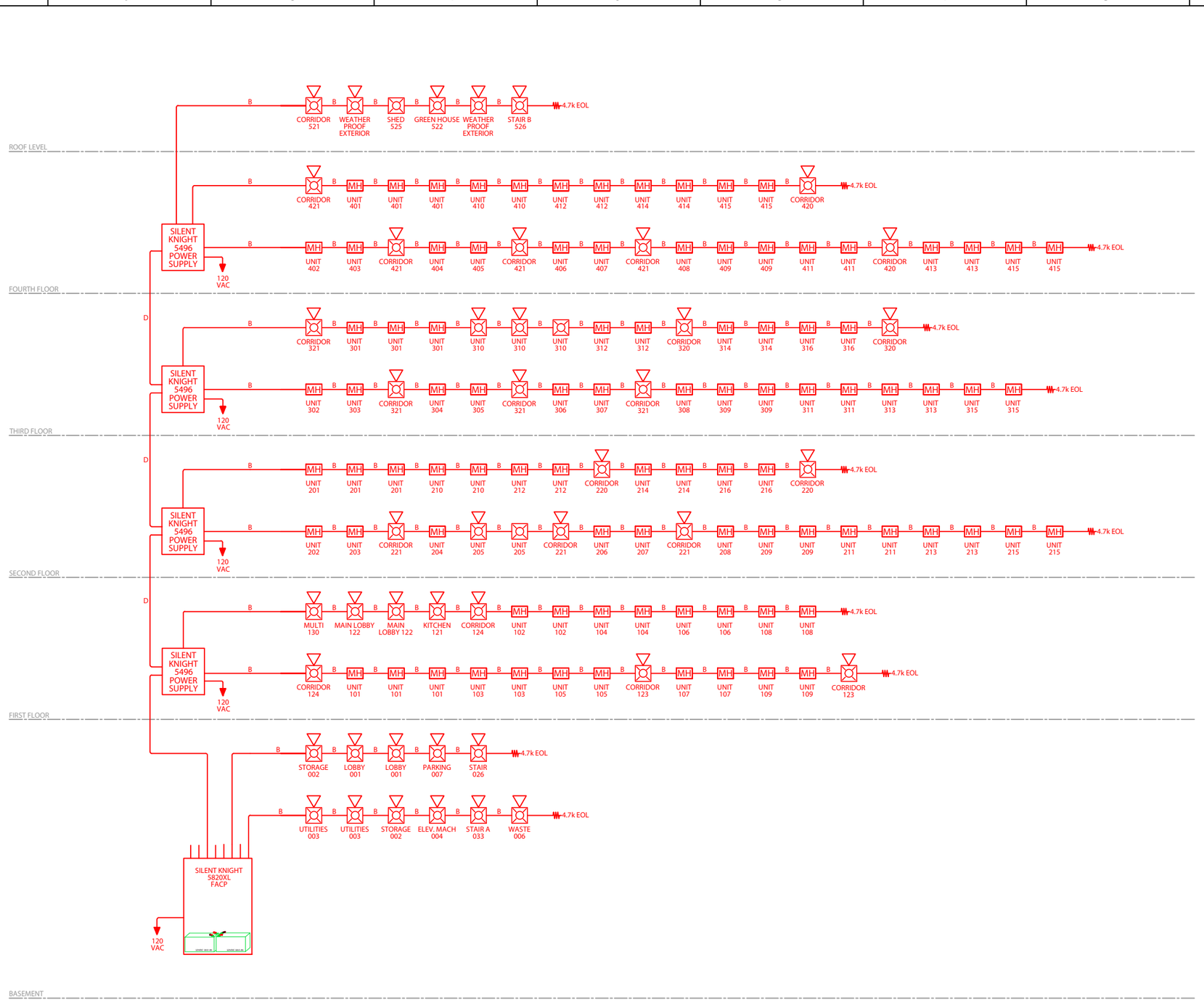
NE Reg Wilmington, MA Office
600 Research Drive
Wilmington, MA 01887
Toll Free: 800-354-2616
In State: 978-688-4444
Fax: 978-688-9119

NE Reg Portland, ME Office
4 Thomas Drive, Suite 5
Westbrook, ME 04092
Toll Free: 888-826-8567
In State: 207-828-0022
Fax: 207-828-0044

Client
409 CUMBERLAND AVENUE PORTLAND, MAINE

Title
FIRE ALARM RISER SLC

Date: 02/18/2014	Drawing Scale: None
Drawn By: ZAD	SSL Rep: Kevin Inman
Email Address: Kevin.inman@securadyne.com	
Securadyne File Name: 409 Cumberland Ave.	
Securadyne Quote/Proj No.	Sheet: 1 OF 2



General Notes

LEGEND

- STROBE
- HORN STROBE
- MH — MINI HORN

WIRE TYPES

- A — 2 COND. FPL SEE NOTES FOR AWG
- B — 2 COND. #14 AWG FPL
- D — 4 COND. #18 AWG FPL
- E — CAT 3,5 OR 6 FOR TELCO

FIRE ALARM RISER SUBMITTAL

NO.	DATE	DESCRIPTION

REVISIONS

securadyne systems

NE Reg Wilmington, MA Office
600 Research Drive
Wilmington, MA 01887
Toll Free: 800-554-2616
In State: 978-688-4444
Fax: 978-688-9119

NE Reg Portland, ME Office
4 Thomas Drive, Suite 5
Westbrook, ME 04092
Toll Free: 888-826-8567
In State: 207-828-0022
Fax: 207-828-0044

Client

409 CUMBERLAND AVENUE PORTLAND, MAINE

Title

FIRE ALARM RISER NAC

Date: 02/18/2014	Drawing Scale: None
Drawn By: ZAD	SSL Rep: Kevin Inman
Email Address: Kevin.inman@securadyne.com	
Securadyne File Name: 409 Cumberland Ave.	
Securadyne Quote/Proj No.	Sheet: 2 OF 2

SYSTEM OPERATION MATRIX

		Control Unit Annunciation										Notification					Supplementary		
	SYSTEM INPUTS	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE COMMON TROUBLE SIGNAL	ACTUATE ALARM INDICATOR	ACTUATE EVACUATION SIGNALS	DISPLAY CHANGE OF STATUS	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	RELEASE MAGNETICALLY HELD SMOKE DOORS	DISPLAY ON REMOTE ANNUNCIATOR	AHU SHUTDOWN
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
1	MANUAL PULL STATIONS	●	●					●	●	●	●				●	●			
2	SMOKE DETECTORS	●	●					●	●	●	●				●	●			
3	HEAT DETECTORS	●	●					●	●	●	●				●	●			
4	DUCT SMOKE DETECTORS	●	●					●	●	●	●				●	●	●		
5	SPRINKLER WATERFLOW	●	●					●	●	●	●				●	●			
6	SPRINKLER TAMPER			●	●					●			●			●			
7	FIRE ALARM AC POWER FAILURE					●	●			●						●			
8	FIRE ALARM SYSTEM LOW BATTERY					●	●			●						●			
9	OPEN CIRCUIT					●	●			●						●			
10	GROUND FAULT					●	●			●						●			
11	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●			●						●			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N				

General Notes

NO.	DATE	DESCRIPTION

REVISIONS

securadyne systems

NE Reg Wilmington, MA Office
600 Research Drive
Wilmington, MA 01887
Toll Free: 800-354-2616
In State: 978-688-4444
Fax: 978-688-9119

NE Reg Portland, ME Office
4 Thomas Drive, Suite 5
Westbrook, ME 04092
Toll Free: 888-826-8567
In State: 207-828-0022
Fax: 207-828-0044

Client

409 CUMBERLAND AVENUE
PORTLAND, MAINE

Title

FIRE ALARM
MATRIX

Date: 02/24/2014	Drawing Scale: None
Drawn By: ZAD	SSL Rep
Email Address: zachary.davis@securadyne.com	
Securadyne File Name: Portland Fire Alarm Matrix	
Securadyne Quote/Proj No.	Sheet: 1 OF 1