RED HAWK
FIRE PROTECTION, LLC
801 Valley Avenue N.W. Suite D, Puyallup, WA 98371
Phone: (253) 840-9900 | Fax: (800) 591-4382
REDHAHF901QP

FIRE ALARM SYSTEM SUBMITTAL

SITE ADDRESS:

OLYMPIC SPORTS AND SPINE
TENANT IMPROVEMT
YMCA GIG HARBOR
10550 HARBOR HILL DRIVE
GIG HARBOR, WA 98332

PREPARED BY:
Red Hawk Fire Protection
801 Valley Avenue NW Suite D
Puyallup, WA 98371

RED HAWK FIRE PROTECTION JOB # **90008**

SUBMITTAL INCLUDES:
SCOPE OF WORK
EQUIPMENT DATA SHEETS
BATTERY AND VOLTAGE DROP CALCULATIONS
CERTIFICATIONS

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Tab 1 – Scope of Work

RED HAWK
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SCOPE OF WORK:

The intended scope of work is to relocate existing fire alarm speaker/strobes to new office and exam room.

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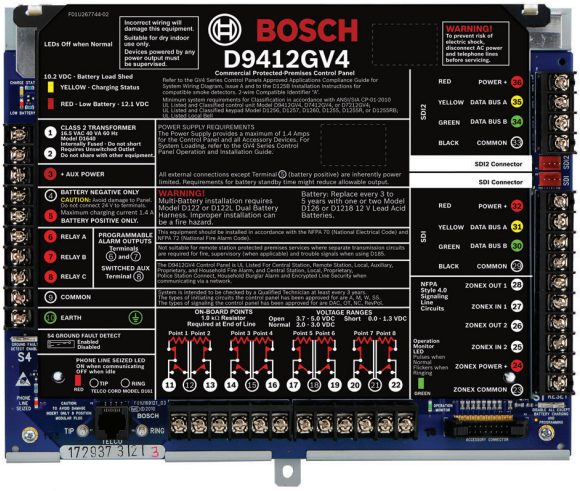
Tab 2 – Fire Alarm Control Panel (Existing)

EXISTING

D9412GV4 Control Panel

www.boschsecurity.com

BOSCH
Invented for life



- Fully integrated intrusion, fire, and access control allows users to interface with one system instead of three
- Conettix IP-based communication options provide high-speed, secure alarm transport and control through connection of wired and/or cellular network interfaces
- Up to 32 programmable areas, each supporting perimeter and interior points with your choice of touch screen, ATM style, or LED keypads
- 246 hardwired, addressable or wireless points with flexible configuration options to meet multiple installation requirements
- OPTIONAL GV4 version 2.xx firmware upgrade available

GV4 panels are the premier commercial control panel line from Bosch. GV4 panels integrate intrusion, fire and access control providing one simple user interface for all systems. With the ability to adapt to large and small applications, the D9412GV4 provides up to 246 individually identified points that can be split into 32 areas. The control panel includes a communicator that sends events to selected public switched telephone network (PSTN), IP network, or cellular network destinations through four programmable route groups. With the D9412GV4 you can:

- Monitor alarm points for intruder or fire alarms while operating keypads and other outputs
- Program all system functions local or remote using Remote Programming Software (RPS) or by using basic programming through the keypad.
- Add up to eight doors of access control using the optional D9210C Access Control Interface Module.

Functions

Programmable outputs

- 2 A alarm power at 12 VDC
- 1.4 A auxiliary power at 12 VDC
- Four alarm-output patterns
- Programmable bell test

System response

- High-performance micro-controller provides industry-leading system response
- High-speed device bus
- 31 custom point indexes, including fire supervisory
- Selectable point response time
- Cross point capability
- Fire alarm verification
- Fire inspector's local test
- Watch mode
- Scheduled events (SKEDS) arm, disarm, bypass and unbypass points, control relays, control authority levels, and control door access

User interface
- Supervision of up to 16 keypads (up to 32 unsupervised keypads can be used)
- Remote Programming Software (RPS) allows end users to perform control panel management tasks – Add/Delete/Change user passcodes and authorities, view and print the panel history event log
- Custom keypad text is fully programmable, including remote programming
- Full function command menu including Custom Functions
- Authority by area and 16-character name for each user
- 14 custom authority levels control user's authority to change, add, or delete passcodes or access control credentials; to disarm or bypass points; and to start system tests

Area configurations
Area programming offers a wide selection of different system configurations. Each area is assigned an account number to define annunciation, control, and reporting functions. Multiple areas can be linked to a shared area which is automatically controlled (hallway or lobby). Area arming can be conditional on other areas (master or associate). Any area can be configured for perimeter and interior arming, not requiring a separate area for this function.

Custom functions
For added convenience, Custom Functions can be programmed to eliminate keystrokes for users allowing the installer to program an easy command for a complicate function. For example, a custom function can be written to bypass a group of points and arm the system, allowing the user to perform this function with one easy command. This can be used to control a particular room, or even a single door allowing customized access. In additions, Custom Functions can be activated with a token or card, or automatically as a scheduled event (SKED) providing further flexibility and ease of use.

Door-activated custom function
A custom function activates when user credentials are presented to a B901 or D9210C access control module's door controller's reader. The custom function behaves as though the user performed a function at the keypad associated with the door controller.

Passcode security
For high security applications, GV4 can be configured for several different passcode options.
- Dual Authentication – requires a user to enter their passcode and also use a token or card.
- Two-Man Rule - Requires two people with two unique passcodes to be present at the time of opening.
- Early Ambush - Allows users to verify that the facility is safe by requiring two passcode entries at different keypads within the same area, sending a duress event if the user does not enter the passcode a second time after inspecting the premises.

Easy Exit control
The control panel changes from one armed state to another armed state without disarming. For example, if you change the state from Perimeter Arm to Master Arm, the control panel complies and reports the change. Easy Exit Control reduces the number of keystrokes, simplifying system operation.

Programmable passcode-controlled Menu List
The system prompts users to enter a passcode prior to viewing the keypad menu. The keypad display shows the user the menu options allowed according to the user's authority level. Passcode-controlled menus provide users only with the options and information pertinent to them, simplifying system operation.

Flexible control
The system provides the flexibility to select added convenience or high security. For example, you can restrict passcode arming and disarming to a keypad's immediate local area, even if the user has access to other areas. This is particularly useful for high security areas, where a user may have access to the area, but would prefer to only disarm the area individually rather than with the rest of the system. Another option is to program the system to disarm all areas the user can access from any keypad.

Invisible walk test
A menu item allows the user to test invisible 24-hour points within the scope of the keypad without sending a report to the central station.

System users
The system supports up to 1000 users, each can have a passcode, an access token and a wireless keyfob. User passcodes contain three to six digits. Passcodes can be assigned to one of 14 customized authority levels in each area, and can be restricted to operate only during certain times.

Communication formats
The control panel prioritizes and sends reports in Contact ID or Modem IIIa^2 communications formats to four route groups. Each group has a programmable primary and backup destination.
The control panel provides flexible communications for most central stations with reporting capabilities such as:
- Individual point numbers
- Opening or closing reports by user and area number
- Remote programming attempts
- Diagnostic reports

IP communication
The control panel uses the B426/B420 Connetix Ethernet Communication Module, DX4020 and/or the ITS-DX4020-G Cellular Communicator to communicate with the Conettix D6600 and D6100i Communications Receiver/Gateways. Using Conettix IP communication offers a secure path that includes anti-replay/anti-

substitution features and provides enhanced security with encryption. The B420, DX4020 and ITS-DX4020-G can all be used for remote programming.
GV4 is the first Security Control panel to support DNS (Domain Name System) for both remote programming and central station communication. DNS provides ease of use, eliminating the need to use static IP addresses as your reporting destination and accommodates a simple solution for central station disaster recovery. IP Setup is available via the installer keypad menus and the remote programming software, eliminating the need to use complicated internet programming tools such as ARP and Telnet.

Communication paths
The control panel accommodates up to four separate destinations for primary, alternate, and backup receivers for automatic test reports.
When resetting alarms or arming or disarming a system, the user is identified by name and number.

Firmware updates
Remote firmware updates using the RPS Firmware Update wizard through the IP connection (B426/B420 Connetix Ethernet Communication Module) as well as an on-site flash update key, provides for easy feature enhancements without replacing ROM chips.

***For GV4 version 2.00 firmware update information, refer to the, *"GV4 version 2.00 firmware updates" datasheet* to learn more about key enhancements, and supported products.**

A wide variety of input options
Each point:
- Accommodates normally-open (NO) and normally-closed (NC) devices with end-of-line (EOL) resistor supervision.
- Is programmable for fire, fire supervisory, or intrusion application.
- Can be hard-wired, addressable, or wireless.

Security and Fire detection
The control panel provides eight on-board points, and up to 238 additional off-board points. You can program individual points to monitor all types of burglar alarms, fire alarms, and supervision devices.

Scheduled events (SKEDS)
The internal clock and calendar start individually scheduled events (SKEDS). SKEDS perform functions such as arm or disarm, relay control, or point bypassing. The D9412GV4 Control Panel offers:
- 40 scheduled events with up to 25 different functions
- Eight opening windows and eight closing windows
- Eight user windows
- Day-of-week, date-of-month, or holiday only schedules
- Four holiday schedules of 366 days each (leap year)

Access control
The control panel provides custom door strike, point shunt and auto disarming response by area. There are 14 panel-wide access levels with both manual and scheduled control.
Store, view, or print access events such as:
- Access granted
- No entry
- Request to enter
- Request to exit

Wireless interface
The B820 SDI2 Inovonics Interface Module connects an Inovonics EN4200 Serial Receiver to the control panel SDI2 bus, allowing this UL Listed wireless system to be programmed locally via the panel keypad, as well as remotely through RPS.

Event log
The event log stores up to 1,000 local and transmitted events. The event log includes time, date, event, area, point, user number, and transmission status. View the event log from a keypad or use RPS to remotely retrieve event information. RPS operators can retrieve events periodically using one call, rather than receiving several calls each day. When the event log reaches a programmed threshold of stored events, it can send an optional report to a receiver.

Fire test
When a user activates Fire Test Mode, the control panel suppresses all reports to the central station. The keypad and annunciator show all testing data. An automatic sensor reset feature saves time; you do not need to reset the sensors manually. At the end of test, the keypad shows the number of untested points.

Programming, diagnostics and controls
Installers can program locally or remotely through RPS as well as basic keypad programming. A programmable system passcode prevents unauthorized remote programming.

Two data buses
GV4 provides 2 data buses which support a wide array of components. The SDI bus supports keypads, access, and communications modules and also allows connection of existing components in a retrofit application. The new SDI2 bus supports input and output devices as well as a new wireless interface module, and an Ethernet communicator. SDI2 allows these devices to be mounted up to 1000 ft (305 m) from the control panel, providing installation convenience and flexibility.

Commercial Fire Alarm support
Suitable for Commercial Fire (UL 864, 9th Edition) applications.

Bosch Video Management System integration
With Bosch Video Management System (Bosch VMS) and an intrusion system, the VMS operator has a single user interface to monitor and control the intrusion system combined with video surveillance. With Bosch VMS and a control panel, the operator can, for example:
- View videos triggered by intrusion events, including all relevant information such as areas, point, and user show in the display with the event

- View areas, points, outputs, and doors – with their statuses – on the Bosch VMS map, providing the exact location in the system.
- Turn on (arm) and turn off (disarm) areas.
- Bypass and unbypass points.
- Lock and unlock doors (Bosch VMS 6.0 and higher).

Requirements to integrate Bosch VMS with a control panel:

- A licensed Bosch VMS system using Professional Editions v5.5 or higher or Bosch VMS Enterprise
- Edition v5.5 or higher.
- Expansion license to integrate the intrusion control panel. One license needed per control panel. Order number MBX-XINT-xx for the expansion license added to a Bosch VMS base license. Refer to the Bosch Video Management Software product page on the Bosch website, www.boschsecurity.com.
- Access to Remote Programming Software (RPS).
- Control panel firmware v2.xx

Certifications and approvals

USA:

UL 365	Police Station Connected Burglar Alarm Units and Systems
UL 609	Local Burglar Alarm Units and Systems
UL 636 (NEW)	Holdup Alarm Units and Systems
UL 864	Control Units and Accessories for Fire Alarm Systems (Commercial Fire)
UL 985	Household Fire Warning System Units
UL 1023	Household Burglar Alarm System Units
UL 1076	Proprietary Burglar Alarm Units and Systems
UL 1610	Central Station Burglar Alarm Units
ANSI/SIA CP-01:2010	False Alarm Reduction
FM 3010	Fire Alarm Signaling Systems
CSFM	California Office of The State Fire Marshall 7165-1615:0242 Control Unit (Commercial)

FCC Part 15 Class B, Part 68

Region	Certification	
USA	UL	20130918-S1871, UL 864, ANSI/SIA CP-01-2010, UL 1076, UL 1610, UL 1635, UL 365, UL 609, UL 985, UL 1023, UL 636
	CSFM	California State Fire Marshal (see our website)
	FDNY-CoA	6174
Canada	ULC	20140407-S1871; ULC/ORD-C1076-M1986, CAN/ULC-S304-06, CAN/ULC-S303-M91, CAN-ORD-C1023
Brazil	ANATEL	1083-12-1855

Installation/configuration notes

Compatible Products

Keypads

D1265 Touch Screen Keypad

D1255 Series Keypads

D1260 Series Keypads

D1256RB Fire Keypad

D1257RB Remote Fire Alarm Annunciator

D720 Series Keypads

D279A Independent Zone Control

Detectors

D278S Four-wire Addressable Detector Base, 12 VDC

D285/TH Photoelectric Smoke Detector Heads

D298S Addressable Detector Base, 24 VDC

D7050 Series Addressable Photoelectric Smoke and Smoke Heat Detector Heads

F220-B6PM/S 12/24 VDC Addressable Detector Bases with POPITs

FCC-380 Carbon Monoxide Detector

MX775i Addressable PIR Detector

MX794i Long Range Multiplex PIR Detector

MX934i Addressable PIR Detector

MX938i Addressable PIR Detector

ZX776Z PIR Detector

ZX794Z Long Range PIR Detector

ZX835 TriTech Microwave/PIR Detector

ZX935Z PIR Detector

ZX938Z PIR Detector

ZX970 PIR/Microwave Detector

Bosch conventional detectors, including Professional Series, Blue Line Gen2, Blue Line, Classic Line, Commercial Line, and Ceiling Mount motion detectors, as well as glass break, seismic, request-to-exit, photoelectric, heat, and smoke detectors.

Enclosures

D8103 Universal Enclosure

D8108A Attack-resistant Enclosure

D8109 Fire Enclosure

Magnetic Contacts

Bosch magnetic contacts include recessed, terminal connection, miniature, overhead door, and surface mount.

Modules

Conettix B426 Ethernet Communication Module (NEW)

B208 Octo-input Module

B308 Octo-output Module

B520 Auxiliary Power Supply Module (NEW)

B820 SDI2 Inovonics Interface Module

Conettix B420 Ethernet Communication Module

Conettix ITS-DX4020-G Cellular Integrated Communicator

Conettix DX4020 Network Interface Module

Conettix DX4010V2 USB/Serial Interface Module

Conettix C900V2 Dialer Capture Module

D113 Battery Lead Supervision Module

D125B Dual Class B Initiating Module

D126 Standby Battery (12V, 7 Ah)

D127 Reversing Relay Module

D129 Class A Initiating Module

D130 Auxiliary Relay Module

D185 Reverse Polarity Signaling Module

D161 Phone Cord

D162 Phone Cord

D192G Notification Appliance Circuit Module

D928 Phone Line Switcher

D5060 MUX Programmer

D8125 POPEX Point Expander

D8128D OctoPOPIT Eight-point Expander

D8125MUX Point Expander

D8125INV Wireless Interface Module

D8129 Octo-relay Module

D8130 Door Release Module

D9127 Series POPIT Modules

D9210C Access Control Interface Module

DS7432 Eight-input Remote Module

DS7457i Series Single-zone Multiplex Input Modules

DS7460i Two-input Module

DS7461i Single-input Multiplex Module

DS7465i Input and Output Module

ICP-SDI-9114 SDI Splitter

Transformers

D1640 Transformer

D1640-CA Transformer

Programming

RPS or RPS-LITE Remote Programming Software

Readers

ARD-R10 iCLASS Mullion Reader

ARD-R40 iCLASS Switchplate Reader

ARD-RK40-09 iCLASS PIN Reader

ARD-VSMART iCLASS Reader

D8223 Prox Pro Reader

D8224 Mullion Reader

D8224-SP Switch Plate Reader

D8225 Mini Mullion Reader

D8301W Low-profile Proximity Readers

Wireless

Inovonics wireless

B820 SDI2 Inovonics Interface Module

ENKIT-SDI2 Inovonics Interface and Receiver Kit. Includes B820 and EN4200

EN1210 Universal Transmitter (Single-input)

EN1210EOL Universal Transmitter with EOL Resistor

EN1210W Door-Window Transmitter with Reed Switch

EN1215EOL Universal Transmitter with Wall Tamper, Reed Switch, and EOL Resistor

EN1223D Water-resistant Pendant Transmitter (Double-button)

EN1223S Water-resistant Pendant Transmitter (Single-button)

EN1224-ON Multiple-Condition Pendant Transmitter

EN1233D Necklace Pendant Transmitter (Double-button)

EN1233S Necklace Pendant Transmitter (Single-button)

EN1235D Beltclip Pendant Transmitter (Double-button)

EN1235DF Fixed-location Transmitter (Double-button)

EN1235S Beltclip Pendant Transmitter (Single-button)

EN1235SF Fixed-location Transmitter (Single-button)

EN1247 Glass-break Detector Transmitter

EN1249 Bill Trap Transmitter

EN1242 Smoke Detector Transmitter

EN1260 Wall Mount Motion Detector

EN1261HT High Traffic Motion Detector

EN1262 Motion Detector with Pet Immunity

EM1265 360° Ceiling Mount Motion Detector

EN4200 Serial Receiver

EN5040-T High Power Repeater with Transformer

Parts included

The D9412GV4 includes the following parts:

Quant.	Component
1	D9412GV4
1	Faceplate with D9412GV4 Label
1	Literature pack • Installation Instructions • Owners Manual • Release Notes
1	Literature CD containing all product literature

The available kits come with the parts indicated in the following table:

	Kits		
Components	-A	-B	-C
D9412GV4	1	1	1
D122 Dual Battery Harness		1	
D161 Dual Modular Phone Cord		2	
D928 Dual Phone Line Switcher		1	
D1640 Transformer		1	1
D8103 Enclosure			1
D8108A Attack-resistant Enclosure	1		
D8109 Fire Enclosure		1	
D101 Lock and Key Set	1		1
D101F Lock and Key Set		1	

Technical specifications

Communications

Telephone Connection:	• One telephone line • D928 Dual Phone Line Module required for two telephone lines

Environmental Considerations

Relative Humidity:	5% to 93% at +30°C (+86°F), non-condensing
Temperature (Operating):	0°C to +50°C (+32°F to +122°F)

Number of...

Areas:	32
Card Readers (Doors):	8
Credentials (Tokens):	999
Custom Functions:	16
Events:	Up to 1000
Passcode Users:	999, plus 1 service passcode
Parallel Printers:	3
Points:	246 (8 on-board, up to 238 off-board)
Programmable Relay Outputs:	131
RF Points:	238
SKEDs:	40

Power Requirements

Current Draw (Maximum):	300 mA
Output (Alarm):	2 A at 12 VDC
Output (Auxiliary, Continuous Power, and Switched Auxiliary combined):	1.4 A at 12 VDC nominal
Voltage (Operating):	12 VDC nominal
Voltage (AC):	16.5 VAC 40 VA plug-in transformer (D1640)

Ordering information

D9412GV4 Control Panel
The D9412GV4 is sold individually or in kits. It supports 246 points.
Order number **D9412GV4**

D9412GV4-A Attack-resistant Package
Contains one PCB, one transformer, and one attack-resistant enclosure.
Order number **D9412GV4-A**

D9412GV4-B Fire/Burglar Package
Contains one PCB, one dual battery harness, two telephone cords, one telephone line switcher, one transformer, and one fire enclosure.
Order number **D9412GV4-B**

D9412GV4-C Standard Burglar Package
Contains one PCB, one lock and key set, one transformer, and one universal enclosure.
Order number **D9412GV4-C**

Accessories

B520 Auxiliary Power Supply Module
Provides auxiliary power to 12 VDC devices or to SDI2 modules.
Order number **B520**

B208 Octo-input Module
Provides 8 programmable inputs.
Order number **B208**

B308 Octo-output Module
Provides 8 programmable relays.
Order number **B308**

SDI2 Inovonics Interface and Receiver Kit
Kit containing B820 and EN4200 for use on SDI2 bus panels.
Order number **ENKIT-SDI2**

D122 Dual Battery Harness
Harness with circuit breaker. Connects two batteries to a compatible control panel.
Order number **D122**

D122L Dual Battery Harness with Long Leads
Color-coded harness with circuit breaker and leads measuring 89 cm (35 in.). Connects 12 V batteries to compatible control panels.
Order number **D122L**

D126 Standby Battery (12 V, 7 Ah)
A rechargeable sealed lead-acid power supply used as a secondary power supply or in auxiliary or ancillary functions.
Order number **D126**

D1218 Battery (12 V, 18 Ah)
A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors
Order number **D1218**

D137 Mounting Bracket
Used to mount accessory modules in D8103, D8108A, and D8109 enclosures.
Order number **D137**

D138 Mounting Bracket, Right Angle
Used to mount accessory modules in D8103, D8108A, and D8109 enclosures.
Order number **D138**

D1640 Transformer
System transformer rated at 16.5 VAC, 40 VA.
Order number **D1640**

D8004 Transformer Enclosure
For applications such as fire alarm that might require a transformer enclosure.
Order number **D8004**

D9002-5 Mounting Skirt
5 pack of mounting skirts for B8103, D8103, D8108A, and D8109 enclosures. Each skirt can hold up to six standard 3-hole mounting modules.
Order number **D9002-5**

D101 Lock and Key Set
Short-body lock set with one key supplied. Uses the D102 (#1358) replacement key.
Order number **D101**

D110 Tamper Switch
Screw-on tamper switch that fits all enclosures. Shipped in packages of two.
Order number **D110**

ICP-EZTS Dual Tamper Switch
Combination tamper switch with a wire loop for additional tamper outputs.
Order number **ICP-EZTS**

D8108A Attack Resistant Enclosure
Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.). UL Listed. Includes a lock and key set.
Order number **D8108A**

D8103 Enclosure
Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.).
Order number **D8103**

D8109 Fire Enclosure
Red steel enclosure measuring 40.6 cm x 40.6 cm x 8.9 cm (16 in. x 16 in. x 3.5 in). UL Listed. Includes a lock and key set.
Order number **D8109**

BATB-40 Battery Box\Enclosure
The BATB-40 Battery Box holds two dry or wet cell batteries. The box can be used with fire alarm systems or intrusion systems.
Order number **BATB-40**

BATB-80 Battery Box\Enclosure with Shelf
The BATB-80 Battery Box holds up to four dry or wet cell batteries. The box can be used with fire alarm systems or with intrusion systems.
Order number **BATB-80**

D928 Dual Phone Line Switcher
Allows the control panel to operate over and supervise two separate phone lines. Only one D162 phone cord is supplied. Two additional D161 or D162 phone cords are required.
Order number **D928**

Software Options

RPS Kit (DVD-ROM and USB Security Block)
Account management and control panel programming software with USB security key (dongle).
Order number **D5500C-USB**

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Tab 3 – Voice Evacuation Panel (existing)

SAFEPATH facility communications system & expansion options

EXISTING

→ SP40S

SPB-320

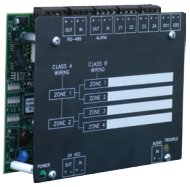
SPB-80/4
SPB-160

SP4-TZC

SPRM

SP4Z-A/B

SP-SVC



SP4-APS

Contents

Powering Business Worldwide

SAFEPATH Facility Communications: SP40S

Description

The SP40S is a multifunction supervised paging, messaging, background music (BGM) delivery and emergency voice evacuation system with 24 VDC battery backup. The SP40S integrates with fire alarm systems and provides full control of building audible and visual notification appliances. This single channel system is capable of delivering 40 watts of supervised high fidelity audio power and 2 amps of supervised 24 VDC synchronized strobe power. It comes standard with an on-board digital voice messaging system with 8 standard messages, a hand-held microphone, power supply/ battery charger and numerous additional features. The SAFEPATH system is expandable to 5280 watts utilizing the SPB-80/4 (80 watts and 4 amps of strobe power), the SPB-160 (160 watts) or SPB-320 (320 watts) supervised audio power boosters. All models are available in 115 VAC or 220 VAC.

SAFEPATH, when combined with audio boosters and Wheelock speakers (LSPK, LSPST, S, and EH product lines), meets both NFPA 72 (fire signaling) and NFPA 720 (CO signaling) low frequency tone requirements for sleeping areas.

Features

Voice evacuation

- Supervised NAC speaker and strobe circuits
- Live microphone override
- 8 digitally pre-recorded voice messages
- Selectable pre-tones for messages

Background music

- Capable of broadcasting from a supplied BGM source
- Unique supervision method allows for full system supervision even during background music
- Line Level input for music source
- Frequency Response 100 Hz–15KHz

General paging

- Easily interfaces with most existing phone system page port, CO port and line level signals
- Automatically mutes BGM
- Frequency Response 275–6.5kHz
- Night ringer or security alert connection

Strobe inputs and activation

- 2 Amps of 24 VDC supervised strobe power with built-in Wheelock sync protocol. Power limited.
- Strobe output is selectable for control of Wheelock sync protocol or non-sync operation
- Strobe terminals have pass-through capability for Wheelock sync or non-sync operation
- Any of the 8 messages can be dip switch selected to activate strobes
- Microphone activation can be dip switch selected to activate strobes
- Auxiliary activation (Remote MIC) can be dip switch selected to activate strobes
- 24 VDC supervised and synchronized strobe power can be expanded to meet the requirements of the installation via connecting to optional Wheelock power boosters

Speaker output

- 40 watts of supervised audio power
- Speaker outputs: 25V or 70.7V power limited

System activation

- Contact closure message activation

Audio processing

- Volume and tone controls for general paging and BGM
- Connectivity of optional speaker splitter modules
- Dual-tone tone generator with Code 3 Tone and Slow Whoop for alerting of system trouble
- Night ringer/security alerting capability
- Audio power can be expanded by connecting to optional audio power boosters
  - SPB-80/4: 80-watt supervised audio power booster with 4 Amp of Synchronized Strobe Power
  - SPB-160: 160-watt supervised audio power booster
  - SPB-320: 320-watt supervised audio power booster

Live & pre-recorded message announcement

- Supplied with 8 pre-recorded emergency messages
- Capable of in-field recording of all messages via 1/8" line level audio input jack
- Preset audio levels for emergency messaging (prerecorded and live mic)—system reverts back to a preset level regardless of the volume set for BGM or general paging
- On board push-to-talk microphone
- Telephone paging input, disconnects BGM when in use
- Auxiliary input for remote microphone connection

Power supply & batteries

- 24 VDC, 33AH max rechargeable battery back-up power circuitry built-in
- Batteries can be housed in the enclosure. Up to two BAT-1212, 12 volt, 12 ampere hour batteries can fit in the enclosure. Actual battery size required will depend on speaker and/or strobe load. (Batteries are sold separately.)

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

⚠ WARNING

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

Benefits & advantages

- One multi-function in-building communications system
- Background Music (BGM) system, with patent-pending supervision during BGM operation
- Supervised emergency/fire voice evacuation system
- Interfaces with telephone system for general paging requirements

- Built-in power for visual notification appliances (e.g., strobes)
- Expandable for larger system requirements (with optional equipment)

Approvals & compliances

- Approvals: UL Standard 864, 9th edition, UL Standard 1711, California State Fire Marshal (CSFM), New York City (MEA), FCC Part 15
- To meet both NFPA 72 and NFPA 720 low frequency tone requirements for sleeping areas, SAFEPATH is listed to UL 2017 (code 4), UL 864 (code 3) and the low frequency requirements of UL 464 (520 Hz)
- OSHA 1910.165 and ADA Compliant
- 1 year warranty

Applications

- **Multi-use applications:** The system can function as an evacuation system, an emergency messaging system, a paging system, an employee notification system and a background music system per NFPA 72.
- **Fire code applications:** The system is listed under UL Standard 864, 9th edition delivering supervised audio and voice messaging with strobes and notification appliance circuits (NAC) for visual alerting.
- **Economic OSHA applications:** The system is OSHA 1910.165 compliant and therefore it **does not** require reliability inspections every two months or the required spare parts inventory.
- Wide ranging applications—from small to large facilities
- Can connect to pagers for private alerting of emergency/ trouble conditions

Installation & maintenance

- Multiple trouble LED indicators for quick system diagnostics
- Fully supervised circuitry always in effect—even during BGM and general paging (via patent pending technology)
- Removable quick connect/disconnect terminals for ease of wiring; accepts #12 to #22 AWG
- Power-limited circuitry with Class "B" or Class "A" wiring (Class "A" only with use of audio splitter)
- Surge protected circuitry
- Audio and strobe power limiter reset button

Compatible Wheelock Products

- All Wheelock speaker/strobes
- All Wheelock strobes
- All Wheelock speakers
- All cluster speakers
- Wheelock strobe power supply

Table 1. Inputs: Audio & Activation

Priority Ordered Inputs	Priority Level	Type of Input
On Board Microphone	1	Push to Talk (PTT) Microphone
Auxiliary	2	Remote Microphone or Remote Microphone Expander
Digital Message Input 1	3	Contact Closure activation
Digital Message Input 2	4	
Digital Message Input 3	5	
Digital Message Input 4	6	
Digital Message Input 5	7	
Digital Message Input 6	8	
Digital Message Input 7	9	
Digital Message Input 8	10	
Night Ringer Input	11	Contact Closure input
Telephone Paging Input	12	Page port input
Background Music Input	13	Line Level Input, 600 ohm, input voltage must be less than 2.5 V peak to peak or 0.3 volts RMS

Table 2. Inputs: Audio/Technical Specifications

Switch mode, Class D amplifier (40 Watts)	
Speaker Outputs	25V or 70.7V power limited
Frequency Response	Voice: 275 Hz – 6.5 kHz BGM: 100 Hz – 15 kHz Meets UL Voice Evacuation Requirements of 800–2800 Hz
Signal-to-Noise Ratio	Better than 65 dB
Dynamic Range	Better than 65 dB
Total Harmonic Distortion	Less than 2%
Stand by Current Draw	130 mA
Alarm Current Draw	4.7 amps

Table 3. SP40S Mechanical

Dimensions	21" H x 16" W x 6" D (wall mount)
Weight	36 lbs. (without batteries)
Finish	Red or black exterior enclosure
Door Lock	Wheelock key-lock

Table 4. Ordering Information

Model Number	Order Code	Description
SP40S	9929	Multi-Function Supervised Paging, Messaging, Background Music delivery and Emergency Voice Evacuation System with 24 VDC battery backup circuitry. Single channel system with 40 watts of supervised audio power and 2 amps of supervised 24 VDC synchronized strobe power and 8 standard messages. (Batteries not included, 2 required.) Red Enclosure.
SP40S-B	9935	Same as above but with black enclosure
SP40SE	6138	Same as above but with 220 VAC input
SP40SE-B	6139	Same as above but with 220 VAC input and black enclosure
SP40S-LF-KIT	6216	Digital voice message control chip that upgrades SP40S with low frequency sleeping area tone capability
BAT-1212	7390	12 volt, 12-ampere hour battery
SP40S-PMK	9936	SP40S 8 Message Programmed Message Kit
AM-SP40S-SMK	9937	SP40S After Market 8 Message Standard Message Kit
AM-SP40S-PMK	9938	SP40S After Market 8 Message Programmed Message Kit
AM-SP40S-NBT	9939	SP40S After Market Narrow Band Signal Tone Kit
SP-COA	9908	C.O. Port Adapter for the SP40S – Recommended 24 VDC Power Supply is Wheelock RPS-2406 (Order Code 3770)
BATC-R	5414	Battery Cabinet, Red
BATC-B	5413	Battery Cabinet, Black
BAT-1224	7391	12 Volt, 24Ampere Battery Cell

Table 5. Message Capabilities

Message and Priority #	Type of Message	Voice Type	Message Script
1	Fire (Do not use elevators)	Male	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! A fire emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit. Do not use the elevators."
2	Fire (Do not use elevators)	Female	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! A fire emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit. Do not use the elevators."
3	Fire	Male	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! A fire emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit."
4	Emergency	Female	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! An emergency has been reported in the building. While this is being verified, please leave the building by the nearest exit."
5	Emergency	Male	Three (3) rounds of code 3 horn (followed by): "May I have your attention please! An emergency has been reported in the building. While this is being verified, please leave the building and report to the designated assembly area for your group."
6	Weather	Male	Five (5) seconds of 1kHz tone (followed by): "May I have your attention please! The National Weather Service has issued a severe weather warning for our area."
7	All Clear	Male	Five (5) seconds of 1kHz tone (followed by): "May I have your attention please! The building emergency has ended. An all clear has been given. Please resume normal activities."
8	Test	Male	Five (5) seconds of 1kHz tone (followed by). "May I have your attention please! This is a test of the Wheelock evacuation system, repeat, this is only a test."

- Each message can be selected to have a code 3 pre-alert tone, a 1kHz continuous pre-alert tone, or no pre-alert tone
- Post-tones are also selectable and match the pre-tones for individual messages
- Any of the 8 messages are field programmable to record your own custom message
  - Each message length is 30 seconds
  - A 1/8" line level audio input jack is supplied for message recording
  - A two-step recording procedure is required to ensure and verify that the standard message will be permanently erased
- Factory programmed messages are available for custom messages
  - Contact customer service for additional information
  - Form is required and can be downloaded from www.coopernotification.com

Note: For telephone paging, the SP40S can connect directly into the page port of the local phone system. If a page port is inaccessible, the SP-COA (C.O. Port Adapter for the SP40S) may be used to connect the SP40S to an unused C.O. port or stand-alone telephone.

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

SAFEPATH 2-Zone Class A or 4-Zone Class B Speaker Audio Splitter

Description

- Supervised 2-zone Class A or 4-zone Class B speaker audio splitter for the SP40S, SP40/2 or audio boosters
- Enables a single supervised speaker audio output to drive up to two Class A supervised speaker audio outputs or four Class B supervised speaker audio outputs
- For operation with SAFEPATH family of products: SP40S, SP40/2, SPB-320, SPB-160, SPB-80/4

Features

- Expands one zone to up to 2 zones of supervised speaker audio output in Class A
- Expands one zone to up to 4 zones of supervised speaker audio output in Class B
- Each Class A zone can accept up to 40 watts of audio
- Each Class B zone can accept up to 40 watts of audio
- Operates on either 25V or 70.7V RMS
- Mounts inside the enclosure of the SP40S, SP40/2 or audio boosters
- Power and Trouble LED's
- Individual zone short and open LED indication
- Capable of detecting wiring faults
- Removable wiring terminals for quick connect/disconnect accepting 12–22 AWG
- All output circuitry is Power Limited
- Space provided to allow for naming of the zones
- Powered by 24VDC, supplied by the either the SP40S, SP40/2 or audio boosters
- Standby and Alarm current at 24VDC is 15mA

Approvals & compliances

- UL Standard 864, 9th edition, and California State Fire Marshal (CSFM), New York City (MEA)
- UFC 04-021-01 2002

Applications

- Provides for expansion of one zone to up to 2 zones of supervised speaker audio output in Class A
- Provides for expansion of one zone to up to 4 zones of supervised speaker audio output in Class B

Table 6. Ordering Information

Model Number	Order Code	Description
SP4Z-A/B	9900	Supervised 2-Zone Class A or 4-Zone Class B Speaker Audio Splitter for the SP40S, SP40/2 or Audio Boosters
SPMB4Z	9907	Mounting Bracket for the SP4Z-A/B is required when used with the Audio Boosters

Note: The Speaker Splitter Mounting Bracket (SPMB4Z) is required when the speaker splitter is used in audio boosters. The SPMB4Z can support two splitters.

SAFEPATH Audio Boosters

Description

Supervised facility communication and emergency voice evacuation audio and audio/strobe power boosters, UL Standard 1711 and UL Standard 864, 9th edition with 24VDC battery backup capabilities. Designed to provide for additional supervised audio power for live voice, pre-recorded messages or background music (BGM). Fully supervised patent pending circuitry is always in effect even during BGM. The SPB-80/4 also provides 4 amps of 24 VDC supervised and synchronized strobe power.

The SPB-320, SPB-160 and the SPB-80/4 easily connects to the Wheelock SP40S or SP40/2. Multiple SPB-320, SPB-160 and SPB-80/4 Audio Boosters can be interconnected to accommodate large installations with supervised audio power and also supervised and synchronized strobe power requirements.

The SPB-320 draws 2.4 watts of audio input power to properly operate and provide additional supervised audio output power. The SPB-160 and the SPB-80/4 draws 1.2 watts of audio input power to properly operate and provide additional supervised audio output power. A maximum of 5,280 watts of supervised audio power can be achieved. Additional strobe power can be obtained via a combination of SPB-80/4 or Wheelock power supplies/chargers.

SPB-320 SPB-80/4 SPB-160

SPB-320: 320 watt supervised audio power

SPB-160: 160 watt supervised audio power booster (two 80-watt circuits)

SPB-80/4: 80 watt supervised audio power booster with 4 amps of supervised and synchronizable strobe power (two 2 amp circuits)

Features

System Activation: Audio

- 70V or 25V input from the SP40S or SP40/2
- 1 Volt input from SP4-RMX

System Activation: Strobe (SPB-80/4)

- 8–33VDC NAC input connected to the strobe input

Power supply & batteries

- Fully supervised patent pending circuitry always in effect even during BGM
- Power limited circuitry
- Class D amplifiers
- Internal battery charger and power supply
- Required batteries fit inside the enclosure (sold separately)
- SPB-320 requires four 12 VDC, 12 AH batteries
- SPB-160 and SPB-80/4 require two 12 VDC, 12 AH batteries

Inputs:

- Audio speaker inputs: 70V or 25V, field selectable
- Auxiliary in (for alarm input signal)

Outputs:

- SPB-320 has four 80 watt speaker output circuits
- SPB-160 has two 80 watt speaker output circuits
- SPB-80/4 has one 80 watt speaker output circuit and two 2 amp strobe circuits (4 amps total)
- Supervised Audio Speaker outputs: 70V or 25V field selectable (all boosters must be either 70 V or 25 V)
- Expansion output (supervised, 24VDC at 0.5A in alarm condition) used for connecting multiple boosters
- DC output (unsupervised for optional splitter power). Each speaker circuit (four for the SPB-320, two for the SPB-160, one for the SPB-80/4) can connect to speaker splitters.

SPB-80/4 Strobe Features:

- Two 24VDC 2 amps, NAC supervised, synchronizable, power limited, Class B strobe outputs
- Selectable outputs; Wheelock sync, pass through, or constant DC
- Trouble LED for open and short output conditions
- Alarm indicator: LED for strobe and expansion outputs

Approvals & compliances

- UL Standard 864, UL Standard 1711, UL 2017, California State Fire Marshal (CSFM), New York City (MEA)
- OSHA 1910.165, ADA and UFC 04-021-01
- 1-year warranty

Applications

- Provides for additional supervised audio power for large installations
- Provides for additional supervised and synchronizable strobe power for large installations
- Can be used in new construction as well as in retrofit construction

Technical specifications:

- 120VAC, 3.8A, 60 Hz input
- SP40SE Models 240 VAC, 2.5A, 50–60 Hz
- Standby current draw: 120mA, per amplifier board
- Alarm current draw: 9 amps, per amplifier board
- SPB-80/4 and SPB-160 have one amplifier board
- SPB-320 has two amplifier boards
- System Frequency Response:
  - Voice: 400 Hz–6.5 kHz
  - BGM: 275 Hz–15 kHz
- Removable quick connect/disconnect terminals, accepts 12–22 AWG
- Multiple LED's for easy indication of system diagnostic conditions
- Signal-to-Noise Ratio: > 70 dB
- Dynamic Range: > 65 dB
- Total Harmonic Distortion: 2%

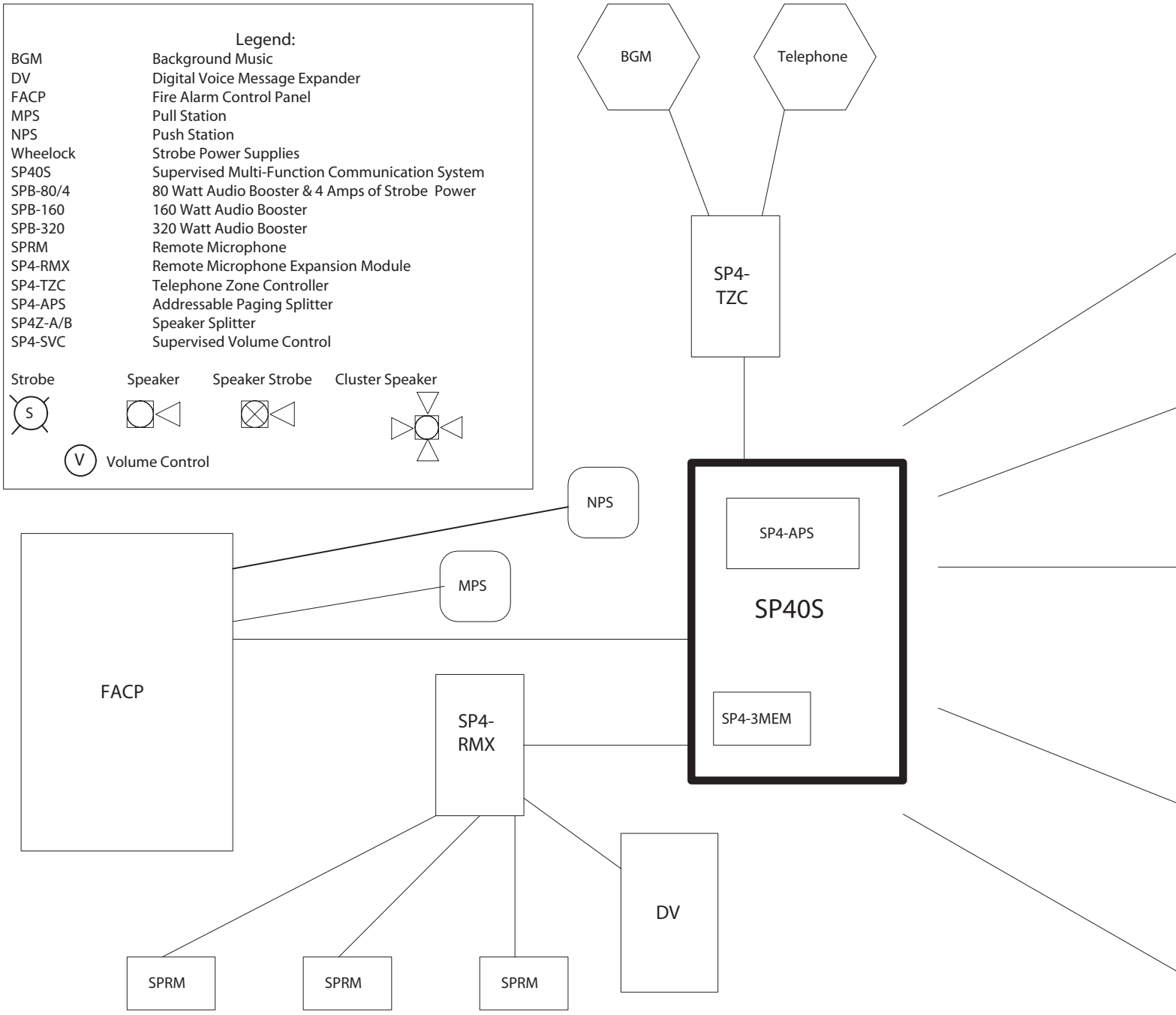
Table 7. Mechanical

SPB-160, SPB-80/4	
Dimensions	21" H x 16" W x 6" D (wall mount)
Weight	36 lbs. (without batteries)
Finish	Red exterior enclosure
Door Lock	Wheelock key-lock
SPB-320	
Dimensions	36" H x 24" W x 6" D (wall mount)
Weight	80 lbs. (without batteries)
Finish	Red or black exterior enclosure
Door Lock	Wheelock key-lock

Table 8. Ordering Information

Model Number	Order Code	Description
SPB-320	9918	320 watt supervised audio power booster (Four 80-watt circuits)
SPB-320E	6336	320 watt supervised audio power booster (four 80 watt circuits), 220 VAC input
SPB-320E-B	6353	320 watt supervised audio power booster (four 80 watt circuits), 220 VAC input, black enclosure
SPB-160	8989	160 watt supervised audio power booster (two 80 watt circuits), red enclosure
SPB-160-B	9930	160 watt supervised audio power booster (two 80 watt circuits), black enclosure
SPB-160E	6149	160 watt supervised audio power booster (two 80 watt circuits), 220 VAC input
SPB-160E-B	6150	160 watt supervised audio power booster (two 80 watt circuits), 220 VAC input, black enclosure
SPB-80/4	8988	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), red enclosure
SPB-80/4-B	9931	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), black enclosure
SPB-80/4E	6147	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), 220 VAC input
SPB-80/4E-B	6148	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), 220 VAC input, black enclosure
SPMB4Z	9907	Speaker splitter mounting bracket for SPB-320, SPB-160 or SPB-80/4

Note: The Speaker Splitter Mounting Bracket (SPMB4Z) is required when the speaker splitter is used in audio boosters. The SPMB4Z can support two splitters.



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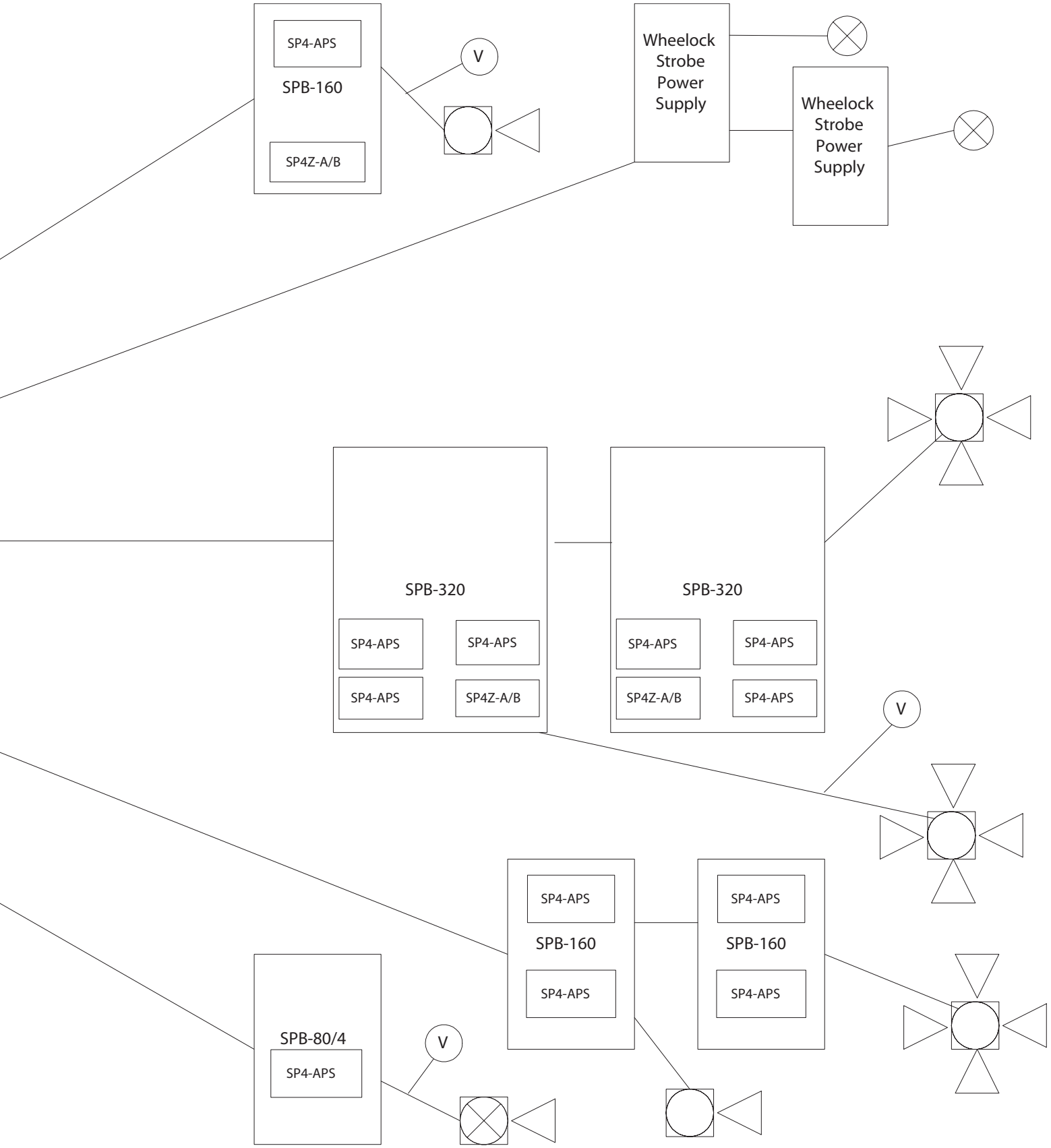
SP4-APS
SPB-160
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V
Wheelock Strobe Power Supply
Wheelock Strobe Power Supply
SPB-320
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SP4-APS
SPB-160
SP4-APS
SPB-80/4
SP4-APS
V

SAFEPATH Addressable Paging Splitter and Telephone Zone Controller

SP4-APS SP4-TZC

SP4-APS: Addressable paging splitter

SP4-TZC: Telephone zone controller

Features

- Allows selections of speaker zones via a telephone keypad (DTMF tones)
- One SP4-TZC (controller) can control up to 17 SP4-APS (splitters)
- Telephone page input connects to stand alone telephone, unused CO port, page port
- USB connection for logical zone grouping and
- BGM programming (supports Windows 2000 and Windows XP)
- Up to 9 logical zones, (a logical zone is a user selected group of up to 5 zones, individual or fixed)
- RS-485 digital control to the SP4-APS speaker splitters
- Connects to the SP40S or SP40/2 via the BGM input
- The combination of 1 SP4-TZC (controller) and up to 17 SP4-APS (splitters) can provide:
  - Class B
    - 4 zones per splitter
    - Up to 68 individual zones (17 splitters)
    - 17 fixed zones (groups of 4)
    - 9 logical zones
  - Class A
    - 2 zones per splitter
    - Up to 34 individual zones (17 splitters)
    - 17 fixed zones (groups of 2)
    - 9 logical zones

SP4-TZC telephone zone controller:

- Connects to the SP40S or SP40/2
- Auto programmable
- Custom user programmable (for logical zones)
- All call or selected zone(s) telephone paging
- Background music (BGM) zone(s) selectable
- Telephone input and background music (BGM) input
- Enclosure for the SP4-TZC (controller):
  - Dimensions: 13”H x 7.6”W x 2.15”D
  - Color: Black
  - Wall mountable
- Requires 24 VDC, model RPS-2406

SP4-APS addressable paging splitter:

- Addressable speaker zone splitter
- Mounts inside the SP40S, SP40/2, SPB-80/4, SPB-160 or SPB-320
- Operates on 24 VDC, supplied by the SP40S, SP40/2, SPB-80/4, SPB-160, SPB-320
- Handles 40 watts of supervised audio per zone
- UL Standard 864, 9th edition listed

Approvals & compliances

- UFC 04-021-01

Applications

- Connects to the SP40S or SP40/2 to control selectable paging and background music (BGM)
- Ability to access individual or multiple speaker zones throughout the SP40S or SP40/2 system via the telephone

Table 9. Ordering Information

Model Number	Order Code	Description
SP4Z-APS	9920	Addressable paging splitter
SP4-TZC	9921	Telephone zone controller
TZC-USB	9923	SP4-TZC programming cable

SAFEPATH Supervised Volume Control

SP-SVC: Supervised volume control

Features

- Supervised volume control for use with UL Listed Life Safety Applications
- Can handle up to 35 watts of 70.7 volt audio power input
- Adjustment settings: 0–10, in 3dB increments
- Operates in Class B or Class A wiring (for Class A, the SP4-APS is required)
- Requires a double gang, 3-1/2" deep back box or 4" square and 1-1/2" deep box with a 1-1/2" extension ring
- Stainless steel mounting plate with a black knob
- Maximum RMS current 10.0mA

Approvals & compliances

- UL Standard 864 and California State Fire Marshal (CSFM) listed for use with the SP40S, SP40/2 or SPB Audio Boosters
- OSHA 1910.165 and ADA compliant
- UFC 04-021-01

Applications

- Allows manual volume setting for telephone paging and background music for a specific speaker or speaker zone
- The selected adjustment will not affect the volume setting of emergency prerecorded messages or live microphone usage

Table 10. Ordering Information

Model Number	Order Code	Description
SP-SVC	9926	Supervised volume control for use with the SAFEPATH 4 system

SAFEPATH Remote Microphone

Description

Remote Microphone for use with the SAFEPATH 4 facility communications system—SP40S, SP40/2 or SP4-RMX

Features

- Supervised hand held push to talk microphone
- Key required to enable remote microphone use
- Individual front panel LED indication for; System Normal, System Trouble and Alarm
- When used with the SP40S or SP40/2, the priority level is 2, the SP40S or SP40/2 on board microphone is always priority 1
- Remote microphone usage disengages background music and general paging
- Voice frequency response: 275 Hz - 6.5 kHz
- Requires 24VDC, supplied by the SP40S, Audio Boosters, or SP4-RMX
- Input current:
  - Standby: 23mA
  - Alarm: 30mA
- Audio output level: 1.05V RMS
- 6 wire connection to the SP40S, SP40/2 or SP4-RMX
- Mounting plate is red and measures, 8 3/4" x 5 ¼" fits into a 4 gang back box
- All output circuitry is Power Limited

Approvals & compliances

- UL Standard 864, 9th edition and California State Fire Marshal (CSFM)
- UFC 04-021-01

Applications

- Provides for an additional microphone in a remote location
- Can be mounted up to 2,000 feet away from the SP40S or SP40/2

Table 11. Ordering Information

Model Number	Order Code	Description
SPRM	8996	Remote microphone for use with the SP40S, SP40/2, SPB-320, SPB-160, SPB-80/4 or SP4-RMX, red plate
SPRM-GP	9927	General paging microphone for use with the SPB-320, SPB-160, or SPB-80/4, black plate

SAFEPATH 4 Remote Microphone Expansion Module

SP4-RMX: Remote microphone expansion module

Features

- The SP4-RMX will provide the capability of connecting up to (3) three Remote Microphone Stations (SPRM)
- When connected to the SP40S or SP40/2, two SP4-RMX units can be cascaded together to provide up to six remote microphones
- Provides for an auxiliary input for connection of an external message repeater, for additional messages
- Can accept a line level input for broadcasting of other information
- When the SP4-RMX is connected to the SP40S or SP40/2, the entire system benefits from the additional microphone capability
- Can be connected to Audio Boosters for general (non-alarm) paging with use of SPRM-GP
- Multiple on board diagnostics with 3 status conditions: standby, alarm, and trouble
- Operates on 24 VDC, supplied by the SP40S, SP40/2, SPB-80/4, SPB-160, SPB-320
- The SP4-RMX is an external module
- Enclosure dimensions: 13"H x 7.6"W x 2.15"D
- Color: black
- Wall mountable

Approvals & compliances

- UL Standard 864 listed
- OSHA 1910.165, ADA and UFC 04-021-01

Applications

- Expands one remote microphone (SPRM) from the SP40S or SP40/2 to three remote microphones
- Two SP4-RMX modules can be cascaded together to provide up to six remote microphones from the SP40S or SP40/2
- Provides for an auxiliary input for connection of an external VoiceLink message repeater for additional messages

Table 12. Ordering Information

Model Number	Order Code	Description
SP4-RMX	9919	Remote microphone expansion module

Table 13. Microphone and message priority levels when the SP4-RMX is used with the SP40S or SP40/2

Priority Level	Device
	Microphones
1	SP40 on board microphone
2	SP4-RMX, remote microphones #1, 2, 3 (set priority or First In First Out
3	SP4-RMX, auxiliary input only
	SP40S Standard Messages
4	SP40S message 1
5	SP40S message 2
6	SP40S message 3
7	SP40S message 4
8	SP40S message 5
9	SP40S message 6
10	SP40S message 7
11	SP40S message 8

Table 14. Ordering Information

Model Number	Order Code	Description
SP40S	9929	Multifunction supervised paging, messaging, background music and emergency voice evacuation system with 24 VDC battery backup circuitry; single channel system with 40 watts of supervised audio power and 2 amps of supervised 24 VDC synchronized strobe power and 8 standard messages (batteries not included, 2 required.); red enclosure
SP40S-B	9935	Same as above but with black enclosure
SP40S-PMK	9936	SP40S 8-message programmed message kit
SP40S-LF-KIT	6216	Digital voice message control chip that upgrades SP40S with low frequency sleeping area tone capability
AM-SP40S-SMK	9937	SP40S after market 8-message standard message kit
AM-SP40S-PMK	9938	SP40S after market 8-message programmed message kit
AM-SP40S-NBT	9939	SP40S after market narrow band signal tone kit
SP-COA	9908	C.O. port adapter for the SP40S or SP40/2; recommended 24 VDC power supply is Wheelock RPS-2406 (Order Code 3770)
SP4Z-A/B	9900	Supervised 2-zone Class A or 4-zone Class B speaker audio splitter for the SP40S, SP40/2 or audio boosters
SPMB4Z	9907	Mounting bracket for the SP4Z-A/B is required when used with the audio boosters
SPB-320	9918	320 watt supervised audio power booster (four 80 watt circuits)
SPB-160	8989	160 watt supervised audio power booster (two 80 watt circuits), red enclosure
SPB-160-B	9930	160 watt supervised audio power booster (two 80 watt circuits), black enclosure
SPB-80/4	8988	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), red enclosure
SPB-80/4-B	9931	80 watt supervised audio power booster with 4 amps of supervised and synchronized strobe power (two 2 amp circuits), black enclosure
SP4Z-A/B	9900	Supervised 2-zone Class A or 4-zone Class B speaker audio splitter for the SP40S, SP40/2, SPB-320, SPB-160 or SPB-80/4
SPMB4Z	9907	Speaker splitter mounting bracket for SPB-320, SPB-160 or SPB-80/4
SP4Z-APS	9920	Addressable paging splitter
SP4-TZC	9921	Telephone zone controller
TZC-USB	9923	SP4-TZC programming cable
SP-SVC	9926	Supervised volume control for use with the SAFEPATH 4 System
SPRM	8996	Remote microphone for use with the SP40S, SP40/2, SPB-320, SPB-160, SPB-80/4 or SP4-RMX, red plate
SPRM-GP	9927	General paging microphone for use with the SPB-320, SPB-160 or SPB-80/4, black plate
BATC-R	5414	Battery cabinet, red
BATC-B	5413	Battery cabinet, black
BAT-1212	7390	12 volt, 12 ampere battery cell
BAT-1224	7391	12 volt, 24 ampere battery cell
BAT-1265	7392	12 volt, 65 ampere battery cell

Architects and engineers specifications

SP40S Facility Communications System

The system shall be a multi-purpose NFPA compliant, supervised, general-purpose audio, and fire/emergency evacuation system. The system shall be a single channel voice evacuation system incorporating supervision during the broadcasting of background music and general paging. The system shall be capable of delivering 40 watts of supervised audio power and 2 amps of supervised 24 VDC synchronized strobe power. Minimum supervised audio power shall be 40 watts, expandable to 5280 watts, depending on system configuration and with additional modules and power boosters. Supervised 24 VDC synchronized strobe power shall be 2 amps, expandable to the requirements of the installation. The system shall be capable of operating from a 120 VAC power source. E models shall be capable of operating from a 240 VAC power source. All models shall have a 24 VDC battery backup. Standard on-board system features shall include: digital voice messaging, a hand-held push-to-talk microphone with override priority, and a power supply/battery charger. The system shall be capable of interfacing with telephone systems for general paging announcements and will have night ringer capabilities. Form C contacts shall be provided for system alarm and trouble conditions.

The system shall have 8 message contacts with contact closure activation. Background music input voltage shall be capable of handling less then 2.5 V peak to peak or less then 0.3 volts. The system shall have thirteen priority ordered inputs, including: On Board Microphone, Auxiliary Input (Line Level), 8 Digital Messages, Night Ringer Input, Telephone Paging Input, and Background Music Input. The system shall have preset audio levels for emergency messaging (prerecorded and live mic). The system shall revert back to a preset level regardless of the volume set for background music (BGM) or general paging. Background music inputs can be an AM/FM tuner, cassette, CD, MP3, or any other remote source. The system shall be supplied with 8 pre-recorded messages and be capable of in-field recording of customer unique messages. The system shall have a dual-tone tone generator with Code-3 Tone and Slow Whoop. When the system is on battery power, telephone page, night ring and background music shall be disengaged.

The panel shall have power-limited circuitry with an internal battery charger and power supply. The power supply/charger section shall be able to charge 24 VDC batteries with a maximum capacity of 33 amp hours. Up to two 12 VDC, 12 AH batteries may be housed in the enclosure. Batteries larger than 12 Ah shall be housed in a separate enclosure such as the Cooper Wheelock BATC or equivalent.Batteries shall be supplied separately.

The system shall have power limited circuitry and class B wiring. Wiring terminal blocks will be removable and accept #22–#12 AWG wire. Audio output voltage shall be selectable for 25V or 70.7V. The voice (live microphone or recorded message) frequency response shall be 275 Hz–6.5 kHz, background music frequency response shall be 100 Hz–15 kHz. Stand by current draw shall be 140mA. Alarm current draw shall be 4.7 amps. The signal to noise ratio shall be better than 65 dB, dynamic range shall be better than 65 dB, total harmonic distortion shall be less than 2%.

The system shall be wall mountable, enclosed in a steel locking enclosure. The required batteries for 40 watt systems shall fit inside the enclosure. The 40 watt system shall weigh no more than 36 lbs (without batteries) and its dimensions shall not exceed 21" H x 16" W x 6" D. Approvals for the system shall include: UL Standard 864, 9th edition, UL Standard 1711, FCC part 15, California State Fire Marshal (CSFM) and New York City (MEA). The system shall be OSHA 1910.165 and ADA compliant. To meet both NFPA 72 (fire signaling) and NFPA 720 (CO signaling) low frequency tone requirements for sleeping areas, the system shall be listed to UL 2017 (code 4), UL 864 (code 3) and the low frequency requirements of UL 464 (520 Hz). 1 Year Warranty.

SAFEPATH Audio Boosters

The Wheelock SPB-320, SPB-160 and SPB-80/4 Audio Boosters shall be NFPA compliant supervised audio and supervised 24VDC synchronized strobe power boosters (some models will have supervised 24VDC synchronized strobe booster capability). The booster shall have 24VDC battery backup capabilities. The booster shall have the capability to supervise the circuitry during playback of background music. The booster shall have the capability to be inter-connected to accommodate large installations with supervised audio power and also supervised and synchronized strobe power requirements. Three versions of the booster shall be made available: SPB-80/4, (80 watts of supervised audio power and 4 amps of supervised and synchronized strobe power), SPB-160 (160 watts of supervised audio) or SPB-320 (320 watts of supervised audio).

Each booster shall use 1.2 watts of audio input power (The SPB-320 requires 2.4 watts of audio power) to properly operate and provide additional supervised audio output power. A combination of boosters can be added together to provide for a maximum of 5,280 watts of supervised audio power. Additional strobe power can be obtained via a combination of boosters. The audio section of the booster shall be connected via a selectable 70V or 25V input from the Wheelock SP40S. The strobe section of the booster shall be divided into two sections each supplying 2 amps of 24VDC, NAC, supervised, synchronizable, power limited, Class B strobe outputs, with selectable outputs offering Wheelock sync, pass through, or constant DC and can be activated via 8-33VDC NAC input or contact closure.

The internal battery charger/power supply shall be capable of charging 24 VDC batteries with a maximum capacity of 33 amp hours. The enclosure shall be capable of housing the correct number of 12 VDC rechargeable batteries [SPB-80/4 (2), SPB-160 (2), SPB-320 (4)] with a maximum capacity of 12 amp hours. Batteries with a larger capacity require an external battery enclosure(s) such as the Cooper Wheelock BATC or equivalent.

The boosters shall have power-limited circuitry and be a class D amplifier with an internal battery charger and power supply. The required batteries (purchased separately) shall fit inside the enclosure (two 12VDC, 12 AH for the SPB-80/4 or SPB-160 and four 12 VDC, 12 AH for the SPB-320). The booster shall operate on 120VAC, 3.8A, 50–60 Hz input. E model boosters shall operate on 240 VAC, 2.5A, 50–60 Hz input. The SPB-80/4 or SPB-160 standby current draw shall be 120mA and alarm current draw shall be 9 amps. The SPB-320 consists of two SPB-160's. Each SPB-160 shall have its own power supply and battery charger. The voice frequency response shall be 400 Hz–6.5 kHz +/- 3 dB, the BGM frequency response shall be 275 Hz–15 kHz +/- 3 dB. Removable quick connect/disconnect terminals that accept 12–22 AWG shall be used. Multiple LED's for easy indication of system diagnostic conditions shall be present on the PC board. The Signal-to-Noise Ratio shall be > 70 dB, the dynamic range shall be > 65 dB, the Total Harmonic Distortion spec shall be 2%.

The booster shall be wall mountable, enclosed in a steel locking enclosure, with a red finish. Approvals for the booster shall include; UL Standard 864, UL Standard 1711, UL 2017, CSFM and MEA. The system shall be OSHA 1910.165, ADA and UFC compliant. The booster shall carry a 1 Year Warranty.

The SPB-80/4 & SPB-160 enclosure dimensions are 21" H x 16" W x 6" D and the SPB-320 enclosure dimensions are 36" H x 24" W x 6" D.

4 Zone Class B Speaker Splitter

The Wheelock SP4Z-A/B shall be UL Standard 864, 9th edition, California State Fire Marshal (CSFM) and New York City (MEA) approved, 2-Zone Class A or 4-Zone Class B Speaker Splitter for operation with the Wheelock, SP40S, SP40/2, SPB-80/4, SPB-160 and SPB-320. The SP4Z-A/B shall enable a single supervised speaker audio output to drive up to two Class A supervised speaker audio outputs or four Class B supervised speaker audio outputs. Each Class A zone shall be capable of accepting up to 40 watts and operate on either 25 or 70.7V RMS of audio input. Each Class B zone shall be capable of accepting up to 40 watts of audio and operate on either 25 or 70.7V RMS of audio input. The SP4Z-A/B shall be capable of supporting live microphone paging, prerecorded emergency voice evacuation messages, supervised background music and general paging announcements.

The SP4Z-A/B shall mount inside the enclosure of the SP40S, SP40/2, SPB-80/4, SPB-160 and SPB-320 and shall have power and trouble LED's with individual zone short and open LED indication. The SP4Z-A/B shall be capable of detecting wiring faults. The SP4Z-A/B shall be powered by 24VDC, which is to be supplied by the SP40S, SP40/2, SPB-80/4, SPB-160 or SPB-320. Standby and Alarm current at 24VDC shall be 15mA. Removable wiring terminals for quick connect/disconnect accepting 12–22 AWG shall be incorporated. All output circuitry shall be power limited. Space shall be provided to allow for naming of the zones.

Addressable Paging Splitter and Telephone Zone Controller

The Wheelock Addressable Paging Splitter (SP4-APS) and Telephone Zone Controller (SP4-TZC) shall be used to control and direct telephone paging and background music zones connected to the SAFEPATH Multi-Function Facility Communication System using an RS485 connection.

The Addressable Paging Splitter (SP4-APS) shall be UL Standard 864, 9th edition and California State Fire Marshal (CSFM) approved, addressable and supervised 2-zone Class A or 4-zone Class B Speaker splitter. The SP4-APS shall be used with Wheelock's SP40S or SP40/2 panel and the Audio Booster (SPB-160, SPB-80/4, and SPB-320) panels. Each SP4-APS shall have a single audio input capable of 25 Vrms or 70.7 Vrms at a maximum of 80 Watts. The input audio power shall be distributed to the zone connections with the total not exceeding the input and no zone exceeding 40 Watts. When audio boosters are connected, each audio booster module shall consume 1.2 Watts from the total input power of the SP4-APS. The splitter shall be mounted inside the SP40S, SP40/2 or Audio Booster that it is associated with, and it shall operate on 24VDC supplied by the supported module. The SP4-APS shall contain 16 LED indicators used to monitor and troubleshoot the module.

The Telephone Zone Controller Module (SP4-TZC) shall be used to address the output zones on the SP4-APS. The SP4-TZC shall be capable of supporting 17 SP4-APS speaker splitter modules and shall be capable of addressing all zones at once ("All Call"), a maximum of 68 separate zones, 17 fixed zone groups and 9 programmed logical zone groups. This shall be accomplished using two digit DTMF tones from a page port, an unused CO port, or a stand alone telephone with a loop start circuit. Also, the SP4-TZC shall be able to select zones for background music. The SP4-TZC has the following inputs: Power, USB port, Background Music (BGM), Page Audio in. The outputs are: Audio out and RS485 Digital Control. The basic operating parameters of the SP4-APS shall be pre-programmed. Customized programming shall be accomplished using a USB cable and programming computer software. The SP4-TZC shall be powered using a 24VDC filtered and regulated power supply such as the Wheelock RPS-2406. The Controller Module assembly is mounted in a metal enclosure measuring 13"L x 7 5/8"W x 2"D.

Supervised Volume Control

The Wheelock SP-SVC shall be UL Standard 864, 9th edition approved, supervised volume control for use with the SAPEPATH Facility Communications System.

The SP-SVC shall provide for manual volume setting for telephone paging and background music for a specific speaker or speaker zone. The selected adjustment will not affect the volume setting of emergency prerecorded messages or live microphone usage. The SP-SVC shall be capable of handling up to 35 watts of audio power @ 70.7 volts or 4 watts audio power @ 25 volts and shall operate on either 70.7 or 25 volt input from an SP40S or Audio Booster. The SP-SVC shall be capable of operating in Class B or Class A wiring configurations (for Class A, the SP4-APS is required). The SP-SVC shall receive operating power from an Audio Booster, SP40S or SP40/2. Volume adjustment settings shall be off, 1–10, in 3dB increments. The SP-SVC shall be supplied with a stainless steel mounting plate with a black knob and require a double gang, 3-1/2" deep back box for mounting.

Remote Microphone

The Wheelock SPRM shall be UL Standard 864, 9th edition and California State Fire Marshal (CSFM) approved, Remote Microphone for use with the SAFEPATH Facility Communications System.

The SPRM shall be a supervised hand held push to talk microphone and a key shall be required to enable remote microphone use. (Same key as SP40S or SP40/2). Removable wiring terminals for quick connect/disconnect accepting 12–22 AWG shall be incorporated. All output circuitry shall be power limited. Individual front panel LED's shall be provided for indication of System Normal, System Trouble and Alarm. Multiple on board diagnostic LED's shall be provided. When used with the SP40S or SP40/2, the priority level shall be number two. Remote microphone usage shall disengage background music and general paging.

Voice frequency response shall be 275 Hz–6.5 kHz +/- 2.4 dB. Power requirements shall be 24VDC and will be supplied by the SP40S or SP40/2. Input current for Standby shall be 26mA and for Alarm 38mA. Audio output level shall be 1.05V RMA. There shall be a 6-wire connection to the SP40S or SP40/2. The mounting plate shall be red and measure, 8-3/4" x 5-1/4", and shall fit into a 4 gang back box.

Remote Microphone Expansion Module

The Wheelock SP4-RMX Remote Microphone Expansion Module shall be UL Standard 864, 9th edition and California State Fire Marshal (CSFM) approved for use with the SAFEPATH SP40S Facility Communications System.

The SP4-RMX shall be a supervised outboard expansion module for use with the SAFEPATH system. It shall be used to expand the number of optional supervised Remote Microphone (SPRM) modules up to three. Two SP4-RMX Remote Microphone Expansion Modules can be connected to the SP40S or SP40/2 and shall have the capability of providing the SP40S or SP40/2 with up to six system wide "All Call" Remote Microphone (SPRM) modules①. The SP4-RMX can be programmed to provide either priority override for each SPRM module input or First In First Out. First In First Out allows the active SPRM to complete its communication before another SPRM can be used. All output circuitry shall be power limited. Multiple on board diagnostic LED indicators shall be provided. All wiring shall be connected to the module using quick connect/disconnect wiring terminals, capable of accepting 12–22 AWG wiring.

The SP4-RMX PCB assembly is mounted in a metal enclosure measuring 13"L x 7 5/8"W x 2"D. The SP4-RMX can support each SPRM at a range up to 2000 feet.

① The SP4-RMX can also be connected to Audio Booster for general (non-alarm) paging with use of SPRM-GP.

Note: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Eaton's Cooper Notification business standard terms and conditions.

Note: Refer to the products Installation Instructions for proper installation, wiring procedures and any additional specifications.

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Tab 4 – Notification Devices

EXISTING

Technical Data TD450024EN

Effective April 2018
Supersedes July 2016

Wheelock E70 & E90 Speakers & Speaker Strobes

Description

The Wheelock E70 Wall and E90 Ceiling Speakers and Speaker Strobes are designed for high efficiency sound output for indoor applications. The E product line features intelligible communications with crisp, clear voice messages and tone signaling, ideal for mass notification, and voice evacuation.

Providing a sleek aesthetic appearance, the Wheelock Series E High Speaker Strobes feature dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. The low profile design incorporates a speaker mounting plate for faster and easier installation. Each model has a built-in level adjustment feature and an aesthetic two (2) screw grille cover.

For visible signaling to meet the hearing impaired, the E Speaker Strobe models incorporate the Low Current draw RSS Strobes.

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

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

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

The E Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances). All inputs employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.

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

Powering Business Worldwide

Features

- Intelligible Communications
  - Efficient design for high intelligibility at minimum wattage across a frequency range of 400 to 4000 HZ
- Field Selectable Settings
  - Wall mount models are available with Field Selectable Candela Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models)
  - Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (Multi-candela models)
- Field Selectable Taps
  - 1/8 watt up to 2 watts
  - 25 or 70 VRMS operation
- Easy-to-Install
  - Low profile design incorporates speaker mounting plate for faster and easier installation
  - Built- in level adjustment feature and an aesthetic two (2) screw grille cover.
  - Quick installation with IN/OUT screw terminals using #12 to #18 AWG wires
  - 4" square backbox prevents wire damage
  - E70 No extension ring required
  - E90 Optional extender (E90 Ext) is available for mounting to 4" square backboxes
- Strobe Synchronization Components
  - Meet synchronizing standards with Wheelock's DSM Sync Modules, Power Supplies or SAFEPATH products
- Compliance
  - UL 1971, UL 1480
  - California State Fire Marshal (CSFM)
  - ADA/NFPA/ANSI/OSHA
  - FCC Part 15, ICES

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

Drawings

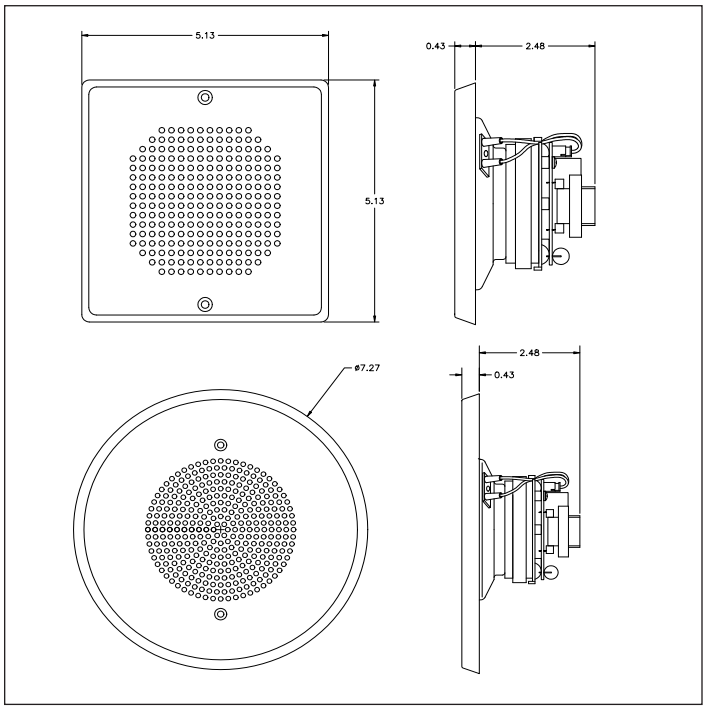

Figure 1. E70 (top) and E90 (bottom) Speakers - Front & Side Views

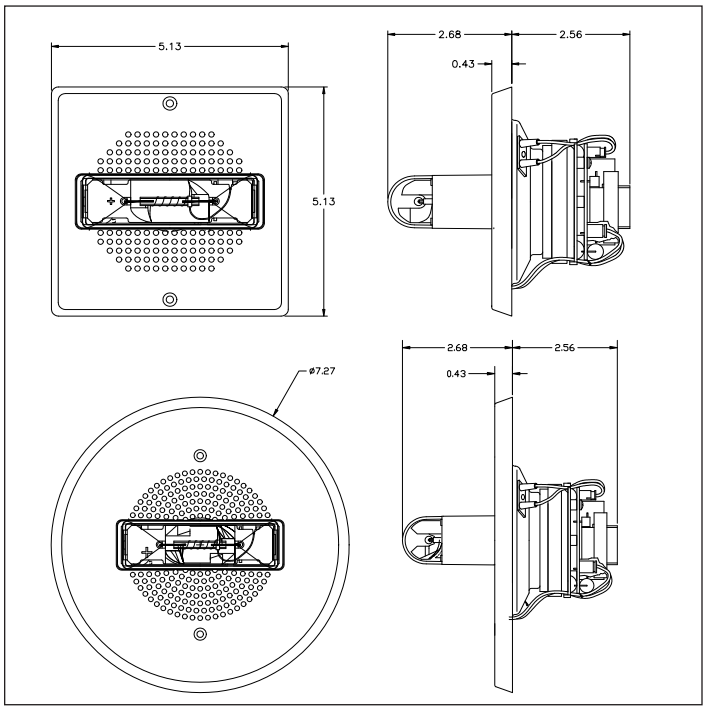

Figure 2. E70 (top) and E90 (bottom) Speaker Strobes - Front & Side Views

General Notes

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range." Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL 1971.

Table 1. Maximum RMS Current

		UL Max Current ①								
		24MCW/24MCC					24MCWH/24MCCH			
Model	Regulated Voltage Range VDC	15	30	75	95	110	115	135	177	185
E70	16.0-33.0	0.060	0.092	0.165		0.220		0.300		0.420
E90	16.0-33.0	0.065	0.105	0.189	0.249		0.300		0.420	

Table 2. UL Listed Models and Ratings

	UL Reverberant dBA at 10 Feet ②				
Model	1/8 watts ③	1/4 watts	1/2 watts	1 watts	2 watts
E70 Speaker	72	75	78	81	83
E90 Speaker	72	75	78	81	82
E70 Speaker Strobe	71	75	78	81	83
E90 Speaker Strobe	74	77	80	82	85

Table 3. Specification & Ordering Information

Model	Order #	Strobe Candela	Red	White	Lettering	Wall	Ceiling	Mounting Options	Sync w/ DSM or Wheelock Power Supplies
Speakers									
E70-R	9865		X		No Lettering	X		P, Q	
E70-W	9866			X	No Lettering	X		P, Q	
E90-R	9875		X		No Lettering		X	P, Q	
E90-W	9876			X	No Lettering		X	P, Q	
Speaker Strobes									
E70-24MCW-FR	0183	15/30/75/110	X		FIRE	X		P, Q	X
E70-24MCW-FW	0184	15/30/75/110		X	FIRE	X		P, Q	X
E70-24MCW-NW	9748	15/30/75/110		X	No Lettering	X		P, Q	X
E70-24MCW-ALR	4123	15/30/75/110	X		ALERT	X		P, Q	X
E70-24MCW-ALW	4124	15/30/75/110		X	ALERT	X		P, Q	X
E70-24MCWH-FR	0185	135/185	X		FIRE	X		P, Q	X
E70-24MCWH-FW	0186	135/185		X	FIRE	X		P, Q	X
E70-24MCWH-ALW	4456	135/185		X	ALERT	X		P, Q	X
E70-24MCC-ALR	4308	15/30/75/95	X		ALERT		X	P, Q	X
E70-24MCC-ALW	5838	15/30/75/95		X	ALERT		X	P, Q	X
E70-24MCC-NW	1000	15/30/75/95		X	No Lettering		X	P, Q	X
E90-24MCC-FR	0191	15/30/75/95	X		FIRE		X	P, Q	X
E90-24MCC-FW	0192	15/30/75/95		X	FIRE		X	P, Q	X
E90-24MCC-NW	3181	15/30/75/95		X	No Lettering		X	P, Q	X
E90-24MCC-ALW	4189	15/30/75/95		X	ALERT		X	P, Q	X
E90-24MCC-ALR	4309	15/30/75/95	X		ALERT		X	P, Q	X
E90-24MCCH-FR	0194	115/177	X		FIRE		X	P, Q	X
E90-24MCCH-FW	0193	115/177		X	FIRE		X	P, Q	X
E90-24MCCH-ALR	0980	115/177	X		ALERT		X	P, Q	X
E90-24MCCH-ALW	2975	115/177		X	ALERT		X	P, Q	X
E90-24MCCH-NW	2974	115/177	X		No Lettering		X	P, Q	X

① RMS current ratings are per UL maximum RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33v for 24v units). For strobes the UL max current is usually at the minimum listed voltage (16v for 24v units). For audibles the max current is usually at the maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

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

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

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

Table 4. Specifications

Physical	
Material	Red or white textured UV stabilized, colored impregnated engineered plastic. Exceeds 94V-0 UL flammability rating.
Weight	E70 Speaker: 1.7 lbs (0.77 kg); E70 Speaker Strobe 1.8 lbs (0.82kg); E90 Speaker: 1.5 lbs (0.68 kg); E90 Speaker Strobe 1.6 lbs (0.73 kg)
Lens	GE Lexan 943A
Dimensions	E70 Speaker: 5.13" W x 5.13" H x 0.43"D; E70 Speaker Strobe: 5.13" W x 5.13" H x 2.56"D; E90 Speaker: 7.27" Diameter x 0.43" D; E90 Speaker Strobe: 7.327 Diameter x 2.68" D
Operating Temperature	Indoor: 33.8°F to 120.2°F (0°C to 49°C) and maximum humidity of 93%
Mounting & Wire Connections	
Mounting (indoor only)	4"square backbox with extension ring prevents wire damage; SBB for surface mount of E70
Wire Connections	#12 through #18 AWG
Power & General	
Operating voltage	25/70 VRMS
Strobe Output Rating	UL 1971
Strobe Flash Rate	Strobes are designed to flash at 1 flash per second
Synchronization Models	Strobes can be synchronized with Wheelock's DSM Sync Modules, Power Supplies or SAFEPATH products, using Wheelock patented sync protocol
Frequency Range	400 Hz to 4000 Hz

Architects and Engineers Specifications

The speaker appliances shall be Wheelock Series E70 or E90 Speakers and Speaker Strobe appliances or approved equals. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 87 dB at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall also incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range. The strobe shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL 1971 at 15/30/75/110cd or 135/185cd for wall mount and 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant.

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

The speaker and speaker strobe appliances shall be designed for indoor surface or flush mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a grille cover which is secured with two screws for a level, aesthetic finish and shall mount to standard electrical hardware requiring no additional trimplate or adapter.

The finish of the Series E speakers and strobe speakers shall be red or white.

All speaker and speaker strobe appliances shall be backward compatible.

UL 1971, UL 1480, CSFM, FCC.

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WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

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Tab 5 – CERTIFICATIONS

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Eff Date: 3/20/2015 Exp Date: **4/11/2023**

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HEATHER MATTIOLI

has satisfactorily completed the cognitive and performance testing required by the standards of the **COYNE FIRST AID, INC.** Course of Instruction in:

BASIC FIRST AID

Jun 2, 2021 — Date of Issue

Jun 1, 2024 — Date of Expiration

HEATHER MATTIOLI

M-09118

MATTIHC151JJ

Seattle Fire Department

FIRE DEPT.

Fire & Life Safety Examination

CERTIFICATE

NATIONAL safety COMPLIANCE

CERTIFICATE OF TRAINING

Heather Mattioli

has successfully completed the safety training program

Confined Spaces

Training was completed on: 12/20/19

Authorized Signature:

NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES®

Providing Certification Programs Since 1961

BE IT KNOWN THAT

Heather C Mattioli

IS HEREBY AWARDED THE FOLLOWING CERTIFICATION

Fire Alarm Systems Level III

Certification Number **147931**

Valid Through **2024-08-01**

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BE IT KNOWN THAT

Jeffrey Marshall Gordon

IS HEREBY AWARDED CERTIFICATION AT

LEVEL II

IN FIRE PROTECTION ENGINEERING TECHNOLOGY
FIRE ALARM SYSTEMS

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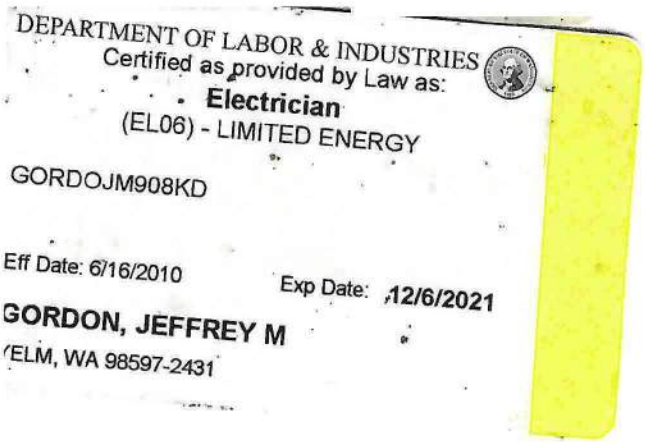
JEFFREY GORDON
G-07952
Seattle
Fire
Department
FIRE DEPT.
Fire & Life Safety Examination
CERTIFICATE


DEPARTMENT OF LABOR & INDUSTRIES
Certified as provided by Law as:
Electrician
(EL06) - LIMITED ENERGY
GORDOJM908KD
Eff Date: 6/16/2010
Exp Date: 12/6/2021
GORDON, JEFFREY M
ELM, WA 98597-2431