



Permitting and Inspections Department

Fire Alarm Permit Application

Construction Address: 40 Free St.		
Total Square Footage of Proposed Structure: 68,200		
Tax Assessor's Chart, Block & Lot Chart# <input type="text"/> Block# <input type="text"/> Lot# <input type="text"/>		Applicant Name: Norris Inc.
Cost of Work: \$ \$ 29,000.00		Address: 2257 West Broadway South Portland, ME. 04106
Lessee/Owner Name (if different): 40 Free LLC		Phone: 207-883-3473
Address: 10 Free Street Portland, Maine 04101		Email: melissap@norrisinc.com
Phone: 207-774-5908		Contractor Name (if different): BH Milliken
Email: <input type="text"/>		Address: 235 Presumpscot St. Unit C Portland, ME. 04103
Current use (i.e. single family): n/a		
If vacant, what was the previous use? n/a		
Proposed specific use: apartments, parking garage and retail		
Is property part of a subdivision? If yes, name: no		
Project description: install a new addressable fire alarm system		
Life Safety Code Occupancy Classification: mixed— new apartment, retail and garage		
Is this new work or a renovation to an existing system? new		
Is the top occupiable floor of the building greater than 75 feet above the lowest level of Fire Department access (high-rise)? no		
Name of company providing programming and certification of system*: Norris Inc.		
Electrical permit #: ELEC2019-02184		
Will a master box be installed? <input checked="" type="radio"/> Yes <input type="radio"/> No If yes, complete all items for approval):		
AES approved installing contractor: Norris Inc.		
Documentation of AES approval: attached		
Property Owner: <input type="text"/>		
Property Owner Billing Address: <input type="text"/>		
Property common name: <input type="text"/>		
E-911 address for protected premises: <input type="text"/>		
Emergency contact phone: 207-774-5908 Additional emergency contact phone: N/A		
Number of stories protected: <input type="text"/>		
Is the building protected by a supervised, automatic sprinkler system? <input checked="" type="radio"/> Yes <input type="radio"/> No		
Name of person to contact when the permit is ready: Norris Inc.- Melissa Peters		
Address: same as above		
City, State & Zip: <input type="text"/>		
Email Address: melissap@norrisinc.com		Phone: 207-883-3473 x1104

*For a list of approved fire alarm companies, see www.portlandmaine.gov/1486/Approved-Fire-Alarm-Companies389 Congress Street, Room 315/Portland Maine 04101/www.portlandmaine.gov/tel: 207-874-8703/fax: 207-874-8716



Norris Inc.

PO Box 2551
2257 West Broadway
South Portland, ME 04106

1-800-370-3473
Fax 207-879-0540

www.norrisinc.com



Reviewed for Code Compliance
Permitting and Inspections
Department
Approved: 02/17/2019

Please complete this form and return to Norris Inc.

Building Owner Information Form

Job Name:

Project #

Electrical Contractor:

NFPA requires this information for proper documentation.

The contractor must provide all of the requested information below before ANY equipment can be released.

Electrical Contractor Contact:

Estimated Date Equip. Needed:

Estimated Finals Date:

Building Owner:

Job Site Address:

City:

State:

Zip:

Customer Contact:

Phone:



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Thank you for your cooperation.

**Please advise the building owners that if this system is equipped with a digital communicator,
then they MUST also make monitoring arrangements prior to a certificate of occupancy.**

Norris Inc will attempt to contact the building owners.



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STOP!

**THIS COPY IS FOR YOUR ELECTRICIAN
ON THE JOBSITE**

PLEASE BE SURE THIS COPY IS FORWARDED

- 1.) A riser diagram is enclosed. **DO NOT USE THE ENGINEER'S RISER SHOWN ON THE PLANS.** If there is any information that you question, call us immediately.
- 2.) **YOU MUST CALL AT LEAST FIVE DAYS IN ADVANCE TO SCHEDULE FINAL CONNECTION ASSISTANCE.**
- 3.) All wires must be labeled and clear of any grounds, shorts or opens, and must maintain polarity throughout. Meter out all circuits before calling for final connection assistance. If applicable verify End of Line resistors are in place.
- 4.) If using shielded cable, the drain wires must be connected and fully insulated, so that neither the shield or the drain wire touches the backbox.
- 5.) Unless special arrangements are made, we will make one final job site visit. If a special visit is required for an elevator inspection or partial occupancy, then additional charges may if prior arrangements were not made. Call your customer service representative if needed.
- 6.) If you have any defective or left over parts, **DO NOT WRITE ON THEM OR THE BOXES.** Save the original box, all mounting hardware and instructions. Returns that do not conform to this practice will not be accepted for credit.
- 7.) If the system is being monitored through a digital communicator, please see information on the next page.



**IMPORTANT INFORMATION FOR THE BUILDING OWNERS
SPECIAL NOTE REGARDING ALARM MONITORING SERVICES**

Included with your alarm system package is a digital communicator, which sends coded messages to a private 24 hour central station if your alarm system is activated. This is a code requirement for most fire alarm systems. As a service to our customer, we offer central station monitoring services from our local UL Listed central station at extremely competitive rates.

If the central station monitoring contract is purchased through Norris Inc. prior to our scheduled start up; we will connect, program, and test the communicator at no additional charge.

Should the building owners decide to obtain monitoring services from another company, then the cost for programming and testing the communicator will be the sole responsibility of the firm they have contracted with. Furthermore, if programming changes are made to the system by persons other than Norris Inc. technicians, then the company performing the changes shall be solely liable for any personal injury or loss of life or damage to, or loss of property arising out of the use of or inability to use the system and it shall result in a waiver of any system warranties.

We appreciate that you understand the delicate nature of this life safety and/or security system and realize that serious problems may arise when modifications to the system are made, including very simple programming changes.

Call Norris Inc. at 1-800-370-FIRE (3473) to make arrangements for central station monitoring services.



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SUBMITTAL PACKAGE

Project: 40 Free Street Mixed Use Building

System: Fire Alarm

Submitted by: Norris Inc.

2257 West Broadway

South Portland, Maine 04106

Telephone: 1-800-370-3473

Submittal Date: 11/8/2019



Norris Inc.

PO Box 2551
2257 West Broadway
South Portland, ME 04106

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Company Profile

“We are extremely proud to represent the highest quality manufacturers integrating life safety, alarm, and communication systems throughout northern New England.”

—Bradford Norris, President—

Mission Statement

Provide quality engineered systems, exceptional service.

Goal

Learn...Continually Improve...Exceed Expectations

Founded in 1979, Norris Inc. has grown to become northern New England’s leading integrated system contracting and supply company. Norris Inc. is an innovated proactive organization with extensive experience in integration interdisciplinary building management systems. Our local and national affiliations assure that your project will be done properly regardless of size. Representing leading manufacturers, our comprehensive projects provide outstanding quality, reliability, and performance... Surpassing customer application requirements and exceeding the stringent requirements of Underwriters Laboratories, National Fire Protection Association and other codes.

We maintain an exceptional level of quality and provide the highest levels of customer service. Our knowledgeable technical support will insure the great service you deserve.

Whether your needs involve industrial, commercial, institutional, or educational applications, you can trust that Norris Inc. has the complete resources it takes to provide the right solution, right away.



LIMITED WARRANTY

Norris Inc. warrants that the products of its manufacturers shall be free from defects in materials or workmanship as warranted by the manufacturer which is typically for a one (1) year period from the completed installation date, but not always. The completed installation date will be the date when the end-user was able to begin using or started using the product(s) or the system, whether partially or in its entirety. For projects that have a specification or bid instructions to follow which contains specific warranty requirements, Norris Inc. will always honor the warranty terms exactly as specified in the project's specifications or bid documents, which may be more or less in coverage and duration than the manufacturer's warranty. In performing hundreds of projects per year with thousands of different products it is impossible for Norris Inc. to track the terms and details of specified or individual product warranties. Therefore, Norris Inc. will request that the owner's representative provide these special warranty details when the warranty work is requested; otherwise a standard one (1) year warranty on the equipment will be honored. The manufacturer's warranty is for equipment only and does not include any labor and/or shipping costs. All warranties provided by Norris Inc. are limited with the same limitations included with the manufacturer's warranty which is included in the manuals of the products being provided.

The warranty will apply only if such goods have been properly installed, are subject to normal proper use and have not been modified in any manner whatsoever. Upon return of the defective product, Norris Inc. will, at its sole discretion, either repair or replace, at no cost, such goods determined to have a defect in materials or workmanship. In cases of a warranty repair, Norris Inc. will use its sole discretion to determine if a suitable replacement part can be provided on loan while the repairs are being performed.

All warranty work is performed during regular business hours. If emergency warranty work is required, the customer will pay the difference between the emergency service bill and our normal hourly charges.

Norris Inc.'s limited warranty does not apply to those products that are damaged due to misuse, abuse, negligence, exposure to adverse environmental conditions, acts of God, or have been modified in any manner whatsoever.

Norris Inc.'s standard terms and conditions are provided with our invoices. Those Terms and Conditions shall be provided upon request.

NORRIS INC. SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM LOSS OF LIFE AND/OR PROPERTY OR OTHER DAMAGE OR LOSSES OWING TO THE FAILURE OF NORRIS INC. PRODUCTS BEYOND THE COST OF REPAIR OR REPLACEMENT OF ANY DEFECTIVE PRODUCTS.

NORRIS INC. MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY AND NO OTHER WARRANTY, ORAL OR WRITTEN, EXPRESS OR IMPLIED AS ALLOWED TO THE FULLEST EXTENT OF THE LAW.



OUR CONTINUOUS COMMITMENT TO OUR ENVIRONMENT

At Norris Inc, we are proudly committed to continuous environmental improvement for a sustainable future and to develop strong partnerships within our community.

Our mission while running our operations is to do everything within our power to improve the environmental quality of our world and to work together to create a clean and safe place to live in and work in for future generations.

We will incorporate and promote green practices within our operations with policies to support it, a system of rewarding those that fully embrace it and then will regularly review our practices for continuous improvement.

We will establish policies, make investments in technologies and set the example in our own operations to include our ongoing commitment to go paperless and making it a requirement to Reuse, Reduce, & Recycle, to turn off unneeded lights, to not allow our vehicles to idle, to encourage carpooling and to utilize practical energy efficient transportation.

We will always be 100% compliant with all applicable environmental laws and regulations and will report any violations.

We will remain committed to working locally and whenever possible to sell and use locally manufactured products.

We will insist that every purchase we make will include a review of its environmental impact with a very high priority to selecting the greenest products and services available.

We will remain committed to selling low energy products. This includes promoting wireless technologies, using existing wire infrastructure in our installations, promoting solar powered devices, using our Remote Services in lieu of on-site service calls and performing calculations to minimize power supply and battery needs.

We will educate our employees and customers to illustrate that green practices and purchases are almost always less costly in the long run.

We will support and give priority to organizations that show the strongest commitment to the environment.

We will actively encourage and promote the same responsible green practices that we utilize in the work place to our employees for use in their everyday personal lives.



REMOTE INTERNET CONNECTIONS

As an added service to our customers and in order to facilitate the commissioning of the system(s) being provided within this submittal and then later to provide warranty support Norris Inc. may (at Norris Inc's option) use internet connections to gain access to the system(s) being provided. Many methods can be used, but the most popular is utilizing software named LogMeIn. This software or any other method used to connect to the customer's network will allow Norris Inc's technicians the ability to get onto the programming and diagnostic levels of the system(s) being provided via the building owner's or tenant's data network and program, diagnose or make needed changes to the operation of the system(s). This will provide a better working atmosphere to perform programming from a controlled environment without the disruptions of a construction job-site and allow fast and efficient trouble shooting and/or servicing if problems should occur later. Acceptance of this submittal by those approving it shall constitute an acceptance and approval to perform the work necessary to install and/or enable these network connections if Norris Inc. chooses to do so. It is the sole responsibility of the submittal approvers to advise the building owners and/or tenants that Norris Inc. has the ability to gain access to their network. At the specific request of those approving this submittal or the contractor that Norris Inc. is working for the building owners or tenants that own the network, Norris Inc. can remove or disable the ability to connect to the building's network. However, leaving it in place will allow for quicker and more cost effective service when it is needed. Under absolutely no circumstances shall Norris Inc, its principals, employees, or heirs to be held responsible for any losses incurred as a result of this network connection or the inability for the network connection to operate as expected.



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Department
Approved 12/17/2019

This is to certify that

NORRIS, INC.

is an authorized Engineered Systems Distributor for NOTIFIER

During the year of 2019

Richard Bauer
Vice President Sales

ESD Since 1987

40 Free Street Mixed Use Building



Reviewed for Code Compliance
Permitting and Inspections
Department
April 17, 2019

Date:

11/8/2019

Project #:

1376

Contractor:

BH Milliken

(207) 879-1877

Equipment List

<u>Quantity</u>	<u>Manufacturer</u>	<u>Part Number</u>	<u>Description</u>
1	NOTIFIER	NFS320	ADDRESSABLE FIRE ALARM PANEL
1	NOTIFIER	UDACT2	DIGITAL ALARM COMMUNICTATOR TRANSMITTER
2	SR COMPONENTS	R5RJ31X	UL 8P8C RJ31X JACK
2	SR COMPONENTS	804R8	SILVER SATIN 8' PLUG - PLUG
2	SIGMASTEK	SP1212	12V 12AH BATTERY
1	NOTIFIER	FDU80	80 CHARACTER DISPLAY ANNUNCIATOR.
20	NOTIFIER	NBG12LX	ADDRESSABLE PULL STATION
38	NOTIFIER	FSP951	INTELLIGENT ADDRESSABLE PHOTO DETECTOR
4	NOTIFIER	FST951	INTELLIGENT ADDRESSABLE 135 DEGREE THERMAL
2	NOTIFIER	B3006	INTELLIGENT FLANGED MNT.ING BASE; 6" WHITE
4	NOTIFIER	B3006BP	INTELLIGENT FLANGED MNT.ING BASE; 6"PKG 10
7	SYSTEM SENSOR	CO1224TR	CO DETECTOR
28	NOTIFIER	FMM101	ADDRESSABLE MINI MODULE
7	NOTIFIER	FRM1	ADDRESSABLE RELAY MODULE
5	NOTIFIER	FCPS24S8	REMOTE POWER SUPPLY
10	SIGMASTEK	SP127	12V 7AH BATTERY
25	SYSTEM SENSOR	P2RL	HORN STROBE, WALL, RED
10	SYSTEM SENSOR	SRL	STROBE, WALL, RED
6	SYSTEM SENSOR	P2RK	HORN STROBE, WP, WALL, RED
3	SYSTEM SENSOR	P2RHLF	LOW FREQUENCY SOUNDER STROBE
62	NOTIFIER	HRLF	LOW FREQUENCY SOUNDER, RED
48	NOTIFIER	MHR	MINI HORN, RED
1	SPACE AGE	SSU00690	FIRE ALARM RECORDS CABINET
1	SPACE AGE	ELOCKFA	FIRE CIRCUIT LOCK OUT KIT
1	KNOX	KNOX3271	RECESSED KNOX BOX, BLACK
62	BRK ELECTRONICS	7010B	120V SMOKE DETECTOR
3	BRK ELECTRONICS	7010BSL	120V SMOKE W/ 177CD STROBE
51	BRK ELECTRONICS	SC7010B	120V SMOKE/CO DETECTOR
5	BRK ELECTRONICS	SL177	177 CANDELA SMART STROBE
1	AES	7788F	8 ZONE RADIO MASTER BOX
1	ELK PRODUCTS	TRG1640	16.5VAC, 45VA TRANSFORMER
1	SIGMASTEK	SP127	12V 7AH BATTERY
1	SENTROL	SR3025TM	BOX TAMPER

40 Free Street Mixed Use BuildingReviewed for Code Compliance
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<u>Quantity</u>	<u>Manufacturer</u>	<u>Part Number</u>	<u>Description</u>
1	LINEAR	AE100	TELEPHONE ENTRY SYSTEM
1	LINEAR	TR100	TRIM RING FOR AE 100
1	ULTRATECH	IM1213	12V 1.3AH BATTERY



NFS-320

Intelligent Addressable Fire Alarm System



Intelligent Fire Alarm Control Panels

General

The NFS-320 intelligent Fire Alarm Control Panel is part of the ONYX® Series of Fire Alarm Controls from NOTIFIER.

In stand-alone or network configurations, ONYX Series products meet virtually every application requirement.

The NFS-320's modular design makes system planning easier. The panel can be configured with just a few devices for small building applications, or networked with many devices to protect a large campus or a high-rise office block. Simply add additional peripheral equipment to suit the application.

For installations using NFS-320C, an optional ACM Series annunciator can be mounted in the same cabinet (up to 48 zones/points, order separately; see DN-60085).

NOTE: Unless called out with a version-specific "R", "C" or "E" at the end of the part number, "NFS-320" refers to models NFS-320, NFS-320R, NFS-320C, and NFS-320E.

Features

- Certified for seismic applications when used with the appropriate seismic mounting kit.
- Approved for Marine applications when used with listed compatible equipment. See DN-60688.
- One isolated intelligent Signaling Line Circuit (SLC) Style 4, 6 or 7.
- Up to 159 detectors (any mix of ion, photo, thermal, or multi-sensor) and 159 modules (Addressable pull stations, normally open contact devices, two-wire smoke detectors, notification, or relay). 318 devices maximum.
- Standard 80-character display.
- Network options:
 - High-speed network for up to 200 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYXWorks, NFS-3030, NFS-640, and NCA).
 - Standard network for up to 103 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYXWorks, NCS, NFS-3030, NFS-640, NCA, AFP-200, AFP-300/400, AFP-1010, and AM2020). Up to 54 nodes when DVC-EM is used in network paging.
- 6.0 A power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable System Sensor, Wheelock, or Gentex strobe synchronization.
- Built-in Alarm, Trouble, Security, and Supervisory relays.
- VeriFire® Tools online or offline programming utility. Upload/Download, save, store, check, compare, and simulate panel databases. Upgrade panel firmware.
- Autoprogramming and Walk Test reports.
- Multiple central station communication options:
 - Standard UDACT
 - Internet
 - Internet/GSM
- 80-character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).



NFS-320

- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with automatic counter.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.
- NAC coding functions:
 - March time.
 - Temporal.
 - California two-stage coding.
 - Canadian two-stage.
 - Strobe synchronization.
- Field-programmable on panel or on PC, with VeriFire® Tools program check, compare, simulate.
- Full QWERTY keypad.
- Battery charger supports 18 – 200 AH batteries.
- Non-alarm points for lower priority functions.
- Remote ACK/Signal Silence/System Reset/Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.

FLASHSCAN® INTELLIGENT FEATURES

- Polls up to 318 devices in less than two seconds.
- Activates up to 159 outputs in less than five seconds.
- Multicolor LEDs blink device address during Walk Test.
- Fully digital, high-precision protocol (U.S. Patent 5,539,389).
- Manual sensitivity adjustment — up to nine levels.
- Pre-alarm ONYX intelligent sensing — up to nine levels.
- Day/Night automatic sensitivity adjustment.
- Sensitivity windows:
 - Ion — 0.5 to 2.5%/foot obscuration.



- **Photo** – 0.5 to 2.35%/foot obscuration.
- **Laser (VIEW®)** – 0.02 to 2.0%/foot obscuration.
- **Acclimate® Plus™** – 0.5 to 4.0%/foot obscuration.
- **IntelliQuad** – 1.0 to 4.0%/foot obscuration.
- **IntelliQuad™ PLUS** – 1.0 to 4.0%/foot obscuration
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode — in the unlikely event that the NFS-320's primary microprocessor fails, FlashScan detectors revert to degraded operation and can activate the control panel's NAC circuits and alarm relay. Each of the four built-in panel circuits includes a Disable/Enable switch for this feature.
- Multi-detector algorithm involves nearby detectors in alarm decision (U.S. Patent 5,627,515).
- Automatic detector sensitivity testing (NFPA-72 compliant).
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

FSL-751 VIEW (VERY INTELLIGENT EARLY WARNING)

SMOKE DETECTION TECHNOLOGY

- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

FAPT-851 ACCLIMATE® PLUS™

LOW-PROFILE INTELLIGENT MULTI-SENSOR

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

FSC-851 INTELLIQUAD

ADVANCED MULTI-CRITERIA DETECTOR

- Detects all four major elements of a fire (smoke, heat, CO, and flame).
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

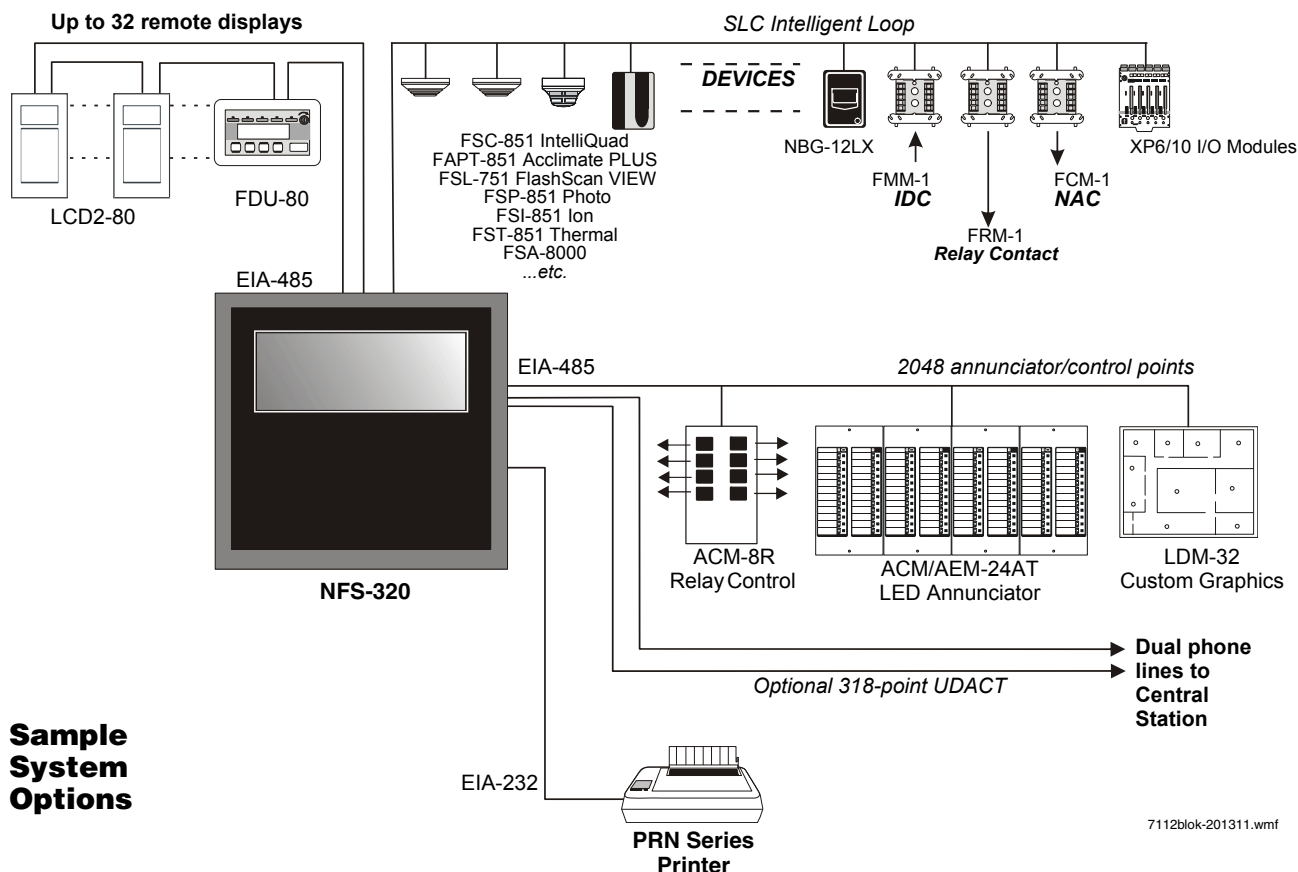
FSA-8000 INTELLIGENT FAAST DETECTOR

- Connects directly to the SLC loop of compatible ONYX series panels
- Provides five event thresholds that can be individually programmed with descriptive labels for control-by-event programming; uses five detector addresses.
- Uses patented particle separator and field-replaceable filter to remove contaminants.
- Advanced algorithms reject common nuisance conditions

FCO-851 INTELLIQUAD™ PLUS

ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR

- Detects all four major elements of a fire.
- Separate signal for life-safety CO detection.



7112blok-201311.wmf



- Optional addressable sounder base for Temp-3 (fire) or Temp-4(CO) tone.
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

RELEASING FEATURES

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure CO₂ listed.

VOICE FEATURES

- Integrates with FirstCommand Series. See DN-60772.
- Telephone applications require NFC-FFT.

HIGH-EFFICIENCY OFFLINE SWITCHING

3.0 A POWER SUPPLY (6.0 A IN ALARM)

- 120 VAC (NFS-320/NFS-320C); 240 VAC (NFS-320E).
- Displays battery current/voltage on panel (with display).

FlashScan, Exclusive World-Leading Detector Protocol

At the heart of the NFS-320 is a set of detection devices and device protocol — FlashScan (U.S. Patent 5,539,389). FlashScan is an all-digital protocol that gives superior precision and high noise immunity.

In addition to providing quick identification of an active input device, this protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS-320 to have the largest device per loop capacity in the industry — 318 points — yet every input and output device is sampled in less than two seconds. The microprocessor-based FlashScan detectors have bicolor LEDs that can be coded to provide diagnostic information, such as device address during Walk Test.

ONYX Intelligent Sensing

Intelligent sensing is a set of software algorithms that provides the NFS-320 with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the high-speed microcomputer used by the NFS-320.

Drift Compensation and Smoothing: Drift compensation allows the detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by NFPA 72. Smoothing filters are also provided by software to remove transient noise signals, such as those caused by electrical interference.

Maintenance Warnings: When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised, and special warnings are given. There are three warning levels: (1) Low Chamber value; (2) Maintenance Alert, indicative of dust accumulation that is near but below the allowed limit; (3) Maintenance Urgent, indicative of dust accumulation above the allowed limit.

Sensitivity Adjust: Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of

pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

Self-Optimizing Pre-Alarm: Each detector may be set for “Self-Optimizing” pre-alarm. In this special mode, the detector “learns” its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

Cooperating Multi-Detector Sensing: A patented feature of ONYX intelligent sensing is the ability of a smoke sensor to consider readings from nearby sensors in making alarm or pre-alarm decisions. Without statistical sacrifice in the ability to resist false alarms, it allows a sensor to increase its sensitivity to actual smoke by a factor of almost two to one.

Field Programming Options

Autoprogram is a timesaving feature. The FACP “learns” what devices are physically connected and automatically loads them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

Keypad Program Edit (with KDM-R2) The NFS-320, like all NOTIFIER intelligent panels, has the exclusive feature of program creation and editing capability from the front panel keypad, while continuing to provide fire protection. The architecture of the NFS-320 software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per-point segments, while the NFS-320 simultaneously monitors other (already installed) points for alarm conditions.

VeriFire® Tools is an offline programming and test utility that can greatly reduce installation programming time, and increase confidence in the site-specific software. It is Windows®-based and provides technologically advanced capabilities to aid the installer. The installer may create the entire program for the NFS-320 in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel.

Placement of Equipment in Chassis and Cabinet

The following guidelines outline the NFS-320’s flexible system design.

Wiring: When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the *NFS-320 Installation Manual*.

It is critical that all mounting holes of the NFS-320 are secured with a screw or standoff to ensure continuity of Earth Ground.

Networking: If networking two or more control panels, each unit requires a Network Communication Module or High-Speed Network Communication Module (HS-NCM) can support two nodes; see “Networking Options” on page 4). These modules can be installed in any option board position (see manual), and additional option boards can be mounted in front of them.



KDM-R2 Controls and Indicators

Program Keypad: QWERTY type (keyboard layout).

12 LED Indicators: Power; Fire Alarm; Pre-Alarm; Security; Supervisory; System Trouble; Signals Silenced; Points Disabled; Control Active; Abort; Pre-Discharge; Discharge.

Keypad Switch Controls: Acknowledge/Scroll Display; Signal Silence; Drill; System Reset; Lamp Test.

LCD Display: 80 characters (2 x 40) with long-life LED backlight.

Product Line Information

- “Configuration Guidelines” on page 4
- “Networking Options” on page 4
- “Auxiliary Power Supplies and Batteries” on page 4
- “Audio Options” on page 4
- “Compatible Devices, EIA-232 Ports” on page 4
- “Compatible Devices, EIA-485 Ports” on page 4
- “Compatible Intelligent Devices” on page 5
- “Enclosures, Chassis, and Dress Plates” on page 5
- “Other Options” on page 6

CONFIGURATION GUIDELINES

The NFS-320 system ships assembled; description and some options follow. See “Enclosures, Chassis, and Dress Plates” on page 5 for information about mounting peripherals.

NOTE: Stand-alone and network systems require a main display. On stand-alone systems, the panel’s keypad provides the required display. On network systems (two or more networked fire panel nodes), at least one NCA-2, NCS, or ONYXWorks annunciation device is required. (For NCA-2, see DN-7047.)

NFS-320: The standard, factory-assembled NFS-320 system includes the following components: one control panel mounted on chassis (120 V operation — ships with grounding cable, battery interconnect cables, and document kit); includes integral power supply mounted to the main circuit board; one primary display KDM-R2 keypad/display; and one cabinet for surface or semi-flush mounting. Purchase batteries separately. One or two option boards may be mounted inside the NFS-320 cabinet; additional option boards can be used in remote cabinets. (Non-English versions also available. NFS-320-SP, NFS-320-PO.)

NFS-320R: Same as NFS-320, but in red enclosure.

NFS-320C: Based on NFS-320 above. NFS-320C supports installation of an optional ACM-series annunciator in the same cabinet. UL- and ULC-listed. (Non-English version also available: NFS-320C-FR.) For NFS-320C, see DN-60085.

NFS-320CR: Same as NFS-320C but in a red enclosure. For NFS-320C, see DN-60085.

NFS-320E: Same as NFS-320, but with 240 V operation. (Non-English versions also available. NFS-320E-SP, NFS-320E-PO.)

TR-320: Trim ring for the NFS-320 cabinet.

NETWORKING OPTIONS

NCM-W, NCM-F: Standard Network Communications Modules. Wire and multi-mode fiber versions available. See DN-6861.

HS-NCM-W/MF/SF/WMF/WSF/MFSF: High-speed Network Communications Modules. Wire, single-mode fiber, multi-

mode fiber, and media conversion models are available. See DN-60454.

RPT-W, RPT-F, RPT-WF: Standard-network repeater board with wire connection (RPT-W), multi-mode fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). Not used with high-speed networks. See DN-6971.

ONYXWorks: UL-listed graphics PC workstation, software, and computer hardware. See DN-7048 for specific part numbers.

NFN-GW-EM-3: NFN Gateway, embedded. See DN-60499.

NWS-3: NOTI•FIRE•NET™ Web Server. See DN-6928.

CAP-GW: Common Alerting Protocol Gateway. See DN-60576.

VESDA-HLI-GW: VESDAnet high-level interface gateway. See DN-60753.

LEDSIGN-GW: UL-listed sign gateway. Interfaces with classic and high-speed NOTI•FIRE•NET networks through the NFN Gateway. See DN-60679.

OAX2-24V: UL-listed LED sign, used with LEDSIGN-GW. See DN-60679.

AUXILIARY POWER SUPPLIES AND BATTERIES

ACPS-610: 6.0 A or 10.0 A addressable charging power supply. See DN-60244.

APS2-6R: Auxiliary Power Supply. Provides up to 6.0 amperes of power for peripheral devices. Includes battery input and transfer relay, and overcurrent protection. Mounts on two of four positions on a CHS-4L or CHS-4 chassis. See DN-5952.

FCPS-24S6/S8: Remote 6 A and 8 A power supplies with battery charger. See DN-6927.

BAT Series: Batteries. NFS-320 uses two 12 volt, 18 to 200 AH batteries. See DN-6933.

AUDIO OPTIONS

NFC-50/100: 25 watt, 25 VRMS, emergency Voice Evacuation Control Panel (VECP) with integral commercial microphone, digital message generator, and Class A or Class B speaker circuits. See DN-60772.

COMPATIBLE DEVICES, EIA-232 PORTS

PRN-6: 80-column printer. See DN-6956.

VS4095/5: Printer, 40-column, 24 V. Mounted in external backbox. See DN-3260.

DPI-232: Direct Panel Interface, specialized modem for extending serial data links to remotely located FACPs and/or peripherals; mount on NFS-320 chassis. See DN-6870.

COMPATIBLE DEVICES, EIA-485 PORTS

ACM-24AT: ONYX Series ACS annunciator — up to 96 points of annunciation with Alarm or Active LED, Trouble LED, and switch per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) by point to be red, green, or yellow; the Trouble LED is always yellow. See DN-6862.

AEM-24AT: Same LED and switch capabilities as ACM-24AT, expands the ACM-24AT to 48, 72, or 96 points. See DN-6862.

ACM-48A: ONYX Series ACS annunciator — up to 96 points of annunciation with Alarm or Active LED per circuit. Active/Alarm LEDs can be programmed (by powered-up switch



selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. *See DN-6862.*

AEM-48A: Same LED capabilities as ACM-48A, expands the ACM-48A to 96 points. *See DN-6862.*

ACM-8R: Remote Relay Module with eight Form-C contacts. Can be located up to 6,000 ft. (1828.8 m) from panel on four wires. *See DN-3558.*

FDU-80: Terminal mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. *See DN-6820.*

LCD2-80: Terminal and ACS mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. *See DN-60548.*

LDM: Lamp Driver Modules LDM-32, LDM-E32, and LDM-R32; remote custom driver modules. *See DN-0551.*

SCS: Smoke control stations SCS-8, SCE-8, with lamp drivers SCS-8L, SCE-8L; eight (expandable to 16) circuits (HVAC only). *See DN-4818.*

TM-4: Transmitter Module. Includes three reverse-polarity circuits and one municipal box circuit; mount on NFS-320 chassis or remotely. *See DN-6860.*

UDACT-2: Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-60686.*

UZZ-256: Programmable Universal Zone Coder provides positive non-interfering successive zone coding. Microprocessor-controlled, field-programmable from IBM®-compatible PCs (requires optional programming kit). Mounts in **BB-UZZ**. *See DN-3404.*

COMPATIBLE INTELLIGENT DEVICES

FSA-8000: Intelligent FFAST Fire Alarm Aspiration Sensing Technology®. Intelligent aspirating smoke detector. For Canadian applications, order FSA-8000A. *See DN-60792.*

FSB-200: Intelligent beam smoke detector. *See DN-6985.*

FSB-200S: Intelligent beam smoke detector with integral sensitivity test. *See DN-6985.*

FSC-851: FlashScan IntelliQuad Advanced Multi-Criteria Detector. *See DN-60412.*

FCO-851: FlashScan IntelliQuad PLUS Advanced Multi-Criteria Fire/CO Detector. *See DN-60689.*

FSI-851: Low-profile FlashScan ionization detector. *See DN-6934.*

FSP-851: Low-profile FlashScan photoelectric detector. *See DN-6935.*

FSP-851T: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal. *See DN-6935.*

FSP-851R: Remote-test capable photoelectric detector for use with DNR(W) duct detector housings. *See DN-6935.*

FST-851: FlashScan thermal detector 135°F (57°C). *See DN-6936.*

FST-851R: FlashScan thermal detector 135°F (57°C) with rate-of-rise. *See DN-6936.*

FST-851H: FlashScan 190°F (88°C) high-temperature thermal detector. *See DN-6936.*

FAPT-851: FlashScan Acclimate Plus low-profile multi-sensor detector. *See DN-6937.*

FSL-751: FlashScan VIEW laser photo detector. *See DN-6886.*

DNR: InnovairFlex low-flow non-relay duct-detector housing (order FSP-851R separately). Replaces FSD-751PL/FSD-751RPL. *See DN-60429.*

DNRW: Same as above with NEMA-4 rating, watertight. *See DN-60429.*

B224RB: Low-profile relay base. *See DN-60054.*

B224BI: Isolator base for low-profile detectors. *See DN-60054.*

B210LP: Low-profile base. Standard U.S. style. Replaces B710LP. *See DN-60054.*

B501: European-style, 4" (10.16 cm) base. *See DN-60054.*

B200S: Intelligent programmable sounder base, capable of producing a variety of tone patterns including ANSI Temporal 3. Compatible with synchronization protocol. *See DN-60054.*

B200SR: Sounder base, Temporal 3 or Continuous tone. *See DN-60054.*

FMM-1: FlashScan monitor module. *See DN-6720.*

FDM-1: FlashScan dual monitor module. *See DN-6720.*

FZM-1: FlashScan two-wire detector monitor module. *See DN-6720.*

FMM-101: FlashScan miniature monitor module. *See DN-6720.*

FCM-1: FlashScan control module. *See DN-6724.*

FCM-1-REL: FlashScan releasing control module. *See DN-60390.*

FRM-1: FlashScan relay module. *See DN-6724.*

FDRM-1: FlashScan dual monitor/dual relay module. *See DN-60709.*

NBG-12LX: Manual pull station, addressable. *See DN-6726.*

ISO-X: Isolator module. *See DN-2243.*

XP6-C: FlashScan six-circuit supervised control module. *See DN-6924.*

XP6-MA: FlashScan six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone. *See DN-6925.*

XP6-R: FlashScan six-relay (Form-C) control module. *See DN-6926.*

XP10-M: FlashScan ten-input monitor module. *See DN-6923.*

SLC-IM: SLC integration module, for VESDAnet detectors. *See DN-60755.*

ENCLOSURES, CHASSIS, AND DRESS PLATES

CAB-BM Marine System: Protects equipment in shipboard and waterfront applications. Also order **BB-MB** for systems using 100 AH batteries. For a full list of required and optional equipment, see *DN-60688.*

BB-UZZ: Backbox for housing the UZZ-256. Required for NFS-320 applications. Black. For red, order BB-UZZ-R.

NFS-LBB: Battery Box (required for batteries larger than 26 AH).

NFS-LBBR: Same as above, but red.

SEISKIT-320/B26: Seismic mounting kit. Required for seismic-certified applications with NFS-320 and BB-26. Includes battery bracket for two 26 AH batteries.



SEISKIT-BB25: Seismic mounting kit for the BB-25. Includes battery bracket for two 26 AH batteries.

SEISKIT-LBB: Seismic kit for the NFS-LBB. Includes battery bracket for two 55 AH batteries.

OTHER OPTIONS

411: Slave Digital Alarm Communicator. See DN-6619.

411UDAC: Digital Alarm Communicator. See DN-6746.

IPDACT-2/2UD, IPDACT Internet Monitoring Module: Connects to primary and secondary DACT telephone output ports for internet communications over customer-provided Ethernet connection. Requires compatible Teldat VisorALARM Central Station Receiver. Can use DHCP or static IP. See DN-60408.

IPSPLT: Y-adapter option allow connection of both panel dialer outputs to one IPDACT-2/2UD cable input.

IPENC: External enclosure for IPDACT, includes IPBRKT mounting bracket; Red. For Black order **IPENC-B**.

IPGSM-4G: Internet and Digital Cellular Fire Alarm Communicator. Provides selectable configurable paths: cellular only, IP only, or IP primary with cellular backup. Connects to the primary and secondary ports of a DACT. See DH-60769.

NFS-320-RB: Replacement board with central processing unit (CPU). *NOTE: Keypad must be removed before shipping old unit out for repair.*

- NFS-320-RBE: Replacement CPU, Export.
- NFS-320-RB-PO: Replacement CPU, Portuguese.
- NFS-320-RB-POE: Replacement CPU, Export, Portuguese.
- NFS-320-RBC-FR: Replacement CPU, Canadian French.
- NFS-320-RB-SP: Replacement CPU, Spanish.
- NFS-320-RB-SPE: Replacement CPU, Export, Spanish.

NOTE: For other options including compatibility with retrofit equipment, refer to the panel's installation manual, the SLC manual, and the Device Compatibility Document.

System Specifications

SYSTEM CAPACITY

- Intelligent Signaling Line Circuits 1
- Intelligent detectors 159
- Addressable monitor/control modules 159
- Programmable internal hardware and output circuits 4
- Programmable software zones 99
- Special programming zones 14
- LCD annunciators per NFS-320/-320E 32
- ACS annunciators per NFS-320/-320E 32 addresses x 64 points

SPECIFICATIONS

- Primary input power
 - NFS-320: 120 VAC, 50/60 Hz, 5.0 A.
 - NFS-320E: 220/240 VAC, 50/60 Hz, 2.5 A.

- Current draw (standby/alarm):
 - NFS-320(E) board: 0.250 A. Add 0.035 A for each NA in use.
 - KDM-R2 (Backlight on): 0.100 A.
- Total output 24 V power: 6.0 A in alarm.

NOTE: The power supply has a total of 6.0 A of available power. This is shared by all internal circuits. See Installation Manual for a complete current draw calculation sheet.

- Standard notification circuits (4): 1.5 A each.
- Resettable regulated 24V power: 1.25 A.
- Two non-resettable regulated 24V power outputs:
 - 1.25 A.
 - 0.50 A.
- Non-resettable 5V power: 0.15 A.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 26 AH.
- Float rate: 27.6 V.

CABINET SPECIFICATIONS

NFS-320 cabinet dimensions:

- Backbox: 18.12 in. (46.025 cm) width; 18.12 in. (46.025 cm) height; 5.81 in. (14.76 cm) depth.
- Door: 18.187 in. (46.195 cm) width; 18.40 in. (46.736 cm) height; 0.75 in. (1.905 cm) depth.
- Trim ring: Molding width is 0.905 in. (2.299 cm).
- Shipping weight (without batteries): 36.15 lb. (16.4 kg).

TEMPERATURE AND HUMIDITY RANGES

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/ 60 – 80°F.

AGENCY LISTINGS AND APPROVALS

The listings and approvals below apply to the basic NFS-320 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635.
- **ULC Listed:** S635 (NFS-320C only, excludes IPDACT).
- **FM Approved.**
- **CSFM:** 7165-0028:0243.
- **MEA:** 128-07-E.
- **FDNY:** COA#6085, #6121.
- **City of Chicago.**

NOTE: For additional information on UL- and ULC-listed model NFS-320C, see DN-60085. For information on NFS-320SYS, see DN-60637.

Marine Applications: Marine approved systems must be configured using components itemized in this document. (See Main System Components, in "Product Line Information.") Specific connections and requirements for those components are described in the installation document,



PN 54756. When these requirements are followed, systems are approved by the following agencies:

- **US Coast Guard** 161.002/50/0, 161.002/55/0 (Standard 46 CFR and 161.002).
- **Lloyd's Register** 11/600013 (ENV 3 category).
- **American Bureau of Shipping** (ABS) Type Approval.

NOTE: For information on marine applications, see DN-60688.

STANDARDS

The NFS-320 complies with the following UL Standards and NFPA 72, International Building Code (IBC), and California Building Code (CBC) Fire Alarm Systems requirements:

- **UL 864** (Fire).
- **UL 1076** (Burglary).
- **UL 2572** (Mass Notification Systems).
- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires TM-4).
- **REMOTE STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires TM-4).
- **PROPRIETARY** (Automatic, Manual, Waterflow and Sprinkler Supervisory). *Not applicable for FM.*
- **CENTRAL STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires DACT).
- **EMERGENCY VOICE/ALARM.**
- **OT, PSDN** (Other Technologies, Packet-switched Data Network).
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic).



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UDACT-2

Universal Digital Alarm Communicator Transmitter



Annunciator Control System

General

The Universal Digital Alarm Communicator Transmitter (UDACT-2) is designed for use on Notifier Fire Alarm Control Panels and on the NCA-2 Network Control Annunciator. When used in conjunction with the NCA-2 network control annunciator, the UDACT-2 can report the status of all control panels on NOTI•FIRE•NET™. The UDACT-2 transmits system status to UL listed Central Station Receivers via the public switched telephone network. The UDACT-2 can be installed in the panel cabinet or remotely in a separate enclosure.

NOTE: The UDACT-2 can also be used with legacy panels. Please refer to the UDACT-2 manual for more information.

The UDACT-2 upload/download programming and firmware updates are accomplished with VeriFire Tools. Refer to the Programming Section for further details.

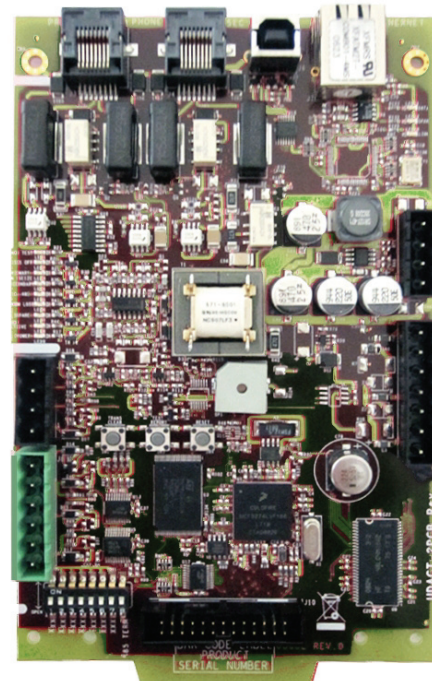
The UDACT-2 is capable of transmitting the status of software zones (Alarm and Trouble), System Trouble, Panel Off-Normal, Supervisory, Bell Trouble, Low Battery, and AC Fail. The UDACT-2 is capable of transmitting all of the zone and point status associated with each panel.

When the UDACT-2 is used with the NFS-3030, NFS2-3030, and NCA-2 it is capable of reporting up to 2,040 points. Reporting may be in the form of points or zones (refer to the UDACT-2 manual for specific reporting parameters). Points transmitted may be programmed for a variety of types, including fire, water-flow, supervisory, etc.

NOTE: Descriptions regarding point capacity, listed above, are for receivers which receive in Ademco Contact ID format. See chart on page 2 for compatible receivers.

Features

- Programmable with VeriFire Tools version 6.60 or higher, allowing the UDACT-2 programming to be uploaded/downloaded and saved.
- Maximum of 14 point trouble messages transmitted per hour.
- Dual phone lines with line voltage detect.
- Compact in size: 6.75" x 4.25" (17.145 x 10.795 cm).
- USB port for upload/download programming.
- Manual Test Report function.
- Manual Transmission Clear function.
- Mounts in a separate enclosure (ABS-8RB or UBS-1B/R).
- Communicates vital system status including:
 - Independent zone fire alarm.
 - Independent zone non-fire alarm.
 - Independent zone trouble.
 - Independent zone supervisory.
 - AC (mains) Power Loss (programmable).
 - Low Battery and Earth Fault.
 - System Off-Normal.
 - 12 or 24 hour test signal.
 - Abnormal Test Signal per new UL requirements.
 - EIA-485 Communication Bus Failure.
- Annunciation of UDACT-2 Troubles including: loss of phone lines, communication failure with either Central Station, total communications failure.
- Individual LEDs for: Power, EIA-485 Loss, Manual Test, Kiss-off, Comm Fail, Primary Line Seize, Secondary Line Seize and Modem Communications.



UDACT-2

- Open Collector relay driver for Total Communications Failure or UDACT-2 trouble.
- Real-time clock.
- Extensive transient protection.
- EIA-485 interface to host panel.

Programming

The UDACT-2 programming is created and downloaded using VeriFire Tools. This enables the unit to be programmed prior to installation, be easily modified, and saved either online or offline. A printed report with point or zone information can be generated from VeriFire Tools for an ONYX Series panel or network annunciator. The point report consists of the central station point address, ACS point, ACS point function, panel label, panel point, type code, custom and extended label, alarm verification, walktest participation, presignal, and PAS information. The zone report consists of a grid with the central station point address, ACS point address, source, ACS point function, custom label and panel label. This report may be sent to the Central Station for their records. VeriFire Tools also supports upgrading the UDACT-2 operating firmware.



Communication Formats

- Ademco Contact ID
- 4+2 Standard
- SIA

NOTE: Ademco Contact ID must be used for independent zone reporting.

Type Mode Feature

Ademco Contact ID format - only Use Type Mode to identify reports to Central Station as:

- Fire Alarm
- Supervisory
- Pull Station
- Heat Detector
- Waterflow
- Duct Detector
- Flame Sensor
- Smoke Zone
- Burglary
- 24 hour Non-Burglary
- High Temperature
- Low Temperature
- Low Water Pressure
- Low Water Level
- Pump Failure

Electrical Specifications

Standby current: 40 mA.

Current while communicating: 75 mA.

Maximum current while communicating and with open collector output activated: 100 mA.

Voltage: Regulated 24 volts. Range: 21.2 to 28.2 volts.

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL/ULC Listed: S635
- FM Approved
- CSFM: 7165-0028:0243 (NFS2-640/320), 7165-0028:0224 (NFS2-3030)
- FDNY: COA#6085, COA#6098

Ordering Information

UDACT-2: Universal Digital Alarm Communicator Transmitter. Includes operating and programming instructions, and mounting hardware.

MCBL-7: DACT phone cord, 7 ft (2.13 m) long (two required).

ABS-8RB: Metal enclosure for externally mounting UDACT-2 up to 6,000 ft./1828.8 m from host FACP. 9.94" H x 4.63" W x 2.50" D (cm: 25.248 H x 11.760 W x 6.350 D).

UBS-1B: Metal enclosure with solid door, Black.

UBS-1BR: Metal enclosure with solid door, Red.

R-10E: SPDT Form-C relay. Contacts rated for 10 A @ 115 VAC. Connects to open collector relay driver.

R-20E: DPDT Two Form-C relays. Contacts rated for 10A @ 115 VAC. Connects to open collector relay driver.

FBD-1: Ferrite bead kit. Use for remote mounting only.

UL Listed Receivers

The chart below shows UL listed receivers compatible with the UDACT-2. A check in the protocol column indicates the receiver supports that protocol.

Receiver	4+2 Standard 1800/2300	Ademco Contact ID	SIA
Ademco 685 (1)	✓	✓	
Ademco MX8000 (2)	✓	✓	✓
Silent Knight 9500 (3)	✓	✓	✓
Silent Knight 9800 (4)	✓	✓	✓
FBI CP220FB (5)	✓	✓	✓
Osborne Hoffman 2000E (6)		✓	✓
Radionics 6600 (7)		✓	✓
SurGard MLR2 (8)	✓	✓	
SurGard System III (9)		✓	✓
SurGard MLR-2000 (10)		✓	

(1) With 685-8 Line Card with Rev 4.4d software

(2) With 124060V206B and 124063 Line Card Rev B

(3) With version V2.4 Receiver & 126047 Line Card Rev G

(4) With 124077V2.00 Receiver & 126047 Line Card Rev M

(5) With software V3.9

(6) With V.7301 Receiver S/W

(7) With 01.01.03 Receiver S/W & Line Card 01.01.03

(8) With software V1.86

(9) With software V1.72

(10) With DSP4016 and V1.6 Line Card

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BAT Series Batteries

Sealed Lead-Acid or Gell Cell


Power Supplies

General

BAT Series Batteries feature a new part-numbering/listing system — providing an improved method of delivery for NOTIFIER-approved sealed lead-acid batteries for all your fire alarm system needs. Multiple brands of batteries are now offered under generic part numbers, reducing backorder situations and permitting us to deliver these products in a more timely fashion. NOTIFIER has approved the multiple brands listed below as possible product shipped for a given part number. Please note that any incoming orders for “PS Series” batteries will be converted to the equivalent BAT Series part numbers.

Features

- Provide secondary power for control panels.
- Sealed and maintenance-free.
- Overcharge protected.
- Easy handling with leakproof construction.
- Ruggedly constructed, high-impact case (ABS, polystyrene, or polypropylene, depending on models).
- Long service life.
- Compact design.



6933cov.jpg

Agency Listings and Approvals

The listings and approvals below apply to BAT Series Batteries. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Recognized Components:** files MH19884 (*B & B Battery*), MH20567 (*UPG, previously Jolt*), MH20845 (*Power-Sonic*).

Part Number Reference

CURRENT Part Number	BATTERY DESCRIPTION	ALTERNATES APPROVED: manufacturers and P/Ns shipped under BAT P/Ns
BAT-1250	12 V, 5 AH, sealed.	BP5-12 (B&B Battery); PS-1250 (Power-Sonic); SA1250 (Jolt) to be replaced with UB1250 (UPG).
BAT-1250	12 V, 5 AH, sealed.	BP5-12 (B&B Battery); PS-1250 (Power-Sonic); SA1250 (Jolt) to be replaced with UB1250 (UPG).
BAT-1270	12 V, 7 AH, sealed.	BP7-12 (B&B Battery); PS-1270 (Power-Sonic); SA1272 (Jolt) to be replaced with UB1270 (UPG).
BAT-12120	12 V, 12 AH, sealed.	BP12-12 (B&B Battery); PS-12120 (Power-Sonic); SA12120 (Jolt) to be replaced with UB12120 (UPG).
BAT-12180	12 V, 18 AH, sealed.	PS-12180 (Power-Sonic); SA12180 (Jolt) to be replaced with UB12180 (UPG).
BAT-12180	12 V, 18 AH, sealed.	PS-12180 (Power-Sonic); SA12180 (Jolt) to be replaced with UB12180 (UPG).
BAT-12260	12 V, 26 AH, sealed.	BP26-12 (B&B Battery); PS-12260 (Power-Sonic); SA12260 (Jolt) to be replaced with UB12260 (UPG).
BAT-12550	12 V, 55 AH, sealed.	PS-12550 (Power-Sonic); XSA12550 (Jolt) to be replaced with UB12550 (UPG).
BAT-12550	12 V, 55 AH, sealed.	PS-12550 (Power-Sonic); XSA12550 (Jolt) to be replaced with UB12550 (UPG).
BAT-121000	12 V, 100 AH, gell cell.	PS-121000 (Power-Sonic); XSA121000A (Jolt) to be replaced with UB121000 (UPG).

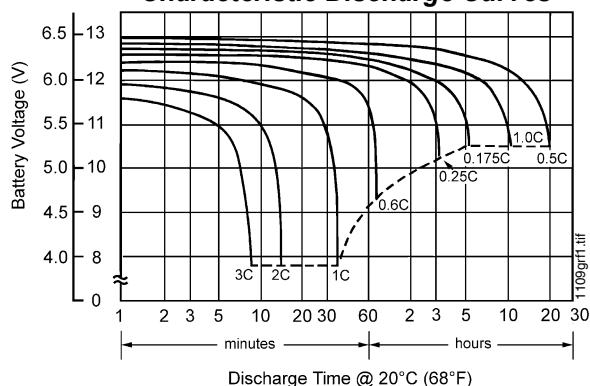


POWER-SONIC

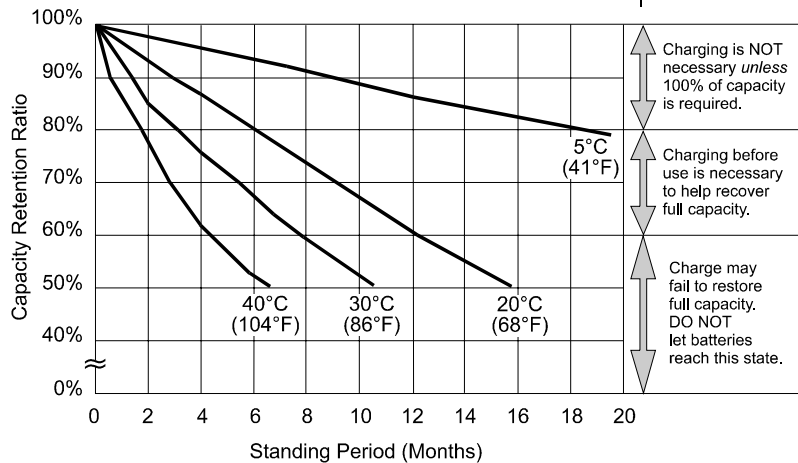
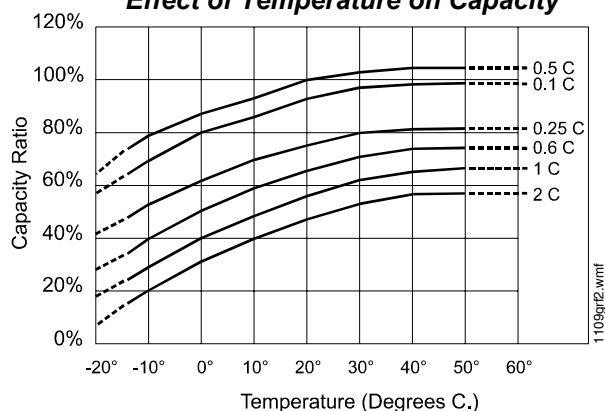
Part Number Reference

MODEL	Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.	Discharge Current @20 hr. rate mA	DIMENSIONS									
				Width		Depth		Height		Height over terminal		Weight	
				in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.
PS-1250	12	5	250	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
PS-1270	12	7	325	5.94	151	2.56	65	3.7	94	3.86	98	5.7	2.6
PS-12120	12	12	600	5.94	151	3.86	98	3.7	94	3.86	98	8.8	4
PS-12180	12	18	875	7.13	181	2.99	76	6.57	167	6.57	167	12.8	5.8
PS-12250	12	25	1300	6.89	175	6.54	166	4.92	125	4.92	125	18.7	8.5
PS-12550	12	55	3000	10.25	260	6.6	168	8.2	208	9.45	240	39.7	18
PS-121000	12	100	5000	12	305	6.6	168	8.2	208	9.45	240	65.7	29.8

Characteristic Discharge Curves

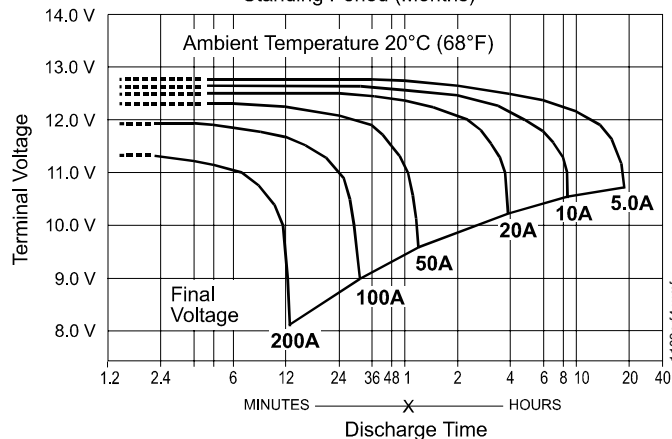


Effect of Temperature on Capacity



**at left:
PS-121000
Shelf-Life
and Storage**

Charging is NOT necessary unless 100% of capacity is required.
Charging before use is necessary to help recover full capacity.
Charge may fail to restore full capacity. DO NOT let batteries reach this state.



**at left:
PS-121000
Discharge
Characteristics**



FDU-80

80 Character Liquid Crystal Display



Annunciators

General

The FDU-80 is a compact, cost-effective, 80-character, backlit LCD remote Fire Annunciator for use with the NOTIFIER Fire-Warden-100-2, NFS2-640, and NFS-320 Fire Alarm Control Panels (FACPs). The FDU-80 mimics the display of the control panel and displays complete system point status information.

Up to 32 FDU-80s may be connected onto the EIA-485 terminal port of each FACP. The FDU-80 requires no programming, which saves time during system commissioning.

Features

- 80-character Liquid Crystal Display.
- Mimics all display information from the host panel.
- Control switches for System Acknowledge, Signal Silence, Drill and Reset with enable key.
- System status LEDs for Power, Alarm, Trouble, Supervisory and Alarm Silenced.
- No programming necessary — FDU-80 connects to the terminal port on the FACP.
- Displays device type identifiers, individual point alarm, trouble or supervisory, zone and custom alpha labels.
- Time-and-date display field.
- Aesthetically pleasing design.
- May be powered from the host FACP or by remote power supply (requires 24 VDC).
- Up to 32 FDU-80 annunciators per FACP.
- Plug-in terminal blocks for ease of installation and service.
- Can be remotely located up to 6,000 feet (1828.8 m) from the FACP.
- Local piezo sounder with alarm and trouble resound.
- Semi-flush mounts to 2.188" (5.556 cm) minimum deep, three-gang electrical box (NOTIFIER PN 10103) or three-gangable electrical switchbox.
- Surface-mounts to NOTIFIER PN SBB-3 surface backbox.

Operation

The FDU-80 annunciator provides the FACP with point annunciation with full display text on an 80-character LCD display. The FDU-80 also provides an array of LEDs to indicate system status, and includes control switches for remote control of critical system functions.

The FDU-80 provides the FACP with up to 32 remote serially connected annunciators. All field-wiring terminations on the FDU-80 use removable, compression-type terminal blocks for ease of wiring and circuit testing.

Communication between the FACP and the annunciators is accomplished over an EIA-485 serial interface, which greatly reduces wire and installation cost over traditional systems.

Installation

The FDU-80 can be semi-flush mounted to a 2.188" (5.556 cm) minimum deep, three-gang electrical box or three-gangable electrical switchboxes. Alternately, an SBB-3 surface backbox is available for surface-mount applications.



6820fdub.jpg

Ordering Information

FDU-80: 80 character, backlit, LCD Fire Annunciator with control switches for remote control of system functions, and key-switch lock.

FDU-80C: ULC-listed version; see DN-60573 for details.

10103: Three-gang electrical box, minimum 2.188" (5.556 cm) deep, for semi-flush mount applications.

SBB-3: Three-gang surface backbox for surface-mount applications.

Agency Listings And Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635
- **MEA Listed:** 245-00-E
- **FDNY:** COA#6038
- **CSFM:** 7120-0028:209
- **FM Approved**

NOTE: For ULC-listed version, see DN-60573.



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All specifications are subject to change without notice.



For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com



NBG-12LX

Addressable Manual Pull Station



Intelligent/Addressable Devices

General

The Notifier NBG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface for any Notifier intelligent control panel except FireWarden series panels, and the NSP-25 panel. Because the NBG-12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

Features

- Maintenance personnel can open station for inspection and address setting without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word “ACTIVATED” appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Up to 99 NBG-12LX stations per loop on CLIP protocol loops.
- Up to 159 NBG-12LX stations per loop on FlashScan® protocol loops.
- Dual-color LED blinks green to indicate normal on FlashScan® systems.

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 µA.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**



The NBG-12LX
Addressable Manual Pull Station

Installation

The NBG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the NBG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word “ACTIVATED” (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 on FlashScan® systems, 1 – 99 on CLIP systems).

Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or



4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches.

The loop poll LED shall be clearly visible through the front of the station. The LED shall flash while in the normal condition, and stay steadily illuminated when in alarm.

Product Line Information

NBG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

NBG-12LXSP: Spanish/English labelled version.

NBG-12LXP: Portuguese labelled version.

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17021: Keys, set of two.

NY-Plate: New York City trim plate.

Agency Listings and Approvals

In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL/ULC Listed:** S692 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0028:0199.
- **FDNY:** COA #6085 (NFS2-640), COA #6098 (NFS2-3030).
- **BSMI:** CI313066760047.
- **U.S. Coast Guard.**
- **Lloyd's Register.**
- **FM Approved.**

Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

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For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

FSP-951 Series

Intelligent Plug-In Photoelectric Smoke Detectors



Intelligent/Addressable Devices

General

The NOTIFIER FSP-951 Series intelligent plug-in smoke detectors are designed for both performance and aesthetics. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards. The FSP-951 Series detector sensitivity can be programmed in the control panel software. Sensitivity is continuously monitored and reported to the panel. Point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for selective maintenance when chamber contamination reaches an unacceptable level. Dual electronic thermistors add 135°F (57°C) fixed temperature thermal sensing on the FSP-951T. The FSP-951R is a remote test capable detector for use with DNR Series duct detector housings. FSP-951 series detectors are available for both FlashScan® and CLIP applications as designated.

Features

- New modern profile for improved aesthetics.
- Designed to meet UL268 7th Edition.
- Stable communication technique with noise immunity.
- Low standby current.
- Two-wire SLC connection.
- Compatible with FlashScan® and CLIP protocol systems.
- Rotary, decimal addressing (1-99 on CLIP systems, 1-159 on FlashScan systems).
- Optional remote, single-gang LED accessory.
- Dual LED design provides 360° viewing angle.
- Visible bi-color LEDs blink green every time the detector is addressed, and illuminate steady red on alarm (*FlashScan systems only*).
- Remote test feature from the panel.
- Walk test with address display (an address on 121 will blink the detector LED: 12-[pause]-1 (*FlashScan systems only*)).
- Built-in functional test switch activated by external magnet.
- Built-in tamper-resistant feature.
- Sealed against back pressure.
- Expanded color options.
- SEMS screws for wiring of the separate base.
- Optional relay, isolator, and sounder bases.

Specifications

Sensitivity:

- UL Applications: 0.5% to 4.0% per foot obscuration.
- ULC Applications: 0.5% to 3.5% per foot obscuration.

Size: 2.0" (5.3 cm) high; base determines diameter.

- B300-6: 6.1" (15.6 cm) diameter.
- B501: 4" (10.2 cm) diameter.

For a complete list of detector bases see DN-60981.

Shipping weight: 3.4oz (96.4g)

Operating Temperature range:

- FSP-951, 0°C to 50°C (32°F to 122°F).
- FSP-951T, 0°C to 38°C (32°F to 100°F).



FSP-951 in B300-6 Base

- FSP-951R installed in a DNR/DNRW, -20°C to 70°C (-4°F to 158°F).

UL/ULC Listed Velocity Range: 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts.

Relative Humidity: 10%-93% noncondensing.

Thermal Ratings: Fixed-temperature setpoint 135°F (57°C).

DETECTOR SPACING AND APPLICATIONS

NOTIFIER recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.1m). For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. *System Smoke Detector Application Guide*, document A05-1003, is available at systemsensor.com

ELECTRICAL SPECIFICATIONS

Voltage Range: 15-32 volts DC peak.

Standby Current (max. avg.): 200µA @ 24VDC (one communication every five seconds with LED enabled).

LED Current (max.): 4.5mA @ 24 VDC ("ON").

Installation

FSP-951 series plug-in detectors use a separate base to simplify installation, service, and maintenance.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see DN-60981.

NOTE: 1) Because of inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring. 2) When using relay or sounder bases, consult the ISO-X(A) installation sheet I56-1380 for device limitations between isolator modules and isolator bases.



Agency Listings and Approvals

These listings and approvals apply to the detectors specified in this document. In some cases, certain detectors or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL/ULC Listed: S911
- FM Approved
- CSFM: 7272-0028:0503

Product Line Information

NOTE:

- Detectors must be mounted to one of the Intelligent Bases listed below.
- "A" suffix indicates ULC Listed model.
- "IV" suffix indicates FlashScan® and CLIP device.

FSP-951: White, low-profile intelligent photoelectric sensor, FlashScan only.

FSP-951A: Same as FSP-951 but with ULC listing.

FSP-951-IV: Ivory, low-profile intelligent photoelectric sensor.

FSP-951A-IV: Same as FSP-951-IV but with ULC listing.

FSP-951T: White, same as FSP-951 but includes a built-in 135°F (57°C) fixed-temperature thermal device. FlashScan only.

FSP-951TA: Same as FSP-951T but with ULC listing.

FSP-951T-IV: Ivory, same as FSP-951T but includes a built-in 135°F (57°C) fixed-temperature thermal device.

FSP-951TA-IV: Same as FSP-951T-IV but with ULC listing.

FSP-951R: White, low-profile intelligent photoelectric sensor, remote test capable. For use with DNR/DNRW. FlashScan only.

FSP-951RA: Same as FSP-951R but with ULC listing. For use with DNRA.

FSP-951R-IV: Ivory, low-profile intelligent photoelectric sensor, remote test capable. For use with DNR/DNRW.

FSP-951RA-IV: Same as FSP-951R-IV but with ULC listing. For use with DNRA.

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DN-60981

B300-6: White, 6" base, standard flanged low-profile mounting base.

B300-6-IV: Ivory, 6" base, standard flanged low-profile mounting base.

B300A-6: Same as B300-6, ULC listed.

B300A-6-IV: Ivory, 6" standard flanged low-profile mounting base, ULC listed.

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4" standard European flangeless mounting base. UL/ULC listed.

B501-BL: Black, 4" standard European flangeless mounting base. UL/ULC listed.

B501-IV: Ivory color, 4" standard European flangeless mounting base. UL/ULC listed.

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10.

B224RB-WH: White, relay base.

B224RB-IV: Ivory, relay base.

B224RBA-WH: White, relay base, ULC listing.

B224RBA-IV: Ivory, relay base, ULC listing.

B224BI-WH: White, *isolator* detector base.

B224BI-IV: Ivory *isolator* detector base.

B224BIA-WH: White, *isolator* detector base, ULC listing.

B224BIA-IV: Ivory *isolator* detector base, ULC listing.

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol.

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol.

B200SA-WH: Same as B200S-WH, ULC listing.

B200SA-IV: Same as B200S-IV, ULC listing.

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with SO Series detector applications).

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with SO Series detector applications, ULC listing).

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement.

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement.

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications.

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications.

B200SRA-WH: Same as B200SR-WH with, ULC listing.

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing.

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications.

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications.

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base.

TR300-IV: Ivory, replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300(A)-6.

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.



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www.notifier.com

FST-951 Series

Intelligent Thermal (Heat) Detectors



Intelligent / Addressable Devices

General

The NOTIFIER FST-951 Series intelligent thermal detectors are designed for both performance and aesthetics. A new modern, sleek, contemporary design and advanced thermal technologies make the FST-951 Series ideal for both system operation and building design. The point ID address, set using rotary decimal switches, provide specific detector locations. The series includes a 135°F/57°C fixed-temperature, rate-of-rise and a 180°F/88°C fixed high-temperature detectors. These thermal detectors provide effective, intelligent property protection in a variety of applications. Detectors are available for both FlashScan® and CLIP applications as designated.

Features

- Sleek and stylish contemporary design.
- Advanced thermal technology for fast response.
- Fixed temperature model (FST-951) factory preset to 135°F (57°C).
- Rate-of-rise model (FST-951R), 15°F (8.3°C) per minute.
- High temperature model (FST-951H) factory preset to 190°F (88°C).
- Addressable by device.
- Compatible with FlashScan® and CLIP protocol systems.
- Rotary, decimal addressing (1-99 on CLIP systems, 1-159 on FlashScan systems).
- Two-wire SLC connection.
- Visible LEDs “blink” every time the unit is addressed.
- 360°-field viewing angle of the visual alarm indicators (two bi-color LEDs). LEDs blink green in Normal condition and turn on steady red in Alarm.
- Integral communications and built-in device-type identification.
- Remote test feature from the panel.
- Built-in functional test switch activated by external magnet.
- Walk test with address display (an address of 121 will blink the detector LED 12-(pause)-1).
- Low standby current.
- Built-in tamper-resistant feature.
- Designed for direct-surface or electrical-box mounting.
- Sealed against back pressure.
- Plugs into separate base for ease of installation and maintenance.
- SEMS screws for wiring of the separate base.
- Optional remote, single-gang LED accessory.
- Optional sounder, relay, and isolator bases.

Specifications

- Size:** 2.0" (5.3 cm) high; base determines diameter.
- B300-6: 6.1" (15.6 cm) diameter.
 - B501: 4" (10.2 cm) diameter.

For a complete list of detector bases, see DN-60981

Shipping weight: 3.4oz (96.4g)

Operating temperature range:

- FST-951, FST-951R Series: –20°C to 38°C (–4°F to 100°F);
- FST-951H Series: –20°C to 66°C (–4°F to 150°F).



FST-951R in B300-6 Base

Detector spacing: UL approved for 50 ft. (15.24 m) center to center. FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing.

Relative humidity: 10% – 93% non-condensing.

Thermal ratings: Fixed-temperature set point 57°C (135°F), rate-of-rise detection 8.3°C (15°F) per minute, high temperature heat 88°C (190°F).

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak.

Standby current (max. avg.): 200uA @ 24 VDC (one communication every 5 seconds with LED enabled).

LED current (max.): 4.5mA @ 24 VDC (“ON”).

Applications

Use thermal detectors for protection of property. For further information, refer to I56-6522, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Installation

The FST-951 Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see DN-60054.

NOTE: 1) Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring “T-taps” or branches are permitted for Style 4 (Class “B”) wiring. **2)** When using relay or sounder bases, consult the ISO-X(A) installation sheet I56-1380 for device limitations between isolator modules and isolator bases.



Agency Listings and Approvals

These listings and approvals apply to the detectors specified in this document. In some cases, certain detectors or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL/ULC Listing: S2101
- FM Approved
- CSFM: 7270-0028:0502

Product Line Information

NOTE: "A" suffix indicates ULC Listed model.

NOTE: "-IV" suffix indicates FlashScan® and CLIP device.

FST-951: White, low-profile intelligent 135°F fixed thermal sensor, FlashScan only.

FST-951A: Same as FST-951 but with ULC listing.

FST-951-IV: Ivory, low-profile intelligent 135°F fixed thermal sensor, FlashScan and CLIP.

FST-951A-IV: Same as FST-951-IV but with ULC listing.

FST-951R: White, low-profile intelligent rate-of-rise thermal sensor, FlashScan only.

FST-951RA: Same as FST-951R but with ULC listing.

FST-951R-IV: Ivory, low-profile intelligent rate-of-rise fixed thermal sensor, FlashScan and CLIP.

FST-951RA-IV: Same as FST-951R-IV but with ULC listing.

FST-951H: White, low-profile intelligent 190°F fixed thermal sensor, FlashScan only.

FST-951HA: Same as FST-951H but with ULC listing.

FST-951H-IV: Ivory, low-profile intelligent 190°F thermal sensor, FlashScan and CLIP.

FST-951HA-IV: Same as FST-951H-IV but with ULC listing.

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DN-60981

B300-6: White, 6" base, standard flanged low-profile mounting base.

B300-6-IV: Ivory, 6" base, standard flanged low-profile mounting base.

B300A-6: Same as B300-6, ULC listed.

B300A-6-IV: Ivory, 6" standard flanged low-profile mounting base, ULC listed.

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4" standard European flangeless mounting base. UL/ULC listed.

B501-BL: Black, 4" standard European flangeless mounting base. UL/ULC listed.

B501-IV: Ivory color, 4" standard European flangeless mounting base. UL/ULC listed.

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10.

B224RB-WH: White, relay base.

B224RB-IV: Ivory, relay base.

B224RBA-WH: White, relay base, ULC listing.

B224RBA-IV: Ivory, relay base, ULC listing.

B224BI-WH: White, *isolator* detector base.

B224BI-IV: Ivory *isolator* detector base.

B224BIA-WH: White, *isolator* detector base, ULC listing.

B224BIA-IV: Ivory *isolator* detector base, ULC listing.

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol.

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol.

B200SA-WH: Same as B200S-WH, ULC listing.

B200SA-IV: Same as B200S-IV, ULC listing.

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with SO Series detector applications).

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with SO Series detector applications, ULC listing).

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement.

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement.

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications.

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications.

B200SRA-WH: Same as B200SR-WH with, ULC listing.

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing.

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications.

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications.

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base.

TR300-IV: Ivory, replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B3006(A)-6.

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.



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For more information, contact Notifier. Phone: (800) 627-3473, FAX: (203) 484-7118.
www.notifier.com



CO1224T and CO1224TR Carbon Monoxide Detectors with RealTest® Technology

The System Sensor CO1224T and CO1224TR (round) Carbon Monoxide (CO) Detectors use a highly accurate and reliable electrochemical sensing cell to provide early warning of dangerous CO levels.

Features

- RealTest® enables a functional test using canned CO
- Full compliance with UL 2075
- A code-required trouble relay
- Wiring supervision with SEMS terminals
- A six-year end-of-life timer
- 12/24 VDC
- A low current draw of 20 mA in standby and 40 mA in alarm
- Versatile mounting for wall and ceiling
- Accurate and reliable electrochemical sensing technology
- Optional CO-PLATE CO Detector Replacement Plate to upgrade previously installed competitor detectors to the CO1224T



With RealTest® technology, the CO gas sensing cell used in the CO1224T and CO1224TR CO detectors can be tested using a CO gas agent, fully meeting the requirements of NFPA 720: 2009. Simply put the detector into RealTest mode, spray a small amount of CO into the detector per the installation instructions, and within seconds the detector will alarm, indicating successful gas entry. (See the reverse page or the user manual for complete instructions.)

When dangerous amounts of CO are detected, the CO1224T and CO1224TR detectors alert residents by sounding and flashing a temp 4 signal alarm. With 24/7 central station monitoring, residents are guaranteed protection whether they are away from home, sleeping, or already suffering from the effects of CO.

The CO1224T and CO1224TR are designed for system operation. These detectors are fully listed to UL 2075 and offer a code-required trouble relay to send a sensor failure or end-of-life signal to the control panel and the central station. The CO1224T and CO1224TR also use SEMS-type terminal Philips head screws for quicker and more positive wiring connections and code-required wiring supervision. With a low current draw, these detectors enable more devices to be connected to the panel, limiting the need to purchase extra power supplies or more expensive panels. As 12/24 VDC detectors, the CO1224T and CO1224TR will operate on most industry security and fire alarm control panels.

Agency Listings





CO1224T and CO1224TR Carbon Monoxide Detector Specifications

Architectural/Engineering Specifications

Carbon monoxide (CO) detector shall be a system-connected System Sensor model number CO1224T or CO1224TR listed to Underwriters Laboratories UL 2075 for Gas and Vapor Detectors and Sensors. The detector shall be equipped with a sounder and a trouble relay. The detector's base shall be able to mount to a single-gang electrical box or direct (surface) mount to the wall or ceiling. Wiring connections shall be made by means of SEMS screws. The detector shall provide dual-color LED indication that blinks to indicate normal standby, alarm, or end-of-life. When the sensor supervision is in a trouble condition, the detector shall send a trouble signal to the panel. When the detector gives a trouble or end-of-life signal, the detector shall be replaced. The detector shall provide a means to test CO gas entry into the CO sensing cell. The detector shall provide this with a test mode that accepts CO gas from a test agent and alarms immediately upon sensing CO entry. The detector shall perform in the detection of CO up to 12,000 feet above sea level and alarm within the time specified by ANSI/UL 2034 for CO concentrations of 70, 150 and 400 parts per million (ppm), as verified by a Nationally Recognized Test Laboratory.

Electrical Specifications

Operating Voltage	12/24 VDC
Audible Signal	85 dB in alarm
Standby Current	20 mA
Alarm Current	40 mA (75 mA test)
Alarm Contact Ratings	0.5 A @ 30 VDC
Trouble Contact Ratings	0.5 A @ 30 VDC

Physical Specifications

Size: CO1224T	Length: 5.1 in, Width: 3.3 in, Height: 1.3 in
CO1224TR	Diameter: 6 in, Height: 1.3 in
Approximate Weight	CO1224T: 7 oz ; CO1224TR: 11 oz
Operating Temperature Range	32°F to 104° F (0°C to 40° C)
Operating Humidity Range	22 to 90% RH
Input Terminals	14 to 22 AWG
Mounting	Single-gang back box; surface mount to wall or ceiling

Operation Modes

Operation Mode	Green LED	Red LED	Sounder
Normal (standby)	Blink 1 per minute	—	—
Alarm	—	Blink in temp 4 pattern	Sound in temp 4 pattern

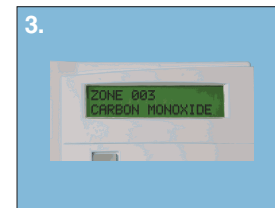
RealTest® Feature: The System Sensor CO1224T and CO1224TR Carbon Monoxide Detectors with RealTest enable evaluation of the functionality of the CO sensing cell using a canned CO test agent.



1. Push and hold the Test/Hush button for two seconds to enter RealTest mode. The green LED will flash once every second to indicate RealTest mode has started.



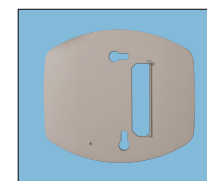
2. Spray canned CO agent into the detector.



3. Verify CO sensing at the control panel. The detector will automatically exit RealTest alarm mode after about 20-60 seconds.

NOTE: Check with local codes and the AHJ to determine if a functional gas test is desired for an installation.

Hush Feature: Pushing the Test/Hush button will silence the sounder for 5 minutes (except in RealTest mode).
 Trouble Feature: When the detector is in a trouble condition, it will send a trouble signal to the panel.
 End-of-Life Timer: After the detector's internal sensor has reached the end of its life, a trouble signal will be sent to the panel to indicate it is time to replace the detector. An electrochemical CO detector lifespan is about six years. The detector must be replaced by the date marked on the inside of the product.
 CO-PLATE: System Sensor also offers the CO-PLATE CO Detector Replacement Plate to cover the footprint (when necessary) of previously installed competitive carbon monoxide detectors that require replacement.



CO-PLATE

Ordering Information

Part No.	Description
CO1224T	12/24 volt, 4-wire system-monitored carbon monoxide detector with RealTest® Technology
CO1224TR	12/24 volt, 4-wire system-monitored round carbon monoxide detector with RealTest® Technology
CO-PLATE	CO detector replacement plate to cover the footprint of previously installed competitive detectors as necessary



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FMM-1(A), FMM-101(A), FZM-1(A) & FDM-1(A)

Monitor Modules with FlashScan®

**Intelligent/Addressable Devices**

General

Four different monitor modules are available for Notifier's intelligent control panels for a variety of applications. Monitor modules supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (FZM-1(A)).

FMM-1(A) is a standard-sized module (typically mounts to a 4" [10.16 cm] square box) that supervises either a Style D (Class A) or Style B (Class B) circuit of dry-contact input devices.

FMM-101(A) is a miniature monitor module a mere 1.3" (3.302 cm) H x 2.75" (6.985 cm) W x 0.5" (1.270 cm) D that supervises a Style B (Class B) circuit of dry-contact input devices. Its compact design allows the FMM-101(A) to be mounted in a single-gang box behind the device it monitors.

FZM-1(A) is a standard-sized module that monitors and supervises compatible two-wire, 24 volt, smoke detectors on a Style D (Class A) or Style B (Class B) circuit.

FDM-1(A) is a standard-sized dual monitor module that monitors and supervises two independent two-wire Style B (Class B) dry-contact initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by NOTIFIER that greatly increases the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.

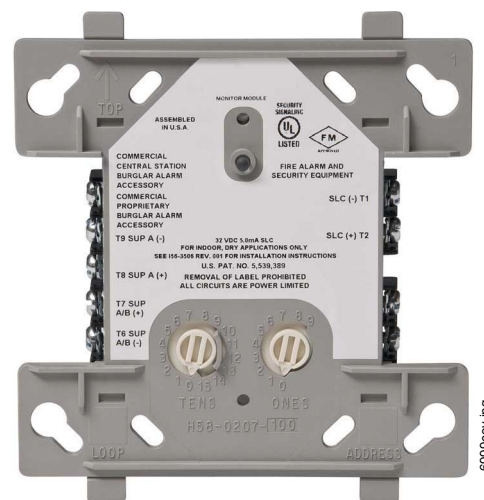
FMM-1(A) Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops; 01 – 99 on CLIP loops.
- LED flashes green during normal operation (this is a programmable option) and latches on steady red to indicate alarm.

The FMM-1(A) Monitor 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. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The FMM-1(A) can be used to replace MMX-1(A) modules in existing systems.

FMM-1(A) APPLICATIONS

Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class

**FMM-1(A) (Type H)**

A) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit.

FMM-1(A) OPERATION

Each FMM-1(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FMM-1(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

Average operating current: 350 μ A (LED flashing), 1 communication every 5 seconds, 47k EOL.

Maximum IDC wiring resistance: 40 ohms.

EOL resistance: 47K ohms.

Temperature range: 32°F to 120°F (0°C to 49°C).

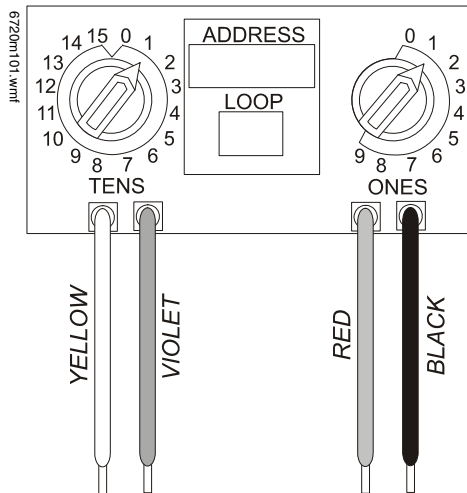
Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.



FMM-101(A) Mini Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops; 01 – 99 on CLIP loops.



The FMM-101(A) Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The FMM-101(A) is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices. The FMM-101(A) can be used to replace MMX-101(A) modules in existing systems.

FMM-101(A) APPLICATIONS

Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the circuit.

FMM-101(A) OPERATION

Each FMM-101(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

FMM-101(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Average operating current: 350 μ A, 1 communication every 5 seconds, 47k EOL; 600 μ A Max. (Communicating, IDC Shorted).

Maximum IDC wiring resistance: 40 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 400 μ A.

EOL resistance: 47K ohms.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 1.3" (3.302 cm) high x 2.75" (6.985 cm) wide x 0.65" (1.651 cm) deep.

Wire length: 6" (15.24 cm) minimum.

FZM-1(A) Interface Module

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops, 01 – 99 on CLIP loops.
- LED flashes during normal operation; this is a programmable option.
- LED latches steady to indicate alarm on command from control panel.

The FZM-1(A) Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be UL compatible with the module. The FZM-1(A) can be used to replace MMX-2(A) modules in existing systems.

FZM-1(A) APPLICATIONS

Use the FZM-1(A) to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 3.9 K ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (class B or A) circuit (maximum IDC loop resistance is 25 ohms). Install ELR across terminals 8 and 9 for Style D application.

FZM-1(A) OPERATION

Each FZM-1(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FZM-1(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 ohms.

Average operating current: 300 μ A, 1 communication and 1 LED flash every 5 seconds, 3.9k eol.

EOL resistance: 3.9K ohms.

External supply voltage (between Terminals T3 and T4): DC voltage: 24 volts power limited. Ripple voltage: 0.1 Vrms maximum. Current: 90 mA per module maximum.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.



FDM1(A) Dual Monitor Module

The FDM-1(A) Dual Monitor Module is intended for use in intelligent, two-wire systems. It provides two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open contact fire alarm and supervisory devices; or either normally open or normally closed security devices. The module has a single panel-controlled LED.

NOTE: The FDM-1(A) provides two Style B (Class B) IDC circuits ONLY. Style D (Class A) IDC circuits are NOT supported in any application.

FDM-1(A) SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

Average operating current: 750 μ A (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 μ A

EOL resistance: 47K ohms.

Maximum SLC Wiring resistance: 40 Ohms.

Temperature range: 32° to 120°F (0° to 49°C).

Humidity range: 10% to 93% (non-condensing).

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 2.125" (5.398 cm) deep.

FDM-1(A) AUTOMATIC ADDRESSING

The FDM-1(A) automatically assigns itself to two addressable points, starting with the original address. For example, if the FDM-1(A) is set to address "26", then it will automatically assign itself to addresses "26" and "27".

NOTE: "Ones" addresses on the FDM-1(A) are 0, 2, 4, 6, or 8 only. Terminals 6 and 7 use the first address, and terminals 8 and 9 use the second address.



CAUTION:

Avoid duplicating addresses on the system.

Installation

FMM-1(A), FZM-1(A), and FDM-1(A) modules mount directly to a standard 4" (10.16 cm) square, 2.125" (5.398 cm) deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

The FMM-101(A) module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations.

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S635
- **ULC:** S635
- **FM Approved**
- **CSFM:** 7300-0028:0219
- **MEA:** 457-99-E
- **U.S. Coast Guard:**

– 161.002/23/3 (AFP-200: FMM-1/-101, FZM-1)

– 161.002/42/1 (NFS-640: FMM-1/-101)

- **Lloyd's Register:**

– 03/60011/E1 (FMM-1/-101, FZM-1)

– 94/60004/E2 (AFP-200: except FDM-1)

– 02/60007 (NFS-640: FDM-1)

- **FDNY:** COA #6038 (NFS2-640, NFS-320), COA# 6058 (NFS2-3030)

Product Line Information

NOTE: "A" suffix indicates ULC-listed model.

FMM-1(A): Monitor module.

FMM-101(A): Monitor module, miniature.

FZM-1(A): Monitor module, two-wire detectors.

FDM-1(A): Monitor module, dual, two independent Class B circuits.

SMB500: Optional surface-mount backbox.

NOTE: See installation instructions and refer to the SLC Wiring Manual, PN 51253.



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FCM-1(A) & FRM-1(A) Series

Control and Relay Modules

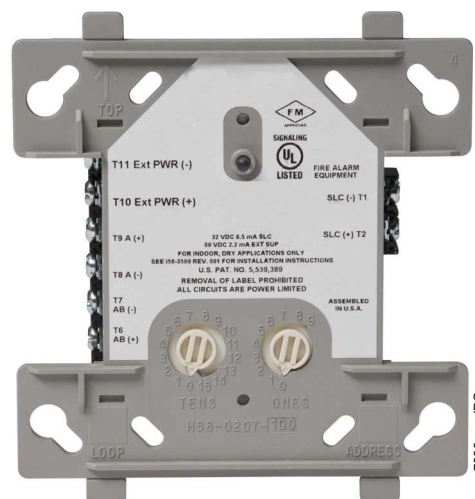
**Intelligent / Addressable Devices**

General

FCM-1(A) Control Module: The FCM-1(A) Addressable Control Module provides Notifier intelligent fire alarm control panels a circuit for Notification Appliances (horns, strobes, speakers, etc.). Addressability allows the FCM-1(A) to be activated, either manually or through panel programming, on a select (zone or area of coverage) basis.

FRM-1(A) Relay Module: The FRM-1(A) Addressable Relay Module provides the system with a dry-contact output for activating a variety of auxiliary devices, such as fans, dampers, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by NOTIFIER Engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.

**FCM-1(A)**

Features

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop. The FCM-1(A) module requires power (for horns, strobes, etc.), or audio (for speakers).
- Integral LED “blinks” green each time a communication is received from the control panel and turns on in steady red when activated.
- LED blink may be deselected globally (affects all devices).
- High noise immunity (EMF/RFI).
- The FCM-1(A) may be used to switch 24-volt NAC power, audio (up to 70.7 Vrms).
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct-dial entry of address 01– 159 for FlashScan loops, 01 – 99 for CLIP mode loops.
- Speaker, and audible/visual applications may be wired for Class B or A (Style Y or Z).

Applications

The FCM-1(A) is used to switch 24 VDC audible/visual power, high-level audio (speakers). The FRM-1(A) may be programmed to operate dry contacts for applications such as door holders or Air Handling Unit shutdown, and to reset four-wire smoke detector power.

NOTE: Refer to the SLC Manual (PN 51253) for details regarding releasing applications with the FCM-1(A). Refer to the FCM-1-REL datasheet (DN-60390) for new FlashScan® releasing applications.

Construction

- The face plate is made of off-white heat-resistant plastic.
- Controls include two rotary switches for direct-dial entry of address (01-159).

- The FCM-1(A) is configured for a single Class B (Style Y) or Class A (Style Z) Notification Appliance Circuit.
- The FRM-1(A) provides two Form-C dry contacts that switch together.

Operation

Each FCM-1(A) or FRM-1(A) uses one of 159 possible module addresses on a SLC loop (99 on CLIP loops). It responds to regular polls from the control panel and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay. The FCM-1(A) supervises Class B (Style Y) or Class A (Style Z) notification or control circuits.

Upon code command from the panel, the FCM-1(A) will disconnect the supervision and connect the external power supply in the proper polarity across the load device. The disconnection of the supervision provides a positive indication to the panel that the control relay actually turned ON. The external power supply is always relay isolated from the communication loop so that a trouble condition on the external power supply will never interfere with the rest of the system.

Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a module and a sensor address.

Specifications for FCM-1(A)

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 6.5 mA (LED on).

Average operating current: 350 μ A direct poll, 375 μ A group poll with LED flashing, 485 μ A Max. (LED flashing, NAC shorted.)



Maximum NAC Line Loss: 4 VDC.

External supply voltage (between Terminals T10 and T11): Maximum (NAC): Regulated 24 VDC; Maximum (Speakers): 70.7 V RMS, 50W.

Drain on external supply: 1.7 mA maximum using 24 VDC supply; 2.2 mA Maximum using 80 VRMS supply.

Max NAC Current Ratings: For class B wiring system, the current rating is 3A; For class A wiring system, the current rating is 2A.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% non-condensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 Electrical Box; CB500 Barrier

Specifications for FRM-1(A)

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 6.5 mA (LED on).

Average operating current: 230 µA direct poll; 255 µA group poll.

EOL resistance: not used.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% non-condensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 Electrical Box; CB500 Barrier

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S635
- **ULC:** S3705 (A version only)
- **FM Approved**
- **CSFM:** 7300-0028:0219
- **MEA:** 14-00-E
- **FDNY:** COA #6067, #6065

Contact Ratings for FRM-1(A)

Current Rating	Maximum Voltage	Load Description	Application
3 A	30 VDC	Resistive	Non-Coded
2 A	30 VDC	Resistive	Coded
.9 A	110 VDC	Resistive	Non-Coded
.9 A	125 VDC	Resistive	Non-Coded
.5 A	30 VDC	Inductive (L/R=5ms)	Coded
1 A	30 VDC	Inductive (L/R=2ms)	Coded
.3 A	125 VAC	Inductive (PF=0.35)	Non-Coded
1.5 A	25 VAC	Inductive (PF=0.35)	Non-Coded
.7 A	70.7 VAC	Inductive (PF=0.35)	Non-Coded
2 A	25 VAC	Inductive (PF=0.35)	Non-Coded

NOTE: Maximum (Speakers): 70.7 V RMS, 50 W

Product Line Information

NOTE: "A" suffix indicates ULC Listed model.

FCM-1(A): Intelligent Addressable Control Module.

FRM-1(A): Intelligent Addressable Relay Module.

A2143-20: Capacitor, required for Class A (Style Z) operation of speakers.

SMB500: Optional Surface-Mount Backbox.

CB500: Control Module Barrier — required by UL for separating power-limited and non-power limited wiring in the same junction box as FCM-1(A).

NOTE: For installation instructions, see the following documents:

- *FCM-1(A) Installation document I56-1169.*
- *FRM-1(A) Installation document I56-3502.*
- *Notifier SLC Wiring Manual, document 51253.*

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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.



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FCPS-24S6(C/E) & FCPS-24S8(C/E)

6- & 8-Amp 24-Volt Remote Power Supplies



Power Supplies

General

The FCPS-24S6E (6-amp) and FCPS-24S8E (8-amp) are remote power supplies with battery charger. The FCPS-24S6/-24S8 may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may be used as stand-alone supplies. Primary applications include notification appliance circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS-24S6/-24S8 provides regulated and filtered 24 VDC power to four notification appliance circuits configured as either four Class B (Style Y) or Class A (Style Z, with ZNAC-4 option module). Alternately, the four outputs may be configured as all non-resettable, all resettable or two non-resettable and two resettable. The FCPS-24S6/-24S8 also contains a battery charger capable of charging up to 18 AH batteries. FCPS-24S6C & FCPS-24S8C are ULC-listed.

NOTE: Unless otherwise specified, the terms FCPS-24S6 and FCPS-24S8 used in this document refers to the standard FCPS-24S6 and FCPS-24S8, FCPS-24S6C and FCPS-24S8C, the FCPS-24S6E and FCPS-24S8E

Features

- UL-Listed NAC synchronization using System Sensor, Wheelock, or Gentex "Commander²" appliances.
- Operates as a "sync-follower" or as a "sync-generator" (default). See note on page 2.
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode).
- Four Class B (Style Y) or four Class A (Style Z, with ZNAC-4 module) NACs.
- 6-amp (FCPS-24S6) or 8-amp (FCPS-24S8) full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864).
- 4-amp (FCPS-24S6) or 6-amp (FCPS-24S8) continuous output in stand-alone mode (UL 1481).
- Compatible with coded inputs; signals passed through.
- Optional power-supervision relay (EOLR-1).
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two.
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power.
- Power-limiting technology meets UL power-limiting requirements.
- Form-C normally-closed trouble relay.
- Fully supervised power supply, battery, and NACs.
- Selectable earth fault detection.
- AC trouble report selectable for immediate 2-hour delay.
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated NAC power).
- Requires input trigger voltage of 9 - 32 VDC.
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D).



- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries.
- Battery charger may be disabled via DIP switch for applications requiring larger batteries.
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire.

Specifications

Primary (AC) Power:

- FCPS-24S6C/-24S8C: 120 VAC, 60 Hz, 3.2A maximum.
- FCPS-24S6E/-24S8E: 240 VAC, 50 Hz, 1.6A maximum.
- Wire Size: minimum #14 AWG (2.0mm²) with 600 V insulation.

Control Input Circuit:

- **Trigger Input Voltage:** 9 to 32 VDC.
- **Trigger Current:** 2.0 mA (16 - 32 V); Per Input: 1.0 mA (9 - 16 V).

Trouble Contact Rating:

Auxiliary Power Output: Specific application power 500 mA maximum.

Output Circuits:

- +24 VDC filtered, regulated.
- 3.0 A maximum for any one circuit.
- Total continuous current for all outputs (stand-alone mode):
 - FCPS-24S6: 4.0 A maximum.
 - FCPS-24S8: 6.0 A maximum.
- Total short-term current for all outputs (NAC expander mode):
 - FCPS-24S6: 6.0 A maximum.
 - FCPS-24S8: 8.0 A maximum.

Secondary Power (Battery) Charging Circuit:

- Supports lead-acid batteries only.



- Float-charge voltage: 27.6 VDC.
- Maximum current charge: 1.5 A.
- Maximum battery capacity: 18 AH.

Applications

Example 1: Expand notification appliance power an additional 6.0 A (FCPS-24S6) or 8.0 A (FCPS-24S8). Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A (FCPS-24S6) or up to 6.0 A (FCPS-24S8). Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

Example 3: Use addressable control modules to activate the FCPS instead of activating it through the FACP notification appliance circuits. This typically allows for mounting the FCPS at greater distances* away from the FACP while expanding system architecture in various applications.

For example, an addressable control module is used to activate the FCPS, and an addressable monitor module is used to sense FCPS trouble conditions. Local auxiliary power output from the FCPS provides power to the addressable control module.

**NOTE: Addressable FACP's are capable of locating control and monitor modules at distances of up to 12,500 feet (3,810 meters).*

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24S6/-24S8 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24S6/-24S8 is configured (via DIP switch settings) as a "sync follower," the FCPS's NAC outputs track the strobe synchronization pulses present at the FCPS's sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24S6/-24S8 are configured (via DIP switch settings) as a "sync generator," the FCPS's sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS's NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24S6 and FCPS-24S8 comply with the following standards:

- **NFPA 72** National Fire Alarm Code.
- **UL 864** Standard for Control Units for Fire Alarm Systems (NAC expander mode).
- **UL 1481** Power Supplies for Fire Alarm Systems.

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635, S674
- **ULC Listed:** S635 (FCPS-24S6C & FCPS-24S8C)
- **CSFM Approved:** 7315-0028:225
- **MEA:** 299-02-E
- **FM Approved**

Ordering Information

FCPS-24S6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24S6C: Same as above, ULC-listed.

FCPS-24S6R: Same as FCPS-24S6 with red enclosure.

FCPS-24S6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24S8: 8.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24S8C Same as above, ULC-listed.

FCPS-24S8R: Same as FCPS-24S8 with red enclosure.

FCPS-24S8E: 8.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

ZNAC-4: Class A (Style Y) NAC option module.

EOLR-1: 12/24 VDC end-of-line relay for monitoring four-wire smoke detector power.

BAT-1270: Battery, 12-volt, 7.0 AH (two required, see BAT Series data sheet DN-6933).

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

System Sensor L-Series audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- Updated Modern Aesthetics
- Small profile devices for Horns and Horn Strobes
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and two volume selections
- Mounting plate for all standard and all compact wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with legacy SpectrAlert and SpectrAlert Advance devices
- Compatible with MDL3 sync module
- Strobes and Horn Strobes listed for wall mounting only
- Horns listed for wall or ceiling use



The System Sensor L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and compact devices, and plain, FIRE, and FUEGO-printed devices, System Sensor L-Series can meet virtually any application requirement.

The L-Series line of 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, the L-Series utilizes a universal mounting plate for all models 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 two volume selections.

Agency Listings





L-Series Specifications

Architect/Engineer Specifications

General

L-Series standard horns, strobes, and horn strobes shall mount to a standard 2 x 4 x 17/8-inch back box, 4 x 4 x 1 1/2-inch back box, 4-inch octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2 x 4 x 17/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard models and a separate universal mounting plate shall be used for mounting wall compact models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series 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, 30, 75, 95, 110, 135, and 185.

Strobe

The strobe shall be a System Sensor L-Series 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 L-Series 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 two 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. 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 MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize 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 4 11/16 x 4 11/16 x 2 1/8-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 or regulated 24 DC/FWR ¹
Operating Voltage Range²	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 1.91" D (143 mm L x 119 mm W x 49 mm D)
Compact Wall-Mount Dimensions (including lens)	5.26" L x 3.46" W x 1.91" D (133 mm L x 88 mm W x 49 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.25" D (143 mm L x 119 mm W x 32 mm D)
Compact Horn Dimensions	5.25" L x 3.45" W x 1.25" D (133 mm L x 88 mm W x 32 mm D)

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. Strobe products will operate at 12 V nominal only for 15 cd and 30 cd.



UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)				
Candela Range	Candela	8–17.5 Volts		
		DC	16–33 Volts DC	FWR
Candela Range	15	88	43	60
	30	143	63	83
	75	N/A	107	136
	95	N/A	121	155
	110	N/A	148	179
	135	N/A	172	209
	185	N/A	222	257

UL Max. Horn Current Draw (mA RMS)				
Sound Pattern	dB	8–17.5 Volts		
		DC	16–33 Volts DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL Max. Current Draw (mA RMS), Wall Horn Strobe, Candela Range (15–185 cd)										
DC Input	8–17.5 Volts		16–33 Volts							
	15cd	30cd	15cd	30cd	75cd	95cd	110cd	135cd	185cd	
Temporal High	98	158	54	74	121	142	162	196	245	
Temporal Low	93	154	44	65	111	133	157	184	235	
Non-Temporal High	106	166	73	94	139	160	182	211	262	
Non-Temporal Low	93	156	51	71	119	139	162	190	239	
3.1K Temporal High	93	156	53	73	119	140	164	190	242	
3.1K Temporal Low	91	154	45	66	112	133	160	185	235	
3.1K Non-Temporal High	99	162	69	90	135	157	175	208	261	
3.1K Non-Temporal Low	93	156	52	72	119	138	162	192	242	

FWR Input	16–33 Volts								
	15cd	30cd	75cd	95cd	110cd	135cd	185cd		
Temporal High	83	107	156	177	198	234	287		
Temporal Low	68	91	145	165	185	223	271		
Non-Temporal High	111	135	185	207	230	264	316		
Non-Temporal Low	79	104	157	175	197	235	283		
3.1K Temporal High	81	105	155	177	196	234	284		
3.1K Temporal Low	68	90	145	166	186	222	276		
3.1K Non-Temporal High	104	131	177	204	230	264	326		
3.1K Non-Temporal Low	77	102	156	177	199	234	291		

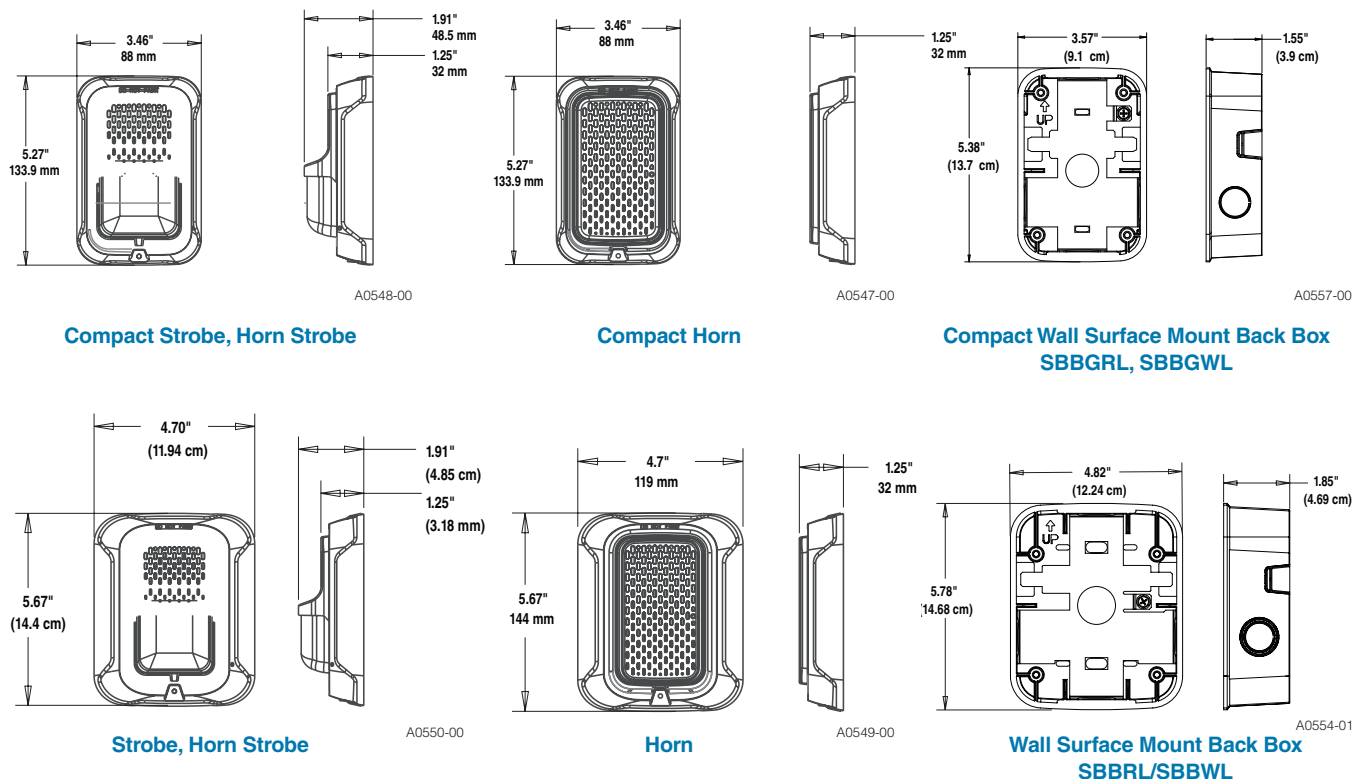
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)					
Switch Position	Sound Pattern	dB	8–17.5 Volts	16–33 Volts	FWR
			DC	DC	
1	Temporal	High	84	89	89
2	Temporal	Low	75	83	83
3	Non-Temporal	High	85	90	90
4	Non-Temporal	Low	76	84	84
5	3.1 KHz Temporal	High	83	88	88
6	3.1 KHz Temporal	Low	76	82	82
7	3.1 KHz Non-Temporal	High	84	89	89
8	3.1 KHz Non-Temporal	Low	77	83	83
9*	Coded	High	85	90	90
10*	3.1 KHz Coded	High	84	89	89

* Settings 9 and 10 are not available on 2-wire horn strobes. Temporal coding must be provided by the NAC. If the NAC voltage is held constant, the horn output remains constantly on.



L-Series Dimensions



L-Series Ordering Information

Model	Description
Wall Horn Strobes	
P2RL	2-Wire, Horn Strobe, Red
P2WL	2-Wire, Horn Strobe, White
P2GRL	2-Wire, Compact Horn Strobe, Red
P2GWL	2-Wire, Comp 2 fils act Horn Strobe, White
P2RL-P	2-Wire, Horn Strobe, Red, Plain
P2WL-P	2-Wire, Horn Strobe, White, Plain
P2RL-SP	2-Wire, Horn Strobe, Red, FUEGO
P2WL-SP	2-Wire, Horn Strobe, White, FUEGO
P4RL	4-Wire, Horn Strobe, Red
P4WL	4-Wire, Horn Strobe, White
Wall Strobes	
SRL	Strobe, Red
SWL	Strobe, White
SGRL	Compact Strobe, Red
SGWL	Compact Strobe, White
SRL-P	Strobe, Red, Plain
SWL-P	Strobe, White, Plain
SRL-SP	Strobe, Red, FUEGO
SWL-CLR-ALERT	Strobe, White, ALERT

Model	Description
Horns*	
HRL*	Horn, Red
HWL*	Horn, White
HGRL*	Compact Horn, Red
HGWL*	Compact Horn, White
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White

Notes:

- All -P models have a plain housing (no "FIRE" marking on cover).
- All -SP models have "FUEGO" marking on cover.
- All -ALERT models have "ALERT" marking on cover.
- *Horn-only models are listed for wall or ceiling use.





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

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 3/4-inch top and bottom conduit entries and 3/4-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.

Agency Listings



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



3023572



MEA452-05-E



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



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 Range²	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)						UL Max. Horn Current Draw (mA RMS)					
	Candela	8–17.5 Volts		16–33 Volts		Sound Pattern	dB	8–17.5 Volts		16–33 Volts	
		DC	FWR	DC	FWR			DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71	Temporal	High	57	55	69	75
	15/75	142	148	77	81	Temporal	Medium	44	49	58	69
	30	NA	NA	94	96	Temporal	Low	38	44	44	48
	75	NA	NA	158	153	Non-Temporal	High	57	56	69	75
	95	NA	NA	181	176	Non-Temporal	Medium	42	50	60	69
	110	NA	NA	202	195	Non-Temporal	Low	41	44	50	50
	115	NA	NA	210	205	Coded	High	57	55	69	75
High Candela Range	135	NA	NA	228	207	Coded	Medium	44	51	56	69
	150	NA	NA	246	220	Coded	Low	40	46	52	50
	177	NA	NA	281	251						
	185	NA	NA	286	258						

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)										
DC Input	8–17.5 Volts			16–33 Volts						
	15	15/75	30	15	15/75	30	75	95	110	115
Temporal High	137	147	107	79	90	107	176	194	212	218
Temporal Medium	132	144	97	69	80	97	157	182	201	210
Temporal Low	132	143	93	66	77	93	154	179	198	207
Non-Temporal High	141	152	116	91	100	116	176	201	221	229
Non-Temporal Medium	133	145	102	75	85	102	163	187	207	216
Non-Temporal Low	131	144	96	68	79	96	156	182	201	210
FWR Input										
Temporal High	136	155	112	88	97	112	168	190	210	218
Temporal Medium	129	152	103	78	88	103	160	184	202	206
Temporal Low	129	151	101	76	86	101	160	184	194	201
Non-Temporal High	142	161	126	103	112	126	181	203	221	229
Non-Temporal Medium	134	155	110	85	95	110	166	189	208	216
Non-Temporal Low	132	154	105	80	90	105	161	184	202	211

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, High Candela Range (135–185 cd)									
DC Input	16–33 Volts				FWR Input	16–33 Volts			
	135	150	177	185		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	
95	44
110	70
115	110
135	135
150	150
177	177
185	185

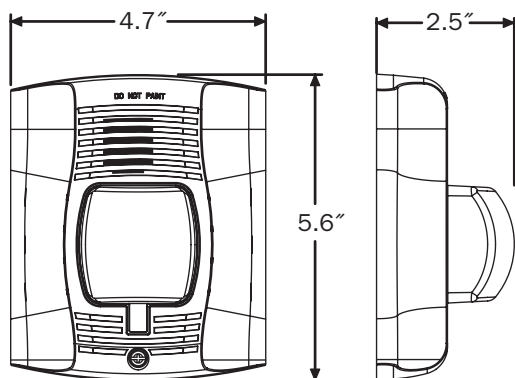
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)											
Switch Position	Sound Pattern	dB	8–17.5 Volts		16–33 Volts		24-Volt Nominal				
			DC	FWR	DC	FWR	Reverberant		Anechoic		
			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	

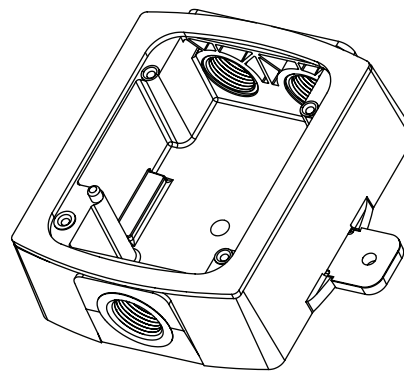
†Settings 7, 8, and 9 are not available on 2-wire horn strobe.



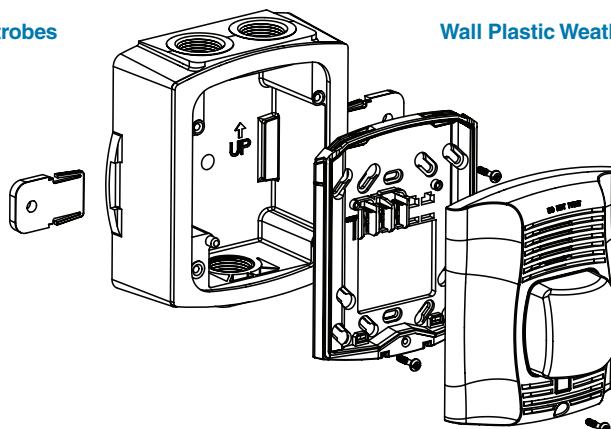
SpectrAlert Advance Diagrams



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.**





Selectable-Output Low Frequency Sounder and Low Frequency Sounder Strobes for Wall Applications



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
- Field-selectable candela settings on wall units: 135, 150, 177, and 185
- Rotary switch for low frequency sounder tone
- Universal mounting plate for wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with legacy SpectrAlert devices
- Compatible with MDL3 sync module
- Listed for ceiling or wall mounting

The SpectrAlert Advance series offers the most versatile and easy-to-use line of low frequency sounder and low frequency sounder strobes in the industry. With white and red plastic housings, dual listed for wall and ceiling mounting, SpectrAlert Advance can meet virtually any application requirement.

Like the entire SpectrAlert Advance product line, wall-mount low frequency sounder, and low frequency sounder 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 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 low frequency sounder tones.

Agency Listings

SIGNALING



S4011 (sounder)
S5512 (strobes)



3047563

MEA
approved

MEA452-05-E



7135-1653:0223
7125-1653:0224



SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance low frequency sounder and low frequency sounder strobes shall mount to a standard 4 x 4 x 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 x 4 x 17/8-inch back box. A universal mounting plate shall be used for mounting 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 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. Low Frequency Sounder strobes shall have field-selectable candela settings including 135, 150, 177, and 185.

Low Frequency Sounder

The low frequency sounder shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 464 and shall be approved for fire protective service. The low frequency sounder and the Sync•Circuit™ MDL3 Module accessory, if used, shall be powered from a notification appliance circuit output and shall operate on a nominal 12 or 24 volts (includes fire alarm panels with built in sync). When used with the Sync•Circuit Module MDL3, 12-volt rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 16.5 to 33 volts. If the notification appliances are not UL 9th edition listed with the corresponding panel or power supply being used, then refer to the compatibility listing of the panel to determine maximum devices on a circuit. The low frequency sounder has an option to switch between temporal three pattern, non-temporal (continuous) pattern and coded supply. The low frequency sounder shall operate on a coded or non-coded power supply.

Low Frequency Sounder Strobe Combination

The low frequency sounder 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 low frequency sounder 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 sounder shall have an option to switch between a temporal three pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. The low frequency sounder on low frequency sounder strobe models shall operate on a non-coded power supply.

Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and low frequency sounder at temporal three. Also, while operating the strobes, the module shall silence the low frequency sounder on low frequency sounder strobe models over a single pair of wires. The module shall mount to a 4^{11/16} x 4^{11/16} x 2^{1/8}-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 Low Frequency Sounder	Regulated 12 DC/FWR or regulated 24 DC/FWR ¹
Nominal Voltage Range Low Frequency Sounder Strobe	Regulated 24 VDC/FWR ¹
Operating Voltage Range	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	6.4 inches L x 4.7 inches W x 2.5 inches D (162 mm L x 119 mm W x 64 mm D)
Sounder Dimensions	5.6 inches L x 4.7 inches W x 1.3 inches D (142 mm L x 119 mm W x 33 mm D)
Low Frequency Sounder/Strobe with Surface Mount Back Box Dimensions (SBBR, SBBW)	6.4 inches L x 4.7 inches W x 4.3 inches D (162 mm L x 120 mm W x 108 mm D)
Low Frequency Sounder with Surface Mount Back Box Dimensions (SBBR, SBBW)	5.7 inches L x 4.8 inches W x 3 inches D (145 mm L x 120 mm W x 76 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.



UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)					
	Candela	8–17.5 Volts		16–33 Volts	
		DC	FWR	DC	FWR
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. Low Frequency Current Draw (mA RMS)					
Sound Pattern	dB	8–17.5 Volts		16–33 Volts	
		DC	FWR	DC	FWR
Temporal	High	191	262	138	166
Continuous	High	292	384	138	208
Coded	High	292	388	153	205

UL Max. Current Draw (mA RMS), 2-Wire Low Frequency Sounder Strobe, High Candela Range (135–185 cd)									
DC Input	16–33 Volts				FWR Input	16–33 Volts			
	135	150	177	185		135	150	177	185
Temporal	277	292	325	344	Temporal	296	309	343	351
Continuous	337	362	387	417	Continuous	393	395	432	433

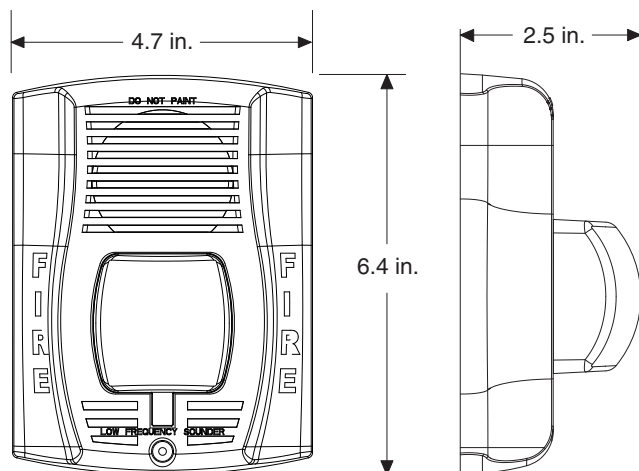
Low Frequency Sounder Tones and Sound Output Data

Low Frequency Sounder and Low Frequency Sounder Strobe Output (dBA)									
Switch Position	Sound Pattern	8–17.5 Volts		16–33 Volts		24-Volt Nominal			
						Reverberant		Anechoic	
		DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	76	76	76	76	76	76	86	86
2	Continuous	80	80	80	80	80	80	90	90
3†	Coded	80	80	80	80	80	80	90	90

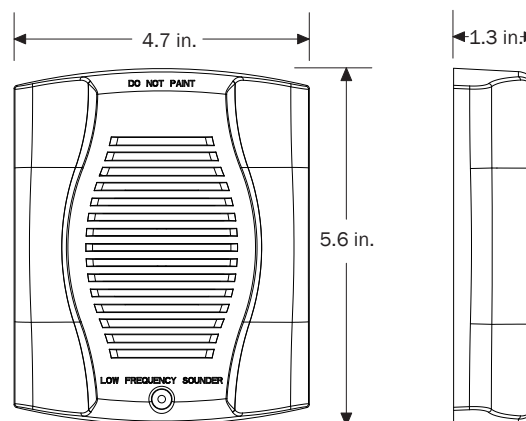
† Sounder ratings provided are for continuous voltage as provided by the NAC



SpectrAlert Advance Dimensions



Wall-mount low frequency sounder strobes



Wall-mount low frequency sounder

SpectrAlert Advance Ordering Information

Model	Description
Wall Low Frequency Sounder Strobes	
P2RH-LF	2-Wire Low Frequency Sounder Strobe, High cd, Red
P2WH-LF	2-Wire Low Frequency Sounder Strobe, High cd, White
Low Frequency Sounders	
HR-LF	Low Frequency Sounder, Red
HW-LF	Low Frequency Sounder, White
Accessories	
BBS-2	Back Box Skirt, Wall, Red
BBSW-2	Back Box Skirt, Wall, White
SBBR	Surface Mount Back Box, Wall, Red
SBBW	Surface Mount Back Box, Wall, White
TR-HS	Trim Ring, Wall, Red
TRW-HS	Trim Ring, Wall White

Notes:

"High cd" refers to strobes that include 135, 150, 177, and 185 candela settings.



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Product specifications subject to change without notice. Visit systemsensor.com
for current product information, including the latest version of this data sheet.
AVDS16402 • 1/14



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





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 x 2.9"W x .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" x 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)

Switch Position	Sound Pattern	Volume	8–17.5 Volts		16–33 Volts	
			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



**NO
EXCUSES!**

SIGNALING



SYSTEM RECORD DOCUMENTS

The SRD is the perfect item to help you meet demanding code requirements today. NFPA 72 2013 7.7.2.4 states that a cabinet must be "prominently labelled 'SYSTEM RECORD DOCUMENTS'."

The SRD is the perfect fit to meet today's demanding code requirements. SAE's number one goal is to manufacture code compliant solutions and this product allows you to do just that. NFPA 72 2013 7.7.2.1 states, "With every new system, a documentation cabinet shall be installed at the system control unit or other approved location at the protected premises."

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, service records, manuals & system records. Using a standard USB B connector you may also store your records electronically (See NFPA 72 2013 7.5.6.7).

The SRD has designated hooks to organize key rings and hold important business cards for easy access and reference. Inside the cover it has an organized record for identifying equipment information, required documentation locations (See NFPA 72 2013 7.2.1).

Standard Features:

- Installed with a 4 GB 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 1/4" deep
- 18 gauge steel box and cover for security
- Durable powder coat baked on finish other colors available
- Standard 3/4" cat 30 key lock. Other lock assemblies available
- Solid stainless steel piano hinge
- Permanently screened white ink 1" high "SYSTEM RECORD DOCUMENTS"
- Legend sheet for documentation, passwords and system information



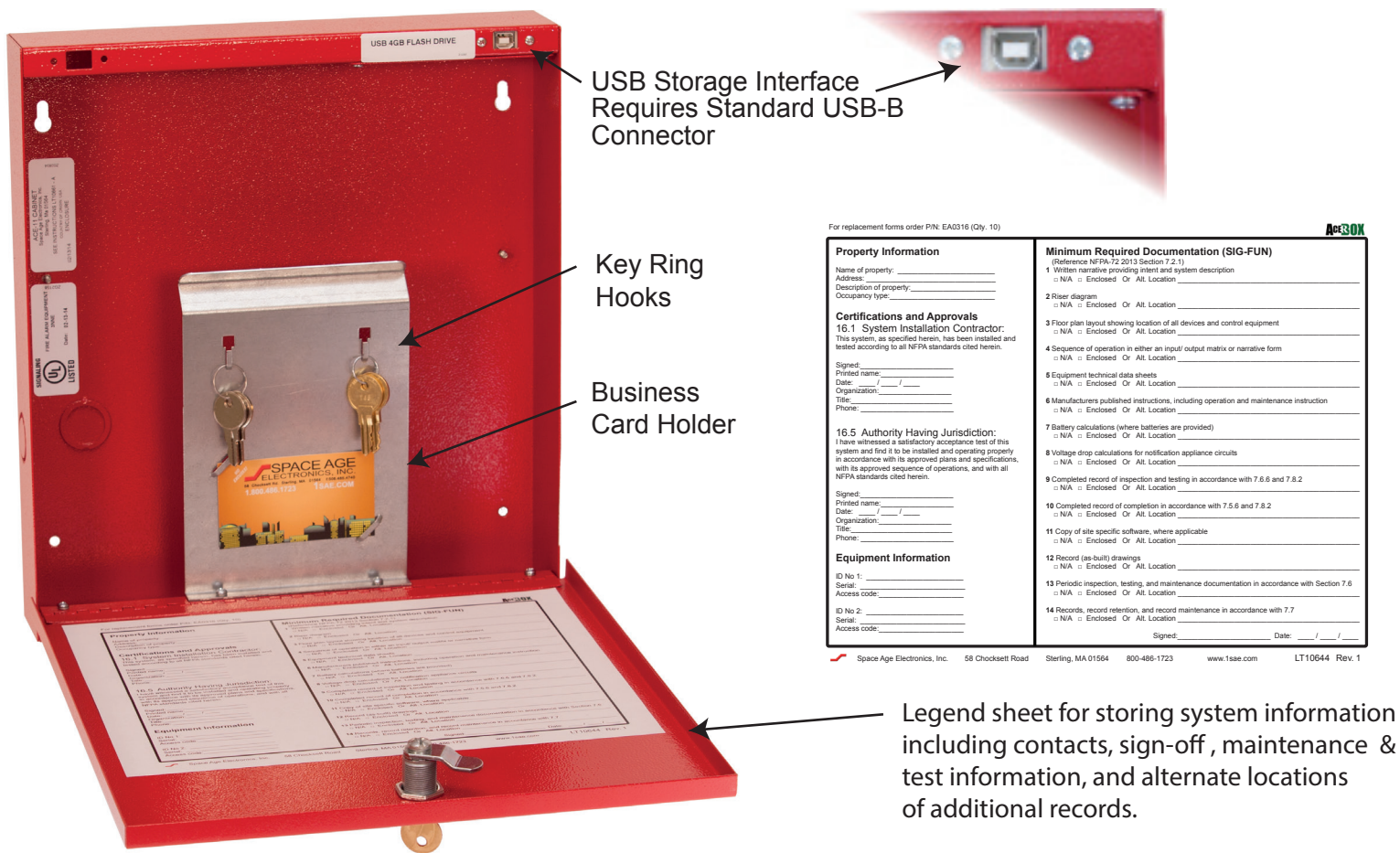
**ISO 9001
REGISTERED
COMPANY**

ACEBOX

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

Specifications:

The system record documents box (SRD) shall be UL Listed, 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 "SYSTEM RECORD 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 SRD 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.



For replacement forms order PIN: EA0316 (Qty. 10)

Property Information	Minimum Required Documentation (SIG-FUN)
Name of property: _____ Address: _____ Description of property: _____ Occupancy type: _____	1 Written narrative providing intent and system description <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
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: _____	2 Riser diagram <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
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: _____	3 Floor plan layout showing location of all devices and control equipment <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
Equipment Information ID No 1: _____ Serial: _____ Access code: _____ ID No 2: _____ Serial: _____ Access code: _____	4 Sequence of operation in either an input/output matrix or narrative form <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	5 Equipment technical data sheets <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	6 Manufacturers published instructions, including operation and maintenance instruction <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	7 Battery calculations (where batteries are provided) <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	8 Voltage drop calculations for notification appliance circuits <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	9 Completed record of inspection and testing in accordance with 7.6.6 and 7.8.2 <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	10 Completed record of completion in accordance with 7.5.6 and 7.8.2 <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	11 Copy of site specific software, where applicable <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	12 Record (as-built) drawings <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	13 Periodic inspection, testing, and maintenance documentation in accordance with Section 7.6 <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	14 Records, record retention, and record maintenance in accordance with 7.7 <input type="checkbox"/> N/A <input type="checkbox"/> Enclosed <input type="checkbox"/> All Location
	Signed: _____ Date: ____/____/____

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

Ordering Information:

Part #	Description
SSU00689	System Record Documents Cabinet RED
SSU00690	Custom screening with your Logo
EA0315	10 pack door legend sheet



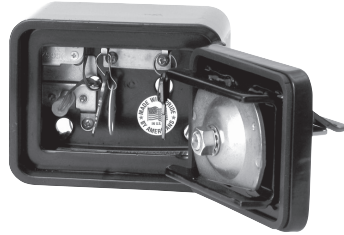
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

This document is subject to change without notice, see doc # ED0479 for legal disclaimer

Recessed Mount
with Face Flange



Surface Mount



High Security Industrial/Government Key Box



Reviewed for Code Compliance
Permitting and Inspections
Department
April 17, 2019

The number one high-security KNOX-BOX® is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX holds keys, access cards and other small items necessary for emergency access.

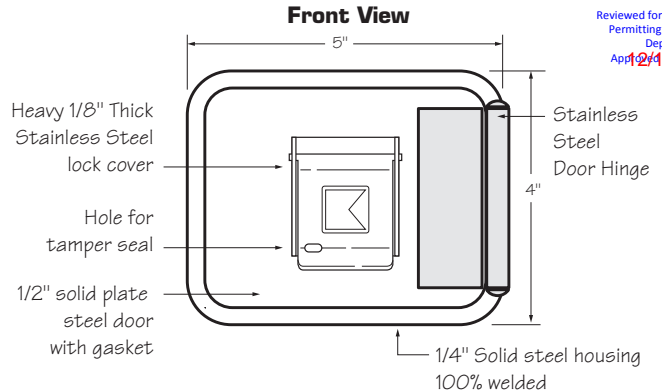
The hinged-door 3200 Series KNOX-BOX is more convenient than the lift-off door version because it allows single-handed operation and opened or closed, it's all one unit.

Features and Benefits

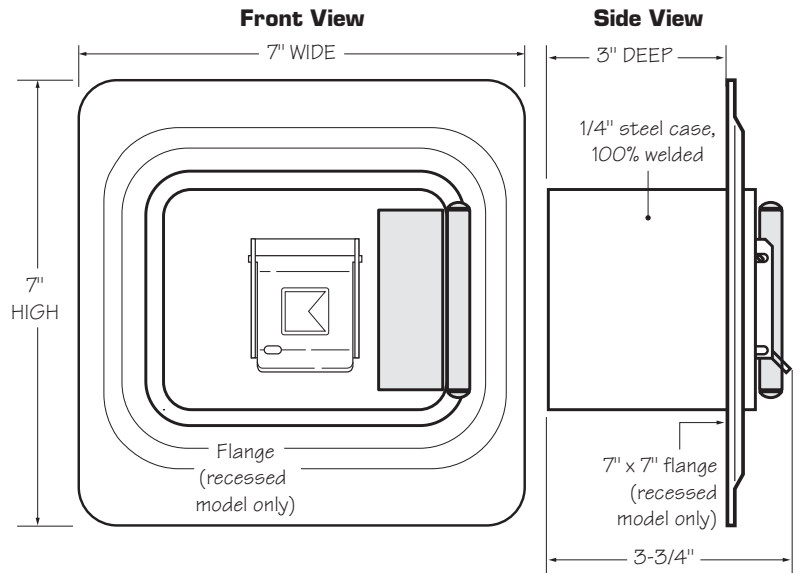
- Holds up to 10 keys and access cards in interior compartment
- Ensures high security. Box and lock are UL® Listed
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with a weather resistant door gasket
- Hinged door allows single-handed operation
- Colors: Black, Dark Bronze or Aluminum
- Weight: Surface mount - 8 lbs.
Recessed mount - 9 lbs.

Options

- Alarm tamper switches (UL Listed)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment



3200 Surface Mount



3200 Recessed Mount

Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with hinged door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal and stainless steel door hinge. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

Exterior Dimensions: Surface mount body- 4"H x 5"W x 3-3/4"D
Recessed mount flange- 7"H x 7"W

Lock: UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.

Finish: Knox-Coat® proprietary finishing process

Colors: Black, Dark Bronze or Aluminum

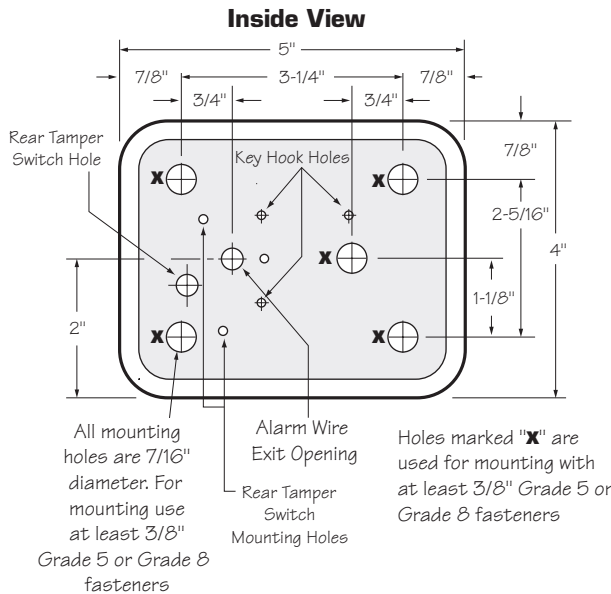
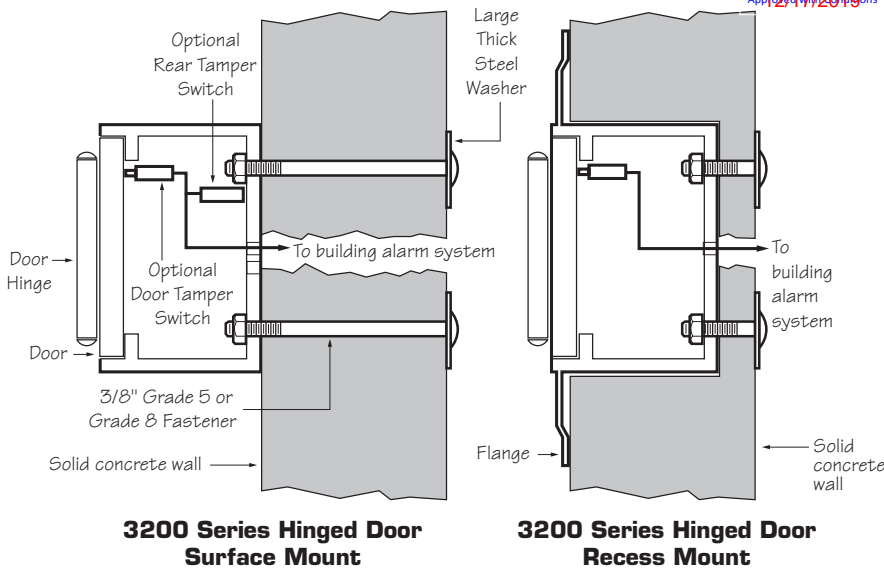
P/N: 3200 Series KNOX-BOX (mfr's cat. ID)

Mfr's Name: **KNOX COMPANY**



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**Suggested minimum mounting height
6 feet above ground**



Attention: KNOX-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 manufactures 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 3200 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-BOX mounts inside the RMK. The RMK may only be used in new concrete or masonry construction.

Installation In Cast Concrete

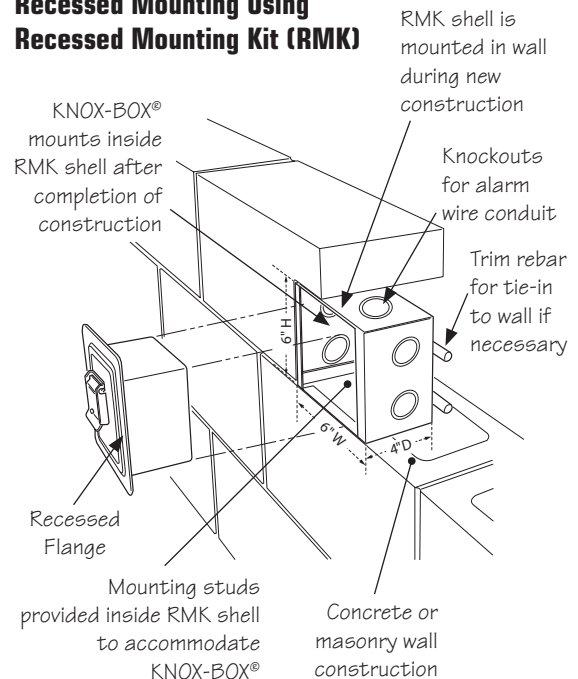
The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

Dimensions

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"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)



SMOKE ALARM

PHOTOELECTRIC

CAT. **7010** Series



(Model 7010B only) OptiPath 360™ Technology

PHOTOELECTRIC

Photoelectric technology is generally more sensitive at detecting large particles, which tend to be produced in greater amounts by smoldering fires.

LATCHING ALARM INDICATOR

Remembers which unit initiated an alarm.

OPTIPATH 360 TECHNOLOGY™

Provides 360 degrees of direct access to the smoke sensing chamber.

SINGLE BUTTON TEST/SILENCE

Silences and tests alarm with a single button.

TWO LOCKING FEATURES

Pins are provided to lock battery drawer and/or alarm to base. Perfect for apartment, dormitory or hotel applications.

Available in the following versions:

7010 AC Alarm with silence
7010B AC Alarm with silence and battery backup



BRK®

THE PROFESSIONAL STANDARD

120V AC, 60Hz Wire-in with 9V Battery Backup (7010B)

Description:

The BRK Brands, Inc. Model Numbers 7010 and 7010B are wire-in, 120V AC 60Hz single and/or multiple station photoelectric smoke alarms specifically designed for residential and institutional applications including sleeping rooms of hospitals, hotels, motels, dormitories and other multi-family dwellings as defined in standard NFPA 101. Models 7010 and 7010B comply with UL217, CSFM, NFPA 72, HUD, FHA and other agencies that model their codes after the above agencies. They meet building codes where AC and AC/DC with silence photoelectric smoke alarms are required. The alarms are interconnectable with up to 18 devices, of which 12 can be smoke alarms.

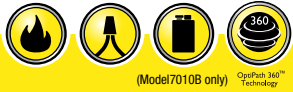
The BRK 7010 Series alarms feature a photoelectric smoke sensing chamber, an 85dB horn, a 9V battery back-up (model 7010B only) and a "silence" feature. Optipath 360 technology provides 360 degrees of direct access to the smoke sensing chamber. Alarm Latch: Easily identifies initiating alarm even after alarm condition has subsided. The "Perfect Mount" system features a gasketless base and a mounting bracket that keeps the alarm secure over a wide rotation range to allow for true alignment. This will allow fine-tuning on the positioning to compensate for out of aligned wall studs and to keep the wording level when wall mounting. Battery installation and removal can occur while the unit is mounted to the ceiling or wall via the side load battery compartment. Other Contractor Preferred features include a dust cover to keep alarm clean during construction, keyhole slots in the mounting bracket eliminate the need to remove the electrical box screws for installation. Two locking features are provided to prevent battery theft and/or theft of the unit. Connection to AC power is made with a "Quick-Connect" wiring harness.

Installation is quick, easy and cost effective.

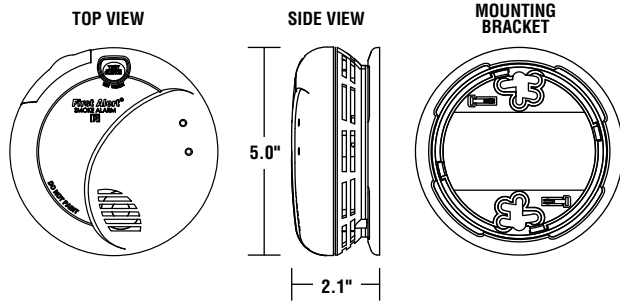


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Department
April 17, 2019

CAT. 7010 Series



(Model 7010B only) OptiPath 360° Technology



ARCHITECTURAL AND ENGINEERING SPEC

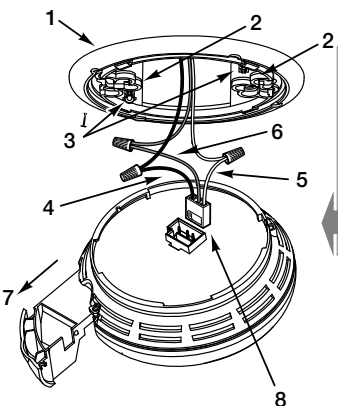
The smoke alarm shall be a BRK Model 7010B (battery backup) or 7010 (no battery backup) and shall provide at a minimum the following features and functions:

1. A photoelectric smoke sensing chamber.
2. The unit shall be capable of self restoring.
3. Fully screened sensing chamber to resist entry of small insects thereby reducing the probability of unwanted alarms.
4. Powered by 120V AC, 60Hz and have a monitored 9V battery backup model (7010B only), and a solid state piezo horn rated at 85dB at 10 ft.
5. A visual green LED power-on indicator to confirm unit is receiving power or is in alarm.
6. A full function test button should check all alarm functions by simulating a smoke condition, causing the unit to alarm.
7. Latching & silence features: Alarm Latch to easily identify initiating alarm after alarm condition has subsided. Silence feature - Temporarily silence unwanted nuisance alarms.
8. Two Locking features - tamper resistant locking pins that lock battery drawer and/or alarm to mounting bracket.
9. The unit shall be capable of operating between 40°F (4°C) and 100°F (38°C) and relative humidity between 10% and 90%.
10. The unit shall have a gasketless base for easy installation and be capable of keeping alarm secure over a wide rotation range to allow for true alarm alignment.
11. The unit shall have a plug in connector and be capable of interconnection of up to 18 alarms, 12 of which can be smoke alarms.
12. The unit shall at a minimum meet the requirements of UL217, CSFM, NFPA 72, NFPA 101, ICC

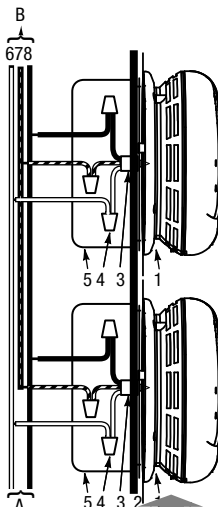
INSTALLATION OF ALARM

Installation of this smoke alarm must conform to all local electrical codes and Article 760 of the National Electrical Code (NFPA 70) and NFPA 72. Interconnected units must meet the following requirements: Total length of wire interconnecting units should be less than 1000 feet, be #18 gauge or larger and be rated at least 300V. It is recommended that all units be on the same fuse or circuit breaker. If local codes do not permit, be sure the neutral wire is common to both phases.

THE PARTS OF THIS SMOKE ALARM



1. Mounting bracket
2. Mounting Slots
3. Locking Pins
4. Hot (Black) AC Wire
5. Neutral (White) AC Wire
6. Interconnect (Orange) Wire
7. Pull-out Battery Drawer
8. Quick-Connect Plug



A. Unswitched 120VAC 60 Hz source
 B. To additional units; Maximum = 18 total (Maximum 12 Smoke Alarms)

1. Smoke Alarm
2. Ceiling or Wall
3. Power Connector
4. Wire Nut
5. Junction Box
6. Neutral Wire (White)
7. Interconnect Wire (Orange)
8. Hot Wire (Black)

TECHNICAL SPECS

Alarm Dimensions:	5.0" dia x 2.1"H
Weight:	6.7 oz (7010); 8.4 oz (7010B)
Operating Voltage:	120V AC 60Hz w/ 9V battery backup (7010B only)
Operating Current:	.05 amps (standby/alarm)
Temperature Range:	40°F (4°C) to 100°F (38°C)
Humidity Range:	10% to 90% relative humidity (RH)
Audio Alarm:	85dB at 10 feet
Test/Silence:	Electronically simulates smoke condition, causing the unit to alarm Press and hold test/silence button
Alarm Reset:	Automatic when smoke clears
Interconnections:	Up to 18 units of First Alert or BRK Smoke, CO and Heat Alarms. Maximum of 12 smoke alarms. See user's manual for details.
Smoke Sensor:	Photoelectric
Indicator Lights/Sounds:	AC Power: Constant Green LED DC Power: Intermittent Red LED (7010B only) Local Alarm: Red LED flashes rapidly Latching Alarm: Red LED flashes once per second for 3 seconds after local alarm. Pattern repeats approximately every 45 seconds. Remote Alarm: Audio alarm and Red LED out.
Listing:	Listed to UL217 Standard

SHIPPING SPECS:

Individual Carton Dimensions	5.13"L x 2.38"W x 5.13"H
Weight	0.45 lbs. (7010); 0.55 lbs. (7010B)
Cube	0.04 ft3
UPC	0 29054 11200 2 (7010) 0 29054 11201 9 (7010B)
Master Carton Dimensions	10.75"L x 7.88"W x 11.06"H
Master Pack	12
Weight	5.9 lbs. (7010) 7.1 lbs. (7010B)
Cube:	0.54 ft3
I2of5:	7010: 100 29054 11200 9 7010B: 100 29054 11201 6

Pallet Information	
Cases per Layer	22
Number of Layers:	4
Cases per Pallet:	88
Units per Pallet:	1,056
Cube:	54.0 ft3
Weight:	572 lbs. (7010) 678 lbs. (7010B)



Reviewed for Code Compliance
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 Department
 April 17, 2019



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 Company (NYSE: JAH)
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 Aurora, IL 60504-8122
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 CM3070

SMOKE & STROBE COMBO

PHOTOELECTRIC

CAT. **7010BSL**



INTEGRATED SMOKE ALARM & STROBE LIGHT

One device includes both a strobe light and photoelectric smoke alarm. Requires only one electrical box. Saves installation time.

SMART STROBE

Separate flash patterns to distinguish between smoke and carbon monoxide.

177 CANDELA XENON STROBE

Powerful 177 candela xenon strobe light provides effective visual warning to hearing impaired residents.

1 Hz FLASH RATE

60 flashes per minute rate meets ADA, ANSI 117.1, NFPA 72 and UL1971 requirements for visual signal devices.

OPTIPATH 360 TECHNOLOGY™

Provides 360 degrees of direct access to the smoke sensing chamber.

BATTERY BACKUP

Two AAA batteries provide backup for the smoke alarm during power outages. (Note: will not power the strobe light).



BRK®

THE PROFESSIONAL STANDARD

120V AC, 60Hz Wire-in with two AAA Battery Backup for Alarm

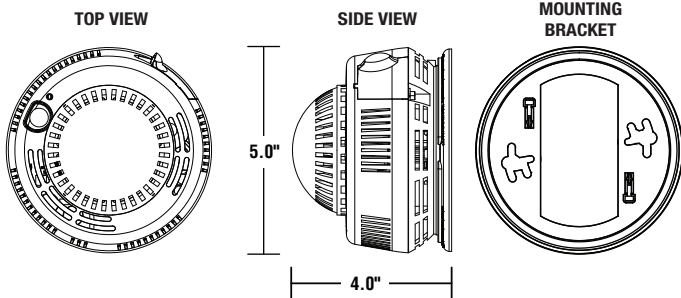
Description:

The BRK Brands, Inc. Model Number 7010BSL is a wire-in, 120V AC 60Hz single and/or multiple station photoelectric smoke alarm with integrated 177 candela strobe light specifically designed for residential and institutional applications including sleeping rooms of hospitals, hotels, motels, dormitories and other multi-family dwellings as defined in standard NFPA 101. Model 7010BSL complies with UL217, UL1971, CSFM, NFPA 72, HUD, FHA and other agencies that model their codes after the above agencies. They meet building codes where AC with battery backup, silence, photoelectric smoke alarms are required. The alarms are interconnectable with up to 18 devices, of which 12 can be smoke alarms.

The BRK 7010BSL alarms feature a photoelectric smoke sensing chamber, an integrated 177 candela strobe light, an 85dB horn and AAA battery back-up for alarm. The Strobe Light is designed to provide deaf & hard of hearing individuals with a visual warning of a fire. The Smart Strobe has separate flash patterns for smoke/heat and carbon monoxide dangers (when connected to a First Alert CO alarm). This helps a hearing impaired person better distinguish the danger present. The 177 candela Xenon strobe meets UL 1971 requirements and flashes at a rate of an average of 60 times a minute. This alarm features two latching features and two silence features. Alarm Latch: Easily identifies initiating alarm even after alarm condition has subsided. Low Battery Latch: Identifies which unit is in low battery condition by blinking the green power light. Low Battery Silence: Temporarily silence the low battery chirp for up to eight hours. Alarm Silence: Silence alarm for several minutes. Optipath 360 technology provides 360 degrees of direct access to the smoke sensing chamber. Replace battery without removing alarm from ceiling. Other Contractor preferred features include a dust cover, keyhole slots in the mounting bracket eliminate the need to remove the electrical box screws for installation, two locking features and a "Quick-Connect" wiring harness.



CAT. 7010BSL



ARCHITECTURAL AND ENGINEERING SPEC

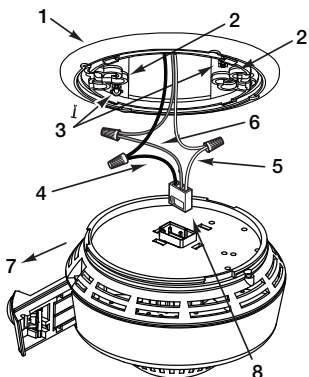
The integrated strobe light & smoke alarm shall be a BRK Model 7010BSL and shall provide at a minimum the following features and functions:

1. A photoelectric smoke sensing chamber.
2. A 177 candela Xenon strobe light. The Smart Strobe shall have separate flash patterns to distinguish between smoke/heat and carbon monoxide dangers.
3. Fully screened sensing chamber to resist entry of small insects thereby reducing the probability of unwanted alarms.
4. Powered by 120V AC, 60Hz and have a monitored two AAA battery backup for alarm and a solid state piezo horn rated at 85dB at 10 ft and be capable of self restoring.
5. A visual green LED power-on indicator to confirm unit is receiving power or is in alarm.
6. A full function test button should check all alarm functions by simulating a smoke condition, causing the unit to alarm.
7. Two Latching features: Alarm Latch to easily identify initiating alarm after alarm condition has subsided. Low battery latch: to visually identify which unit is in low battery condition. Two Silence Features: Alarm Silence to temporarily silence nuisance alarms. Low Battery Silence to silence low battery chirp for up to 8 hours.
8. Two Locking features - tamper resistant locking pins that lock battery drawer and/or alarm to mounting bracket.
9. The unit shall be capable of operating between 40°F (4°C) and 100°F (38°C) and relative humidity between 10% and 90%.
10. The unit shall have a plug in connector and be capable of interconnection of up to 18 alarms, 12 of which can be smoke alarms.
11. The unit shall at a minimum meet the requirements of UL217, UL1971, ADA, ANSI 117.1, CSFM, NFPA 72, NFPA 101 and the ICC.

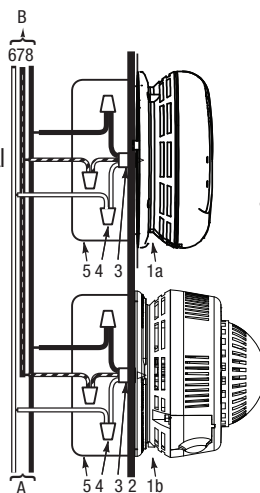
INSTALLATION OF ALARM

Installation of this smoke alarm must conform to all local electrical codes and Article 760 of the National Electrical Code (NFPA 70) and NFPA 72. Interconnected units must meet the following requirements: Total length of wire interconnecting units should be less than 1000 feet, be #18 gauge or larger and be rated at least 300V. It is recommended that all units be on the same fuse or circuit breaker. If local codes do not permit, be sure the neutral wire is common to both phases.

THE PARTS OF THIS SMOKE ALARM



1. Mounting bracket
2. Mounting Slots
3. Locking Pins
4. Hot (Black) AC Wire
5. Neutral (White) AC Wire
6. Interconnect (Orange) Wire
7. Pull-out Battery Drawer
8. Quick-Connect Plug



- A. Unswitched 120VAC 60 Hz source
- B. To additional units; Maximum = 18 total (Maximum 12 Smoke Alarms)
- 1a. Smoke Alarm
- 1b. Smoke/Strobe Combo
2. Ceiling or Wall
3. Power Connector
4. Wire Nut
5. Electrical Box
6. Neutral Wire (White)
7. Interconnect Wire (Orange)
8. Hot Wire (Black)

UL1971 Signaling Devices Light Dispersion Chart

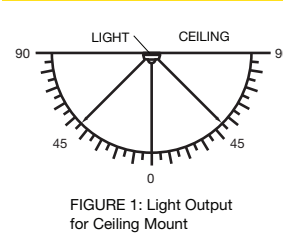
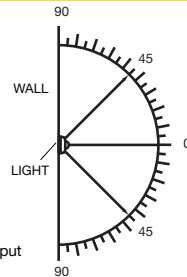


FIGURE 1: Light Output for Ceiling Mount

Angle (In Degrees)	Percent Light Intensity
0	100
5-25	90
30-45	75
50	55
55	45
60	40
65	35
70	35
75	30
80	30
85	25
90	25

FIGURE 2: Light Output for Wall Mount



TECHNICAL SPECS

Alarm Dimensions:	5.1" dia x 4.0"H
Weight:	10.9 oz
Operating Voltage:	120V AC 60Hz w/ two AAA battery backup for alarm Voltage Range: 108V AC to 132V AC
Operating Current:	0.05/0.60 amps (standby/alarm)
Temperature Range:	40°F (4°C) to 100°F (38°C)
Humidity Range:	10% to 90% relative humidity (RH)
Audio Alarm:	85dB at 10 feet
Test/Silence:	Electronically simulates smoke condition, causing the unit to alarm. Press and hold test/silence button
Alarm Reset:	Automatic when smoke clears
Interconnections:	Up to 18 units of First Alert or BRK Smoke, CO and Heat Alarms. Maximum of 12 smoke alarms. See user's manual for details.
Smoke Sensor:	Photoelectric
Strobe Light:	177 candela Xenon strobe
Flash Rate:	1 Hz.
Smoke Alarm:	Constant approx. 1 flash per second.
CO Alarm:	Intermittent approx. 1 flash per second for four flashes, then 5 seconds off. Pattern is repeated.
Indicator Lights/Sounds:	
AC Power:	Constant Green LED
DC Power:	Intermittent Red LED
Local Alarm:	Red LED flashes rapidly, steady flashing strobe
Remote Alarm:	Red LED out.
Listing:	Listed to UL217 & UL1971 Standards

SHIPPING SPECS

Individual Carton Dimensions	5.25"L x 4.13"W x 5.44"H
Weight	0.97 lbs.
Cube	0.07 ft ³
UPC	0 29054 12104 2

Master Carton Dimensions	12.63"L x 5.81"W x 5.94"H
Master Pack	3
Weight	3.24 lbs.
Cube:	0.25 ft ³
I2of5:	300 29054 12104 3

Pallet Information	
Cases per Layer	24
Number of Layers:	7
Cases per Pallet:	168
Units per Pallet:	504
Cube:	47.5 ft ³
Weight:	609 lbs.



Reviewed for Code Compliance
Permitting and Inspections
Department
April 24, 2019

BRK
THE PROFESSIONAL STANDARD
brkelectronics.com

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BRK is a registered trademark of BRK Brands, Inc.
CM3032

CARBON MONOXIDE ALARM

CAT. **CO5120BN**



INTELLIGENT SENSING TECHNOLOGY™

Microprocessor controlled - reduces the number of non-emergency or unwanted alarms.

LATCHING ALARM INDICATION

Microprocessor controlled - Automatically identifies initiating alarm, even after alarm condition has subsided.

SMART INTERCONNECT

Interconnectable to both BRK Smoke and CO Alarms

TWO SILENCE FEATURES

Can silence the low battery chirp for up to eight hours or temporarily silence an unwanted alarm.



BRK ELECTRONICS®

120V AC/DC, 60Hz Wire-in with 9V Battery Back-up

Description:

The BRK Electronics® Cat. No. CO5120BN is a wire-in, 120 VAC/DC, 60Hz with 9V battery backup single and/or multiple station carbon monoxide alarm specifically designed for residential and institutional applications including sleeping rooms of hospitals, hotels, motels, dormitories and other multi-family dwellings. Model CO5120BN complies with UL2034, NFPA720, HUD, FHA and other agencies that model their codes after the above agencies. It meets building codes where AC/DC carbon monoxide alarms are required.

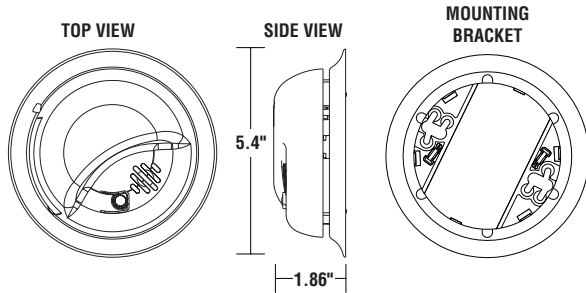
BRK Electronics® CO5120BN features a permanently installed CO sensor, Intelligent Sensing Technology™ for fewer unwanted alarms, an 85dB horn, a 9V battery backup power supply, an easy access side-load battery drawer, two silence features: unwanted alarms and low battery silence and is interconnectable with up to 18 devices including both BRK Smoke and CO Alarms. The "Smart Interconnect" feature allows the unit to be interconnected to BRK smoke alarms. If there is a smoke event, the CO5120BN horn pattern will emit the same sound as a smoke alarm, that is 3 beeps, pause, 3 beeps, pause. If there is a CO event, the interconnected CO alarms will sound with their normal horn pattern. The unit features "Latching Alarm Indication". When interconnected in series, the unit that triggered the alarm rapidly flashes its red LED indicator. After the alarm condition subsides, the initiating unit will store in memory or "latch" the information and begin to flash once every 5 seconds. The red LED indicators remain off on all other interconnected units. The unit mounts to any standard 4" junction box. Keyhole slots in the mounting bracket eliminate the need to remove the junction box screws for installation. Battery installation and removal can occur while the unit is mounted to the ceiling or wall via the side load battery compartment. Two locking features are provided to discourage battery theft and/or theft of the unit. Connection to AC power is made with a "Quick-Connect" wiring harness. Installation is quick, easy and cost effective.



BSI Registered Firm—Certificate #FM21268



120V AC/DC, 60Hz Wire-in with Battery Back-up



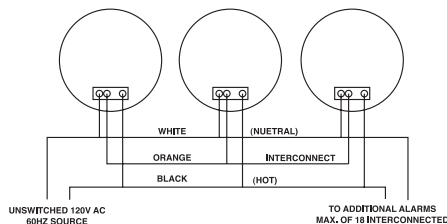
ARCHITECTURAL AND ENGINEERING SPECIFICATION:

The carbon monoxide alarm shall be BRK Electronics Model CO5120BN and shall provide at a minimum the following features and functions:

1. A permanently installed carbon monoxide sensor.
2. Powered by 120V AC, 60Hz and have a monitored 9V battery backup. In battery backup mode, the battery must last for 8 hours minimum in standby, 12 hours minimum in alarm, and 7 days trouble.
3. A visual LED (red) power-on indicator to confirm unit is receiving power or to confirm unit has switched to battery backup mode.
4. The sensor is adjusted not to detect CO levels below 30 PPM and will not alarm when exposed to constant levels of 30 PPM for 30 days. It will alarm at the following levels under 30% to 70% relative humidity: 400 PPM CO between 4 and 15 minutes, 150 PPM CO between 10 and 50 minutes and 70 PPM CO between 60 and 240 minutes.
5. A test/silence button to check all detector functions and to silence any unwanted alarms. In addition, the unit shall have a low battery silence feature to quiet the low battery chirps for up to 8 hours.
6. The unit shall perform self diagnostic tests every second and issue an audible malfunction warning (three rapid chirps) if the unit malfunctions.
7. A solid state piezo horn rated at 85dB at 10 ft. that provides a repeating horn pattern: 4 beeps, pause, 4 beeps, pause.
8. A "Smart Interconnect" feature allows the unit to be interconnected to BRK smoke alarms. If there is a smoke event, the CO5120BN horn pattern shall emit the same sound as the smoke alarm, that is 3 beeps, pause, 3 beeps, pause. If there is a CO event, the interconnected CO alarms shall sound their normal horn pattern.
9. The unit shall be capable of operating between 40°F (4°C) and 100°F (38°C) and relative humidity between 10% and 90%.
10. The unit shall center mount to any standard electrical junction box up to 4" size without screw removal and shall be listed for wall or ceiling mounting.
11. The unit shall have an optional locking mechanism to discourage theft of battery and/or theft of the unit.
12. The unit shall have a plug in connector and be capable of interconnection of up to 18 alarms.
13. The unit shall at a minimum meet the requirements of UL2034, NFPA 720, ICBO, BOCA, SBCCI, CABO

INSTALLATION OF CO ALARM

Installation of this CO alarm must conform to all local electrical codes and Article 760 of the National Electrical Code (NFPA 70) and NFPA 72. Interconnected units must meet the following requirements: Total length of wire interconnecting units should be less than 1000 feet, be #18 gauge or larger and be rated at least 300V. It is recommended that all units be on the same fuse or circuit breaker. If local codes do not permit, be sure the neutral wire is common to both phases. Only those BRK Electronics catalog numbers listed in the "Technical Specs" section under "Interconnection" may be connected to these CO alarms.



TECHNICAL SPECS:

Alarm Dimensions	5.40" dia x 1.86"H
Weight	6.4 oz
Operating Voltage	120V AC 60Hz w/ 9V battery backup
Operating Current	0.09 amps (standby/alarm)
Temperature Range	40°F (4°C) to 100°F (38°C)
Humidity Range	10% to 90% relative humidity (RH)
Audio Alarm	85dB at 10 feet
Test Button	Electronically simulates carbon monoxide condition, causing the unit to alarm.
Alarm Reset	Automatic when CO clears. Press test/silence button to reset manually.
Interconnections	18 total with CO Alarms: CO5120PDBN, CO5120BN. Smoke Alarms: SC6120B, 4120, 4120B, 4120SB, 4120AB, 4120SAB, 2002RAC, 100S, 5919, 5919TH. Heat Alarms: HD6135F, HD6135FB
Sensor	Metal Oxide
Indicator LED	AC Power: Constant Red LED DC Power: Intermittent Red LED Local Alarm: Red LED flashes rapidly, audio alarm Remote Alarm: Red LED out, audio alarm Latching Alarm: Red LED flashes every 5 seconds after local alarm stops, audio off
Listing	UL 2034

SHIPPING SPECS:

Individual Carton Dimensions	5.44"L x 2.00"W x 5.63"H
Weight	.55 lbs.
Cube	0.04 ft ³
UPC	0 29054 856173
Master Carton Dimensions	13.00"L X 5.93"W X 11.81"H
Master Pack	12
Weight	6.80 lbs.
Cube	.53 ft ³
UPC	300 29054 85617 4

Pallet Information	
Cases per layer	25
Number of layers	3
Cases per pallet	75
Cube	49.72 ft ³
Weight	566 lbs. (includes pallet)
Manufactured By:	BRK Brands, Inc 3901 Liberty Street Road Aurora, IL 60504-8122
Distributed By:	



STROBE LIGHT

HEARING IMPAIRED

CAT. **SL177**



SMART STROBE

Separate flash patterns to distinguish between smoke and carbon monoxide.

177 CANDELA XENON STROBE

Powerful 177 candela xenon strobe light provides effective visual warning to hearing impaired residents.

1 Hz FLASH RATE

60 flashes per minute rate meets ADA, ANSI 117.1, NFPA 72 and UL1971 requirements for visual signal devices.



BRK®

THE PROFESSIONAL STANDARD

120V AC, 60Hz Wire-in

Description:

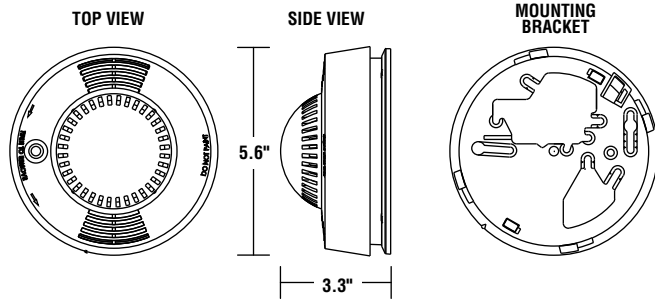
BRK Model SL177 is an ADA hearing impaired strobe light specifically designed for residential and institutional applications including sleeping rooms of hospitals, hotels, motels, dormitories, and other multifamily dwellings as defined in standard NFPA 101. Model SL177 has been fully tested and complies with Americans with Disabilities Act (ADA), Underwriters Laboratories, Inc. Signaling Devices for the Hearing Impaired UL1971, ANSI 117.1, CSFM, NFPA 72, and NFPA 101 and with model building codes published by the ICC.

BRK Model SL177 is a state of the art Strobe Light designed to provide hearing impaired individuals with a visual warning of a fire or a carbon monoxide danger when used with smoke, heat or carbon monoxide alarms. The Smart Strobe has separate flash patterns to distinguish between smoke/heat and carbon monoxide dangers. These different patterns are to help a hearing impaired person better distinguish the danger present. The 177 candela Xenon strobe meets UL 1971 requirements and flashes at a rate of an average of 60 times a minute. The SL177 operates on 120V AC and features a green LED that signals the unit is receiving power. Interconnectable with up to 18 devices, of which 12 can be smoke alarms. Model SL177 was designed with quick and easy installation in mind. Designed to cover most drywall cut-outs, the specially designed mounting bracket mounts on any electrical box up to 4" octagonal and does not require screw removal. Connection to AC power is made with a "Quick-Connect" wiring harness.



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CAT. SL177



ARCHITECTURAL AND ENGINEERING SPEC

The strobe light shall be a BRK Model SL177 and shall provide at a minimum the following features and functions:

1. A 177 candela Xenon strobe.
2. The strobe light shall be powered by 120V AC.
3. The Smart Strobe shall have separate flash patterns to distinguish between smoke/heat and carbon monoxide dangers.
4. A visual LED (green) power-on indicator to confirm the unit is receiving AC power.
5. The unit shall be capable of operating between 40°F and 100°F (4-38°C) and relative humidity of 10% and 90%.
6. The unit shall mount to any standard electrical box up to 4" octagonal without screw removal and shall be listed for ceiling or wall mounting.
7. The unit shall have a plug-in connector and be capable of interconnection up to 18 multiple station alarms per NFPA 72.
8. The unit shall at a minimum meet the requirements of UL1971, ADA, ANSI 117.1, CSFM, NFPA 72, NFPA 101 and the ICC.

UL1971 Signaling Devices Light Dispersion Chart

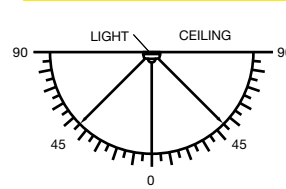


FIGURE 1: Light Output for Ceiling Mount

Angle (In Degrees)	Percent Light Intensity
0	100
5-25	90
30-45	75
50	55
55	45
60	40
65	35
70	35
75	30
80	30
85	25
90	25

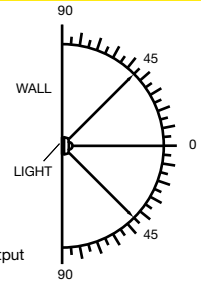


FIGURE 2: Light Output for Wall Mount

TECHNICAL SPECS

Alarm Dimensions:	5.6" dia x 3.3"H
Weight:	9.9 oz
Operating Voltage:	120V AC 60Hz
Operating Current:	.05 amps (standby/alarm)
Temperature Range:	40°F (4°C) to 100°F (38°C)
Humidity Range:	10% to 90% relative humidity (RH)
Test:	To test this strobe light you must activate the test button of each inter-connected, smoke, CO or heat alarm.
Interconnections:	Up to 18 units of First Alert or BRK Smoke, CO and Heat Alarms. Maximum of 12 smoke alarms. See user's manual for details.
Indicator Lights:	
AC Power:	Constant Green LED
Listing:	Listed to UL1971 Standard

SHIPPING SPECS:

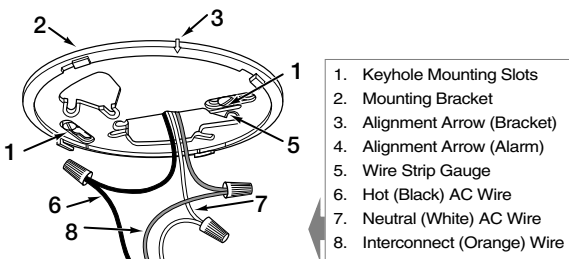
Individual Carton Dimensions	5.75"L x 3.75"W x 6.00"H
Weight	0.81 lbs.
Cube	0.08 ft3
UPC	0 29054 00270 9
Master Carton Dimensions	17.67"L x 7.94"W x 12.75"H
Master Pack	12
Weight	12.7 lbs
Cube:	1.04 ft3
l2of5:	100 29054 00270 6

Pallet Information	
Cases per Layer	12
Number of Layers:	3
Cases per Pallet:	36
Units per Pallet:	432
Cube:	42.2 ft3
Weight:	524 lbs.

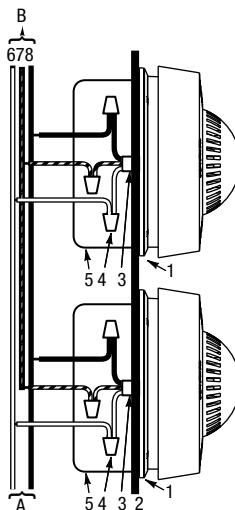
INSTALLATION OF ALARM

Installation of this strobe light must conform to all local electrical codes and Article 760 of the National Electrical Code (NFPA 70) and NFPA 72. Interconnected units must meet the following requirements: Total length of wire interconnecting units should be less than 1000 feet, be #18 gauge or larger and be rated at least 300V. It is recommended that all units be on the same fuse or circuit breaker. If local codes do not permit, be sure the neutral wire is common to both phases.

THE PARTS OF THIS STROBE LIGHT



1. Keyhole Mounting Slots
2. Mounting Bracket
3. Alignment Arrow (Bracket)
4. Alignment Arrow (Alarm)
5. Wire Strip Gauge
6. Hot (Black) AC Wire
7. Neutral (White) AC Wire
8. Interconnect (Orange) Wire



A. Unswitched 120VAC 60 Hz source
B. To additional units; Maximum = 18 total (Maximum 12 Smoke Alarms)

1. Strobe Light
2. Ceiling or Wall
3. Power Connector
4. Wire Nut
5. Junction Box
6. Neutral Wire (White)
7. Interconnect Wire (Orange)
8. Hot Wire (Black)



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April 17, 2019

BRK[®]
THE PROFESSIONAL STANDARD
brkelectronics.com

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Aurora, IL 60504-8122
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BRK is a registered trademark of BRK Brands, Inc.
CM2956



7788F/7744F Series

Wireless Fire Alarm Communicators for AES-IntelliNet



Model 7788F



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 7788F/7744F-ULP 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

Advanced Wireless 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.



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.



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7788F/7744F Series



Technical Specifications

7788F/7744F Series Subscribers

Dimensions

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

Weight

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

Radio Frequency

- 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)

Backup Battery

- 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

UL 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 Button

- 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-7794 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

Size

- 2.8 x 5.0 inches (7.1cm x 12.7cm)

Power Requirements

- 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

Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com

Web www.aes-intellinet.com

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

Linear ACCESS™

AE-100

Telephone Entry System

**125 TENANT CAPACITY.
INFINITE POSSIBILITIES.**

This is one of those cases where less is more. A lot more. Linear's AE-100 is a versatile telephone entry system for smaller commercial applications. But its feature set is more advanced and comprehensive than systems three times its size.

- 125 directory or personal entry codes are standard; no costly, ongoing memory upgrades
- Supports up to four AE-100s on shared telephone line with "single location update"
- Local programming with system keypad; remote programming with touchtone telephone
- Easy-to-read LCD display: back-lit, 2-lines, 16 characters per line, 0.3" height
- Numeric keypad with user-friendly built-in help, call and directory scrolling buttons; keypad lit with long-life white LEDs
- Load shed prevents battery damage under low voltage conditions
- ADA compliant front panel TTY Jack for hearing impaired and voice greetings in 4 languages: English, Spanish, French Canadian, and Portuguese
- Optional, field upgradable color camera
- Brushed stainless steel front panel
- Available in flush mount or surface mount for indoor and outdoor applications
- Postal lock ready
- Listed to UL294 and Canada C22.2 No. 205-M1983 and complies with FCC part 15 for computing device and FCC/Canada for telephone devices



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12/17/2019

Linear®

AE-100 GENERAL SPECIFICATIONS



PROGRAMMING

Telephone Entry: Over 30 programmable parameters, including directory code length, display messages, and languages

OUTPUTS

Access Relay: 10-amp AC/7-amp DC @30 Volts AC/DC ratings; normally open and normally closed contacts

DISPLAY

Front Panel: LCD technology, 2 lines by 16 characters, 0.3" height

Keypad Lighting: Illuminated LED lighting for the front panel keypad

ELECTRICAL

Input: 16 VAC from supplied plug-in transformer

Current Consumption: <200 mA idle, <500 mA operating

Back-up Battery: Built-in charger with up to 7 A/H battery capacity

Dialing: DTMF

ENVIRONMENTAL

Temperature: -22° to +149°F (-30° to +65°C)

Humidity: 5% to 95% non-condensing

DIMENSIONS

Case: 9-3/4" W x 11-3/4" H x 3-1/2" D

(248 x 298 x 89 mm)

Optional Trim Ring Mounting Hole Size: 10" W x 12" H
(254 x 305 mm)

MEMORY

125 directory or personal entry codes; all data is stored in non-volatile memory

CONNECTIONS

Wire connections via removable terminal blocks

ENCLOSURE

16-gauge powder coated steel cabinet; 22-gauge brushed stainless steel front panel

STANDARD EQUIPMENT

AE-100 Telephone Entry System: Integral keypad, display, speakers, and microphone; surface or flush mounting, indoors or outdoors

OPTIONAL EQUIPMENT

Trim Ring: For flush/recess mounting, Linear Model TR-100

Color Camera: Linear Model CCM-1

Battery Backup: Linear Model 12VGB

Linear®

Linear LLC

Suite 150, 1950 Camino Vida Roble
Carlsbad, CA 92008-6517

760.438.7000 800.421.1587 Fax 760.931.1340

www.linearcorp.com



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NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROPS												
40 Free Street Mixed Use Building												
Portland, Maine												
PANEL	CIRCUIT	WIRE GAUGE	LENGTH	CURRENT DRAW	VOLTAGE DROP	VOLTAGE LOSS	END VOLTAGE @ 24.0VDC	END VOLTAGE @ 20.4VDC	CIRCUIT LOAD			
FCPS #1	NAC 1	14	315 FT	1.326A	2.11 VDC	8.79%	21.89 VDC	18.29 VDC	44%			
FCPS #1	NAC 2	14	440 FT	1.239A	2.75 VDC	11.47%	21.25 VDC	17.65 VDC	41%			
FCPS #1	NAC 3	14	380 FT	1.329A	2.55 VDC	10.63%	21.45 VDC	17.85 VDC	44%			
FCPS #1	NAC 4	14	370 FT	0.961A	1.8 VDC	7.48%	22.2 VDC	18.6 VDC	32%			
FCPS #2: 4.855A/8A Spare Capacity: 39%												
FCPS #2	NAC 1	14	343 FT	0.657A	1.14 VDC	4.74%	22.86 VDC	19.26 VDC	22%			
FCPS #2	NAC 2	14	360 FT	0.674A	1.23 VDC	5.11%	22.77 VDC	19.17 VDC	22%			
FCPS #2	NAC 3	14	330 FT	0.657A	1.1 VDC	4.56%	22.9 VDC	19.3 VDC	22%			
FCPS #2	NAC 4	14	325 FT	0.812A	1.33 VDC	5.55%	22.67 VDC	19.07 VDC	27%			
FCPS #2: 2.8A/8A Spare Capacity: 65%												
FCPS #3	NAC 1	14	375 FT	0.674A	1.28 VDC	5.32%	22.72 VDC	19.12 VDC	22%			
FCPS #3	NAC 2	14	345 FT	0.657A	1.14 VDC	4.77%	22.86 VDC	19.26 VDC	22%			
FCPS #3	NAC 3	14	345 FT	0.675A	1.18 VDC	4.90%	22.82 VDC	19.22 VDC	23%			
FCPS #3	NAC 4	14	340 FT	0.812A	1.39 VDC	5.81%	22.61 VDC	19.01 VDC	27%			
FCPS #3: 2.818A/8A Spare Capacity: 65%												
FCPS #4	NAC 1	14	390 FT	0.674A	1.33 VDC	5.53%	22.67 VDC	19.07 VDC	22%			
FCPS #4	NAC 2	14	360 FT	0.657A	1.19 VDC	4.98%	22.81 VDC	19.21 VDC	22%			
FCPS #4	NAC 3	14	350 FT	0.795A	1.41 VDC	5.86%	22.59 VDC	18.99 VDC	27%			
FCPS #4	NAC 4	14	365 FT	0.64A	1.18 VDC	4.92%	22.82 VDC	19.22 VDC	21%			
FCPS #4: 2.766A/8A Spare Capacity: 65%												
FCPS #4	NAC 1	14	380 FT	0.64A	1.23 VDC	5.12%	22.77 VDC	19.17 VDC	21%			
FCPS #4: 0.64A/8A Spare Capacity: 92%												
Calculated @ Maximum Distance/Current												





System Power Requirements

Notifier NFS-320 Fire Alarm Control Panel A

Protected Premises: <u>Mixed Use Building</u>	Date: <u>11/8/2019</u>
Address: <u>40 Free Street</u>	
City: <u>Portland</u> State: <u>Maine</u>	Zip: <u>04101</u>
Prepared By: <u>Norris Inc.</u>	Phone: <u>1-800-370-3473</u>
Address: <u>2257 Westbroadway</u>	Email: jbridges@norrisinc.com
City: <u>South Portland</u> State: <u>Maine</u>	Zip: <u>04106</u>

AC Branch Current Requirements 5.00 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.83 Amps

Current load on the primary power supply during non-alarm conditions.

Primary Alarm Load 1.24 Amps

Current load on the primary power supply during alarm conditions.

Secondary Load Requirements 19.35 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.668 A	x	Required Standby Time	
		24 hours	16.04
Secondary Alarm Load 1.076 A	x	Required Alarm Time (hours)	
		0.084 hours	0.09
Total Secondary Load			16.13
Derating factor			x 1.2
Secondary Load Requirements (Amp Hours)			19.35 AH

Battery Selection 26 Amp Hours

Select batteries from the list below.

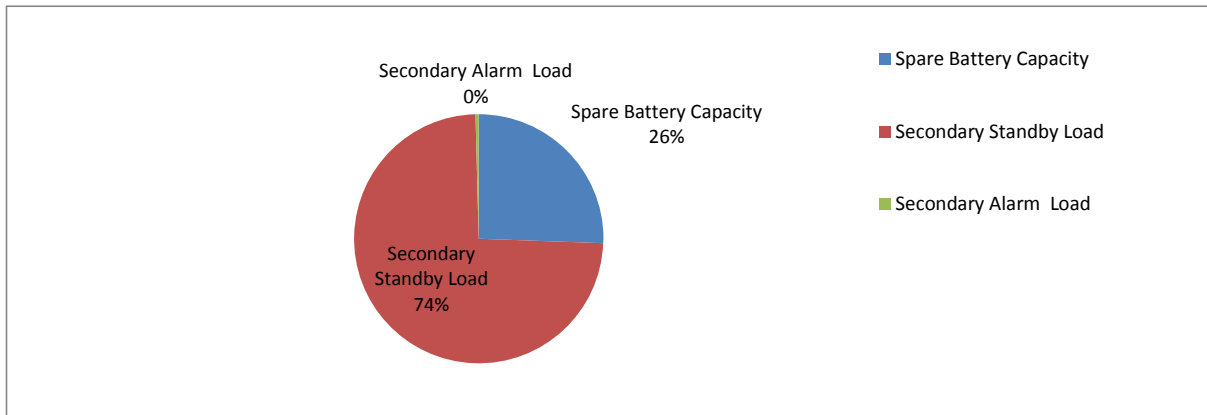
26 AH BAT-12260 Battery (12 volt)

- Two Four (two 12VDC sets in parallel)



Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (26AH) are within the charger range of this power supply (18-200AH).

Spare Battery Capacity	6.65	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	19.24	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.11	Secondary Alarm Load (AH) * Derating Factor



System Power Requirements

FCPS-24s8 Power Supply #1

Protected Premises: <u>Mixed Use Building</u>	Date: <u>11/8/2019</u>
Address: <u>40 Free Street</u>	
City: <u>Portland</u>	State: <u>Maine</u> Zip: <u>04101</u>
Prepared By: <u>Norris Inc.</u>	Phone: <u>1-800-370-3473</u>
Address: <u>2257 West Broadway</u>	Email: jbridges@norrisinc.com
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

AC Branch Current Requirements 3.20 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.09 Amps

Current load on the primary power supply during **non-alarm** conditions.

Primary Alarm Load 5.00 Amps

Current load on the primary power supply during **alarm** conditions.

Secondary Load Requirements 2.38 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.065 A	x	Required Standby Time	
		24 hours	1.56
Secondary Alarm Load 5.000 A	x	Required Alarm Time (hours)	
		0.084 hours	0.42
Total Secondary Load			1.98
Derating factor			x 1.2
Secondary Load Requirements			2.38

AH

Battery Selection 7 Amp Hours

Select batteries from the list below.

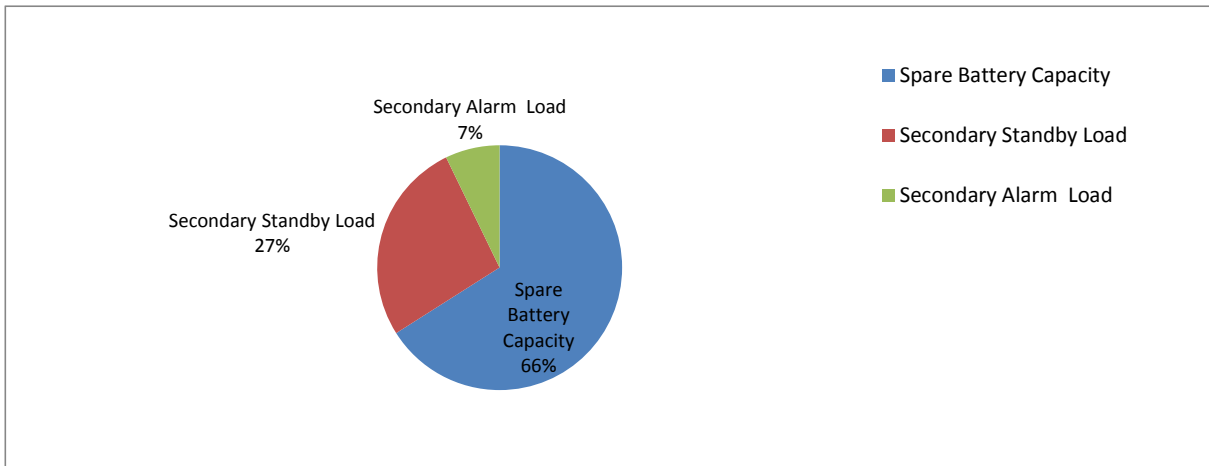
7 AH BAT-1270 Battery (12 volt)

- Two
 Four (two 12VDC sets in parallel)



Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (7AH) are within the charger range of this power supply (7-18AH).

Spare Battery Capacity	4.62	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.50	Secondary Alarm Load (AH) * Derating Factor



System Power Requirements

FCPS-24s8 Power Supply #2

Protected Premises: <u>Mixed Use Building</u>	Date: <u>11/8/2019</u>
Address: <u>40 Free Street</u>	
City: <u>Portland</u> State: <u>Maine</u>	Zip: <u>04101</u>
Prepared By: <u>Norris Inc.</u>	Phone: <u>1-800-370-3473</u>
Address: <u>2257 West Broadway</u>	Email: jbridges@norrisinc.com
City: <u>South Portland</u> State: <u>Maine</u>	Zip: <u>04106</u>

AC Branch Current Requirements 3.20 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.09 Amps

Current load on the primary power supply during **non-alarm** conditions.

Primary Alarm Load 2.95 Amps

Current load on the primary power supply during **alarm** conditions.

Secondary Load Requirements 2.17 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.065 A	x	Required Standby Time	
		24 hours	1.56
Secondary Alarm Load 2.945 A	x	Required Alarm Time (hours)	
		0.084 hours	0.25
Total Secondary Load			1.81
Derating factor			x 1.2
Secondary Load Requirements			2.17

AH

Battery Selection 7 Amp Hours

Select batteries from the list below.

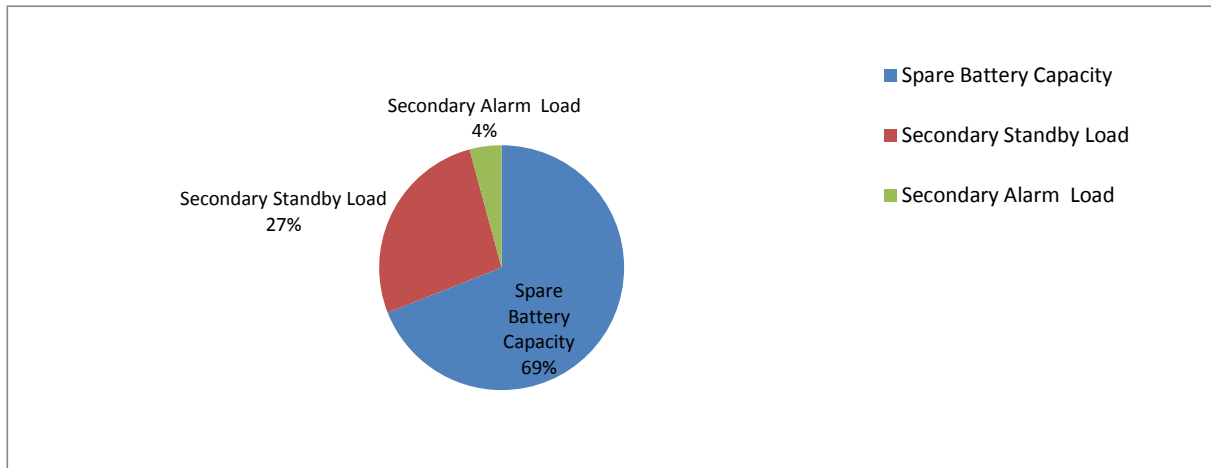
7 AH BAT-1270 Battery (12 volt)

- Two Four (two 12VDC sets in parallel)



Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (7AH) are within the charger range of this power supply (7-18AH).

Spare Battery Capacity	4.83	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.30	Secondary Alarm Load (AH) * Derating Factor



System Power Requirements

FCPS-24s8 Power Supply #3

Protected Premises: <u>Mixed Use Building</u>	Date: <u>11/8/2019</u>
Address: <u>40 Free Street</u>	
City: <u>Portland</u>	State: <u>Maine</u> Zip: <u>04101</u>
Prepared By: <u>Norris Inc.</u>	Phone: <u>1-800-370-3473</u>
Address: <u>2257 West Broadway</u>	Email: jbridges@norrisinc.com
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

AC Branch Current Requirements 3.20 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.09 Amps

Current load on the primary power supply during non-alarm conditions.

Primary Alarm Load 2.96 Amps

Current load on the primary power supply during alarm conditions.

Secondary Load Requirements 2.17 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.065 A	x	Required Standby Time	
		24 hours	1.56
Secondary Alarm Load 2.963 A	x	Required Alarm Time (hours)	
		0.084 hours	0.25
Total Secondary Load			1.81
Derating factor			x 1.2
Secondary Load Requirements			2.17

AH

Battery Selection 7 Amp Hours

Select batteries from the list below.

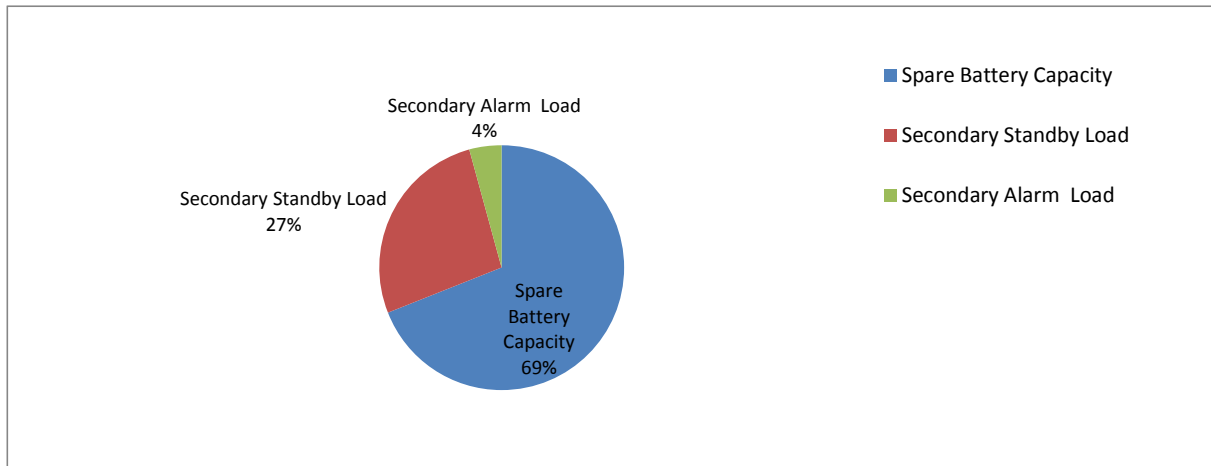
7 AH BAT-1270 Battery (12 volt)

- Two Four (two 12VDC sets in parallel)



Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (7AH) are within the charger range of this power supply (7-18AH).

Spare Battery Capacity	4.83	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.30	Secondary Alarm Load (AH) * Derating Factor



System Power Requirements

FCPS-24s8 Power Supply #4

Protected Premises: <u>Mixed Use Building</u>	Date: <u>11/8/2019</u>
Address: <u>40 Free Street</u>	
City: <u>Portland</u> State: <u>Maine</u>	Zip: <u>04101</u>
Prepared By: <u>Norris Inc.</u>	Phone: <u>1-800-370-3473</u>
Address: <u>2257 West Broadway</u>	Email: jbridges@norrisinc.com
City: <u>South Portland</u> State: <u>Maine</u>	Zip: <u>04106</u>

AC Branch Current Requirements 3.20 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.09 Amps

Current load on the primary power supply during **non-alarm** conditions.

Primary Alarm Load 2.91 Amps

Current load on the primary power supply during **alarm** conditions.

Secondary Load Requirements 2.17 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.065 A	x	Required Standby Time	
		24 hours	1.56
Secondary Alarm Load 2.911 A	x	Required Alarm Time (hours)	
		0.084 hours	0.24
Total Secondary Load			1.80
Derating factor			x 1.2
Secondary Load Requirements			2.17

AH

Battery Selection 7 Amp Hours

Select batteries from the list below.

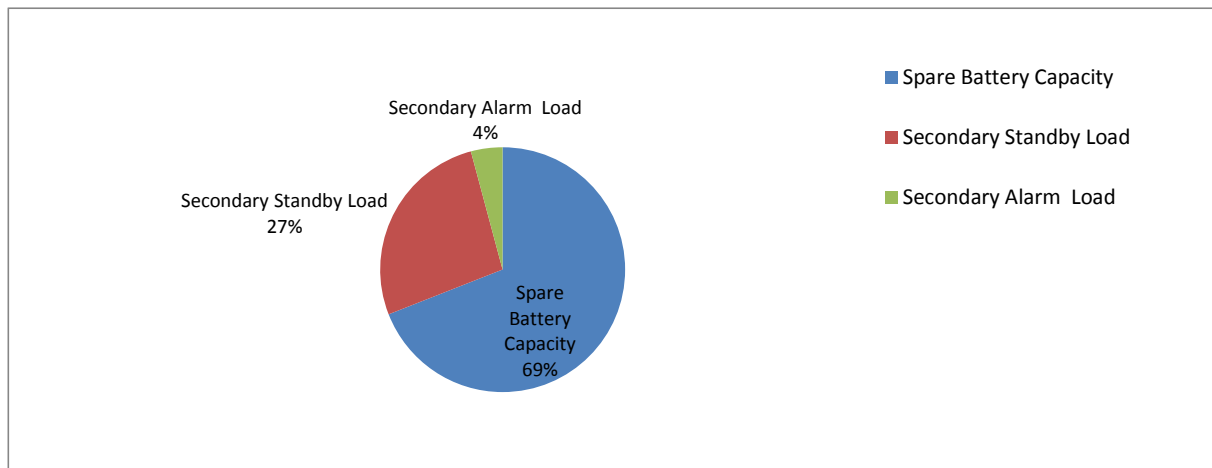
7 AH BAT-1270 Battery (12 volt)

- Two
 Four (two 12VDC sets in parallel)



Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (7AH) are within the charger range of this power supply (7-18AH).

Spare Battery Capacity	4.83	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.29	Secondary Alarm Load (AH) * Derating Factor



System Power Requirements

FCPS-24s8 Power Supply #5

Protected Premises: <u>Mixed Use Building</u>	Date: <u>11/8/2019</u>
Address: <u>40 Free Street</u>	
City: <u>Portland</u> State: <u>Maine</u>	Zip: <u>04101</u>
Prepared By: <u>Norris Inc.</u>	Phone: <u>1-800-370-3473</u>
Address: <u>2257 West Broadway</u>	Email: jbridges@norrisinc.com
City: <u>South Portland</u> State: <u>Maine</u>	Zip: <u>04106</u>

AC Branch Current Requirements 3.20 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.09 Amps

Current load on the primary power supply during **non-alarm** conditions.

Primary Alarm Load 0.79 Amps

Current load on the primary power supply during **alarm** conditions.

Secondary Load Requirements 1.95 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.065 A	x	Required Standby Time	
		24 hours	1.56
Secondary Alarm Load 0.785 A	x	Required Alarm Time (hours)	
		0.084 hours	0.07
Total Secondary Load			1.63
Derating factor			x 1.2
Secondary Load Requirements			1.95

AH

Battery Selection 7 Amp Hours

Select batteries from the list below.

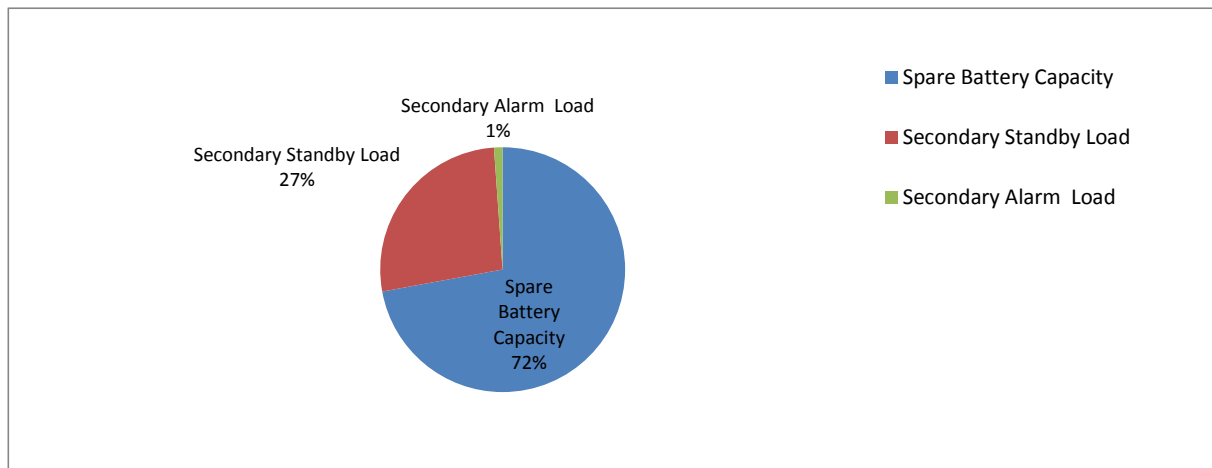
7 AH BAT-1270 Battery (12 volt)

- Two Four (two 12VDC sets in parallel)



Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

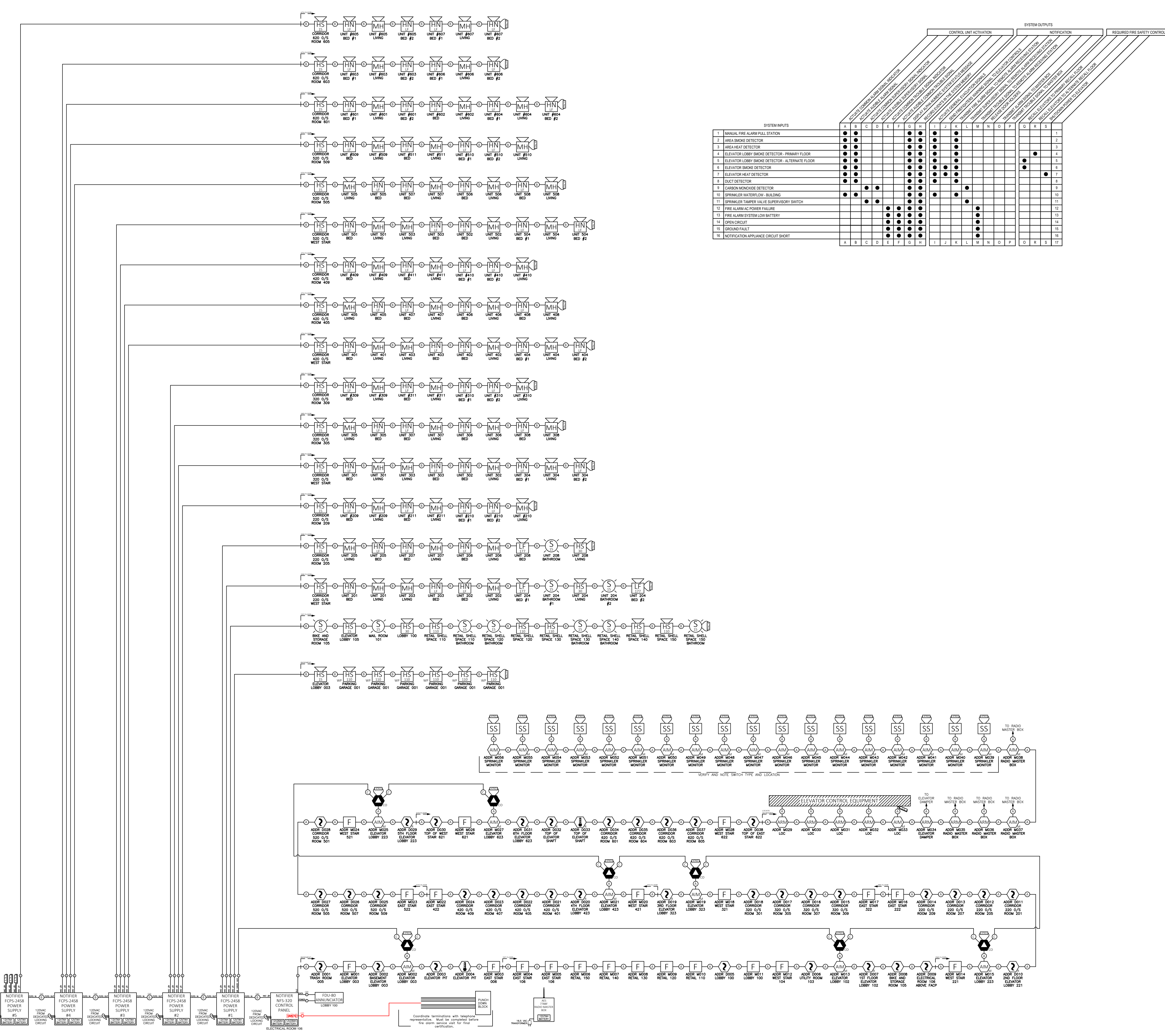
1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (7AH) are within the charger range of this power supply (7-18AH).

Spare Battery Capacity	5.05	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.08	Secondary Alarm Load (AH) * Derating Factor



Reviewed for Code Compliance
Permitting and Inspections Department
Approved with Conditions

12/17/2019



SYSTEM INPUTS	CONTROL UNIT ACTIVATION																SYSTEM OUTPUTS															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T												
1. MANUAL FIRE ALARM PULL STATION	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
2. AREA SMOKE DETECTOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
3. AREA HEAT DETECTOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
4. ELEVATOR LOBBY SMOKE DETECTOR - PRIMARY FLOOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
5. ELEVATOR LOBBY SMOKE DETECTOR - ALTERNATE FLOOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
6. ELEVATOR SMOKE DETECTOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
7. ELEVATOR HEAT DETECTOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
8. DUCT DETECTOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
9. CARBON MONOXIDE DETECTOR	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
10. SPRINKLER WATERFLOW - BUILDING	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
11. SPRINKLER WATERFLOW SUPERVISORY SWITCH	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
12. FIRE ALARM AC POWER FAILURE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
13. FIRE ALARM SYSTEM LOW BATTERY	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
14. OPEN CIRCUIT	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
15. GROUND FAULT	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												
16. NOTIFICATION APPLIANCE CIRCUIT SHORT	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•												

SYMBOL LEGEND

DEVICES	NOTIFICATION
PULL STATION	HORN STROBE
SMOKE DETECTOR	STROBE
HEAT DETECTOR	LOW FREQUENCY SOUNDER
MONITOR MODULE (M=MINI)	LOW FREQUENCY SOUNDER STROBE
RELAY MODULE	MINI HORN
CARBON MONOXIDE DETECTOR	XX = CANDELA RATING
SPRINKLER SWITCH F.B.O.	

WIRE LEGEND

- (A) 2 COND 16 AWG TWISTED PAIR FPL(P)(R) CABLE
- (B) 2 COND 14 AWG FPL(P)(R) CABLE
- (C) 2 COND 18 AWG FPL(P)(R) CABLE
- (D) 2 COND 18 AWG TWISTED SHIELDED FPL(P)(R) CABLE
- (E) CAT-6 CABLE

DEVICE ADDRESSES:

EACH DEVICE MUST BE LABELED WITH THE NODE, LOOP AND SLC ADDRESS.
 DEVICE EXAMPLE: N11D001 MODULE EXAMPLE: N11M001
 CARBON MONOXIDE DETECTORS MUST BE LABELED WITH THE MANUFACTURER'S REPLACEMENT DATE.
 IMPORTANT! DUPLICATE ADDRESSES BETWEEN DEVICES AND MODULES ARE NOT AN ERROR. NOTE: PULL STATIONS ARE IDENTIFIED AS MODULES BY THE FIRE ALARM CONTROL PANEL.

INSTALLATION NOTES:

ALL FIELD WIRING SHALL BE INSTALLED IN CONDUIT.
 FIELD WIRING SHALL BE INSTALLED FOLLOWING THE CURRENT EDITION OF NFPA 70: NATIONAL ELECTRIC CODE(2017), ALL APPLICABLE MUNICIPAL, COUNTY, & STATE CODES, REQUIREMENTS, AND REGULATIONS, AS WELL AS ALL MANUFACTURER GUIDELINES FOR INSTALLATION.
 CONTROL PANELS, DEVICES, AND ALL OTHER SYSTEM COMPONENTS SHALL BE INSTALLED FOLLOWING THE CURRENT EDITION OF NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE(2019), ALL APPLICABLE MUNICIPAL, COUNTY, & STATE CODES, REQUIREMENTS, AND REGULATIONS, AS WELL AS ALL MANUFACTURER GUIDELINES FOR INSTALLATION.
 THE INSTALLER SHALL FOLLOW CORRECT CONDUCTOR POLARITY, INDICATED CIRCUIT DIVISIONS, PROPER GROUNDING AND SHIELDING WITHOUT EXCEPTION. IMPROPER INSTALLATION CAN RESULT IN INTERFERENCE, TRANSIENT VOLTAGE, OR SHORT CIRCUITS CAUSING UNDESIRABLE OPERATION OR DAMAGE TO THE CONTROL PANEL, DEVICES AND ANY OTHER INTEGRATED COMPONENTS.
 IF EXCEEDING 4500 FEET, THE GAUGE OF WIRE USED FOR THE SLC LOOP (IDENTIFIED AS 'A' ON THIS PRINT), SHALL BE DETERMINED BY THE INSTALLER FOLLOWING GUIDELINES AND LIMITATIONS SET FORTH BY THE MANUFACTURER(NOTIFIER DOCUMENT #51253, INTELLIGENT CONTROL PANEL SLC WIRING MANUAL). THE SLC WIRING RISER IS SHOWN DIAGRAMMATICALLY ONLY TO ALLOW FOR VARIANCES IN ACTUAL WIRE DISTANCE, DEVICE PLACEMENT AND STRUCTURAL OR ENVIRONMENTAL REQUIREMENTS.
 WIRE FOR THE NOTIFICATION APPLIANCE CIRCUITS (IDENTIFIED AS 'B' ON THIS PRINT), SHALL FOLLOW THE SPECIFIC REQUIREMENTS OF THE WIRING LEGEND.
 THIS SYSTEM MEETS NFPA REQUIREMENTS FOR OPERATION AT 32-120°F AND A RELATIVE HUMIDITY OF 91-95% AT 87-93°F. HOWEVER, THE USEFUL LIFE OF THE SYSTEM'S STANDBY BATTERIES AND THE ELECTRONIC COMPONENTS MAY BE ADVERSELY AFFECTED BY EXTREME TEMPERATURE RANGES AND HUMIDITY. THEREFORE, IT IS RECOMMENDED THAT THIS SYSTEM AND ITS PERIPHERALS BE INSTALLED IN AN ENVIRONMENT WITH A NORMAL ROOM TEMPERATURE OF 60-80°F.

DESIGN NOTES:

SYSTEM DESIGN PERFORMANCE AND COMPLIANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS IS THE RESPONSIBILITY OF THE DESIGNING ENGINEER. PROPER INSTALLATION OF THIS SYSTEM AND ITS COMPONENTS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. ANY ALTERATIONS, CHANGES, OR DEFICIENCIES MUST BE BROUGHT TO THE ATTENTION OF THE DESIGNING ENGINEER.
 NORRIS INC. ASSUMES NO RESPONSIBILITY FOR ERRORS IN SYSTEM DESIGN OR INSTALLATION, AS WELL AS ANY COSTS ASSOCIATED WITH CORRECTING THESE ERRORS, IF ANY EXIST, UNLESS SYSTEM DESIGN OR INSTALLATION WAS PERFORMED BY NORRIS INC.

RELAY & MONITOR MODULES:

CONNECTIONS FROM THE RELAY AND MONITOR MODULES TO THE CONTROL EQUIPMENT, ALONG WITH ANY REQUIRED COMPONENTS SHALL BE FURNISHED BY THE INSTALLER.

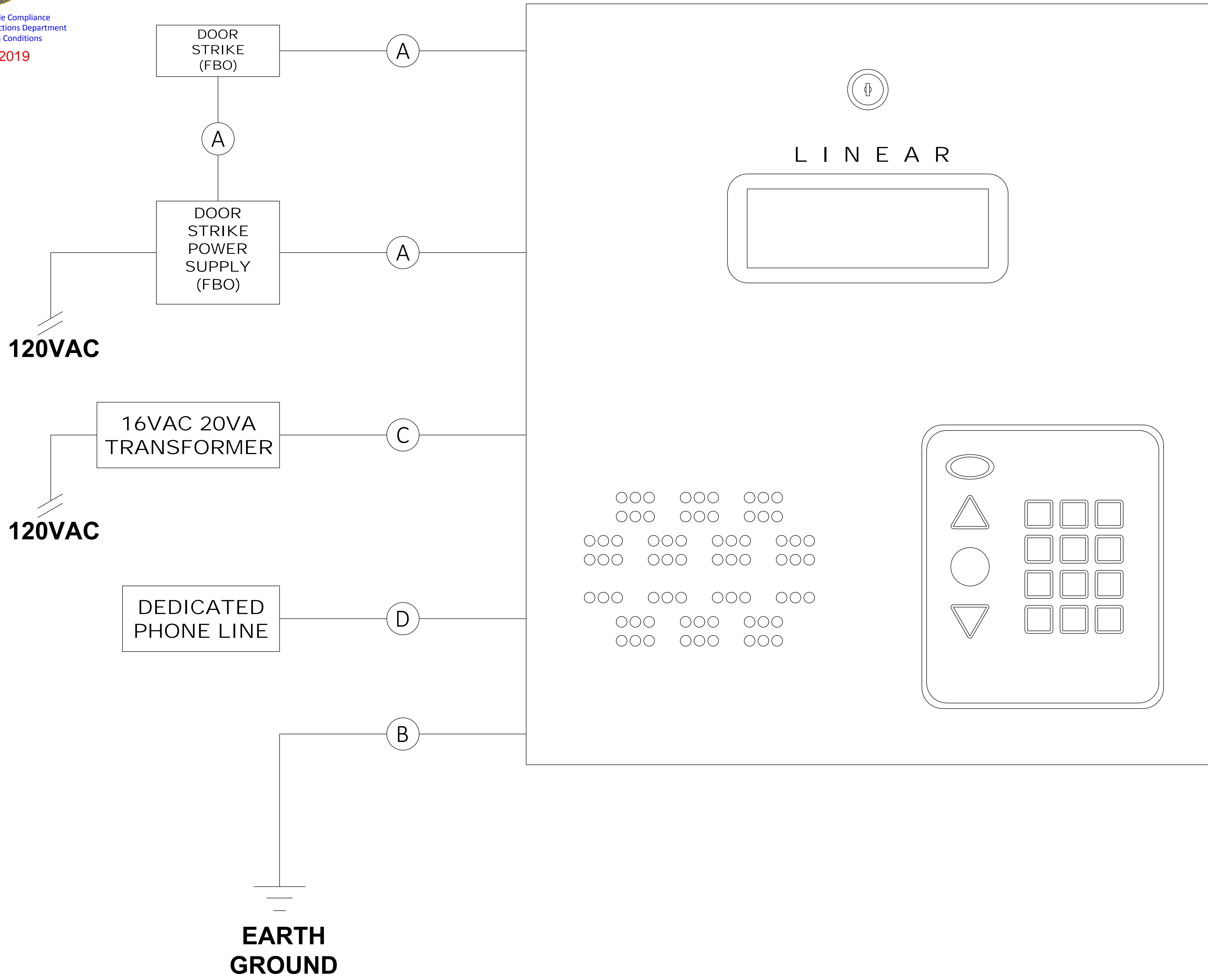
REVISION 0: SUBMITTAL	11/08/2019
FIRE ALARM WIRING RISER	
PROJECT NUMBER: 1376	SCALE: NONE
PROJECT:	DRAWN BY:
MIXED USE BUILDING 40 FREE STREET PORTLAND, MAINE 04101	JAB
	CHECKED BY:
	MP
	SHEET:
	FA-01



2257 BROADWAY SOUTH PORTLAND, MAINE



Reviewed for Code Compliance
 Permitting and Inspections Department
 Approved with Conditions
 12/17/2019



WIRE LEGEND

- (A)— 1 COND 16 AWG THHN
- (B)— 1 COND 12 AWG SOLID
- (C)— 2 COND 14 AWG THHN
- (D)— CAT 5 CABLE

REVISION 0: SUBMITTAL 11/08/2019

TELEPHONE ENTRY WIRING RISER

PROJECT NUMBER: 1376 SCALE: NONE

PROJECT: MIXED USE BUILDING
 40 FREE STREET
 PORTLAND, MAINE 04101
 DRAWN BY: JAB

CHECKED BY: MP

SHEET:



2257 BROADWAY

SOUTH PORTLAND, MAINE

LN-1