Norris Inc.

PO Box 2551
2257 West Broadway
South Portland, ME 04106

1.800.370.3473
fax 207.879.0540

www

CITY OF PORTLAND, MAINE · RESURGAM
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Inspections Division
Approved with Conditions
Date: 12/08/17

Please fax this information to the Administrative Sales Assistant at the So. Portland Office at (207)-879-0540.

Building Owner Information Form

Job Name:	**Project #:**

Electrical Contractor:

NFPA requires this information for proper documentation

****The contractor MUST provide all of the information with an asterisk below before ANY equipment can be released.***

If building owner contact is unknown provide contact name/tel. of GC and check box

Electrical Contractor Contact Name:	
Estimated Date Equip. Needed:	***Estimated Finals Date:**

***Building Owner:**

***Job Site Address:**

***City:**	**State:**	**Zip:**

***Contact Name:**_____ **Check here if GC**

***Phone #:**	**Fax #:**

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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 JOB-SITE

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 of your 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 (wrapped with tape) 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 apply if special arrangements were not made ahead. Call your customer service representative.
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, then please turn to page 2.

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IMPORTANT INFORMATION FOR THE BUILDING OWNERS

SPECIAL NOTE REGARDING ALARM MONITORING SERVICES

Included within your alarm system package is a digital communicator, which sends a coded message 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: **Nickelodeon Theaters**

System: **Fire Alarm System Upgrade**

Submitted By:
Norris Inc.
2257 West Broadway
South Portland, Maine 04106
Telephone: (800) 370-3473

Date: **October 5th, 2017**

Norris Inc.

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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 products 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.

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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 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 &/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.

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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 infrastructures 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.

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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 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 will allow fast and efficient troubleshooting 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 or 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 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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NOTIFIER®
by Honeywell

This is to certify that

NORRIS, INC.

is an authorized Engineered Systems Distributor for ***NOTIFIER***

During the years of ***2017***

Signed for and on behalf of NOTIFIER

Vice President Global Sales

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Norris Inc
2257 West Broadway
South Portland, ME 04106
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327149R1
Equipment List

PATRIOT CINEMAS INC
1001 HINGHILL ST #204
ROCKLAND, MA 02370

Tel:781-878-5100 Fax:781-878-5707

Nickelodeon Theater

Description

NOTIFIER-NFS-320, Addressable Fire Alarm Panel
NOTIFIER-UDACT-2, Digital Communicator
R5-RJ31X, UL 8P8C RJ31X JACK
R5-804R8, SILVER SATIN 8' PLUG - PLUG
IM-12180, 12V 18AH Battery
NOTIFIER-NBG-12LX, Addressable Pull Station
NOTIFIER-FSP-851, intelligent address photo detect, w/flashscan.
NOTIFIER-FST-851, intelligent address 135 degree thermal detect.
NOTIFIER-B210LP, conventional flanged mnt.ing base
NOTIFIER-FMM-1, addressable monitor module; w/flashscan.
NOTIFIER-FRM-1, addressable relay module with flashscan.
O6ELOCKFA, Breaker Lock Out Kit
KNOX-KNOX3262, Surface Mount Knox Box, Black, Hinged
AES Radio Masterbox
AES-7788F, UL Fire 8 Zone
EK-TRG1640, 16.5VAC, 45VA Transformer
IM-1270, 12V 7AH Battery
SPAAGEELE-VS000091, AES Radio Disconnect Enclosure
SR-3025TM, Box Tamper

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NFS-320

Intelligent Addressable Fire Alarm System

NOTIFIER by Honeywell

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.*

7112pho1.jpg

NFS-320

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).
- 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.

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– **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 operator intervention or programming. Se 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.

Sample System Options

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- 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 CO_2 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 termined levels of alarm. Pre-alarm operation can be l or self-restoring, and can be used to activate special 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.

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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 availab *DN-60454.*

RPT-W, RPT-F, RPT-WF: Standard-network repeate with wire connection (RPT-W), multi-mode fiber con (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

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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.*

UZC-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-UZC**. *See DN-3404.*

Compatible Intelligent Devices

FSA-8000: Intelligent FAAST 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 h (order FSP-851R separately). Replaces FSD-751P 751RPL. *See DN-60429.*

DNRW: Same as above with NEMA-4 rating, watertig *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 sychronization 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-UZC: Backbox for housing the UZC-256. Required for NFS-320 applications. Black. For red, order BB-UZC-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.

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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 eac 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,

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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

NOTIFIER by Honeywell

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, waterflow, 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, Kissoff, 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.

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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 w UDACT-2. A check in the protocol column indicates the r 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 sotware V1.72
(10) With DSP4016 and V1.6 Line Card

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BAT Series Batteries

Sealed Lead-Acid or Gell Cell

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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.

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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

1109t1.tbl

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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

at left:
PS-1210000
Discharge
Characteristics

NBG-12LX

Addressable Manual Pull Station

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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

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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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FSP-851(A) Series

Intelligent Plug-In Photoelectric Smoke Detectors with FlashScan®

NOTIFIER by Honeywell

Intelligent/Addressable Devices

General

Notifier FSP-851(A) Series intelligent plug-in smoke detectors with integral communication provide features that surpass conventional detectors. 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. The FSP-851(A) photoelectric detector's unique optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources. Dual electronic thermistors add 135°F (57°C) fixed-temperature thermal sensing on the FSP-851T(A). The FSP-851R(A) is a remote test capable detector for use with DNR(A)/DNRW duct detector housings. FSP-851(A) series detectors are compatible with Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

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 in the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Sleek, low-profile design.
- Addressable-analog communication.
- 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.
- Constructed of off-white fire-resistant plastic, designed to commercial standards, and offers an attractive appearance.
- 94-5V plastic flammability rating.
- SEMS screws for wiring of the separate base.
- Optional relay, isolator, and sounder bases.

Specifications

Sensitivity: 0.5% to 2.35% per foot obscuration

Size: 2.1" (5.3 cm) high; base determines diameter.

- **B210LP(A):** 6.1" (15.5 cm) diameter.
- **B501(A):** 4.1" (10.4 cm) diameter.
- **B200S(A):** 6.875" (17.46 cm) diameter.
- **B200SR(A):** 6.875" (17.46 cm) diameter.
- **B224RB(A):** 6.2" (15.748 cm) diameter.
- **B224BI(A):** 6.2" (15.748 cm) diameter.

B210-2951.jpg

FSP-851(A) in B210LP(A) Base

Shipping Weight: 5.2oz. (147g).

Operating Temperature range: FSP-851(A), 0°C to 49°C (32°F to 120°F). FSP-851T(A), 0°C to 38°C (32°F to 100°F). Low temperature signal for FSP-851T(A) at 45°F +/- 10°F (7.22°C +/- 5.54°C). FSP-851R(A) installed in a DNR(A)/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 (9.144m) for ceiling heights 10 feet (3.148m) and higher. 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.): 300µA @ 24VDC (one communication every five seconds with LED enabled).

LED Current (max.): 6.5mA @ 24 VDC ("ON").

Installation

FSP-851(A) plug-in detectors use a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder.

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 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 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:** S1115.
- **ULC Listed:** S1115 (FSP-851A, FSP-851RA, FSP-851TA).
- **MEA Listed:** 225-02-E .
- **FM Approved.**
- **CSFM:** 7272-0028:0206 .
- **Maryland State Fire Marshal:** Permit # 2122 **.**
- **BSMI:** CI313066760036.
- **CCCF:** Certif. # 2004081801000017 (FSP-851T)
  Certif. # 2004081801000016 (FSP-851).
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).

Product Line Information

***NOTE:** "A" suffix indicates ULC Listed model.*

FSP-851: Low-profile intelligent photoelectric sensor. Must be mounted to one of the bases listed below.

FSP-851A: Same as FSP-851 but with ULC listing.

FSP-851T: Same as FSP-851 but includes a built-in 135°F (57°C) fixed-temperature thermal device.

FSP-851TA: Same as FSP-851T but with ULC listing.

FSP-851R: Low-profile intelligent photoelectric sensor, remote test capable. For use with DNRA/DNRW.

FSP-851RA: Same as FSP-851R but with ULC listing. For use with DNRA.

INTELLIGENT BASES

***NOTE:** "A" suffix indicates ULC Listed model.*

***NOTE:** For details on intelligent bases, see DN-60054.*

B210LP(A): Standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Intelligent, programmable 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.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Plug-in System Sensor **relay** base. Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Plug-in System Sensor ***isolator*** detector base. Maximum 25 devices between isolator bases .

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to ma B710LP(A) profile, or to convert older high-profile bases profile.

F110BP: Bulk pack of F110; package contains 15.

F210: 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 B210LP(A) bases only.

SMB600: Surface mounting kit

M02-04-00: Test magnet.

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

XR2B: Detector removal tool. Allows installation and/or removal of detector heads from bases in high ceiling applications.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

T55-127-010: Detector removal tool without pole.

BCK-200B: Black detector covers for use with FSP-851(A) only; box of 10.

WCK-200B: White detector covers for use with FSP-851(A) only; box of 10.

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FST-851(A) Series

Intelligent Thermal (Heat) Detectors with FlashScan®

NOTIFIER by Honeywell

Intelligent / Addressable Devices

General

Notifier FST-851(A) Series intelligent plug-in thermal detectors with integral communication has features that surpass conventional detectors. Point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector locations. FST-851(A) Series thermal detectors use an innovative thermistor sensing circuit to produce 135°F/57°C fixed-temperature (FST-851/A) and rate-of-rise thermal detection (FST-851R/A) in a low-profile package. FST-851H(A) provides fixed high-temperature detection at 190°F/88°C. These thermal detectors provide effective, intelligent property protection in a variety of applications. FST-851(A) Series detectors are compatible with Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

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 and certain NOTIFIER systems. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Rate-of-rise model (FST-851R/A), 15°F (8.3°C) per minute.
- Factory preset fixed temperature at 135°F (57°C); high-temperature model fixed at 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.
- Backward-compatible.
- 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. Separate base allows interchange of photoelectric, ionization and thermal sensors.
- SEMS screws for wiring of the separate base.
- Constructed of off-white fire-resistant plastic, designed to commercial standards, and offers an attractive appearance.

B210-2251.jpg

FST-851(A) in B210LP(A) Base

- 94-5V plastic flammability rating.
- Remote LED output connection to optional RA100Z(A) remote LED annunciator.
- Optional sounder, relay, and isolator bases.
- Optional flanced surface mounting kit.

Specifications

Size: 2.1" (5.3 cm) high; base determines diameter.

- **B210LP(A):** 6.1" (15.5 cm) diameter.
- **B501(A):** 4.1" (10.4 cm) diameter.
- **B200S(A):** 6.875" (17.46 cm) diameter.
- **B200SR(A):** 6.875" (17.46 cm) diameter.
- **B224RB(A):** 6.2" (15.748 cm) diameter.
- **B224BI(A):** 6.2" (15.748 cm) diameter.

Shipping weight: 4.8 oz. (137 g).

Operating temperature range: FST-851(A) Series, FST-851R(A): –20°C to 38°C (–4°F to 100°F); FST-851H(A): –20°C to 66°C (–4°F to 150°F).

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% noncondensing.

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

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak.

Standby current (max. avg.): 300 µA @ 24 VDC (one communication every 5 seconds with LED enabled).

LED current (max.): 6.5 mA @ 24 VDC ("ON").

Applications

Use thermal detectors for protection of property. For further information, go to systemsensor.com for manual I56-407-00, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

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Installation

The FST Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder

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 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:** S747.
- **ULC Listed:** S6978.
- **MEA Listed:** 383-02-E.
- **FM Approved.**
- **CSFM:** 7270-0028:0196.
- **BSMI:** CI313066760025.
- **CCCF:** Certif. # 2004081801000018.
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).

Product Line Information

NOTE: *"A" suffix indicates ULC Listed model.*

FST-851: Intelligent thermal detector. Must be mounted to one of the bases listed below.

FST-851A: Same as FST-851 but with ULC Listing.

FST-851R: Intelligent thermal detector with rate-of-rise feature.

FST-851RA: Same as FST-851R but with ULC Listing.

FST-851H: Intelligent high-temperature thermal detector.

FST-851HA: Same as FST-851H but with ULC Listing.

INTELLIGENT BASES

NOTE: *"A" suffix indicates ULC Listed model.*

NOTE: *For details about intelligent bases and their mounting, see DN-60054.*

B210LP(A): Standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Addressable Intelligent, programmable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuou marching tone, and custom tone.

B200SR(A): Intelligent sounder base capable of pr sound output with ANSI Temporal 3 or continuou Replaces B501BH series bases in retrofit applications.

B224RB(A): Intelligent relay base. Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts. Maximum: 25 devices between isolator bases; see Note 2 under Installation.

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B710LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B210LP(A) and B501(A) bases only.

SMB600: Surface mounting kit, flanged.

M02-04-00: Test magnet.

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

XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations. Includes T55-127-010.

T55-127-010: Detector removal tool without pole.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

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Intelligent Bases

B501(A), B200S(A), B200SR(A), B210LP(A), B2241BI(A), B224RB(A), Mounting Kits, and Accessories

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Date: 12/08/17

Intelligent/Addressable Devices

General

Intelligent FlashScan® and CLIP mounting bases and kits provide a variety of ways to install NOTIFIER detectors in any application. Intelligent detectors can be mounted in either flanged or flangeless bases depending on junction box selection *(see Junction Box Selection Guide)*. Across this product line, detectors plug in easily to the base with SEMS screws; and models employ various 12 to 24 AWG wire ranges.

Relay, isolator, and sounder bases can be used to meet local code requirements. Relay bases provide one Form-C contact relay for control of auxiliary functions such as door closure and elevator recall. Isolator bases allow loops to continue to operate under fault conditions and automatically restore when the fault is removed. Sounder bases are available in temporal and non-temporal pattern versions depending on whether the signal is to be used for evacuation purposes.

60054b5.jpg

Flangeless Mounting Base B501(A)

60054LP.jpg

Flanged Mounting Base B210LP(A)

60054sr.jpg

Sounder Base B200S(A), B200SR(A), B200SCOA

60054rb.jpg

Relay Base B224RB(A)

Specifications

Diameter:

- B501: 4.1" (104 mm).
- B224BI, B224RB, B210LP: 6.1" (155 mm).
- B200S/SR/SCOA: 6.875" (17.46 cm).

Wire gauge:

- B224BI, B224RB: 14 to 24 AWG.
- B210LP, B501, B200S/SR/SCOA: 12 to 24 AWG.

Temperature range:

- B224BI, B224RB, B200S/SR/SCOA: 32°F to 120°F (0°C to 49°C).
- B210LP, B501: -4°F to 150°F (-20°C to 66°C).

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

System temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. 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 all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Electrical Ratings

FOR B200S/SR/SCOA:

External supply voltage: 16 to 33 VDC (VFWR)

Standby current: 500 µA maximum.

Alarm current:

- B200S: 35 mA maximum at high-volume setting; 15 mA maximum at low-volume setting.
- B200SR: 35 mA maximum.
- B200SCOA: 40mA Max. (DC), 70mA Max. (FWR)

SLC operating voltage: 15 to 32 VDC.

SLC standby current: 300 µA.

Sound output:

- B200S, high-volume*: Greater than 85 dBA minimum.
- B200S, low-volume*: Greater than 75 dBA minimum.
- B200SR*: Greater than 85 dBA minimum.
- B200SCOA, high-volume**: Greater than 87 dBA minimum.
- B200SCOA, low-volume**: Greater than 85 dBA minimum

**Measured in a UL reverberant room at 10 feet, 24 Volts (continuous tone)*
***Measured in a ULC anechoic room at 10 feet, 24 Volts continuous tone)*

FOR B224RB, B224BI:

Operating voltage: 15 to 32 VDC (powered by SLC).

Standby ratings: <500 µA maximum @ 24 VDC.

Set time (B224RB only): short delay 55 to 90 msec; long delay 6 to 9 seconds.

Reset time (B224RB only): 20 msec maximum.

Relay characteristics (B224RB only): two-coil latching relay; one Form-C contact; ratings (UL/CSA): 0.9 A @ 125 VAC, 0.9 A @ 110 VDC, and 3.0 A @ 30 VDC.

Product Line Information

INTELLIGENT BASES

B501: Flangeless mounting base.

B501A: Flangeless mounting base, ULC Listed.

B501BP: Bulk pack of B501 (10).

B210LP: Flanged mounting base.

B210LPA: Flanged mounting base, ULC listed

B210LPBP: Bulk pack of B210LP (10).

B200S: 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. Only compatible with the NFS-320, NFS2-640 and NFS2-3030 operating version with version 15.0 or higher panel firmware.

B200SA: Same as B200S with ULC-listing.

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Date: 12/08/17

B200SCOA: Same as B200S with ULC-listing and CO detector markings in English/French (required in Canada for ULC applications with FCO-851A).

B200SR: Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone.

B200SRA: Same as B200SR with ULC-listing.

B224RB: Relay base.

B224RBA: Relay base, ULC Listed.

B224BI: Isolator base.

B224BIA: Isolator base, ULC Listed.

MOUNTING KITS AND ACCESSORIES

SMB600: Surface mounting kit, flanged.

F110: Retrofit flange for converting high-profile bases to low-profile.

F110BP: Bulk pack of F110 (10).

F210: Accessory flange ring for B210LP(A) base (new design). 6-inch diameter.

F210BP: Bulk pack of F210 (10).

RA100Z: Remote LED annunciator.

RA100ZA: Remote LED annunciator, ULC Listed.

M02-04-00: Detector test magnet.

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

XR2B: Detector removal tool for current heads *(T55-1 included).*

XR2: Detector Remove Tool for use with low profile c heads, and FSL-751.

XP-4: Extension pole for XR2/B *(5 to 15 ft/1.524 to 4.572 m).*

T55-127-010: Detector removal head.

BCK-200B: Black detector kit, package of 10 (for use with photo and ion detectors).

WCK-200B: White detector kit, package of 10 (for use with photo and ion detectors).

Agency Listings and Approvals

The listings and approvals below apply to intelligent bases as noted. 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:** S911
- **ULC Listed:** S911
- **FM Approved**
- **MEA:** 22-95-E, 205-94-E Vol. 2; 257-06-E
- **CSFM:** 7300-1653:0126, 7135-1653:0213, 7300-1653:0109

Junction Box Selection Guide

Base Models	Single Gang	3.5" Oct.	4.0" Oct.	4.0" Sq.	4.0" Sq. with 3.0" mud ring	50 mm	60 mm	70 mm	75 mm
B200S, B200SR, B200SCOA	Yes	Yes	Yes	Yes	Yes	No	No	No	No
B501	No	Yes	No	No	Yes	Yes	Yes	Yes	No
B210LP	Yes	Yes	Yes	Yes	Yes	No	No	No	No
B224RB	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
B224BI	No	Yes	Yes	Yes	No	No	No	Yes	Yes

NOTE: *Box depth contingent on base and wire size.*
Refer to National Electric Code or applicable local codes for appropriate recommendations.

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We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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

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

Monitor Modules with FlashScan®

NOTIFIER by Honeywell

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

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 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.

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FMM-1(A) (Type H)

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 µA (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.

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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 µA, 1 communication every 5 seconds, 47k EOL; 600 µA Max. (Communicating, IDC Shorted).

Maximum IDC wiring resistance: 40 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 400 µA.

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) 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 µA, 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.

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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 µA (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 µA

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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Date: 12/08/17

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www.notifier.com

CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

FST-851(A) Series

Intelligent Thermal (Heat) Detectors with FlashScan®

NOTIFIER by Honeywell

Intelligent / Addressable Devices

General

Notifier FST-851(A) Series intelligent plug-in thermal detectors with integral communication has features that surpass conventional detectors. Point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector locations. FST-851(A) Series thermal detectors use an innovative thermistor sensing circuit to produce 135°F/57°C fixed-temperature (FST-851/A) and rate-of-rise thermal detection (FST-851R/A) in a low-profile package. FST-851H(A) provides fixed high-temperature detection at 190°F/88°C. These thermal detectors provide effective, intelligent property protection in a variety of applications. FST-851(A) Series detectors are compatible with Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

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 and certain NOTIFIER systems. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Rate-of-rise model (FST-851R/A), 15°F (8.3°C) per minute.
- Factory preset fixed temperature at 135°F (57°C); high-temperature model fixed at 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.
- Backward-compatible.
- 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. Separate base allows interchange of photoelectric, ionization and thermal sensors.
- SEMS screws for wiring of the separate base.
- Constructed of off-white fire-resistant plastic, designed to commercial standards, and offers an attractive appearance.

B210-2251.jpg

FST-851(A) in B210LP(A) Base

- 94-5V plastic flammability rating.
- Remote LED output connection to optional RA100Z(A) remote LED annunciator.
- Optional sounder, relay, and isolator bases.
- Optional flanced surface mounting kit.

Specifications

Size: 2.1" (5.3 cm) high; base determines diameter.

- **B210LP(A):** 6.1" (15.5 cm) diameter.
- **B501(A):** 4.1" (10.4 cm) diameter.
- **B200S(A):** 6.875" (17.46 cm) diameter.
- **B200SR(A):** 6.875" (17.46 cm) diameter.
- **B224RB(A):** 6.2" (15.748 cm) diameter.
- **B224BI(A):** 6.2" (15.748 cm) diameter.

Shipping weight: 4.8 oz. (137 g).

Operating temperature range: FST-851(A) Series, FST-851R(A): –20°C to 38°C (–4°F to 100°F); FST-851H(A): –20°C to 66°C (–4°F to 150°F).

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% noncondensing.

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

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak.

Standby current (max. avg.): 300 µA @ 24 VDC (one communication every 5 seconds with LED enabled).

LED current (max.): 6.5 mA @ 24 VDC ("ON").

Applications

Use thermal detectors for protection of property. For further information, go to systemsensor.com for manual I56-407-00, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

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Inspections Division
Approved with Conditions
Date: 12/08/17

Installation

The FST Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder

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 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:** S747.
- **ULC Listed:** S6978.
- **MEA Listed:** 383-02-E.
- **FM Approved.**
- **CSFM:** 7270-0028:0196.
- **BSMI:** CI313066760025.
- **CCCF:** Certif. # 2004081801000018.
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).

Product Line Information

NOTE: *"A" suffix indicates ULC Listed model.*

FST-851: Intelligent thermal detector. Must be mounted to one of the bases listed below.

FST-851A: Same as FST-851 but with ULC Listing.

FST-851R: Intelligent thermal detector with rate-of-rise feature.

FST-851RA: Same as FST-851R but with ULC Listing.

FST-851H: Intelligent high-temperature thermal detector.

FST-851HA: Same as FST-851H but with ULC Listing.

INTELLIGENT BASES

NOTE: *"A" suffix indicates ULC Listed model.*

NOTE: *For details about intelligent bases and their mounting, see DN-60054.*

B210LP(A): Standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Addressable Intelligent, programmable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuou marching tone, and custom tone.

B200SR(A): Intelligent sounder base capable of pr sound output with ANSI Temporal 3 or continuou Replaces B501BH series bases in retrofit applications.

B224RB(A): Intelligent relay base. Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts. Maximum: 25 devices between isolator bases; see Note 2 under Installation.

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B710LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B210LP(A) and B501(A) bases only.

SMB600: Surface mounting kit, flanged.

M02-04-00: Test magnet.

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

XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations. Includes T55-127-010.

T55-127-010: Detector removal tool without pole.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

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Knox-Box® 3200 S
HINGED DOOR M

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/08/17

High Security Industrial/Government Key Box

Recessed Mount
with Face Flange

Surface Mount

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**

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

Knox-Box® 3200 S

HINGED DOOR MODEL - MOUNTING DI

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Date: 12/08/17

Suggested minimum mounting height
6 feet above ground

3200 Series Hinged Door Surface Mount | **3200 Series Hinged Door Recess Mount**

Inside View

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 Mounti

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)

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7788F/7744F Series

Wireless Fire Alarm Communicators for AES-*IntelliNet*

Model 7788F

LISTED

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.

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

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

AES IntelliNet CORPORATION For Alarm Monitoring

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

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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.

AES IntelliNet CORPORATION For Alarm Monitoring

For more information
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7788F-7744F/9/7/11R3

Recessed Pin Plunger

3010 Series

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Date: 12/08/17

Applications

- Model 3015 available in plate mount or clip mount configuration
- Model 3025 plunger self-adjusts to proper reach
  - Pulling out on plunger shunts switch
  - Disconnection while servicing equipment is unnecessary

3012 Clip Mount Plunger

General Specifications

Enclosure	ABS plastic
Temperature Range	-40°F to 150°F (-40°C to 65°C)
Environmental	Contact Housing is made of flame-retardant ABS plastic. Reed switch is protected and held in place by a polyurethane potting material
NEMA Rating	1
Protection Class	IP 62
Response Time	1 msec max.
Life Cycles	100,000 Under Full Load, 10,000,000 Under Dry Circuit
Lead Types/O.D.	#22 wire / 0.05" (0.15cm)
Color Choices	Natural(N), Mahogany(M)
UL Listed	All Models

3015 Recessed Plunger Switch

Includes: 1– Adjustable #6 x 32 1/2" Phillips screw

3025 Tamper Switch

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Order Information	Electrical Specifications					
Part Number	Contact[1] Configuration	Load Rating (AC/DC)	Switching Voltage (AC/DC)	Switching Current (AC/DC)	Contact Resistance	Lead Length
3012-M, N	N.O.	7.5W/VA	100V	0.5A	0.2 Ohms	1'
3015-M, N	N.O.	7.5W/VA	100V	0.5A	0.2 Ohms	1'
3027-M, N	SPDT	3W/VA	30V	0.25A	0.2 Ohms	1'
3025T-M, N	N.O.	7.5W/VA	100V	0.5A	0.2 Ohms	#6 Screw Terminal

Warning— Each electrical rating is an individual maximum and cannot be exceeded!

[1] Configuration with plunger out.