| City of Portland, Maine - Building or Use Permit Application<br>389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716 | Permit No:<br>2013-00370 | Issue Date: | CBL:<br>166 A010001 |
|---|---|---|---|

| Location of Construction:<br>850 BAXTER BLVD | Owner Name:<br>SEASIDE HEALTHCARE LLC | Owner Address:<br>850 BAXTER BLVD PORTLAND, ME 04103 | Phone: |
|---|---|---|---|
| Business Name:<br>Seaside Health Care | Contractor Name:<br>Regional Electric LLC | Contractor Address:<br>186 Summer Street Auburn ME 04210 | Phone<br>(207) 795-7800 |
| Lessee/Buyer's Name | Phone: | Permit Type:<br>Fire Alarm System | Zone:<br>R5 |

| Past Use:<br>Long Term & Extended Care Facilities | Proposed Use:<br>Same: Long Term & Extended Care Facilities | Permit Fee:<br>$520.00 | Cost of Work:<br>$50,000.00 | CEO District:<br>5 |
|---|---|---|---|---|

**FIRE DEPT:** 4/29/13 — ☑ Approved ☐ Denied ☐ N/A

**INSPECTION:** Use Group: Type:

**Proposed Project Description:**
Install Fire Alarm in new addition

Signature: _Bjaiwell_ (5B) Signature:

**PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)**

Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature: Date:

| Permit Taken By:<br>bjs | Date Applied For:<br>02/25/2013 | Zoning Approval |
|---|---|---|

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.

2. Building permits do not include plumbing, septic or electrical work.

3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

SCANNED

**Special Zone or Reviews**
☐ Shoreland
☐ Wetland
☐ Flood Zone
☐ Subdivision
☐ Site Plan
Maj ☐ Minor ☐ MM ☐
OK— Date: 2/25/13

**Zoning Appeal**
☐ Variance
☐ Miscellaneous
☐ Conditional Use
☐ Interpretation
☐ Approved
☐ Denied
Date:

**Historic Preservation**
☑ Not in District or Landmark
☐ Does Not Require Review
☐ Requires Review
☐ Approved
☐ Approved w/Conditions
☐ Denied
Date:

## CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT                    ADDRESS                    DATE                    PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE                    DATE                    PHONE

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

# CITY OF PORTLAND
# BUILDING PERMIT

**This is to certify that**

SEASIDE HEALTHCARE LLC /Regional Electric LLC

**Located at**

850 BAXTER BLVD

**PERMIT ID:** 2013-00370    **ISSUE DATE:** 04/29/2013    **CBL:** 166 A010001

has permission to    **install master box fire alarm system for new addition.**

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

| Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise clsoed-in. 48 HOUR NOTICE IS REQUIRED. | A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be procured prior to occupancy. |

**Fire Prevention Officer**

**Code Enforcement Officer / Plan Reviewer**

### THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
### THERE IS A PENALTY FOR REMOVING THIS CARD

SCANNED

# City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

| Permit No: | Date Applied For: | CBL: |
|---|---|---|
| 2013-00370 | 02/25/2013 | 166 A010001 |

| Location of Construction: | Owner Name: | Owner Address: | Phone: |
|---|---|---|---|
| 850 BAXTER BLVD | SEASIDE HEALTHCARE LLC | 850 BAXTER BLVD | |

| Business Name: | Contractor Name: | Contractor Address: | Phone |
|---|---|---|---|
| Seaside Health Care | Regional Electric LLC | 186 Summer Street Auburn | (207) 795-7800 |

| Lessee/Buyer's Name | Phone: | Permit Type: |
|---|---|---|
| | | Fire Alarm System |

| Proposed Use: | Proposed Project Description: |
|---|---|
| Same: Long Term & Extended Care Facilities | install master box fire alarm system for new addition. |

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**Dept:** Zoning    **Status:** Approved      **Reviewer:** Marge Schmuckal    **Approval Date:** 02/25/2013

**Note:**    Ok to Issue: ☑

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**Dept:** Fire    **Status:** Approved w/Conditions    **Reviewer:** Ben Wallace Jr    **Approval Date:** 04/29/2013

**Note:** Permit approved based upon 3rd party review by FPE Mark Cummings. Letter on file.    Ok to Issue: ☑

1) Visible signals are required per NFPA 101:9.6.3.5 in accordance with NFPA 72:18.5.4.4. Audible and visible notification signals are not required in exit stair enclosures by NFPA 101:9.6.3.5.5 and NFPA 101:9.6.3.6.4.

2) The fire alarm technician shall be present for the fire inspection. System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

3) Through-penetrations and membrane penetrations in fire walls, fire barrier walls, and fire resistance rated horizontal assemblies shall be protected by firestop systems or devices in conformance with NFPA 101:8.3.5 (ASTM E 814 or ANSI/UL 1479). Providing firestop labels at each firestop system or device and an onsite manual containing the detail for each firestop system or device used for the project will streamline final inspection approvals.

4) All smoke detectors shall be photoelectric.

5) The installation shall comply with the following:
City of Portland Chapter 10, Fire Prevention and Protection;
NFPA 1, Fire Code (2009 edition), as amended by City Code;
NFPA 101, Life Safety Code (2009 edition), as amended by City Code;
City of Portland Fire Department Rules and Regulations;
NFPA 72, National Fire Alarm and Signaling Code (2010 edition), as amended by Fire Department Rules and Regulations; and
NFPA 70, National Electrical Code (2011 edition) as amended by the State of Maine

6) The fire alarm system shall have a new fire alarm inspection sticker.

7) In field installation shall be installed per code as conditions dictate.

8) Fire protection systems shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.

9) System CO detectors shall shall not trip the master box but shall be called into the Fire Department upon activation via supervising oe central station.

10 All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".

11 Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.

12 Supervising Station monitoring for addressable fire alarm systems shall be by point.

13 A 4100 series Knox Box is required.

| Location of Construction: | Owner Name: | Owner Address: | Phone: |
|---|---|---|---|
| 850 BAXTER BLVD | SEASIDE HEALTHCARE LLC | 850 BAXTER BLVD | |
| **Business Name:** | **Contractor Name:** | **Contractor Address:** | **Phone** |
| Seaside Health Care | Regional Electric LLC | 186 Summer Street Auburn | (207) 795-7800 |
| **Lessee/Buyer's Name** | **Phone:** | **Permit Type:** | |
| | | Fire Alarm System | |

14  A master box connection and drill switch is required.  AES Zones shall be:
   1. Water flow
   2. City Disconnect: Water flow
   3. Pull stations and detectors
   4. City Disconnect: Pull stations and detectors
   5. Not assigned
   6. Not assigned
   7. Not assigned
   8. AES tamper switc

15  System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department.  Call 874-8703 to schedule.

16  Notice: The first scheduled final inspection fee is at no charge.  Additional inspections shall be billed at $75 for each inspector.

17  Manual Pull Stations are required per NFPA 101:30.3.4.2.1 at all exit doorways and within 200 feet of travel.

# BUILDING PERMIT INSPECTION PROCEDURES
## Please call 874-8703 (ONLY)
## or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**

- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**

- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

## REQUIRED INSPECTIONS:

Final - Fire

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

## Master Box Approval

Applicant: Norris Inc.

App Phone #: 207-883-3473 x 1104

Building Name: Seaside Nursing

Building Address: 850 Baxter Blvd

Occupancy: Healthcare / Nursing Home
Assembly OL>300, 20 unit apartment building, etc.

Emergency Contact: Peter Chapman

Emergency phone #: 207-899-9559

Date of Application: 2/22/13

Billing Address: 850 Baxter Blvd
Portland, ME 04103

Comments:

### Applicant completes red box and submits with Fire Alarm Permit

**1**

FIRE PREVENTION:      ☑ Approved      ☐ Denied

___4__ / __29__ / __13__                    _____
        Date                                          Fire Prevention Officer

Zone 1: Water flow _____    Zone 2: City disconnect – Water Flow _____

Zone 3: Pulls and detectors _____    Zone 4: City disconnect – Pulls and Detectors

Zone 5: Unassigned _____    Zone 6: Unassigned _____

Zone 7: Unassigned _____    Zone 8: AES Tamper switch _____

Modify City Box response to alarm sounding in CAD:  ☐ YES  ☑ NO

**2**

FIRE ALARM:          Box #: Reuse 4468

ELECTRICAL DIVISION:  ☐ Approved        ☐ Denied

**3**

Box Type:     AES Radio Box / _____
              New            Other

Test Date: ____/____/____    In Service Date: ____/____/____    _____
                                                               Fire Alarm Technician
AES

Circuit if applicable:

**4**

FIRE ALARM:     Same Running Assignment As Box: _____

Notifications:    ☐ All Stations    ☐ Run Books    ☐ Digitizer    ☐ Computer    ☐ Cad Box Test

☐ South Portland ☐ _____         _____
                        Other                                    Dispatcher

**5**

BILLING:     ☐ Entered     _____
                            Financial Officer

# Fire Alarm Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: **Seaside Rehab--850 Baxter Blvd**　　CBL: _____

Exact location: (within structure) **new addition** _____

Type of occupancy(s) (NFPA & ICC): **Healthcare** _____

Building owner: **Seaside** _____

System Designer (point of contact): Must be **Melissa Peters-- Norris Inc.** _____

Designer phone: **883-3473 x1104** _____　　E-mail: **melissap@norrisinc.com** _____

Installing contractor: **Regional Electric** _____　　Certificate of Fitness No: **M1008** _____

Contractor phone: **795-7800** _____　　E-mail: **flregionalelectric@myfairpoint.ne** _____

This is a new application:　　YES ⦿　　NO ◯　　New AES Master Box:　YES ⦿　　NO ◯
(Include Master Box approval form)

Amendment to an existing permit:　YES ◯　　NO ◯　　Permit no: _____

**The following documents shall be provided with this application:**

| | |
|---|---|
| ☑ Floor plans | ☑ Scope of Work |
| ☑ Wiring diagram | ☑ 11 ½ x 17s |
| ☑ Annunciator details | ☑ pdf copy (may be e-mailed) |
| ☑ Input/ Output Matrix | ☑ Designer qualifications |
| ☑ Equipment data sheets | ☑ Battery/ voltage drop calcs |
| ☐ Electrical Permit Pulled (check alarm/com) | |

COST OF WORK: _50,000_

PERMIT FEE: _520.00_
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

RECEIVED
FEB 25 2013
Dept. of Building Inspections
City of Portland Maine

Master box approval only:　YES ◯　　NO ◯
(If yes check *New AES Master Box* above)

**The designer shall be the responsible party for this application. Download a new copy of this application at** www.portlandmaine.gov/fire **for every submittal. Submit all plans in electronic PDF in addition to readable 11 ½ x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.**

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the *City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property*, available at www.portlandmaine.gov/fire .

Applicant signature: _Melissa Peters_ _____　Date: _2/22/13_ _____

# FIRE RISK MANAGEMENT, INC

1 Front St., Bath, ME 04530
207/442-7200 [-7272 (fax)]
FRM@fireriskmgt.com

Date:    22 April, 2013

# Memo Report

**From:**    W. Mark Cummings, P.E.

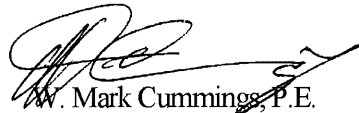**To:**    Mr. Will Bennett, P.E.; Bennett Engineering, Inc.

**CC:**

**Subject:    Fire Alarm System Design Review; Seaside Rehab & Healthcare Center**

As requested, Fire Risk Management, Inc. (FRM) performed an independent, detailed review of the fire alarm system design drawings that you provided for the proposed 2-story addition to the Seaside Rehab and Healthcare Center in Portland, ME. The drawing package reviewed consisted of six (6) separate drawings, FA-1 through FA-6, which included the wiring and riser diagrams and the system floor plans.

Although the initial review did result in a number of questions and comments with regards to the proposed fire alarm system design, the design drawings have been updated and all questions / comments have been adequately resolved. As such, we find that the latest revision, dated 17 April, 2013, of the fire alarm system design to be fully code compliant and appropriate to adequately support the fire detection, alarm, and notification requirements of the proposed addition to the subject facility.

If you have any questions or would like additional details regarding our review of the fire alarm system design, please do not hesitate to contact me.

W. Mark Cummings, P.E.
Principal Engineer

**NORRIS** INC

PO Box 2551
2257 West Broadway
South Portland, ME 04106

1.800.370.3473
*fax* 207.879.0540

www.norrisinc.com

1/22/13

Scope of Work:  Seaside Rehabilitation Addition

Regional Electric will be installing new addressable fire alarm devices to accommodate the new addition at Seaside Rehab.  The contractor will also install a new addressable fire alarm panel as the existing panel does not have the capacity to add the quantity of devices required.

The addition will be fully sprinkled.  There is currently a master box on site.  Norris Inc. will be installing a new AES radio master box to meet current requirements.  We are assuming a standard rubber ducky antennae will be sufficient, however if that is not the case an external antennae will be added.

Smoke detectors and carbon monoxide detectors in the patient rooms will be system connected.  These are strictly patient rooms and there are no cooking facilities within them.

Norris Inc. will provide fire alarm equipment, submittal documents, fire alarm permits, final connections and testing per City of Portland requirements.
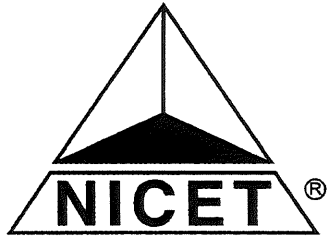
# NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES®

*Providing Certification Programs Since 1961*

BE IT KNOWN THAT

## David S. Gagnon

IS HEREBY AWARDED CERTIFICATION AT

## LEVEL IV

IN FIRE PROTECTION ENGINEERING TECHNOLOGY
FIRE ALARM SYSTEMS

BASED UPON SUCCESSFUL DEMONSTRATION OF REQUISITE KNOWLEDGE, EXPERIENCE AND WORK PERFORMANCE AS SET FORTH BY THIS INSTITUTE.

Certification Valid through April 1, 2014

CERTIFICATION NUMBER 88203

CHAIRMAN OF THE NICET BOARD OF GOVERNORS

A DIVISION OF THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

**NORRIS** INC

PO Box 2551
2257 West Broadway
South Portland, ME 04106

1.800.370.3473
fax 207.879.0540

www.norrisinc.com

# SUBMITTAL PACKAGE

| | |
|---|---|
| **Project:** | **Seaside Rehab** |
| **System:** | **Fire Alarm System** |
| **Submitted By:** | **Norris Inc.**<br>**2257 West Broadway**<br>**South Portland, Maine 04106**<br>**Telephone: (800) 370-3473** |
| **Electrical Contractor:** | **Regional Electric LLC**<br>**186 Summer Street**<br>**Auburn, ME. 04210** |
| **Date:** | **January 15, 2013** |

**Norris Inc**
2257 West Broadway
South Portland, ME 04106
1-800-370-3473

**REGIONAL ELECTRIC LLC**
ATTN: ACCOUNTS PAYABLE
186 SUMMER STREET
AUBURN, ME 04210

**REGELE**   207-795-7800

## Seaside Rehab Fire Alarm

| Description |
| --- |

NOTIFIER-NFS2640, Notifier NFS 640 Version 2.0
NOTIFIER-CPU2-640, Cntl process unit for the NFS2-640 integral 120V power supply
NOTIFIER-KDM-R2, Keyboard Display Module; For CPU2-640 80-character display
NOTIFIER-DP-DISP2, Dress Plate used when CPU2-640 is mounted on top row.
NOTIFIER-DP-1B, Dress panel blank; covers unused cabinet row(s), black.
NOTIFIER-BMP-1, Blank module dress plate;cover annunciator positions.
NOTIFIER-DR-D4, Door, lock & keys.  Accepts 4 chassis, black.
NOTIFIER-SBB-D4, Backbox, 4 chassis, black.
ADI-IM-12180, 12V 18AH Battery
NOTIFIER-UDACT-2, Universal Digital Alarm Communictator Transmitter-2
ADI-MO-804R2, MOD TO MOD 8C 2'RADIONICS CORD
ADI-MO-RJ31X, SFS MT 8C RJ31X UL (917UL)
NOTIFIER-FDU-80, 80 Character Display Ann.
NOTIFIER-NBG-12LX, Addressable Pull Station; with FlashScan.
NOTIFIER-FSP-851, Intelligent Addressable Photo detector; with FlashScan.
NOTIFIER-FST-851, Intelligent Address135 degree thermal detector with FlashScan.
NOTIFIER-B710LPBP, Intelligent Detector Bases, w/flange; ten.
NOTIFIER-B710LP, Intelligent detector base, with flange.
NOTIFIER-CO1224T, Conventional Carbon Monoxide Detector, 12/24 VDC
NOTIFIER-FMM-101, Address Mini Mod; FlashScan (CO Detector)
NOTIFIER-FMM-101, Address Mini Mod; FlashScan (sprinkler)
NOTIFIER-FRM-1, Address Relay Modwith FlashScan (elevator)
NOTIFIER-FRM-1, Address Relay Modwith FlashScan (door holders)
NOTIFIER-FCPS-24S8, 8.0 amps, 120 VAC remote charger power supply.
ADI-IM-1270, 12V 7AH Battery
NOTIFIER-HSR, Horn Strobe, Red, Wall, 2 wire, 12/24V, multi-candela
NOTIFIER-STR, Strobe, Red, Wall, 2 wire, 12/24V, multi-candela
NOR-PORTINSPSTKR, City of Portland Inspection Sticker
SPECIAL-AES, AES Radio Masterbox

**Norris Inc**

**2257 West Broadway**

**South Portland, ME 04106**

**1-800-370-3473**

**REGIONAL ELECTRIC LLC**

ATTN: ACCOUNTS PAYABLE

186 SUMMER STREET

AUBURN, ME 04210

**REGELE**   207-795-7800

## Seaside Rehab Fire Alarm

| Description |
| --- |
| AES-7788F, UL FIRE 8 ZONE RED CASE W/2.5 DB ANTENNA |
| ADI-EK-TRG1640, Transformer |
| AES-7210-5-UM, 5dB Omni directional UHF Antenna |
| AES-13-0346, Cable Assembly;  18#  RG-58  Used to connect RG-8 with N male to |
| AES-7230, Standard Coaxial Surge Protector, N female  N female |
| NOTIFIER-FRM-1, Address Relay Modwith FlashScan (master box) |
| NOTIFIER-FMM-101, Address Mini Mod; FlashScan (master box) |
| ADI-GI-TSW01, Tamper Box w/ Shunt |

# NFS2-640

## Intelligent Addressable Fire Alarm System

**NOTIFIER®**
by Honeywell

**Intelligent Fire Alarm Control Panels**

## General

The NFS2-640 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 meets virtually every application requirement.

Designed with modularity and for ease of system planning, the NFS2-640 can be configured with just a few devices for small building applications, or for a large campus or high-rise application. Simply add additional peripheral equipment to suit the application.

A host of other options are available, including single- or multi-channel voice; firefighters telephone; LED, LCD, or PC-based graphic annunciators; fire or integration networking; advanced detection products for challenging environments, and many additional options.

**NOTE:** Unless called out with a version-specific "E" at the end of the part number, "NFS2-640" refers to models NFS2-640 and NFS2-640E; similarly, "CPU2-640" refers to models CPU2-640 and CPU2-640E.

## Features

- Certified for seismic applications when used with the appropriate seismic mounting kit.
- One, expandable to two, 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, notification, or relay) per SLC. 318 devices per loop/636 per FACP or network node.
- Standard 80-character display, 640-character large display (NCA-2, or display-less (a node on a network).
- Network options:
  - High-speed network for up to 200 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC, 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, ONYXWorks, NCS, NFS-3030, NFS-640, NCA, AFP-200, AFP-300/400, AFP-1010, and AM2020). Up to 54 nodes when DVC is used in network paging.
- 6.0 A switch mode 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).
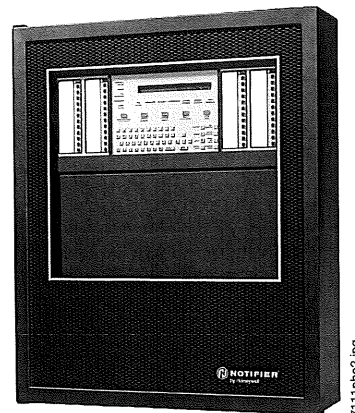


**NFS2-640**

- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with tally.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.
- March time/temporal/California two-stage coding/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.
- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.
- Support for SCS Series smoke control system in HVAC mode.

### NCA-2 AS PRIMARY DISPLAY

- Backlit, 640-character display.
- Supports SCS Series smoke control system in FSCS mode when SCS is connected to the **NCA-2** used as primary display.
- Supports DVC digital audio loop.
- Printer and CRT EIA-232 ports.
- EIA-485 annunciator and terminal mode ports.
- Alarm, Trouble, Supervisory, and Security relays.

### FLASHSCAN® INTELLIGENT FEATURES

- Poll up to 318 devices in less than two seconds.
- Activate 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 — nine levels.
- Pre-alarm ONYX intelligent sensing — nine levels.
- Day/Night automatic sensitivity adjustment.
- Sensitivity windows:
  - **Ion** – 0.5 to 2.5%/foot obscuration.
  - **Photo** – 0.5 to 2.35%/foot obscuration.
  - **Laser (VIEW®)** – 0.02 to 2.0%/foot obscuration.
  - **Acclimate Plus™** – 0.5 to 4.0%/foot obscuration.
  - **IntelliQuad™** – 1.0 to 4.0%/foot obscuration.
  - **IntelliQuad™ PLUS** – 1.0 to 4.0%/foot obscuration
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode — in the unlikely event that the CPU2-640 microprocessor fails, FlashScan detectors revert to degraded operation and can activate the CPU2-640 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 (VERY INTELLIGENT EARLY WARNING) SMOKE DETECTION TECHNOLOGY

- Revolutionary spot laser design.
- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- No moving parts to fail or filters to change.

- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

## FAPT-851 ACCLIMATE PLUS LOW-PROFILE INTELLIGENT MULTI-SENSOR

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- FlashScan or CLIP ("classic") mode compatible.
- 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.
- Six sensitivity levels.

## 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.
- 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.
- Six sensitivity levels.



**Sample System Options** — NFS2-640 "C" cabinet size shown

7111blok.wmf
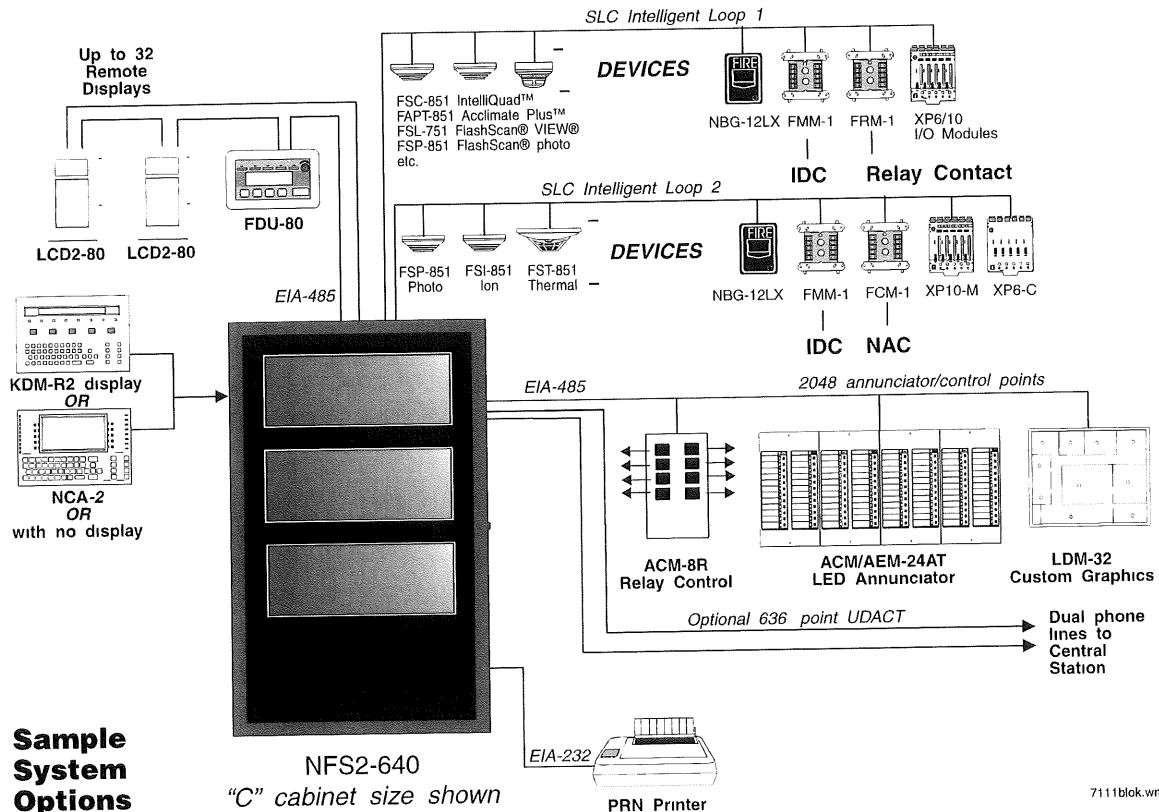
## RELEASING FEATURES

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure $CO_2$ listed.

## VOICE AND TELEPHONE FEATURES

- Up to eight channels of digital audio.
- 35, 50 and, 75 watt digital amplifiers (DAA2/DAX series) (NCA-2 required as primary display).
- Solid-state digital message generation.
- Firefighter telephone option.
- 30- to 120-watt high-efficiency amplifiers (AA Series).
- Backup tone generator and amplifier option.

## HIGH-EFFICIENCY OFFLINE SWITCHING 3.0 A POWER SUPPLY (6.0 A IN ALARM)

- 120 VAC (NFS2-640); 240 VAC (NFS2-640E).
- Displays battery current/voltage on panel (with display).

## FlashScan, Exclusive World-Leading Detector Protocol

At the heart of the NFS2-640 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 new protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS2-640 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 NFS2-640 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 NFS2-640.

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

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

**Sensitivity Adjust:** Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

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

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

## Field Programming Options

**Autoprogram.** This timesaving feature is a special software routine. 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 NFS2-640, 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 NFS2-640 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 NFS2-640 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 NFS2-640 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 NFS2-640's flexible system design.

**Rows:** The first row of equipment in the cabinet mounts in the chassis shipped with the CPU. Mount the second, third, or fourth rows of equipment in a CHS-4 series chassis or, for Digital Voice Command products, in CA-1 or CA-2. (For DVC and DAA2/DAX components see DVC Manual; for DVC-AO applications, see AA Series Installation Manual).Other options are available; see your panel's installation manual.

**Wiring:** When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the NFS2-640 Installation Manual.

**Positions:** A chassis offers four basic side-by-side positions for components; the number of modules that can be mounted in each position depends on the chassis model and the size of the individual module. There are a variety of standoffs and hardware items available for different combinations and configurations of components.

It is critical that all mounting holes of the NFS2-640 are secured with a screw or standoff to ensure continuity of Earth Ground.

**Layers:** The CPU's chassis accepts four layers of equipment, including the control panel. The **CPU2-640** fills three positions (left to right) in the first-installed layer (the back of the chassis); its integral power supply occupies the center two positions in the next two layers; the optional display occupies (the left) two positions at the front, flush with the door. Some equipment, such as the **NCA-2**, may be mounted in the dress panel directly in front of the control panel. The NCA-2 can be used as a primary display for the NFS2-640 (use NCA/640-2-KIT) by directly connecting their network ports (required in Canadian stand-alone applications); see NCA-2 data sheet for mounting options *(DN-7047)*.

**Expansion:** Installing an **LEM-320** Loop Expander Module adds a second SLC loop to the control panel. The LEM-320 is mounted onto the CPU2-640, occupying the middle-right, second (back) slot on the chassis.

**Networking:** If networking two or more control panels, each unit requires a Network Control Module or High-Speed Network Control 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 the network control modules.

## KDM-R2 Controls and Indicators

**Program Keypad:** QWERTY type *(keyboard layout, see figure)*.

**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.

## Ordering Information

- "Configuration Guidelines" on page 4
- "Networking Options" on page 4
- "Auxiliary Power Supplies and Batteries" on page 4
- "Audio Options" on page 5
- "Compatible Devices, EIA-232 Ports" on page 5
- "Compatible Devices, EIA-485 Ports" on page 5
- "Compatible Intelligent Devices" on page 5
- "Enclosures, Chassis, and Dress Plates" on page 6
- "Other Options" on page 7

### CONFIGURATION GUIDELINES

*Stand-alone and network systems require a main display. On single-CPU systems (one CPU2-640/-640E), display options are the KDM-R2 or the NCA-2. On network systems (two or more networked fire panel nodes), at least one NCA-2, NCS, or ONYXWorks annunciation device is required. Other options listed as follows;*

**KDM-R2:** 80-character backlit LCD display with QWERTY programming and control keypad. Order two BMP-1 blank modules and DP-DISP2 mounting plate separately. *Requires top row of a cabinet. Required for each stand-alone 80-character display system. The KDM-R2 may mount in network nodes to display "local" node information as long as at least one NCA-2 or NCS/ONYXWorks network display is on the system to display network information.*

**NCA-2:** Network Control Annunciator, 640 characters. On single *CPU2-640/-640E* systems, the optional NCA-2 can be used as the Primary Display for the panel and connects directly to the *CPU2-640/-640E*. On network systems (two or more networked fire panel nodes), one network display (either NCA-2 or NCS/*ONYXWorks*) is required for every system. On network systems, the NCA-2 connects to (and requires) a standard Network Control Module or High-Speed Network Control Module. Mounts in a row of FACP node or in two annunciator positions. Mounting options include the DP-DISP2, ADP-4B, or in an annunciator box, such as the ABS-2D. In CAB-4 top-row applications, a DP-DISP2 and two BMP-1 blank modules are required for mounting. Required for NFS2-640 applications employing the DVC-EM with DAL devices. *See DN-7047.*

**CPU2-640:** Central processing unit with integral 3.0 A (6.0 A in alarm) power supply for an NFS2-640 system. Includes CPU factory-mounted on a chassis; one Signaling Line Circuit expandable to two; installation, programming and operating manuals. *Order one per system or as necessary (up to 103 network nodes) on a network system.*

**CPU2-640E:** Same as CPU2-640 but requires 240 VAC, 1.5 A, (3.0 A in alarm).

**NCA/640-2-KIT:** Bracket installation kit required to mount NCA-2 to the CPU2-640/-640E's standard chassis.

**DP-DISP2:** Dress panel for top row in cabinet with CPU2-640/640E installed.

**ADP2-640:** Dress panel for middle rows with CPU2-640/640E.

**BMP-1:** Blank module for unused module positions.

**BP2-4:** Battery plate, required.

**LEM-320:** Loop Expander Module. Expands each NFS2-640 to two Signaling Line Circuits. *See DN-6881.*

### 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 that can connect to two nodes. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454.*

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

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

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

### AUXILIARY POWER SUPPLIES AND BATTERIES

**ACPS-610:** 6.0 A or 10 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. NFS2-640 utilizes two 12 volt, 18 to 200 AH batteries. Mounts in NFS-LBB(R). *See DN-6933.*

## AUDIO OPTIONS

*NOTE: See "Enclosures, Chassis, and Dress Plates" on page 6 for mounting harware.*

**DVC-EM:** Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. Capable of playing up to eight simultaneous messages when used with Digital Audio Loop (DAL) devices. *See DN-7045.*

**DVC-KD:** Keypad for local annunciation and controls; status LEDs and 24 user-programmable buttons. *See DN-7045.*

**DVC-AO:** DVC Analog Output board provides four analog output circuits for use with AA Series amplifiers. Four-channel operation supported. *See DN-7045.*

**DAA2-5025(E):** 50W, 25 Vrms Digital Audio Amplifier assembly with power supply; includes chassis. *See DN-60556.*

**DAA2-5070(E):** 50W, 70.7 Vrms Digital Audio Amplifier assembly with power supply; includes chassis. *See DN-60556.*

**DAA2-7525(E):** 75W, 25 Vrms digital audio amplifier assembly with power supply; includes chassis. *See DN-60556.*

**DAX-3525(E):** 35W, 25 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

**DAX-3570(E):** 35W, 70.7 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

**DAX-5025(E):** 50W, 25 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

**DAX-5070(E):** 50W, 70.7 Vrms Digital Audio Amplifier assembly with power supply, includes chassis. *See DN-60561.*

**TELH-1:** Firefighter's Telephone Handset for use with the DVC-EM when mounted in the CA-2 chassis. *See DN-7045.*

**CMIC-1:** Optional microphone and microphone well assembly used with the CA-1 chassis.

**RM-1/RM-1SA:** Remote microphone assemblies, mount on ADP-4 (RM-1) dress panel or CAB-RM/-RMR (RM-1SA) stand-alone cabinets. *See DN-6728.*

**FTM-1:** Firephone Control Module connects a remote firefighter telephone to a centralized telephone console. Reports status to panel. Wiring to jacks and handsets is supervised. See DN-6989.

**AA-30:** Audio Amplifier, 30 watts. Switch-mode power. Includes amplifier and audio input supervision, backup input, and automatic switchover, power supply, cables. *See DN-3224.*

**AA-120/AA-100:** Audio Amplifier provides up to 120 watts of 25 Vrms audio power for the NFS-640. The amplifier contains an integral chassis for mounting to a CAB-B4, -C4, or -D4 backbox (consumes one row). Switch-mode power. Includes audio input and amplified output supervision, backup input, and automatic switchover to backup tone. Order the AA-100 for 70.7 Vrms systems and 100 watts of power. *See DN-3224.*

## COMPATIBLE DEVICES, EIA-232 PORTS

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

**VS4095/5:** Printer, 40-column, 24V. 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. *See DN-6870.*

## COMPATIBLE DEVICES, EIA-485 PORTS

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

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

**ACM-48A:** ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. *See DN-6862.*

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

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

**LCD-80:** ACS mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. *See LCD-80/-80TM (DN-3198).*

**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 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 graphic 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. *See DN-4818.*

**TM-4:** Transmitter Module. Includes three reverse-polarity circuits and one municipal box circuit. Mounts in panel module position (single-address-style) or in CHS2-M2 position. *See DN-6860.*

**UDACT:** Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-4867.*

**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). Up to 256 programmable codes. Mounts in **BB-UZC** or other compatible chassis (purchased separately). *See DN-3404.*

## COMPATIBLE INTELLIGENT DEVICES

**BEAMHK:** Heating kit for transmitter/receiver unit of FSB-200(S) below. *See DN-6985.*

**BEAMHKR:** Heating kit for use with the reflector of FSB-200(S) below. *See DN-6985.*

**BEAMLRK:** Long-range accessory kit, FSB-200(S) below. *See DN-6985.*

**BEAMMKR:** Multi-mount kit, FSB-200(S) below. *See DN-6985.*

**BEAMSMK:** Surface-mount kit, FSB-200(S) below. *See DN-6985.*

**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.*

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

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

**FSP-851T:** FSP-851 plus dual electronic thermistors that add 135°F (57°C) fixed-temperature thermal sensing. *See DN-6935.*

**FSP-851R:** FSP-851, remote-test capable. For use with DNR(W). *See DN-6935.*

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

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

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

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

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

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

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

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

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

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

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

**B200S:** Intelligent addressable 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 NAC control module. *See DN-6720..*

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

**FRM-1:** FlashScan relay module. *See DN-6720..*

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

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

## ENCLOSURES, CHASSIS, AND DRESS PLATES

**CAB-4 Series Enclosure:** NFS2-640 mounts in a standard CAB-4 Series enclosure (available in four sizes, "A" through "D"). Backbox and door ordered seperately; requires BP2-4 battery plate. A trim ring option is available for semi-flush mounting. *See DN-6857.*

**EQ Series Cabinets:** EQ series cabinets will house amplifiers, power supplies, battery chargers and control modules. EQ cabinets are available in three sizes, "B" through "D". *See DN-60229. .*

**CHS-4:** Chassis for mounting up to four APS-6Rs.

**CHS-4L:** Low-profile four-position Chassis. Mounts two AA-30 amplifiers or one AMG-E and one AA-30.

**DP-1B:** Blank dress panel. Provides dead-front panel for unused tiers; covers DAA2-series or AA-series amplifier.

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

**NFS-LBBR:** Same as above but red.

**CHS-BH1:** Battery chassis; holds two 12.0 AH batteries. Mounts one the left side of DAA2 chassis. See DN-7046.

**CA-1:** Chassis, occupies one tier of a CAB-4 Series enclosure. The left side accommodates one DVC and a DVC-KD (optional); and the right side houses a CMIC-1 microphone and its well (optional). *See DN-7045.*

**CA-2:** Chassis assembly, occupies two tiers of a CAB-4 Series enclosure. The left side accommodates one DVC mounted on a half-chassis and one NFS2-640 or NCA-2 mounted on a half-chassis. The right side houses a microphone/handset well. The CA-2 assembly includes CMIC-1 microphone. ADDR Series doors with two-tier visibility are available for use with the CA-2 configuration: ADDR-B4, ADDR-C4, ADDR-D4 (below).

**CFFT-1:** Chassis to mount firefighters telephone and one ACS annunciator in a CAB-4 row. Includes TELH-1 firefighters handset for the DVC, chassis, phone well and mounting hardware. Order DP-CFFT dress panel separately.

**DP-CFFT:** CFFT-1 dress panel. Requires BMP-1 if no ACS annunciator is installed.

**ADDR-B4\*:** Two-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-B4 backbox with the ADDR-B4. *See DN-7045, DN-6857.*

**ADDR-C4\*:** Three-tier-sized door, designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-C4 backbox with the ADDR-C4. *See DN-7045, DN-6857.*

**ADDR-D4\*:** Four-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-D4 backbox with the ADDR-D4. *See DN-7045, DN-6857.*

\*Use ADDR-B4/C4/D4 when CA-2 chassis is installed in top two rows with NCA-2 or BP-CA2. Use standard door when CA-2 is not installed in top two rows. Please see the DVC application guide for additional configuration information.

**DPA-1:** Dress panel, used with the CA-1 chassis when configured with a DVC, DVC-KD, and CMIC-1. *See DN-7045.*

**DPA-2B:** Dress panel used with CA-2 chassis assembly.

**VP-2B:** Dress panel, required when CA-2 chassis is installed in the top two cabinet rows.

**DPA-1A4:** Dress panel, used with the CA-1 chassis when the CMIC-1 is not used. Provides mounting options on right two bays for two ACS annunciators, or for blank plates. *See DN-7045.*

**BP-CA2:** Blank plate for CA-2 chassis.

**BB-UZC:** Backbox for housing the UZC-256 in applications where the UZC-256 will not fit in panel enclosure. Black; for red, order BB-UZC-R.

**SEISKIT-CAB:** Seismic mounting kit. Required for seismic-certified applications with NFS2-640 and BB-26. Includes battery bracket for two 26 AH batteries.

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

**SEISKIT-PS/2/4:** Seismic mounting kit for the FCPS-24S6/S8 and CAB-PS1. Includes battery bracket for two 7 AH or 12 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.*

**IPCHSKIT:** IP Communicator Chassis Mounting Kit. For mounting an IPDACT-2/2UD onto the panel chassis or CHS-4 series chassis. Use IPENC for external mounting applications.

**IPSPLT:** Y-adaptor 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-COM:** Internet and Digital Cellular Fire Communicator Panel. Uses internet as primary with dual GSM technology as backup. Connects to the primary and secondary ports of a DACT. *See DN-60656.*

**VeriFire-TCD::** VeriFire Tools programming software for the ONYX Series. Includes local panel connection cable. *See DN-6871.*

**VeriFireUG-TCD:** VeriFire Tools upgrade software.

*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 expandable to 2
- Intelligent detectors ........................................159 per loop
- Addressable monitor/control modules ..............159 per loop
- Programmable software zones.........................................99
- Special programming zones............................................14
- LCD annunciators per CPU2-640/-640E
  and NCA-2 *(observe power)*............................................32
- ACS annunciators per
  CPU2-640/-640E ..........................32 addresses x 64 points
- ACS annunciators per
  NCA-2.................................32 addresses x 64 or 96 points

*NOTE: The NCA-2 supports up to 96 annunciator address points per ACM-24AT/-48A.*

## Specifications

- Primary input power:
  - CPU2-640 board: 120 VAC, 50/60 Hz, 5.0 A.
  - CPU2-640E board: 220/240 VAC, 50/60 Hz, 2.5 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.*

- 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

Systems can be installed in CAB-4 Series cabinets *(four sizes with various door options, see DN-6857)*. Requires BP2-4 Battery Plate.

## Shipping Weight

- CPU2-640/-640: 14.3 lb (6.49 kg).
- CPU2-640/-640E: 14.55 lb (6.60 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 NFS2-640 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
- **FM Approved**
- **MEA:** 128-07-E
- **FDNY:** COA# 6067
- **CSFM:** 7165-0028:0243
- **City of Chicago**
- **City and County of Denver**
- **CCCF listed**

## Standards

The NFS2-640 complies with the following UL Standards and NFPA 72, IBC, and CBC Fire Alarm Systems requirements:

- **UL 864, 9th Edition** (Fire).
- **UL 1076** (Burglary).
- **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 and Waterflow). *Not applicable for FM.*
- **EMERGENCY VOICE/ALARM.**
- **OT, PSDN** (Other Technologies, Packet-switched Data Network).
- **IBC 2000, IBC 2003, IBC 2006, IBC2009** (Seismic).
- **CBC 2007** (Seismic).

## ISO 9001
**CERTIFIED**
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

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Made in the U.S.A.

# >CAB-4 Series Cabinets

## ONYX® Series Backboxes
## with Locking Doors

# NOTIFIER®
## by Honeywell

**Peripheral Devices**

## General

All cabinets for NOTIFIER fire alarm control panels are fabricated from 16-gauge steel. The cabinet assembly consists of two basic parts: a backbox and a locking door. Cabinets are available in either black or red, with or without LEXAN® windows. The LEXAN model provides a tasteful combination to accent the decor of the finest lobby setting.

- The **key-locked door** is provided with a pin-type hinge, two keys and the necessary hardware to mount the door to the backbox.
- The **backbox** has been engineered to provide ease-of-entry for the installer. **Knockouts** are positioned at numerous points to aid the installer in bringing a conduit into the enclosure with a minimum of hardship.
- **Right- or left-hand hinges**, selectable in the field. Door opens 180°.
- Cabinets are arranged in **four standard sizes**, A (one tier) through D (four tiers), plus a **mini cabinet** (AA, one tier without a battery compartment). See *Ordering Information*.
- A **trim ring option** is available for semi-flush mounting.
- **Chassis bridge** available for assembling multiple CHS-4 chassis external to the backbox.

## Ordering Information

A complete cabinet assembly consists of: a door, a backbox, an optional battery plate, and an optional semi-flush trim ring. For each cabinet required, order one "DR" door and one "SBB" backbox. The BP-4 or BP2-4 battery plate is required for each cabinet assembly that mounts batteries and/or a power supply in the lower position of the cabinet. The optional trim ring is an attractive "picture frame"-style black metal ring.

### MINI "AA" SIZE, ONE TIER:

**DR-AA4:** Door assembly, LEXAN window, one tier (no battery compartment), BLACK.

**DR-AA4R:** Door assembly, LEXAN window, one tier (no battery compartment), RED.

**DR-AA4B:** Door assembly, solid door, one tier (no battery compartment), BLACK.

**DR-AA4BR:** Door assembly, solid door, one tier (no battery compartment), RED.

**SBB-AA4:** Backbox assembly, one tier (no battery compartment), BLACK.

**SBB-AA4R:** Backbox assembly, one tier (no battery compartment), RED.

**TR-AA4:** Accessory semi-flush-mount trim ring, one tier (no battery compartment).
*NOTE: Black trim rings are used with red or black cabinets.*

### ONE TIER, "A" SIZE:

**DR-A4:** Door assembly, LEXAN window, one tier, BLACK.

**DR-A4R:** Door assembly, LEXAN window, one tier, RED.

**DR-A4B:** Door assembly, solid door, one tier, BLACK.

**DR-A4BR:** Door assembly, solid door, one tier, RED.

**SBB-A4:** Backbox assembly, one tier, BLACK.

**SBB-A4R:** Backbox assembly, one tier, RED.

*NFS-640 in "B" sized
CAB-4 cabinet*

**TR-A4:** Accessory semi-flush-mount trim ring, one tier (opening 24.062" [61.118 cm] W x 20.062" [50.958 cm] H), BLACK.
*NOTE: Black trim rings are used with red or black cabinets.*

**BP-4:** Battery panel for NFS-640 and NFS-3030. Used to cover battery and power supply when lower position is used in backbox.

**BP2-4:** Battery panel for NFS2-3030. Used to cover battery and power supply when lower position is used in backbox.

### TWO TIERS, "B" SIZE:

**DR-B4:** Door assembly, LEXAN window, two tiers, BLACK.

**DR-B4R:** Door assembly, LEXAN window, two tiers, RED.

**DR-B4B:** Door assembly, solid door, two tiers, BLACK.

**DR-B4BR:** Door assembly, solid door, two tiers, RED.

**SBB-B4:** Backbox assembly, two tiers, BLACK.

**SBB-B4R:** Backbox assembly, two tiers, RED.

**TR-B4:** Accessory semi-flush-mount trim ring, two tiers (opening 24.062" [61.118 cm] W x 28.562" [72.548 cm] H), BLACK.
*NOTE: Black trim rings are used with red or black cabinets.*

**BP-4:** Battery panel for NFS-640 and NFS-3030. Used to cover battery and power supply when lower position is used in backbox.

**BP2-4:** Battery panel for NFS2-3030. Used to cover battery and power supply when lower position is used in backbox.

### THREE TIERS, "C" SIZE:

**DR-C4:** Door assembly, LEXAN window, three tiers, BLACK.

**DR-C4R:** Door assembly, LEXAN window, three tiers, RED.

**DR-C4B:** Door assembly, solid door, three tiers, BLACK.

**DR-C4BR:** Door assembly, solid door, three tiers, RED.

**SBB-C4:** Backbox assembly, three tiers, BLACK.

**SBB-C4R:** Backbox assembly, three tiers, RED.

**TR-C4:** Accessory semi-flush-mount trim ring, three tiers (opening 24.062" [61.118 cm] W x 37.187" [94.455 cm] H), BLACK.

*NOTE: Black trim rings are used with red or black cabinets.*

**BP-4:** Battery panel for NFS-640 and NFS-3030. Used to cover battery and power supply when lower position is used in backbox.

**BP2-4:** Battery panel for NFS2-3030. Used to cover battery and power supply when lower position is used in backbox.

### FOUR TIERS, "D" SIZE:

**DR-D4:** Door assembly, LEXAN window, four tiers, BLACK.

**DR-D4R:** Door assembly, LEXAN window, four tiers, RED.

**DR-D4B:** Door assembly, solid door, four tiers, BLACK.

**DR-D4BR:** Door assembly, solid door, four tiers, RED.

**SBB-D4:** Backbox assembly, four tiers, BLACK.

**SBB-D4R:** Backbox assembly, four tiers, RED.

**TR-D4:** Accessory semi-flush-mount trim ring, four tiers (opening 24.062" [61.118 cm] W x 45.812" [116.363 cm] H), BLACK.

*Note: Black trim rings are used with red or black cabinets.*

**BP-4:** Battery panel for NFS-640 and NFS-3030. Used to cover battery and power supply when lower position is used in backbox.

**BP2-4:** Battery panel for NFS2-3030. Used to cover battery and power supply when lower position is used in backbox.

### ACCESSORIES:

**WC-2:** Wire channel. Provides a pair of wire trays to neatly route wiring between CHS chassis.

**CB-1:** Chassis bridge. Provides a bridge between CHS Series chassis.

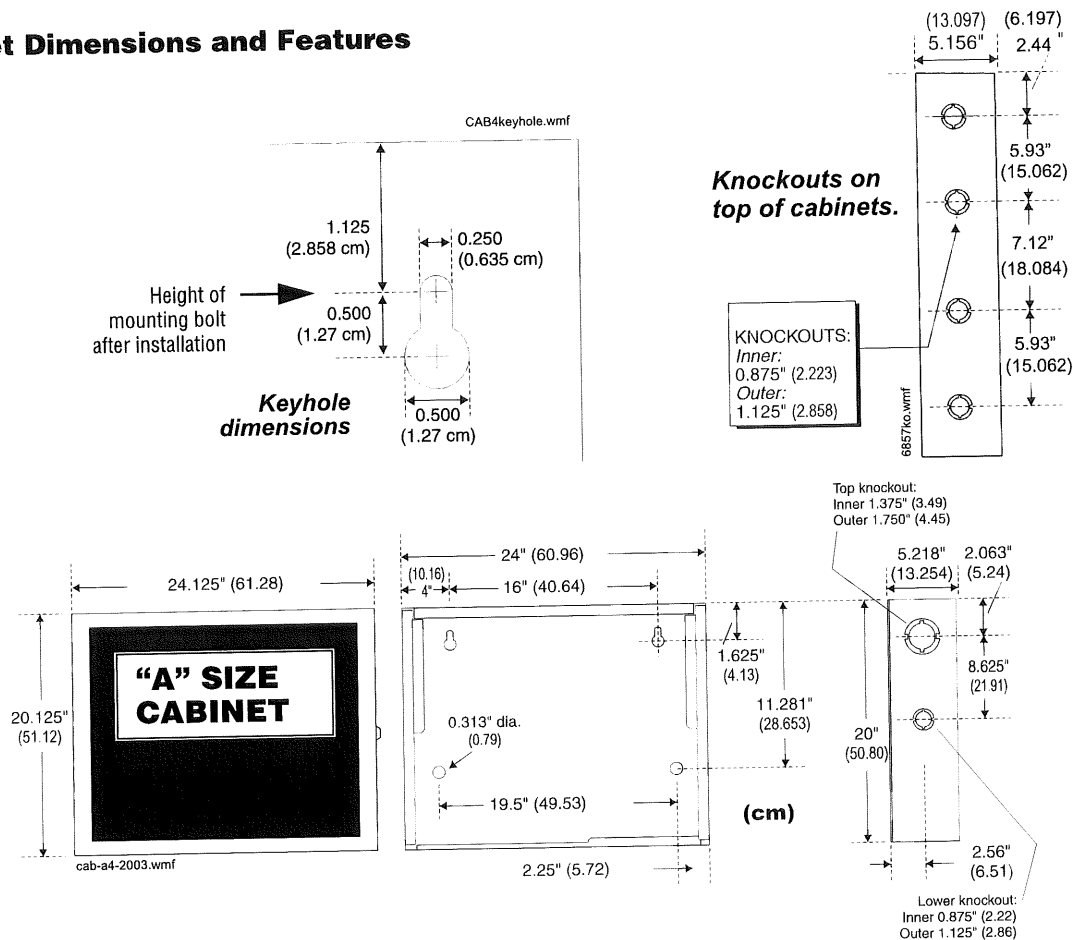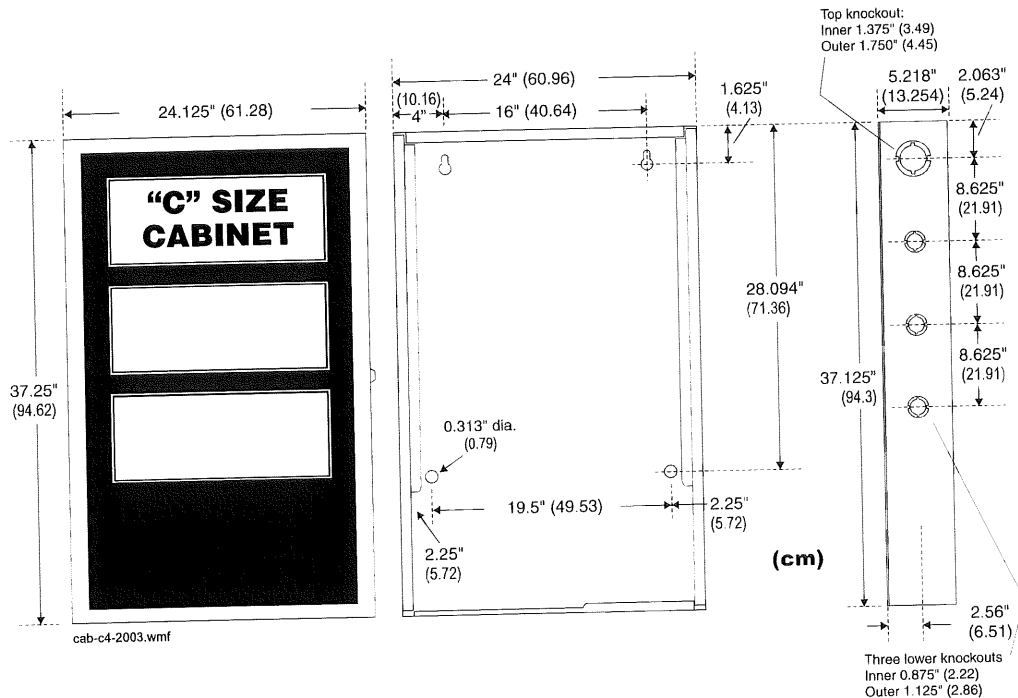**DP-1B:** Blank dress panel, covers one CAB-4 tier, BLACK.

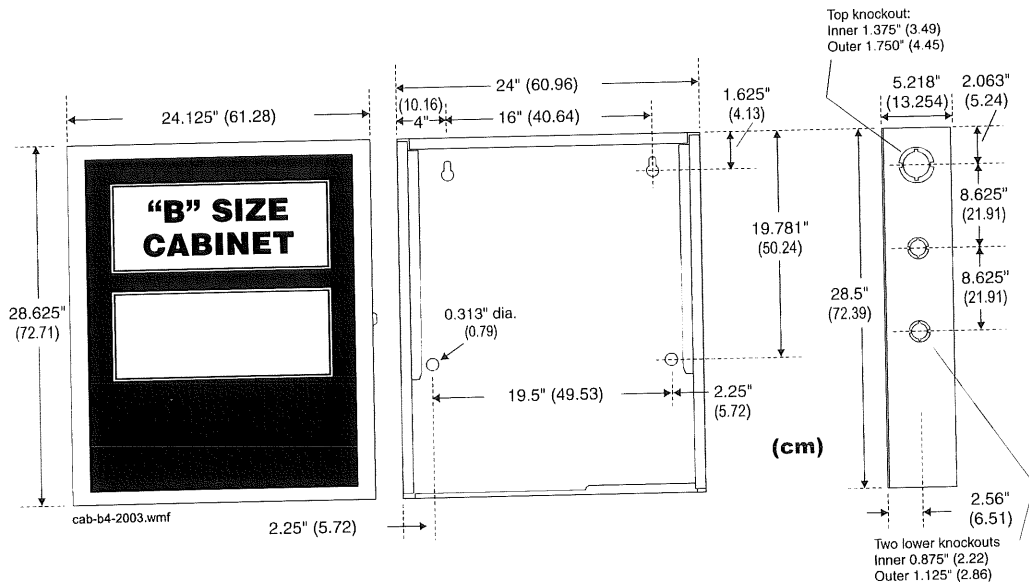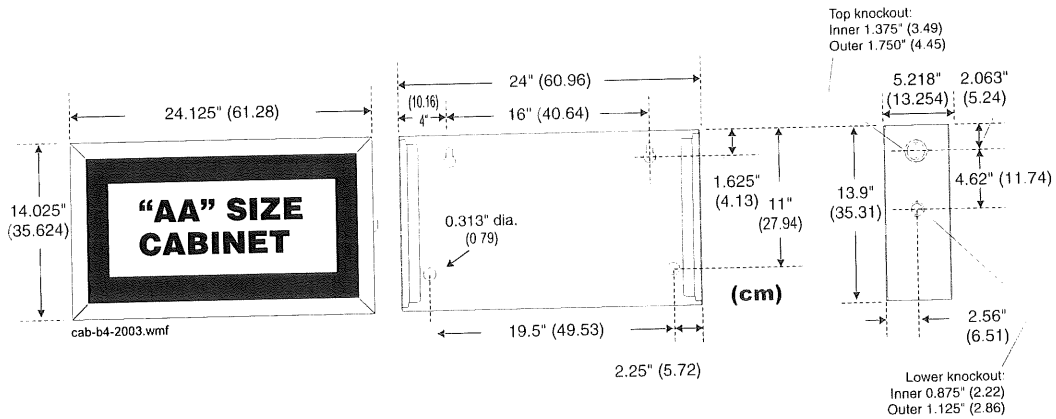**ADP-4B:** Annunciator dress panel.
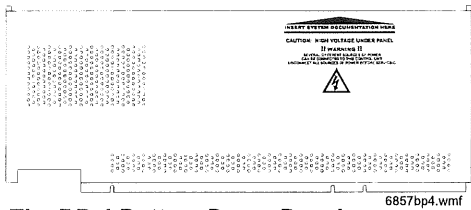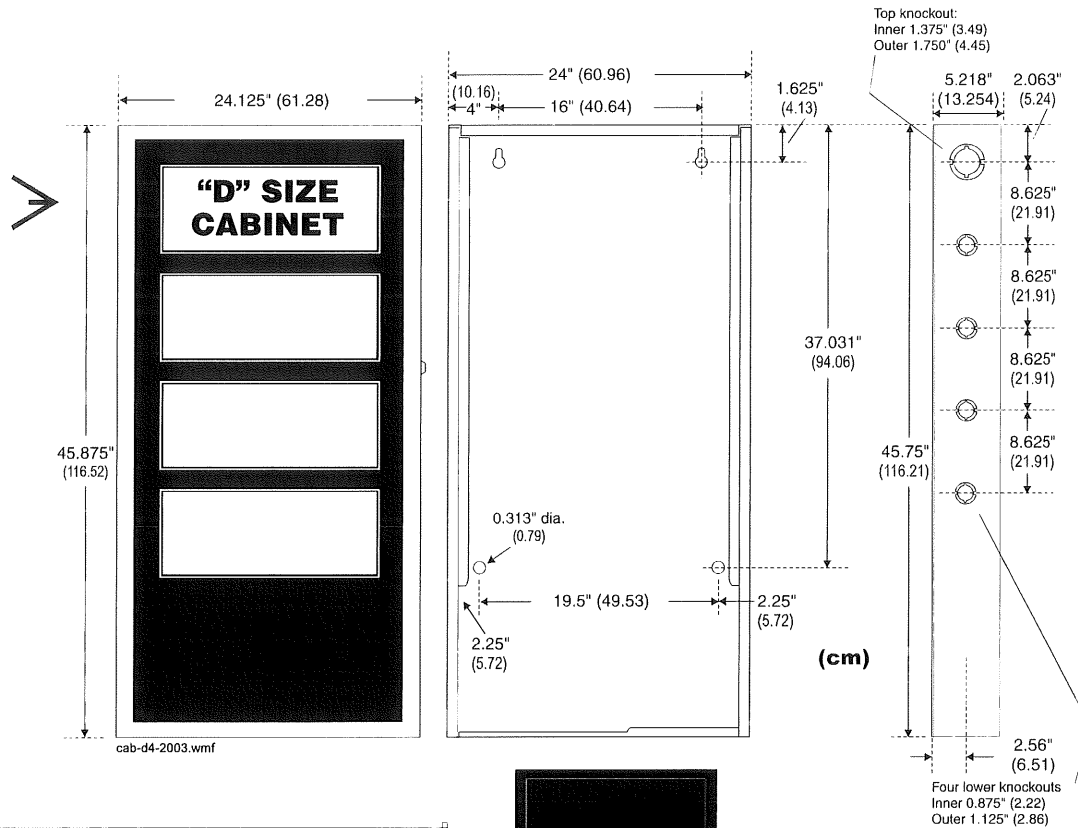
## Agency Listings and Approvals

These listings and approvals below apply to the CAB-4 Series Cabinets. 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: file S635 *(except AA size)*.
- **ULC** Listed: file CS118 *(except AA size)*.
- **MEA** approved: files 317-01-E, 345-02-E *(except AA size)*.
- **CSFM** approved *(except AA size)*: files 7165-0028:214 *(NFS-640)*, 7170-0028:216 *(NFS-640)*, 7165-0028:224 *(NFS-3030)*, 7170-0028:223 *(NFS-3030)*.
- **FM** approved *(except AA size)*.
- **U.S. Coast Guard** approved: 161.002/42/1 *(NFS-640)*.

## Cabinet Dimensions and Features



CAB4keyhole.wmf

1.125 (2.858 cm)

0.250 (0.635 cm)

Height of mounting bolt after installation

0.500 (1.27 cm)

**Keyhole dimensions**

0.500 (1.27 cm)

*Knockouts on top of cabinets.*

KNOCKOUTS:
*Inner:*
0.875" (2.223)
*Outer:*
1.125" (2.858)

(13.097) 5.156"   (6.197) 2.44"

5.93" (15.062)

7.12" (18.084)

5.93" (15.062)

6857ko.wmf



24.125" (61.28)

**"A" SIZE CABINET**

20.125" (51.12)

cab-a4-2003.wmf

24" (60.96)

(10.16) 4"

16" (40.64)

0.313" dia. (0.79)

19.5" (49.53)

2.25" (5.72)

1.625" (4.13)

11.281" (28.653)

**(cm)**

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5.218" (13.254)   2.063" (5.24)

8.625" (21.91)

20" (50.80)

2.56" (6.51)

Lower knockout:
Inner 0.875" (2.22)
Outer 1.125" (2.86)

**"AA" SIZE CABINET**

24.125" (61.28)

14.025" (35.624)

cab-b4-2003.wmf

24" (60.96)

(10.16) 4"

16" (40.64)

0.313" dia. (0 79)

19.5" (49.53)

2.25" (5.72)

1.625" (4.13)

11" (27.94)

13.9" (35.31)

**(cm)**

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5.218" (13.254)

2.063" (5.24)

4.62" (11.74)

2.56" (6.51)

Lower knockout:
Inner 0.875" (2.22)
Outer 1.125" (2.86)

---

**"B" SIZE CABINET**

24.125" (61.28)

28.625" (72.71)

cab-b4-2003.wmf

2.25" (5.72)

24" (60.96)

(10.16) 4"

16" (40.64)

0.313" dia. (0.79)

19.5" (49.53)

1.625" (4.13)

19.781" (50.24)

2.25" (5.72)

28.5" (72.39)

**(cm)**

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5.218" (13.254)

2.063" (5.24)

8.625" (21.91)

8.625" (21.91)

2.56" (6.51)

Two lower knockouts
Inner 0.875" (2.22)
Outer 1.125" (2.86)

---

**"C" SIZE CABINET**

24.125" (61.28)

37.25" (94.62)

cab-c4-2003.wmf

24" (60.96)

(10.16) 4"

16" (40.64)

0.313" dia. (0.79)

19.5" (49.53)

2.25" (5.72)

2.25" (5.72)

1.625" (4.13)

28.094" (71.36)

37.125" (94.3)

**(cm)**

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5.218" (13.254)

2.063" (5.24)

8.625" (21.91)

8.625" (21.91)

8.625" (21.91)

2.56" (6.51)

Three lower knockouts
Inner 0.875" (2.22)
Outer 1.125" (2.86)

## "D" SIZE CABINET

24.125" (61.28)

45.875" (116.52)

cab-d4-2003.wmf

24" (60.96)
(10.16)
4" — 16" (40.64)
1.625" (4.13)

37.031" (94.06)

0.313" dia. (0.79)

19.5" (49.53)

2.25" (5.72)

2.25" (5.72)

**(cm)**

Top knockout:
Inner 1.375" (3.49)
Outer 1.750" (4.45)

5.218" (13.254)   2.063" (5.24)

8.625" (21.91)

8.625" (21.91)

8.625" (21.91)

8.625" (21.91)

45.75" (116.21)

2.56" (6.51)

Four lower knockouts
Inner 0.875" (2.22)
Outer 1.125" (2.86)

INSERT SYSTEM DOCUMENTATION HERE

CAUTION HIGH VOLTAGE UNDER PANEL
!! WARNING !!

6857bp4.wmf

*The BP-4 Battery Dress Panel covers the Main Power Supply and the batteries in the cabinet. Only one BP-4 or BP2-4 is required per cabinet unless an AA cabinet is used (no battery compartment).*

6897d4b.wmf

*"D" sized cabinet with solid door. Solid door option available on all sizes in black or red.*

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Made in the U.S.A.

# BAT Series Batteries

## Sealed Lead-Acid or Gell Cell

### ⓃNOTIFIER®
### by Honeywell

**Power Supplies**

## General

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

## Features

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

6933cov.jpg
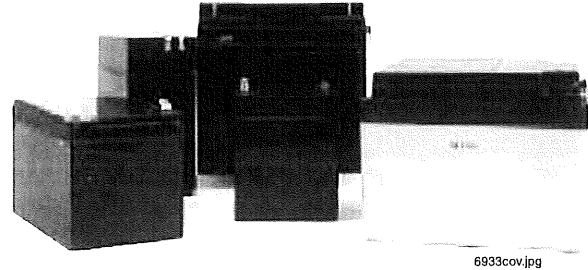
## Agency Listings and Approvals

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

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

## Part Number Reference

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

# POWER-SONIC

## Part Number Reference

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

### Characteristic Discharge Curves



Discharge Time @ 20°C (68°F)
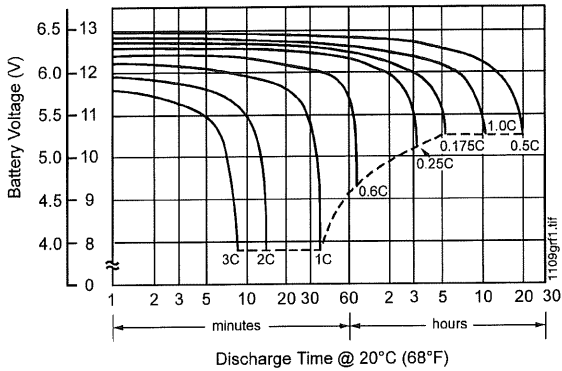
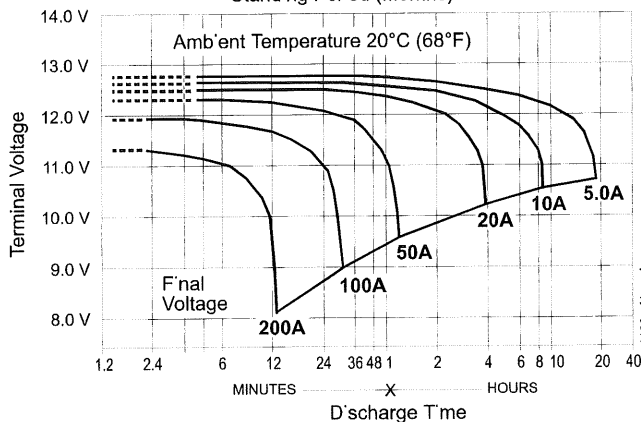### Effect of Temperature on Capacity



Temperature (Degrees C.)
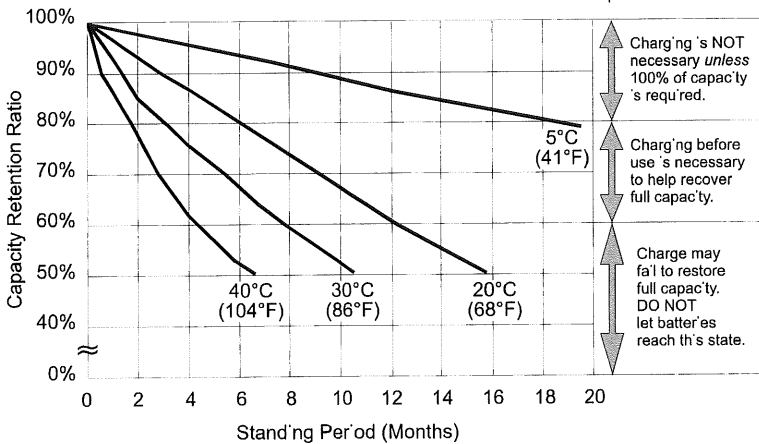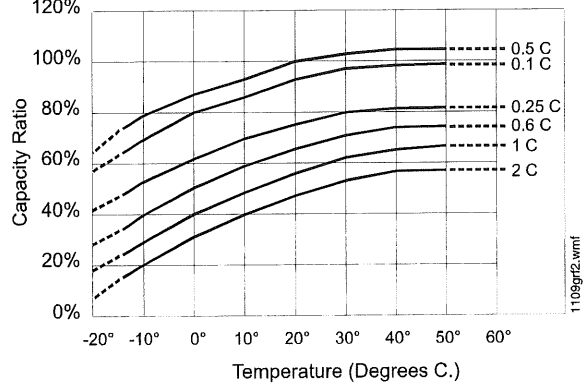


Charging 's NOT necessary *unless* 100% of capac'ty 's requ'red.

Charg'ng before use 's necessary to help recover full capac'ty.

Charge may fa'l to restore full capac'ty. DO NOT let batter'es reach th's state.

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

Stand'ng Per'od (Months)



**at left:**
**PS-1210000**
**Discharge**
**Characteristics**

D'scharge T'me

# B & B BATTERY

| Model | V | Nominal Capacity (AH) | | | | Weight | | Terminal | | | | Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Standard | | Optional | | L | | W | | H | | TH | |
| | | 20 hr | 10 hr | 5 hr | 1 hr | kg | lbs | Type | Pos. | Type | Pos. | mm | in | mm | in | mm | in | mm | in |
| BP5-12 | 12 | 5.00 | 4.75 | 4.25 | 3.00 | 1.86 | 4.10 | T1 | 3 | T2 | | 90 | 3.54 | 70 | 2.76 | 102 | 4.02 | 106 | 4.17 |
| BP7-12 | 12 | 7.00 | 6.65 | 5.95 | 4.20 | 2.60 | 5.73 | T2 | 5 | T1 | | 151 | 5.94 | 65 | 2.56 | 93 | 3.66 | 98 | 3.86 |
| BP12-12 | 12 | 12.00 | 11.40 | 10.20 | 7.20 | 4.03 | 8.89 | B1 | 5 | T1 | | 151 | 5.94 | 98 | 3.86 | 94 | 3.70 | 98 | 3.86 |
| BP26-12 | 12 | 26.00 | 24.70 | 22.10 | 15.60 | 9.40 | 20.73 | B1 | 7 | T2.I1 | 9 | 175 | 6.89 | 166 | 6.54 | 125 | 4.92 | 125 | 4.92 |

## Charging Procedure

| Application | Charging method | Charging voltage at 20°C (V/cell) | Temperature compensation coefficient of charging voltage (mV/°C/cell) | Maximum charging current (CA) | Charging time 0.1 CA, 20°C (h) | | Temp (°C) |
|---|---|---|---|---|---|---|---|
| | | | | | 100% discharge | 50% discharge | |
| For standby power source | Constant voltage and constant current charging (with current restriction) | 2.25 ~ 2.30 | − 3 | 0.3 | 24 | 20 | 0 – 40°C (32 ~104°F) |
| For cycle service | | 2.40 ~ 2.50 | − 4 | 0.3 | 16 | 10 | |

Temperature compensation of charging voltage is not needed when using the batteries within 5°C to 35°C range.

| Final Voltage | Discharge Time: for Model BP5-12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 5 min | 10 min | 15 min | 30 min | 1 hr | 3 hr | 5 hr | 10 hr | 20 hr |
| | Battery Output Power (W): for Model BP5-12 | | | | | | | | |
| 10.80 V | 180.8 | 133.1 | 106.6 | 63.5 | 36.39 | 14.57 | 10.05 | 5.62 | 2.94 |
| 10.50 V | 209.2 | 144.2 | 111.5 | 65.9 | 37.48 | 14.87 | 10.20 | 5.70 | 3.00 |
| 10.20 V | 222.3 | 149.4 | 115.0 | 67.4 | 38.16 | 15.00 | 10.26 | 5.73 | 3.01 |
| 9.90 V | 232.3 | 152.9 | 117.6 | 68.3 | 38.61 | 15.10 | 10.29 | 5.75 | 3.02 |
| 9.60 V | 240.0 | 156.0 | 120.0 | 69.0 | 39.0 | 15.20 | 10.32 | 5.75 | 3.02 |

*Constant Power Discharge Characteristics at 25°C/77°F*
## for BP5-12

| Final Voltage | Discharge Time: for Model BP7-12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 5 min | 10 min | 15 min | 30 min | 1 hr | 3 hr | 5 hr | 10 hr | 20 hr |
| | Battery Output Power (W): for Model BP7-12 | | | | | | | | |
| 10.80 V | 253.1 | 186.3 | 149.3 | 88.8 | 50.95 | 20.40 | 14.07 | 7.86 | 4.11 |
| 10.50 V | 292.9 | 201.8 | 156.2 | 92.2 | 52.47 | 20.81 | 14.28 | 7.98 | 4.20 |
| 10.20 V | 311.2 | 209.1 | 161.0 | 94.3 | 53.42 | 21.00 | 14.36 | 8.02 | 4.22 |
| 9.90 V | 325.2 | 214.1 | 164.7 | 95.6 | 54.06 | 21.15 | 14.41 | 8.04 | 4.23 |
| 9.60 V | 336.0 | 218.4 | 168.0 | 96.6 | 54.60 | 21.27 | 14.45 | 8.04 | 4.23 |

*Constant Power Discharge Characteristics at 25°C/77°F*
## for BP7-12

| Final Voltage | Discharge Time: for Model BP12-12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 5 min | 10 min | 15 min | 30 min | 1 hr | 3 hr | 5 hr | 10 hr | 20 hr |
| | Battery Output Power (W): for Model BP12-12 | | | | | | | | |
| 10.80 V | 433.9 | 319.4 | 256.0 | 152.3 | 87.34 | 34.98 | 24.12 | 13.48 | 7.05 |
| 10.50 V | 502.2 | 346.0 | 267.7 | 158.1 | 89.96 | 35.68 | 24.48 | 13.68 | 7.20 |
| 10.20 V | 533.6 | 358.5 | 276.0 | 161.7 | 91.57 | 36.00 | 24.61 | 13.75 | 7.23 |
| 9.90 V | 557.5 | 367.1 | 282.4 | 164.0 | 92.67 | 36.25 | 24.70 | 13.79 | 7.25 |
| 9.60 V | 576.0 | 374.4 | 288.0 | 165.6 | 93.60 | 36.47 | 24.77 | 13.79 | 7.25 |

*Constant Power Discharge Characteristics at 25°C/77°F*
## for BP12-12

| Final Voltage | Discharge Time: for Model BP26-12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 5 min | 10 min | 15 min | 30 min | 1 hr | 3 hr | 5 hr | 10 hr | 20 hr |
| | Battery Output Power (W): for Model BP26-12 | | | | | | | | |
| 10.80 V | 940.0 | 692.0 | 554.6 | 330.0 | 189.23 | 75.79 | 52.25 | 29.20 | 15.26 |
| 10.50 V | 1088.0 | 749.7 | 580.0 | 342.5 | 194.91 | 77.30 | 53.04 | 29.64 | 15.60 |
| 10.20 V | 1156.0 | 776.7 | 598.0 | 350.3 | 198.41 | 78.00 | 53.33 | 29.79 | 15.67 |
| 9.90 V | 1208.0 | 795.3 | 611.8 | 355.2 | 200.79 | 78.54 | 53.52 | 29.88 | 15.71 |
| 9.60 V | 1248.0 | 811.2 | 624.0 | 358.8 | 202.80 | 79.01 | 53.68 | 29.88 | 15.71 |

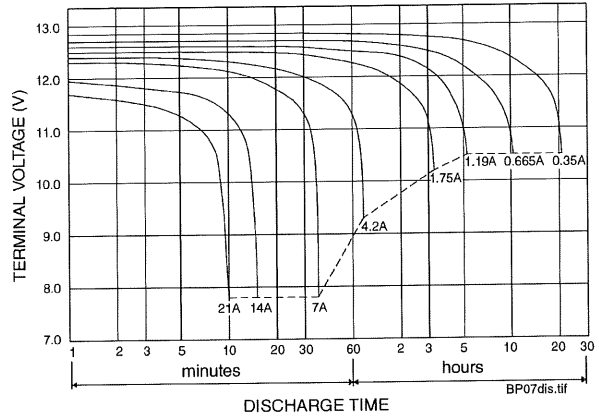*Constant Power Discharge Characteristics at 25°C/77°F*
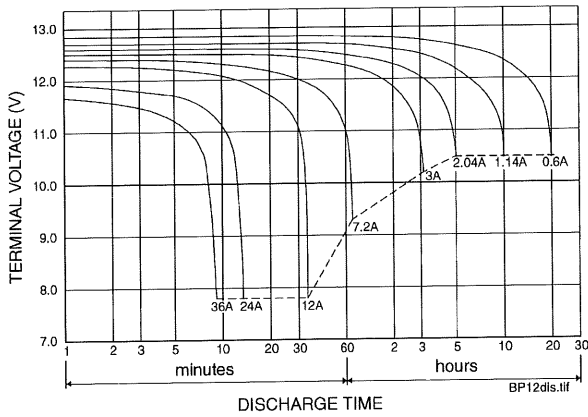## for BP26-12

# B & B BATTERY

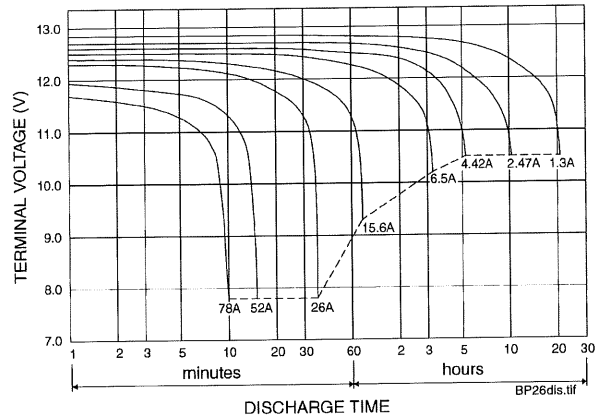### BP5-12 Battery Discharge Characteristics (25°C/77°F)
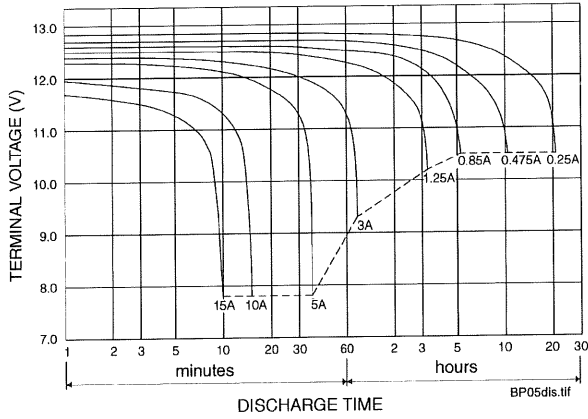


DISCHARGE TIME

BP05dis.tif

### BP7-12 Battery Discharge Characteristics (25°C/77°F)



DISCHARGE TIME

BP07dis.tif

### BP12-12 Battery Discharge Characteristics (25°C/77°F)



DISCHARGE TIME

BP12dis.tif

### BP26-12 Battery Discharge Characteristics (25°C/77°F)



DISCHARGE TIME

BP26dis.tif

**BP05-12**



6933bp05.jpg

**BP12-12**



6933bp12.jpg

**BP26-12**



6933bp26.jpg

# UPG BATTERY

*UB1250 has the same specifications as previous Jolt SA1250;*
*SA1272 to be replaced with UB1270 (specs/diagrams pending).*

## UB1250 (previously SA1250) Diagrams

### UB1250/SA1250 discharge current vs. time



6933up01.tif     Current
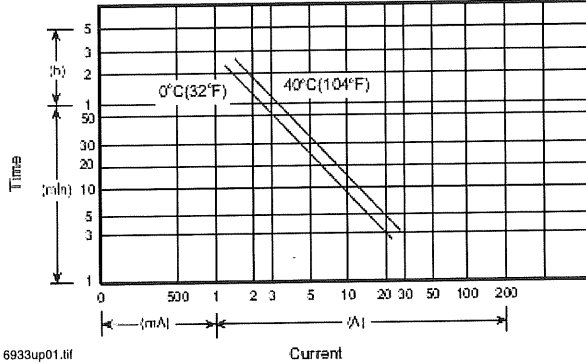
### UB1250/SA1250 discharge characteristics (25°C/77°F)



6933up02.tif     Discharge Time
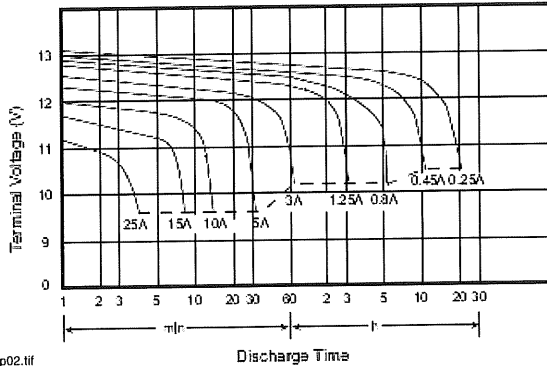
## UB1250, SA1250 Specifications

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 5.0 AH.
- Dimensions: total height 107 mm (4.21"); container height 101 mm (3.98"); length 90 mm (3.54"); width 70 mm (2.76").
- Weight: approximately 1.83 kg (4.03 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 32 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 0.25 A: 5.0 AH.
    5 hr @ 0.8 A: 4.0 AH.
    1 hr @ 3.0 A: 3.0 AH.
    1 C @ 5.0 A: 2.5 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.
- Maximum discharge current: 60 A (5 sec).
- Maximum charging current: 1.5 A.
- Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
    After 6 months: ~ 82%.
    After 12 months: ~ 70%.
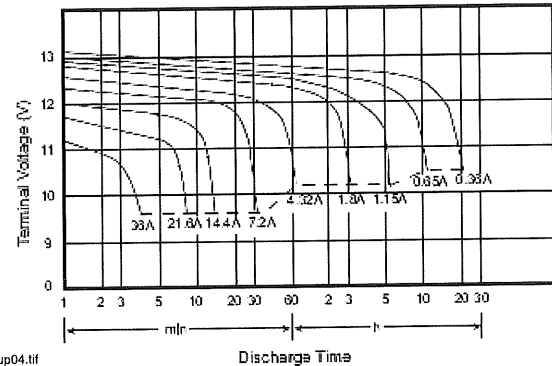
## SA1272 Diagrams

### SA1272 discharge current vs. time



6933up03.tif     Current
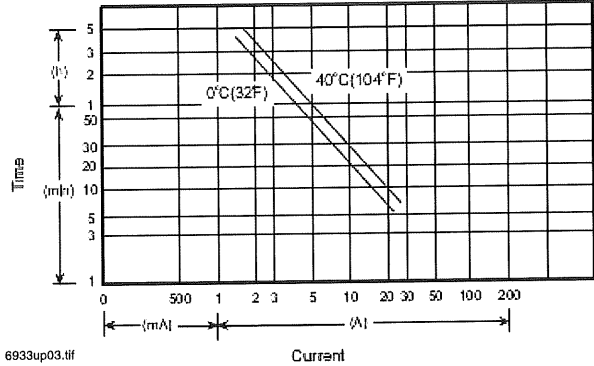
### SA1272 discharge characteristics (25°C/77°F)



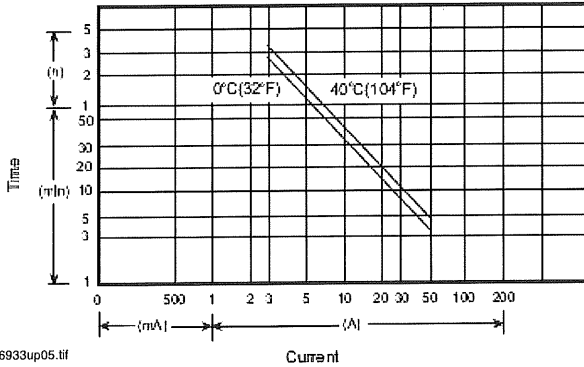6933up04.tif     Discharge Time

## SA1272 Specifications

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 7.2 AH.
- Dimensions: total height 100 mm (3.94"); container height 94 mm (3.70"); length 151 mm (5.95"); width 65 mm (2.56").
- Weight: approximately 2.66 kg (5.85 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 22 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 0.36 A: 7.2 AH.
    5 hr @ 1.15 A: 5.76 AH.
    1 hr @ 4.32 A: 4.32 AH.
    1 C @ 7.2 A: 3.6 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.
- Maximum discharge current: 90 A (5 sec).
- Maximum charging current: 2.16 A.
- Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
    After 6 months: ~ 82%.
    After 12 months: ~ 70%.

# UPG BATTERY

*Same specifications as previous Jolt models;*
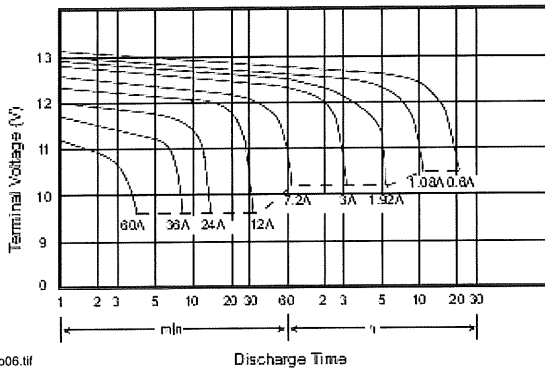*packaging and part numbers are the only changes.*

## UB12120 (was SA12120) Diagrams

### UB12120/SA12120 discharge current vs. time



6933up05.tif     Current

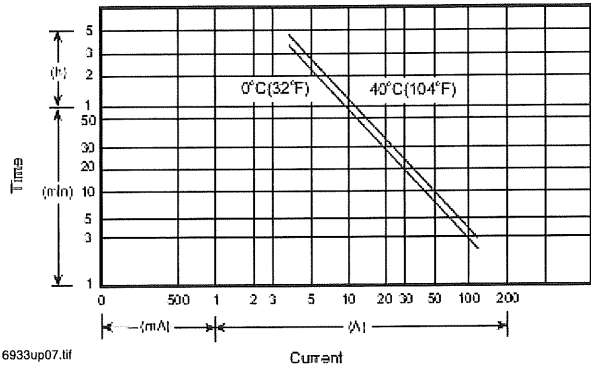### UB12120/SA12120 discharge characteristics (25°C/77°F)



6933up06.tif     Discharge Time

## UB12120, SA12120 Specifications

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 12.0 AH.
- Dimensions: total height 100 mm (3.94"); container height 94 mm (3.70"); length 151 mm (5.95"); width 98 mm (3.86").
- Weight: approximately 4.10 kg (9.04 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 14 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 0.6 A: 12.0 AH.
    5 hr @ 1.92 A: 9.6 AH.
    1 hr @ 7.2 A: 7.2 AH.
    1 C @ 12.0 A: 6.0 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.

Maximum discharge current: 120 A (5 sec).

Maximum charging current: 3.6 A.

Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
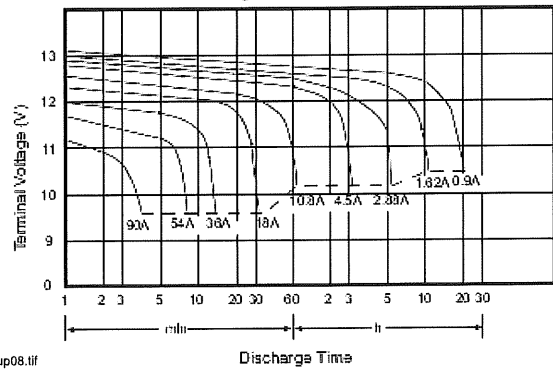    After 6 months: ~ 82%.
    After 12 months: ~ 70%.

## UB12180 (was SA12180) Diagrams

### UB12180/SA12180 discharge current vs. time



6933up07.tif     Current

### UB12180/SA12180 discharge characteristics (25°C/77°F)



6933up08.tif     Discharge Time
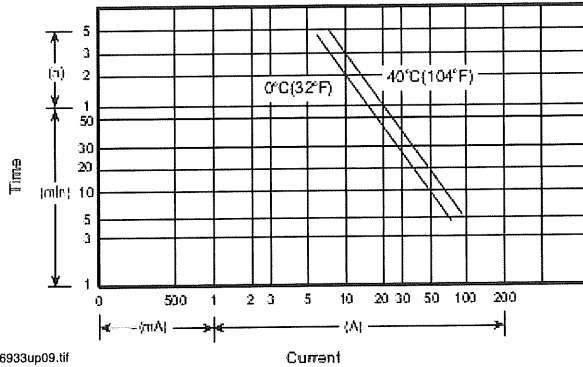
## UB12180, SA12180 Specifications

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 18.0 AH.
- Dimensions: total height 167 mm (6.58"); container height 167 mm (6.58"); length 181 mm (7.13"); width 76 mm (2.29").
- Weight: approximately 6.06 kg (13.36 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 13 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 0.9 A: 18.0 AH.
    5 hr @ 2.88 A: 14.4 AH.
    1 hr @ 10.8 A: 10.8 AH.
    1 C @ 18.0 A: 9.0 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.
- Maximum discharge current: 300 A (5 sec).
- Maximum charging current: 5.4 A.
- Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
    After 6 months: ~ 82%.
    After 12 months: ~ 70%.

# UPG BATTERY

*Same specifications as previous Jolt models;*
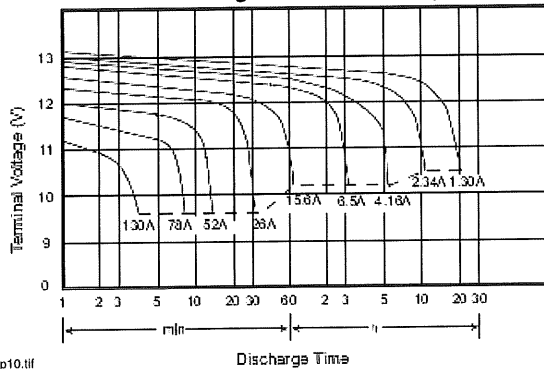*packaging and part numbers are the only changes.*

## UB12260 (was SA12260) Diagrams

*UB12260/SA12260 discharge current vs. time*



6933up09.tif

*UB12260/SA12260 discharge characteristics (25°C/77°F)*



6933up10.tif

## UB12550 (was SA12550) Diagrams

*UB12550/SA12550 discharge current vs. time*



6933up11.tif

*UB12550/SA12550 discharge characteristics (25°C/77°F)*
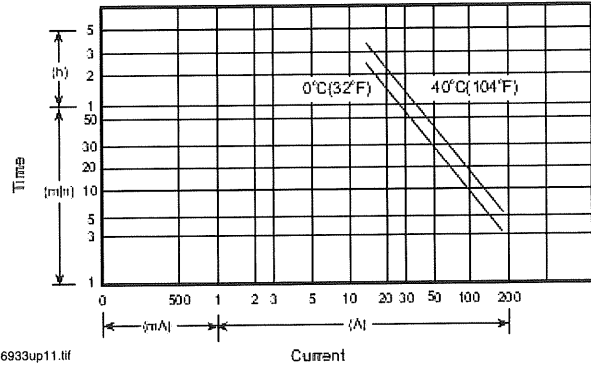


6933up12.tif

## UB12260, SA12260 Specifications

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 26.0 AH.
- Dimensions: total height 125 mm (4.92"); container height 125 mm (4.92"); length 166 mm (6.54"); width 175 mm (6.89").
- Weight: approximately 8.80 kg (19.40 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 10 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 1.3 A: 26.0 AH.
    5 hr @ 4.16 A: 20.8 AH.
    1 hr @ 15.6 A: 15.6 AH.
    1 C @ 26.0 A: 13.0 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.
- Maximum discharge current: 300 A (5 sec).
- Maximum charging current: 7.8 A.
- Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
    After 6 months: ~ 82%.
    After 12 months: ~ 70%.
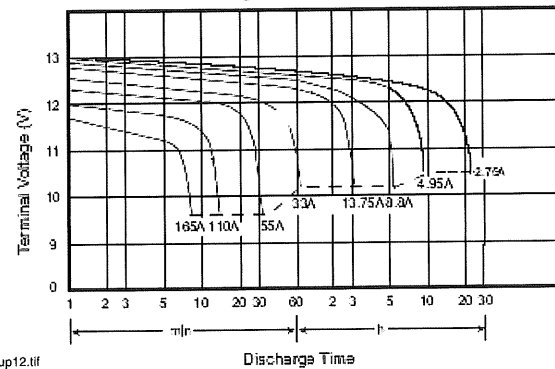
## UB12550, SA12550 Specifications

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 55.0 AH.
- Dimensions: total height 234.5 mm (9.23"); container height 216.5 mm (8.52"); length 229 mm (9.02"); width 138 mm (5.43").
- Weight: approximately 19.0 kg (41.8 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 8 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 2.75 A: 55.0 AH.
    5 hr @ 8.8 A: 44.0 AH.
    1 hr @ 33.0 A: 33.0 AH.
    1 C @ 55.0 A: 27.5 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.
- Maximum discharge current: 600 A (5 sec).
- Maximum charging current: 16.5 A.
- Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
    After 6 months: ~ 82%.
    After 12 months: ~ 70%.

# UPG BATTERY

*Same specifications as previous Jolt models;*
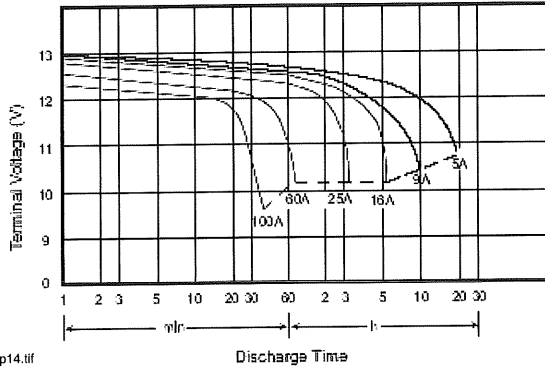*packaging and part numbers are the only changes.*

## UB121000 (XSA121000A) Diagrams

### UB121000/XSA121000A discharge current vs. time
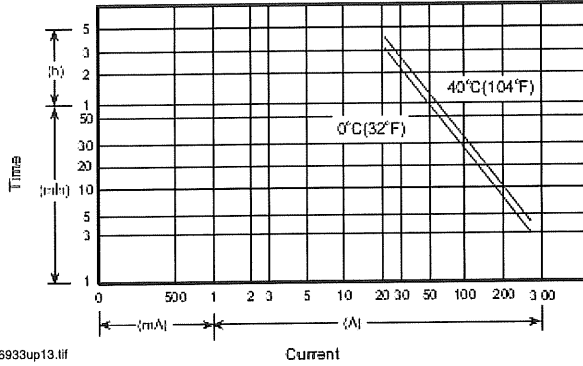


6933up13.tif

### UB121000/XSA121000A discharge characteristics (25°C/77°F)



6933up14.tif

## UB121000 (XSA121000A) Diagrams

- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 100.0 AH.
- Dimensions: total height 221 mm (8.70"); container height 214 mm (8.43"); length 329 mm (12.95"); width 172 mm (6.77").
- Weight: approximately 34.00 kg (74.8 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 6.5 m.
- Discharge capacity under different temperatures:
    40°C: ~ 102%
    25°C: ~ 100%
    0°C: ~ 85%
- Capacity 25°C/77°F:
    20 hr @ 5.0 A: 100.0 AH.
    5 hr @ 16.0 A: 80.0 AH.
    1 hr @ 60.0 A: 60.0 AH.
    1 C @ 100.0 A: 50.0 AH.
- Charging voltage (25°C, 77°F):
    Standby use: 13.65 V ± 0.15 V.
    Cycle use: 14.7 V ± 0.3 V.
- Maximum discharge current: 600 A (5 sec).
- Maximum charging current: 30 A.
- Self-discharge residual capacity (25°C, 77°F):
    After 3 months: ~ 90%.
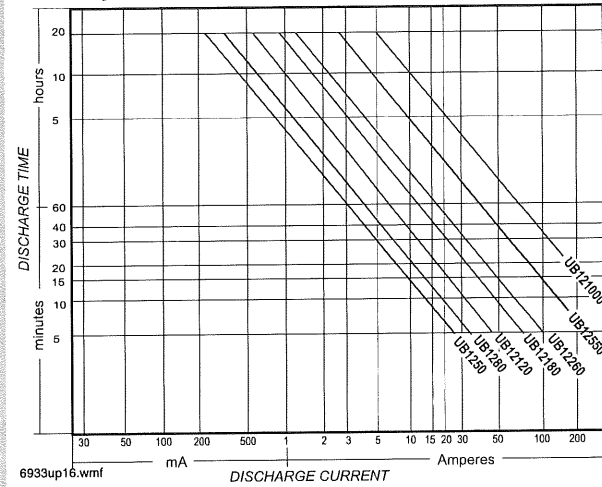    After 6 months: ~ 82%.
    After 12 months: ~ 70%.

## UPG Summary Diagrams

### Summary discharge characteristics
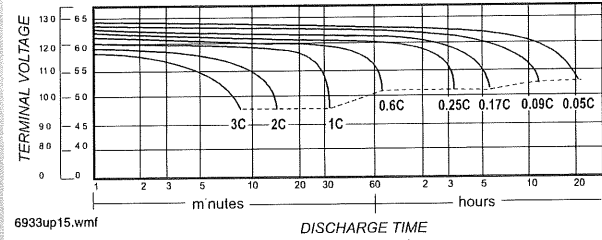


6933up15.wmf

### Summary discharge current vs. time curve (25°C/77°F)



6933up16.wmf
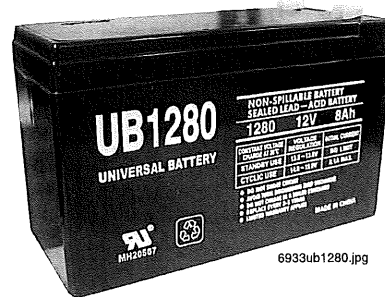


6933ub1280.jpg



6933ub12260.jpg

# UPG BATTERY

*Same specifications as previous Jolt models;*
*packaging and part numbers are the only changes.*

## Charging Procedure: UPG Battery

| Application | Charging method | Charging voltage at 25°C (V/cell) | Temperature compensation coefficient of charging voltage (mV/°C/cell) | Maximum charging current (CA) | Charging time 0.1 CA, 25°C (h) | | Temp (°C) |
|---|---|---|---|---|---|---|---|
| | | | | | 100% discharge | 50% discharge | |
| For standby power source | Constant voltage and constant current charging (with current restriction) | 2.25 ~ 2.30 | − 3.3 (−1.8 mV/°F/cell) | 0.3 | T³ 24 | T³ 20 | 0 – 40°C (32 – 104°F) |
| For cycle service | | 2.40 ~ 2.50 | − 5 (−2.8 mV/°F/cell) | 0.3 | 16 < T < 24 | 10 < T < 24 | |

Temperature compensation of charging voltage is not needed when using the batteries within 5°C to 35°C range.

**ISO 9001**
**CERTIFIED**
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

# ⮞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, water-flow, supervisory, etc.

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

## Features

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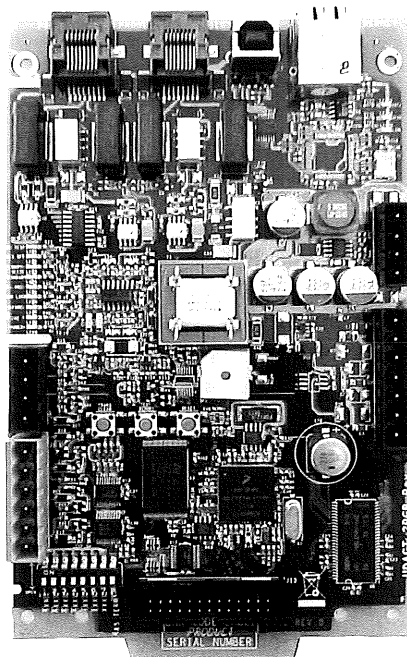


**UDACT-2**

- 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.

## Communication Formats

- Ademco Contact ID
- 4+2 Standard
- SIA

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

## Type Mode Feature

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

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

## Electrical Specifications

**Standby current:** 40 mA.

**Current while communicating:** 75 mA.

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

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

## Agency Listings and Approvals

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

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

## Ordering Information

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

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

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

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

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

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

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

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

## UL Listed Receivers

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

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

(1) With 685-8 Line Card with Rev 4.4d software
(2) With 124060V206B and 124063 Line Card Rev B
(3) With version V2.4 Receiver & 126047 Line Card Rev G
(4) With 124077V2.00 Receiver &126047 Line Card Rev M
(5) With software V3.9
(6) With V.7301 Receiver S/W
(7) With 01.01.03 Receiver S/W & Line Card 01.01.03
(8) With software V1.86
(9) With sotware V1.72
(10) With DSP4016 and V1.6 Line Card

**ISO 9001**
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**QUALITY SYSTEMS**

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Made in the U.S. A.

# FDU-80
## 80 Character Liquid Crystal Display

**(N) NOTIFIER®**
by Honeywell

**Annunciators**

## General

The FDU-80 is a compact, cost-effective, 80 character, backlit LCD Fire Annunciator for use with the NOTIFIER FireWarden-100-2, NFS-640, NFS2-640, and NFS-320 Fire Alarm Control Panels (FACPs). The FDU-80 mimics the display of the control panel and displays complete system point status information. Up to 32 FDU-80s may be connected onto the EIA-485 Terminal Mode port of each control panel. The FDU-80 requires no programming, which saves time during system commissioning.

## Features

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

## Operation

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

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

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

## Installation

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



6820fdu8.jpg

## Agency Listings And Approvals

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

- **UL Listed:** S635
- **ULC Listed:** CS100
- **MEA Listed:** 245-00-E
- **CSFM:** 7120-0028:209
- **FM Approved**

## Ordering Information

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

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

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

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Made in the U.S. A.

# ➤NBG-12LX

## Addressable Manual Pull Station

# Ⓝ NOTIFIER®
## by Honeywell

**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 loop current:** 375 µA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**



**The NBG-12LX**
**Addressable Manual Pull Station**

## Installation

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

## Operation

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

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

## Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4"

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

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

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

## Product Line Information

**NBG-12LX:** Dual-action addressable pull station. Includes key locking feature.

**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 / CUL Listed:** S692 (listed for Canadian and non-Canadian applications)
- **MEA:** 67-02-E
- **CSFM:** 7150-0028:0199
- **FDNY:** COA #6038 (NFS2-640), COA #6058 (NFS2-3030)
- **BSMI:** CI313066760047
- **U.S. Coast Guard:** 161.002/23/3 (AFP-200); 161.002/27/3 (AM-2020/AFP-1010; 161.002/42/1 (NFS-640)
- **Lloyd's Register:** 02/6007 (NFS-640); 94/60004 (E2) (AFP-200); 03/60011 (E1); 07/60007 (NFS2-3030)
- **FM** Approved

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

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Made in the U.S. A.

# FSP-851, FSP-851T, & FSP-851R

## Intelligent Plug-In Photoelectric

# NOTIFIER®
## by Honeywell

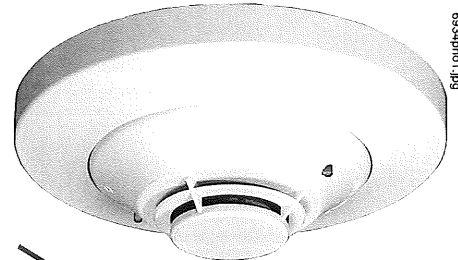**Intelligent/Addressable Devices**

## General

Notifier 851 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 decade address switches, providing exact detector location for selective maintenance when chamber contamination reaches an unacceptable level. The FSP-851 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. The FSP-851R is a remote test capable detector for use with DNR(W) duct detector housings. FSP-851 series detectors are compatible with all ONYX series Notifier intelligent Fire Alarm Control Panels (FACP).
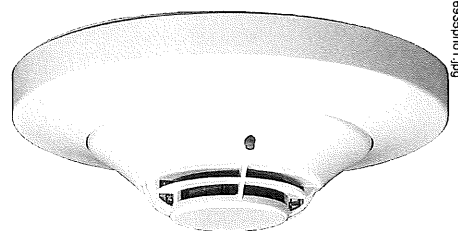
**FlashScan®** (U.S. Patent 5,539,389) is a communication protocol developed by Notifier that greatly increases the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices in the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.



**FSP-851 with B710LP base**



**FSP-851T with B710LP base**

## Features

- Sleek, low-profile design.
- Addressable-analog communication.
- Stable communication technique with noise immunity.
- Low standby current.
- Two-wire SLC connection.
- FlashScan (NFS-320, NFS-640, NFS2-640, NFS-3030, NFS2-3030) and classic CLIP systems (AFP-100, AFP-200, AFP-300, AFP-400, NFS-640, AM2020/AFP1010, NFS-3030) compatible.
- 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 Bayblend®, 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

**Size:** 2.1" (5.3cm) high x 4.1" (10.4cm) diameter installed in B501 base, 6.1" (15.5cm) diameter installed in B710LPbase.

**Shipping Weight:** 5.2oz. (147g).

**Operating Temperature:** FSP-851, 0°C to 49°C (32°F to 120°F); FSP-851T, 0°C to 38°C (32°F to 100°F). Low temperature signal for FSP-851T at 45°F +/- 10°F (7.22°C +/- 5.54°C). FSP-851R installed in a DNR(W), -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 @ 24VDC ('ON').

### BASES AVAILABLE

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

**B710LP(A):** 6.1" (15.5cm) diameter.

**B501(A):** 4.1" (10.4cm) diameter.

**B200SR(A):** Intelligent sounder base, configurable for temp-3 or steady sound.

**B224RB(A) Relay Base:** *Screw Terminals*, up to 14AWG (2.0mm$^2$); *Relay Type*, Form-C; *Rating*, 2.0A @ 30VDC resistive, 0.3A @ 110VDC inductive, 1.0A @ 30VDC inductive; *Dimensions*, 6.2" (15.748cm) x 1.2" (3.048cm) x 1.2" (3.048cm).

**B224BI(A) Isolator Base:** *Dimensions*, 6.2" (15.748cm) x 1.2" (3.048cm) x 1.2" (3.048cm); *Maximum*, 25 devices between isolator bases.

## Installation

FSP-851 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 on an electrical backbox which is at least 1.5" (3.81cm) deep. Suitable mounting base boxes include:

- 4.0" (10.16cm) square box.
- 3.5" (8.89cm) or 4.0" (10.16cm) octagonal box.
- Single-gang box (except relay or isolator base).
- With B200SR base, use an appropriate junction box.
- With B224RB or B224BI base, use a 3.5" (8.89cm) octagonal box, or a 4.0" (10.16cm) octagonal or square box.

**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 data sheet DN-2243 (ISO-X) 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-851TA)
- **MEA Listed:** 225-02-E
- **FM Approved**
- **CSFM:** 7272-0028:206
- **Maryland State Fire Marshal:** Permit # 2122
- **BSMI:** CI313066760036
- **CCCF:** Certif. # 2004081801000017 (FSP-851T)
  Certif. # 2004081801000016 (FSP-851)
- **Lloyd's Register:** 03/60011

## Product Line Information

**NOTE:** *"A or "CDN" 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 DNRW.

**FSP-851RA:** Same as FSP-851R but with ULC listing.

### BASES

**B710LP:** Standard U.S. low-profile base.

**B710LPBP:** Standard U.S. low-profile base, pkg. of 10.

**B710LPA:** Standard U.S. low-profile base, ULC listing.

**B501BP:** Standard European flangeless base, pkg. of 10.

**B501A:** Standard European flangeless base, ULC listing.

**B200SR(A):** Intelligent sounder base, configurable for temp-3 or steady sound.

**B224RB(A):** Intelligent relay base.

**B224BI(A):** Intelligent isolator base. Isolates SLC from loop shorts.

### ACCESSORIES

**F110:** Retrofit replacement flange for older style bases. Converts older high profile base for use with FlashScan detectors.

**RA100Z(A):** Remote LED annunciator. 3-32VDC. Fits U.S. single-gang electrical box. *Supported by* B710LP(A) *and* B501(A) *bases only.*

**SMK400E:** Surface mounting kit provides for entry of surface wiring conduit. *For use with* B501(A) *base only.*

**RMK400:** Recessed mounting kit. *For use with* B501(A) *base only.*

**SMB600:** Surface mounting kit for use with B710LP(A).

**BCK-200B:** Black detector covers, box of 10. For use with FSP-851 only.

**WCK-200B:** White detector covers, box of 10. For use with FSP-851 only.

**M02-04-00:** Test magnet.

**M02-09-00:** Test magnet with telescope stick.

**XR2B:** Detector removal tool. Allows installation and/or removal of FlashScan Series detector heads from base in high ceiling installations.

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

**XP-4:** Extension pole for XR2B. Comes in three 5-ft. sections.

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Made in the U.S.A.

# FST-851 Series

## Intelligent Thermal (Heat) Detectors with FlashScan®

(N) NOTIFIER®
by Honeywell

**Intelligent / Addressable Devices**

## General

Notifier FST-851 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 decade address switches, providing exact detector locations. FST-851 Series thermal detectors use an innovative thermistor sensing circuit to produce 135°F/ 57°C fixed-temperature (FST-851) and rate-of-rise thermal detection (FST-851R) in a low-profile package. FST-851H 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 Series detectors are compatible with all Notifier intelligent Fire Alarm Control Panels, except FireWarden series panels. .

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), 15°F (8.3°C) per minute.
- Factory preset at 135°F (57°C); high-temperature model at 190°F (88°C).
- Addressable by device.
- Compatible with FlashScan® and CLIP protocol systems.
- Direct dial entry of address 01-159 for FlashScan® loops, 01-99 CLIP mode loops.
- 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 Bayblend®, designed to commercial standards, and offers an attractive appearance.



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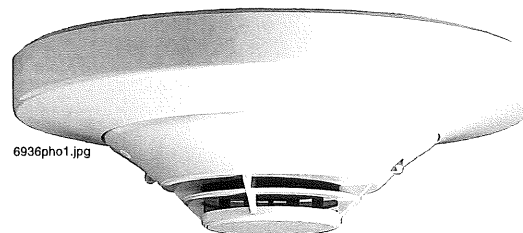
**FST-851 Series in B710LP base**

- 94-5V plastic flammability rating.
- Remote LED output connection to optional RA400Z remote LED annunciator.
- Optional sounder, relay, and isolator bases.
- Optional recessed (RMK400) or surface (SMK400E) base mounting kits.

## Specifications

**Size:** 2.1" (5.3 cm) high x 4.1" (10.4 cm) diameter installed in B501 base, 6.1" (15.5 cm) diameter installed in B710LP base.

**Shipping weight:** 4.8 oz. (137 g).

**Operating temperature range:** FST-851 Series, FST-851R: −20°C to 38°C (−4°F to 100°F); FST-851H: −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).

**Altitude rating:** 10,000 feet.

### 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").

### BASES AVAILABLE:

**B710LP:** 6.1" (15.5 cm) diameter.

**B501:** 4.1" (10.4 cm) diameter.

**B501BH-2 or B501BHT-2:** Sounder base assembly.

**B224RB 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. Dimensions: 6.2" (15.748 cm) x 1.2" (3.048 cm).

**B224BI Isolator Base:** Dimensions: 6.2" (15.748 cm) x 1.2" (15.748 cm). Maximum: 25 devices between isolator bases. See Note 2 under Installation.

## 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 pro-

vides detailed information on detector spacing, placement, zoning, wiring, and special applications.

## Installation

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

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box.
- 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
- Single-gang box (except relay or isolator base).
- With B501BH-2 or B501BHT-2 base, use a 4.0" (10.16 cm) square box.
- With B224RB or B224BI base, use a 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or a 4.0" (10.16 cm) square box.

*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 data sheet DN-2243 (ISO-X) 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:** 7270-0028:196
- **BSMI:** CI313066760025
- **CCCF:** Certif. # 2004081801000018
- **U.S. Coast Guard:** 161.002/23/3 (AFP-200); 161.002/27/3 (AFP1010/AM2020); 161.002/42/1 (NFS-640)
- **Lloyd's Register:** 03/60011

## Product Line Information

"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.

*BASES:*

**B710LP:** Standard U.S. low-profile base

**B710LPBP:** Standard U.S. low-profile base, pkg. of 10.

**B710LP:** Standard U.S. low-profile base.

**B710LP(A):** Standard U.S. low-profile base.

**B501BP:** Standard European flangeless base, pkg. of 10.

**B501:** Standard European flangeless base.

**B501(A):** Standard European flangeless base, ULC Listing.

**BH501BH-2:** Sounder base, includes **B501** base above.

**BH501BHT-2:** Same as B501BH-2, but includes temporal sounder.

**BH501BHA:** Sounder base, includes **B501** base above

**BH501BHTA:** Same as BH501BHA, but includes temporal sounder.

**B224BI(A):** Intelligent isolator base. Isolates SLC from loop shorts.

*ACCESSORIES:*

**F110:** Retrofit replacement flange for older style high profile bases. Converts bases for use with FlashScan® detectors.

**RA400Z(A):** Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B710LPBP(A) and B501(A) bases only.

**SMK400E:** Surface mounting kit provides for entry of surface wiring conduit. For use with B501(A) base only.

**RMK400:** Recessed mounting kit. For use with B501(A) base only.

**SMB600:** Surface mounting kit for use with B710LPBP(A).

**BCK-200B:** Black detector covers, box of 10.

**M02-04-00:** Test magnet.

**M02-09-00:** Test magnet with telescope stick.

**XR2B:** Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations.

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

**XP-4:** Extension pole for XR2B. Comes in three 5-ft. sections.

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All specifications are subject to change without notice.

Made in the U.S. A.

# Intelligent Bases

**B224BI(A), B224RB(A), B501(A), B501BH(A), B501BH-2(A), B501BHT(A), B501BHT-2(A), B710LP(A), Mounting Kits, and Accessories**

## ⓝ NOTIFIER®
## by Honeywell

**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 22 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.

The **RMK400 recessed mounting kit** provides the most aesthetically pleasing installation. Surface mounting boxes are available when flush mounting isn't possible.

## Specifications

**Diameter:** *For B501:* 4.1" (104 mm). *For B224BI, B224RB, B710LP:* 6.1" (155 mm). *For B501BH, B501BH-2, B501BHT, B501BHT-2:* 6.0" (152 mm).

**Wire gauge:** *for B224BI, B224RB:* 14 to 24 AWG. *For B710LP, B501, B501BH, B501BH-2, B501BHT, B501BHT-2:* 12 to 18 AWG.

**Temperature range:** *For B224BI, B224RB, B501BH, B501BH-2, B501BHT, B501BHT-2:* 32°F to 120°F (0°C to 49°C). *For B501 and B710LP,* 32°F to 150°F (0°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 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.

*FOR B501BH, B501BH-2, B501BHT, B501BHT-2:*

**External supply voltage:** 17 to 32 VDC.

**Standby current:** 1.0 mA maximum.

**Alarm current:** 15 mA maximum.
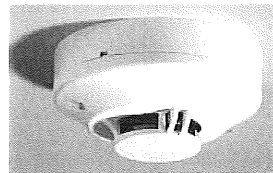

**Flangeless Mounting Base**
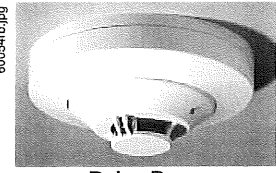

**Relay Base**


**Flanged Mounting Base**


**Recessed Mounting**
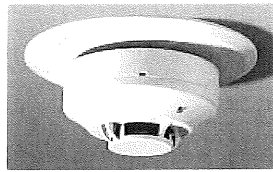

**Standard Sounder Base**
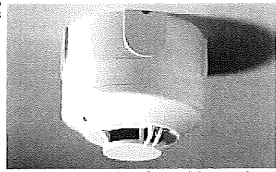

**Flangeless Surface Mounting**

**Maximum ripple voltage:** 10% of supply voltage.

**Startup capacitance:** 200 µF.

**Set time:** *for B501BH and B501BHT,* 6 to 15 seconds. *For B501BH-2 and B501BHT-2,* 0.75 to 5.7 seconds.

**Sound output:** greater than 90 dBA measured in anechoic room at 10 feet (3.048 m), 24 volts. 85 dBA minimum in UL reverberant room.

## Recessed Mounting Kit

The RMK400 can be used with drywall or suspended ceilings. The aesthetically pleasing design can be used with standard junction boxes — suitable for use with 4.0" (10.16 cm) octagonal, 50 mm, and 60 mm junction boxes connected to flexible conduit. Note that junction boxes are not included in the kit. As an application example, with the B501 base, the RMK400 provides a simple installation solution in applications that demand a lower-profile smoke detector.

## 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.

*Listing information to be provided in upcoming edits. Consult panel manuals for lists of compatible UL-Listed devices. All bases have been previously listed for use with various panels.*

## Product Line Information

*INTELLIGENT BASES*

**B501:** Flangeless mounting base.

**B501A:** Flangeless mounting base, ULC Listed.

**B710LP:** Flanged mounting base.

**B710LPA:** Flanged mounting base, ULC UL Listed.

**B501BH:** Standard sounder base.

**B501BHA:** Standard sounder base, ULC Listed.

**B501BHT:** Temporal tone sounder base.

**B501BHTA:** Temporal tone sounder base, ULC Listed.

**B501BH-2:** Standard sounder base, UL 864 9th edition compliant.

**B501BH-2A:** Standard sounder base, UL 864 9th edition compliant, ULC Listed.

**B501BHT-2:** Temporal tone sounder base, UL 864 9th edition compliant.

**B501BHT-2A:** Temporal tone sounder base, UL 864 9th edition compliant, ULC Listed.

**B224RB:** Relay base.

**B224RBA:** Relay base, ULC Listed.

**B224BI:** Isolator base.

**B224BIA:** Isolator base, ULC Listed.

## MOUNTING KITS AND ACCESSORIES

**RMK400:** Recessed mounting kit.

**SMK400:** Surface mounting kit, flangeless.

**SMB600:** Surface mounting kit, flanged.

**F110:** Retrofit flange for B501B, B524.

**RA400Z:** Remote LED annunciator.

**RA400ZA:** Remote LED annunciator, ULC Listed.

**M02-04-01:** Detector test magnet.

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

**XR2B:** Detector removal tool *(T55-127-000 included)*.

**XP-4:** Extension pole for XR2B *(5 to 15 ft/1.524 to 4.572 m)*.

**T55-127-000:** Detector removal head.

**BCK-200B:** Black detector kit.

## 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 |
|---|---|---|---|---|---|---|---|---|---|
| B501 | No | Yes | No | No | Yes | Yes | Yes | Yes | No |
| B710LP | 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 |
| B501BH, B501BH-2 | No | No | No | Yes | No | No | No | No | No |
| B501BHT, B501BHT-2 | No | No | No | Yes | No | No | No | No | No |

*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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# CO1224T/CO1224A

## Conventional
## Carbon Monoxide Detector

**⊗ NOTIFIER®**
by Honeywell

**Conventional Initiating Devices**

## General

Carbon monoxide (CO) is an odorless, colorless, tasteless and highly toxic gas that is produced when fuels, such as wood, gasoline, charcoal and oil, are burned with insufficient air. The majority of residential and commercial fatalities caused from these fuels come from heating systems, power tools and charcoal grills.

If carbon monoxide is detected, the **CO1224T/CO1224A** will alert by sounding and flashing a temp-4 signal alarm. Protection is guaranteed 24/7 by a central station if connected to a panel with a digital alarm communicator.

The CO1224T/CO1224A is specifically designed for system operation. This means the detector is fully listed to UL Standard 2075, offering a code required trouble relay, which sends a sensor failure or end-of-life signal to the control panel and the central station, as well as SEMS-type terminal Phillips-head screws, which provide a quicker and more positive wiring connection and code required wiring supervision. Also, the offers low current draw, allowing more detectors to be connected to the panel without having to purchase a more expensive panel or an extra power supply.

Add addressability to the by supervising the circuit with a compatible monitor module such as the FMM-101(A).

Special to the CO1224T is RealTest™ technology that allows testing of its internal CO detector with a carbon monoxide gas agent. There are few steps: Hold the test button for two seconds, and after the green LED begins to flash about once per second, spray a small amount of CO into the detector. The detector will alarm to indicate presence of gas.

*NOTE: RealTest™ is only available on the UL-listed CO1224T. Refer to the installation documents for details and cautions.*

## Features

- In the CO1224T, RealTest™ technology allows installer to test detector with CO gas.
- Full compliance with UL 2075.
- A code required trouble relay.
- Wiring supervision with SEMS terminals.
- A six-year end-of-life timer.
- 12/24 VDC.
- A current draw of 20mA in standby and 40mA in alarm.
- Versatile mounting for wall and ceiling.
- Electrochemical sensing technology.

## Specifications

### ARCHITECTS'/ENGINEERS' SPECIFICATIONS

Carbon monoxide detector shall be a System Sensor model number , listed to UL 2075 for Gas and Vapor Detectors and Sensors. The detector shall be equipped with a sounder and a trouble relay. The detector's base shall be able to mount to a single-gang electrical box or direct (surface) mount to the wall or ceiling. Wiring connections shall be made by means of SEMS screws. The detector shall provide dual color LED indication, which blinks to indicate normal standby, alarm, or end-of-life. When the sensor supervision is in a trouble condition, the detector shall send a trouble signal to the panel. When the

CO1224T.jpg
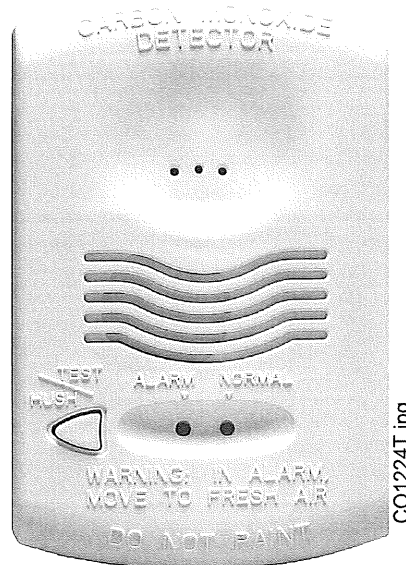
detector gives a trouble or end-of-life signal, the detector shall be replaced.

### ELECTRICAL SPECIFICATIONS

**Operating Voltage:** 12/24 VDC

**Audible Signal:** 85 dB in alarm

**Standby Current:** 20 mA

**Alarm Current:** 40 mA (75 mA test)

**Alarm Contact Ratings:** 0.5 A @ 30 VDC

**Trouble Contact Ratings:** 0.5 A @ 30 VDC

### PHYSICAL SPECIFICATIONS

**Size:** 5.1"L x 3.3"W x 1.3"H

**Approximate Weight:** 7 oz

**Operating Temperature Range:** 0°C to 40°C (32°F to 104°F)

**Operating Humidity Range:** 22% to 90% RH

**Input Terminals:** 14 to 22 AWG

**Mounting:** Single-gang backbox; surface mount to wall or ceiling.

## Operation Modes

| Operation Mode | Green LED | Red LED | Sounder |
|---|---|---|---|
| Normal (Standby) | Blink 1 per minute | – | – |
| Alarm | – | Blink in Temporal 4 pattern | Sound in Temporal 4 pattern |
| RealTest™ (CO1224T only) | Blink 1 per second | – | – |

**Hush Feature:** Pushing the Test/Hush button will silence the sounder for 5 minutes (except in RealTest mode).

**Trouble Feature:** When the detector is in a trouble condition, it will send a trouble signal to the panel via the trouble contact.

**End-of-Life Timer:** After the sensor inside the detector has reached the end of its useful life, a trouble signal will be sent to the panel. This will indicate that it is time to replace the detecttor. An electrochemical carbon monoxide detector life span is approximately six years, and the detector must be replaced by the date marked on the inside of the product.

### MONITOR MODULE APPLICATIONS

When used in conjunction with the CO1224T or CO1224A, the monitor module should be programmed as a supervisory device type and is not suitable for evacuation purposes. Wire the module as an NFPA Style B (Class B) Initiating Device Circuit and terminate the with a 47K ohm End-of-line resistor (provided).

## Listings and Approvals

The listings and approvals below apply to the CO1224T and CO1224A. 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:** E307195 (CO1224T)
- **ULC Listed:** E304075 (CO1224A)

## Product Line Information

**CO1224T:** 12/24 volt, 4-wire system-monitored carbon monoxide detector with RealTest™ Technology. Replaces CO1224.

**CO1224A:** 12/24 volt, 4-wire system-monitored carbon monoxide detector, ULC-listed for use in Canadian applications.

**CO-PLATE:** CO detector replacement plate, package of 5. Covers previously installed round detectors' footprints for a clean, low-profile finish.

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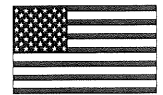
Made in the U.S.A.

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

## Monitor Modules with FlashScan®

# ⓝ NOTIFIER®
## by Honeywell

**Intelligent/Addressable Devices**

## General

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

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

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

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

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

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

## FMM-1(A) Monitor Module

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

The FMM-1(A) Monitor Module is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The FMM-1(A) can be used to replace MMX-1(A) modules in existing systems.

### FMM-1(A) APPLICATIONS

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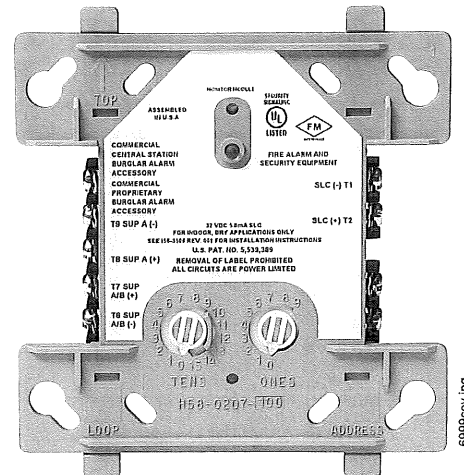


**FMM-1(A) (Type H)**

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

### FMM-1(A) OPERATION

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

### FMM-1(A) SPECIFICATIONS

**Nominal operating voltage:** 15 to 32 VDC.

**Maximum current draw:** 5.0 mA (LED on).

**Average operating current:** 350 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.

## 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.
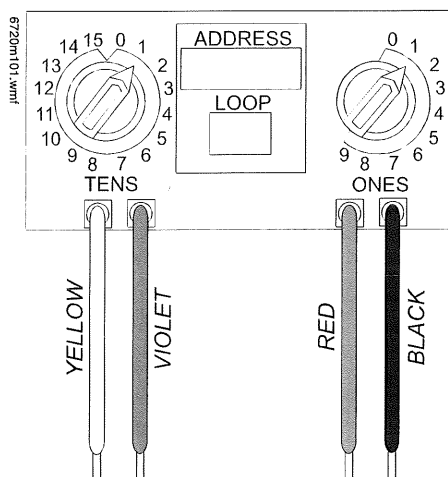


The FMM-101(A) Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The FMM-101(A) is intended for use in intelligent, two-wire systems where the individual address of each module 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) wide x 0.65" (1.651 cm) deep.

**Wire length:** 6" (15.24 cm) minimum.

## FZM-1(A) Interface Module

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

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

### FZM-1(A) APPLICATIONS

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

### FZM-1(A) OPERATION

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

### FZM-1(A) SPECIFICATIONS

**Nominal operating voltage:** 15 to 32 VDC.

**Maximum current draw:** 5.1 mA (LED on).

**Maximum IDC wiring resistance:** 25 ohms.

**Average operating current:** 300 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.

## 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.*

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⚠️ **CAUTION:**
Avoid duplicating addresses on the system.

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## 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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Made in the U.S. A.

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

## Control and Relay Modules

**NOTIFIER®**
by Honeywell

**Intelligent / Addressable Devices**

## General

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

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

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

## Features

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

## Applications

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

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

## Construction

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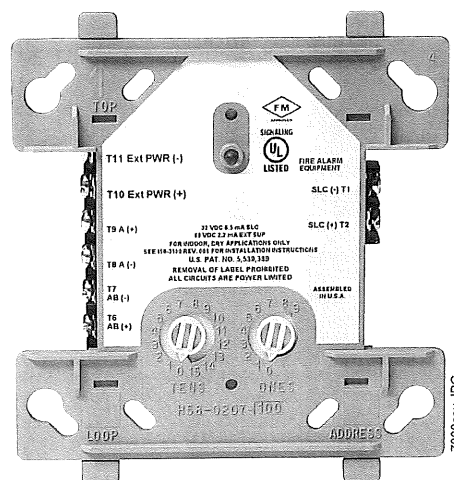


**FCM-1(A)**

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

## Operation

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

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

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

## Specifications for FCM-1(A)

**Normal operating voltage:** 15 to 32 VDC.

**Maximum current draw:** 6.5 mA (LED on).

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

**Maximum NAC Line Loss:** 4 VDC.

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

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

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

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

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

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

**Accessories:** SMB500 Electrical Box; CB500 Barrier

## Specifications for FRM-1(A)

**Normal operating voltage:** 15 to 32 VDC.

**Maximum current draw:** 6.5 mA (LED on).

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

**EOL resistance:** not used.

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

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

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

**Accessories:** SMB500 Electrical Box; CB500 Barrier

## Agency Listings and Approvals

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

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

## Contact Ratings for FRM-1(A)

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

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

## Product Line Information

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

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

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

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

**SMB500:** Optional Surface-Mount Backbox.

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

*NOTE: For installation instructions, see the following documents:*
- *FCM-1(A) Installation document I56-1169.*
- *FRM-1(A) Installation document I56-3502.*
- *Notifier SLC Wiring Manual, document 51253.*

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

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

**⊗ NOTIFIER®**
**by Honeywell**

## General

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

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

## Features

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



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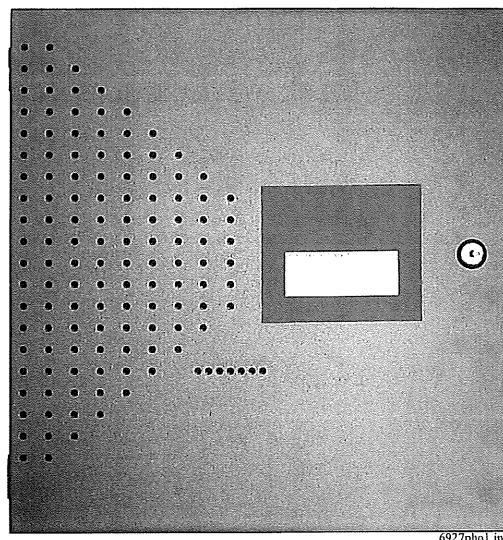
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries.
- Battery charger may be disabled via DIP switch for applications requiring larger batteries.
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm$^2$) wire.

## Specifications

**Primary (AC) Power:**

- FCPS-24S6C/-24S8C: 120 VAC, 60 Hz, 3.2A maximum.
- FCPS-24S6E/-24S8E: 240 VAC, 50 Hz, 1.6A maximum.
- Wire Size: minimum #14 AWG (2.0mm$^2$) with 600 V insulation.

**Control Input Circuit:**

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

**Trouble Contact Rating:** 5 A at 24 VDC.

**Auxiliary Power Output:** Specific application power 500 mA maximum.

**Output Circuits:**

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

**Secondary Power (Battery) Charging Circuit:**

- Supports lead-acid batteries only.
- Float-charge voltage: 27.6 VDC.

- Maximum current charge: 1.5 A.
- Maximum battery capacity: 18 AH.

## Applications

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

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

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

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

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

## Sync Follower/Generator Note

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

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

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

## Standards and Codes

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

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

## Agency Listings and Approvals

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

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

## Ordering Information

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

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

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

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

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

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

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

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

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

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

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

**PS-1270:** Battery, 12-volt, 7.0 AH (two required, see PS Series data sheet DN-1109)

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# >Wheelock® Exceder™
## Horns and Strobes

**Ⓝ NOTIFIER®**
by Honeywell

## General

The Wheelock® Exceder™ Series of notification appliances feature a sleek modern design and numerous features including eight candela options in one appliance, low current draw, no tools needed for setting changes, 12/24 VDC operation, universal mounting base and multiple mounting options.

Models with an audible feature 3 sound settings (90, 95, 99 dB). All switches to change settings can be set without the use of a tool and are located behind the appliance to prevent tampering. Wall models feature voltage test points to take readings with a voltage meter for troubleshooting and AHJ inspection.

The Wheelock® Exceder™ Series of wall and ceiling notification appliances feature a Universal Mounting Base (UMB) designed to simplify the installation and testing of horns, strobes, and combination horn strobes. The separate universal mounting base can be pre-wired to allow full testing of circuit wiring before the appliance is installed and the surface is finished. It comes complete with a contact cover for protection against dirt, dust, paint and damage to the contacts. The contact cover also acts as a shunting device to allow pre-wire testing for common wiring issues.

The contact cover is polarized to prevent it from being installed incorrectly and prevents the appliance from being installed while it is on the UMB. When the contact cover is removed the circuit will show an open until the appliance is installed. The UMB allows for consistent installation and easy replacement of appliances if required. Wall models provide an optional locking screw for extra secure installation, while the ceiling models provide a captive screw to prevent the screw from falling during installation.

## Features

- Multiple voltages
- Voltage test points for quick troubleshooting and easy spot-checking (wall models only)
- 3 audible settings (90, 95, 99 dB)
- 8 Candela settings
  - Wall - 15/1575/30/75/95/110/135/185
  - Ceiling - 15, 30, 60, 75, 95, 115, 150, 177
- Finger-slide switches
- Sleek modern aesthetics
- Common base for wall and ceiling with 5 mounting options:
  - 1-gang
  - 2-gang
  - 4 inch square
  - 3.5 inch octagonal
  - 4 inch octagonal

## Compatibility and Requirements

- Synchronize using Wheelock Sync Modules, or panels with built-in Wheelock patented sync protocol.
- Compatible with UL "Regulated Voltage" using filtered VDC or unfiltered VRMS input voltage
- Strobes produce one flash per second over the Regulated Voltage range.

**Wall**
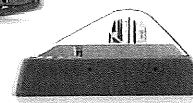
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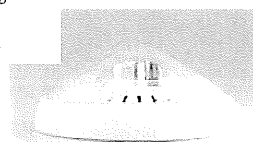
## General Notes

- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series Exceder Strobe products are Listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%) UL 464 (85% UL 1971).
- Series Exceder horns are under UL Standard 464 for audible signal appliances (Indoor use only).
- Product naming conventions: The Exceder line's model codes break down into easy-to-remember codes.
  HN = Horn, ST = Strobe, HS = Horn-strobe, C = Ceiling Mount, W = White, and R = Red. So "STRC" can be read as "Strobe, Red, Ceiling-mount.", and "HSW" is "Horn-strobe, white, wall-mount."
- Refer to your fire alarm panel or power supply manual when calculating the number of devices allowed per circuit.

## Architects/Engineers Specifications

The notification appliances shall be Wheelock Exceder Series HS Audible Strobe appliances, Series ST Visual Strobe appliances and Series HN Audible appliances or approved equals. The Series HS and ST Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series HS and HN Audibles shall be UL Listed under Standard 464 (Fire Protective Signaling). All Series shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 8 to 33 VDC. Indoor wall models shall incorporate voltage test points for easy voltage inspection.

The Series HS Audible Strobe and ST Strobe appliances shall produce a flash rate of one flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The Series shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have 8 field selectable settings at 15,

15/75, 30, 75, 95, 110, 135, 185 candela for wall mount and 15, 30, 60, 75, 95, 115, 150, 177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 15/75 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance). Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a minimum of three field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

## MOUNTING OPTIONS

The Series HS Audible Strobe, ST Strobe and Series HN Audible shall incorporate a patented Universal Mounting Base that shall allow mounting to a single-gang, double-gang, 4" square, 3.5" octagonal, 4" octagonal or 100mm European type back boxes. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Continuity checking of the entire NAC circuit prior to attaching any notification appliances shall be allowed. Product shall come with contact cover to protect contact springs. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). The mounting base shall be the same base among all horn, strobe, horn strobe, wall and ceiling models. All notification appliances shall be backwards compatible.

## PHYSICAL SPECIFICATIONS

The Series HS and ST wall models shall have a low profile measuring 5.24" H x 4.58" W x 2.19" D. Series HN wall shall measure 5.24" H x 4.58" W x 1.6" D. The Series HSC and STC shall been round and have a low profile with a diameter of 6.68" x 2.63" D. Series HNC ceiling shall have a diameter of 6.68" x 1.50" D.

## SYNCHRONIZATION

When synchronization is required, the appliance shall be compatible with Wheelock®ís SM, DSM Sync Modules, Wheelock® Power Supplies or other manufacturerís panels with built-in Wheelock® Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain one flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock® synchronization protocol.

## Standards and Codes

Modules in this series comply with UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), and ULC.

## Agency Listings

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:** S5391 (Strobes); E5946 (Horns, Horn/strobes).
- **ULC Listed**
- **CSFM Listed:** 7125-0785:168.

## Specification & Ordering Information

| Model | Strobe Candela | 12/24 VDC | Mounting Options |
|---|---|---|---|
| **Horn Strobes** | | | |
| HSR | 15, 15/75, 30, 75, 95, 110, 135, 185 | X | Universal Mounting Base |
| HSW | 15, 15/75, 30, 75, 95, 110, 135, 185 | X | Universal Mounting Base |
| HSRC | 15, 30, 60, 75, 95, 115, 150, 177 | X | Universal Mounting Base |
| HSWC | 15, 30, 60, 75, 95, 115, 150, 177 | X | Universal Mounting Base |
| **Strobes** | | | |
| STR | 15, 15/75, 30, 75, 95, 110, 135, 185 | X | Universal Mounting Base |
| STW | 15, 15/75, 30, 75, 95, 110, 135, 185 | X | Universal Mounting Base |
| STRC | 15, 30, 60, 75, 95, 115, 150, 177 | X | Universal Mounting Base |
| STWC | 15, 30, 60, 75, 95, 115, 150, 177 | X | Universal Mounting Base |
| **Horns** | | | |
| HNR | — | X | Universal Mounting Base |
| HNW | — | X | Universal Mounting Base |
| HNRC | — | X | Universal Mounting Base |
| HNWC | — | X | Universal Mounting Base |

*12 VDC models feature 15 and 15/75 settings
**NOTE:** Due to continuous development of Cooper Wheelock products, specifications and offerings are subject to change without notice in accordance with Cooper Wheelock Inc., dba Cooper Notification standard terms and conditions.

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

# >7788F/7744F Series

## Wireless Fire Alarm Communicators for AES-*IntelliNet*

**AES | *IntelliNet***
CORPORATION | For Alarm Monitoring



Model 7788F

**UL LISTED**

## Features – All models

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

## Models 7788F/7744F-ULP with IntelliPro Fire also includes

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

## Advanced Wireless Alarm Monitoring

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

## Supervised Operation

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

## Full Data Reporting from Alarm Panel Digital Dialer

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



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

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

# 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 |

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

# AC Transformers & 12 VDC Plug In Power Supply

## ELK-TRG1640 & TRG2440

- Auto-Resetting (PTC) Fused Secondary
- Green Power On LED
- Grounding Prong & Terminal
- Electrical outlet mounting tab
- UL Listed
- Lifetime Limited Warranty
- Wire Strain Relief

### Specifications

- Input Voltage: 120 VAC, 60 Hz, .43A
- Output Voltage: TRG1640 = 16.5 Volts A.C.
                  TRG2440 = 24 Volts A.C.
- Output Power:  TRG1640 = 45 VA
                 TRG2440 = 40 VA
- Size: 4.14"H x 2.74"W x 2.2"D
        (105mm x 70mm x 56mm)
- Color: White
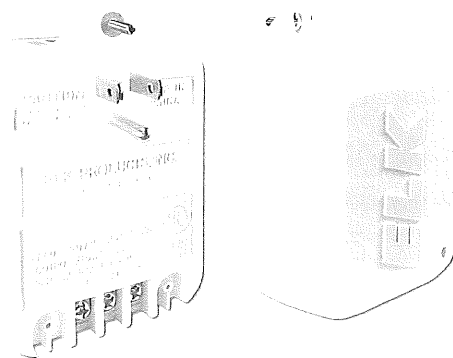
**LIFETIME WARRANTY**
**Grounding Terminal**
**Power LED**
**Strain Relief**

*All in One!*

## ELK-P1216

The ELK-P1216 is a general purpose 12 Volts D.C. Switching Plug-In Power Supply. It is ideal for alarm, access control, and CCTV applications requiring up to 1.5 Amps. The power pack plugs into 100 to 120 Volts A.C., and supplies regulated 12 Volts D.C. to a standard 2.1mm power plug.

### Features

- Switching Power Supply
- Regulated 12 Volts D.C. Output
- Six foot cord and standard
- 2.1mm x 5.5mm x 9mm plug (center is positive)
- UL Listed
- Efficiency Level: V
- Lifetime Limited Warranty

### Specifications

- DC Output Voltage: 12 Volts D.C.
- Current Rating: 1.5 Amps
- AC Input Voltage Range: 100-120 @ 47~63 Hz
- Size: 1.75"H x 1.375"W x 2.75"D
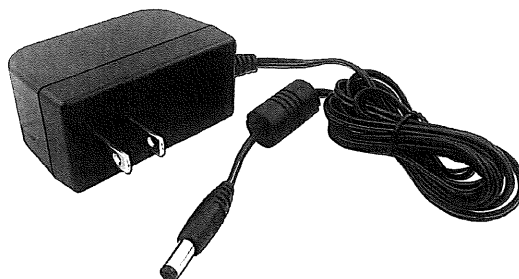
**12 Volts D.C.**
**Plug-In Power Supply**

**Slimline Design**

**RoHS Compliant**

**ELK**
PRODUCTS

# ⇒Antenna & Accessory Selection Guide

| Description | Casetop Flex | Standard | Stealth | Hi Gain |
|---|---|---|---|---|
| Freq Range | 460-470 | 460-470 | 460-470 | 460-470 |
| Gain | 2.5db | 3db | 3db | 5db |
| Power Capability | 5W | 50W | 50W | 50W |
| Mast/Whip Length | 10" | 18" | 18" | 36" |
| Mast/Whip Material | Black Vinyl Clad/Flex | Stainless Steel | Vinyl Clad | Stainless Steel |
| Mount Style | Mounts on case | Universal Mount | Easy Hang Mount | Universal Mount |
| Ground Radials Included | No (case is gnd plane) | Yes | Yes | Yes |
| Connector Type | TNC | N | TNC | N |
| Recommended Cable | cable included | 7220-10-N or -25 | 10' cable included | 7220-10-N or -25-N |
| Application | Indoor | In/Outdoor | Indoor | In/Outdoor |
| Bandwidth | ±5 MHz | ±5 MHz | ±5 MHz | ±5 MHz |
| Vertical Beam Width | 38° | 35° | 35° | 18° |
| Horizontal Beam Width | Omnidirectional | Omnidirectional | Omnidirectional | Omnidirectional |
| Order Number | **7210-3-UR/C** | **7210-3-UM** | **7211** | **7210-5-UM** |

*More Antennas & Accessories on Next Page ->*

**AES·IntelliNet**

# Antenna & Accessory Selection Guide, *continued*

NEW!
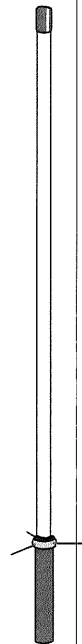
| Description | Rugged Hi Gain | Higher Gain | Central Station |
|---|---|---|---|
| Freq Range | 460-470 | 460-470 | 460-470 |
| Gain | 6db | 7+db | 9db |
| Power Capability | 150W | 200W | 200W |
| Mast/Whip Length (approx) | 48" | 72" | 96" |
| Mast/Whip Material | Fiberglass | Fiberglass | Fiberglass |
| Mount Style | Mast Mount | Mast Mount | Mast Mount |
| Ground Radials Included | Yes | Yes | Yes |
| Connector Type | N | N | N |
| Recommended Cable | 7220-10-N / -25-N | 7220-10-N / -25-N | 7220-10-N / -25-N |
| Application | In/Outdoor | In/Outdoor | In/Outdoor |
| Bandwidth | ±5 MHz | ±5 MHz | ±5 MHz |
| Vertical Beam Width | 14° | 12° | 7° |
| Horizontal Beam Width | Omnidirectional | Omnidirectional | Omnidirectional |
| Order Number | **7210-6-UC** | **7210-7-US** | **7210-9-UC** |

**10' Cable**
RG58 Low Loss
BNC male to N male
7050 to Antenna
**7220-10-N**
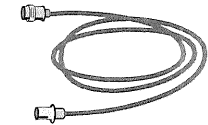
**25' Cable**
**RG58 Low Loss**
BNC male to N male
7050 to Antenna
**7220-25-N**
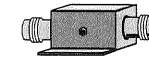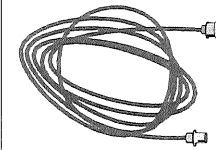
**Lightning Protector**
N female to N female Coax Inline
*A MUST for systems with outdoor antennas*
**7230**

**Bandpass Cavity Filter**
Enhances radio performance by filtering out unwanted RF energy. Custom tuned to specified frequency. N female to N female. Call for details.

AES IntelliNet
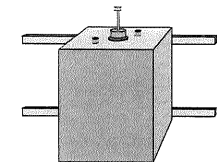
# GRI
# Tamper Switches
## GI-TS01
- *Screw terminals*

> ## GI-TSW01
- *12" leads*

- Eliminates false alarms and service calls
- Fits most bell, siren, control panel mounting hole patterns
- Lifetime warranty

## NOTIFIER® by Honeywell
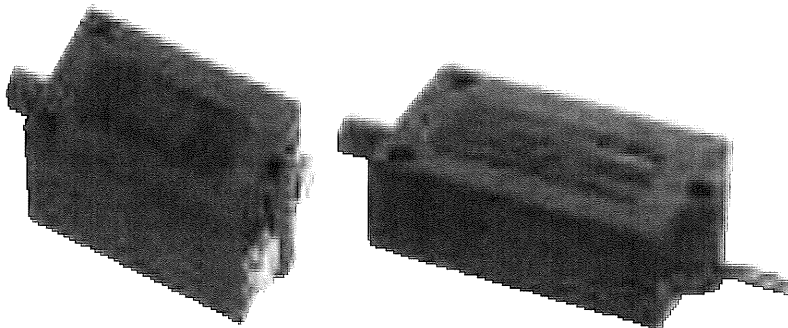
# System Current Draw - NFS2-640

### Total Current

| | |
|----|---------|
| C1 | 1.598 A |
| C2 | 0.878 A |
| C3 | 1.560 A |
| C4 | 0.918 A |
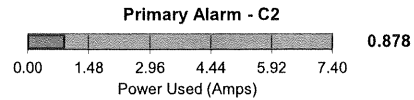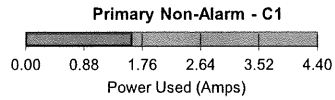
**Primary Non-Alarm - C1**

1.598

0.00  0.88  1.76  2.64  3.52  4.40
Power Used (Amps)

**Primary Alarm - C2**

0.878

0.00  1.48  2.96  4.44  5.92  7.40
Power Used (Amps)

| Device | C1 - Primary Non-Alarm Qty | | Draw | Total | C2 - Primary Alarm Qty | | Draw | Total | C3 - Secondary Non-Alarm Qty | | Draw | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CPU2-640 | 1 | x | 0.25000 | 0.25000 | 1 | x | 0.25000 | 0.25000 | 1 | x | 0.25000 | 0.25000 |
| CPS-24 | 1 | x | 0.00000 | 0.00000 | 1 | x | 0.00000 | 0.00000 | 1 | x | 0.04000 | 0.04000 |
| SLC1 Device Activation Current | 1 | x | 0.40000 | 0.40000 | 1 | x | 0.40000 | 0.40000 | 1 | x | 0.40000 | 0.40000 |
| FDU-80 | 2 | x | 0.06400 | 0.12800 | 2 | x | 0.06400 | 0.12800 | 2 | x | 0.02500 | 0.05000 |
| CO1224T | 39 | x | 0.02000 | 0.78000 | | | | | 39 | x | 0.02000 | 0.78000 |
| UDACT | 1 | x | 0.04000 | 0.04000 | 1 | x | 0.10000 | 0.10000 | 1 | x | 0.04000 | 0.04000 |
| | **Total Non-Alarm Load:** | | | **1.598** | **Total Alarm Load:** | | | **0.878** | **Total Standby Load:** | | | **1.560** |

### C4 - Maximum Secondary Fire Alarm Current Draw

Only include those additional power supplies that are backed up by the control panels batteries.

| Device | Qty | | Draw | Total |
|---|---|---|---|---|
| Total Primary Alarm Load - C2 | | | 0.878 | 0.878 |
| CPS-24 | 1 | x | 0.040 | 0.040 |
| NCA2 - Backlight Off with loss of AC | 0 | x | -0.200 | |
| APS-6R Power Supplies | | | 0.000 | |
| APS2-6R Power Supplies | | | 0.000 | |
| ACPS-610 Power Supplies | | | 0.000 | |
| FCPS-24S6 Power Supplies | | | 0.000 | |
| FCPS-24S8 Power Supplies | | | 0.000 | |
| HPFF8 Power Supplies | | | 0.000 | |
| HPFF12 Power Supplies | | | 0.000 | |
| DAA2 Series | | | 0.000 | |
| DAX Series | | | 0.000 | |
| DAA Series | | | 0.000 | |
| DS-DB | | | 0.000 | |
| FireVoice Panels | | | 0.000 | |
| FireVoice Distributed Audio Panels | | | 0.000 | |
| XPIQ | | | 0.000 | |
| AA-30 | 0 | x | 3.000 | |
| AA-120 | 0 | x | 7.300 | |
| Other Power Supply | 0 | x | 0.000 | |
| Other Power Supply | 0 | x | 0.000 | |
| **Total Standby Alarm Load:** | | | | **0.918** |

## Notifier NFS2-640 Fire Alarm Control Panel

| | | |
|---|---|---|
| Protected Premises: Seaside Rehab and Healthcare | | Date: 1/17/2013 |
| Address: 850 Baxter Blvd | | |
| City: Portland | State: Maine | Zip: |

| | | |
|---|---|---|
| Prepared By: Norris Inc. | | Phone: |
| Address: 2257 West Broadway | Email: | |
| City: South Portland | State: Maine | Zip: 04106 |

### AC Branch Current Requirements    | 5.00 | AMPS @ 120 VAC

Current required by source to power the fire alarm system.

### Primary Standby Load    | 1.60 | Amps

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

### Primary Alarm Load    | 0.88 | Amps

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

### Secondary Load Requirements    | 45.20 | Amp Hours

Total Secondary Load from the calculation table below.

| Current Draw | | Time (hours) | Total (AH) |
|---|:---:|---|---|
| **Secondary Standby Load** | x | Required Standby Time | |
| 1.560 A | | 24 hours | 37.44 |
| **Secondary Alarm Load** | x | Required Alarm Time | |
| 0.918 A | | 0.250 hours | 0.23 |
| | | Total Secondary Load | 37.67 |
| | | Derating factor | x 1.2 |
| | Secondary Load Requirements (Amp Hours) | | 45.20 | AH

### Battery Selection    | 55 | Amp Hours

Select batteries from the list below.

| 55 AH BAT-12550 Battery (12 volt) |
|---|

⦿ Two        ◌ Four (two 12VDC sets in parallel)

## Battery Distribution Chart
Shows amp-hour distribution of your selections.
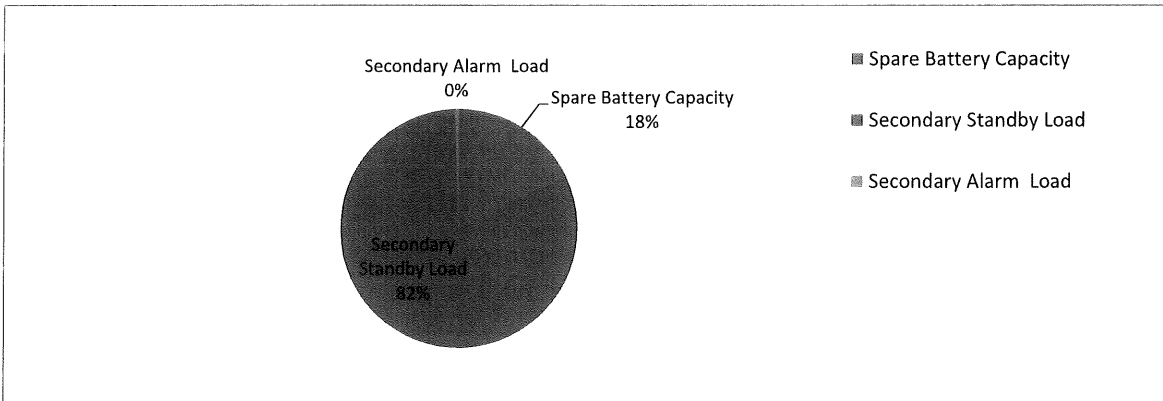


## Comments
1. Battery size exceeds FACP capacity. BB-55 or other external battery box
2. Selected battery size meets secondary load requirements.
3. The selected batteries (55AH) are within the charger range of this power supply (18-200AH).

| | | |
|---|---|---|
| Spare Battery Capacity | 9.80 | Battery Selection (AH) - Secondary Load Requirements (AH) |
| Secondary Standby Load | 44.93 | Secondary Standby Load (AH) * Derating Factor |
| Secondary Alarm Load | 0.28 | Secondary Alarm Load (AH) * Derating Factor |

**NOTIFIER®** by Honeywell
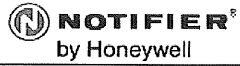
# System Current Draw - FCPS-24s8

| Total Current | |
|---|---|
| C1 | 0.091 A |
| C2 | 3.338 A |
| C3 | 0.065 A |

Select devices using the "Qty" column.
Use yellow cells to enter quantities and current values.
To show only selected devices, select "Show Selected Devices".
To clear selected devices, select "Clear Selections".

| Device | C1 - Primary Non-Alarm | | | | C2 - Primary Alarm | | | | C3 - Secondary Non-Alarm | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Qty | | Draw | Non-Alarm | Qty | | Draw | Alarm | Qty | | Draw | Non-Alarm |
| FCPS-24S8 Main Circuit Board | 1 | x | 0.09100 | 0.09100 | 1 | x | 0.14500 | 0.14500 | 1 | x | 0.06500 | 0.06500 |
| HSR15 | 22 | x | 0.00000 | 0.00000 | 22 | x | 0.08200 | 1.80400 | 22 | x | 0.00000 | 0.00000 |
| STR15 | 19 | x | 0.00000 | 0.00000 | 19 | x | 0.05700 | 1.08300 | 19 | x | 0.00000 | 0.00000 |
| HSR30 | 3 | x | 0.00000 | 0.00000 | 3 | x | 0.10200 | 0.30600 | 3 | x | 0.00000 | 0.00000 |
| | Total Non-Alarm Load: | | | 0.091 | Total Alarm Load: | | | 3.338 | Total Standby Load: | | | 0.065 |

## FCPS-24s8 Power Supply

| | | | |
|---|---|---|---|
| Protected Premises: | Seaside Rehab and Healthcare FCPS 1st floor | | Date: |
| Address: | 850 Baxter Blvd | | |
| City: | Portland | State: Maine | Zip: |

| | | | |
|---|---|---|---|
| Prepared By: | Norris Inc | | Phone: |
| Address: | 2257 West Broadway | Email: | |
| City: | South Portland | State: Maine | Zip: 04106 |

**AC Branch Current Requirements**  | 3.20 | AMPS @ 120 VAC

Current required by source to power the fire alarm system.

**Primary Standby Load**  | 0.09 | Amps

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

**Primary Alarm Load**  | 3.34 | Amps

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

**Secondary Load Requirements**  | 2.87 | Amp Hours

Total Secondary Load from the calculation table below.

| Current Draw | | Time (hours) | Total (AH) |
|---|---|---|---|
| Secondary Standby Load | x | Required Standby Time | |
| 0.065 A | | 24 hours | 1.56 |
| Secondary Alarm Load | x | Required Alarm Time (hours) | |
| 3.338 A | | 0.250 hours | 0.83 |
| | | Total Secondary Load | 2.39 |
| | | Derating factor | x 1.2 |
| | | Secondary Load Requirements | 2.87 |

AH

**Battery Selection**  | 7 | Amp Hours

Select batteries from the list below.

7 AH BAT-1270 Battery (12 volt)

⊙ Two        ○ Four (two 12VDC sets in parallel)

## Battery Distribution Chart

Shows amp-hour distribution of your selections.



■ Spare Battery Capacity

■ Secondary Standby Load

■ Secondary Alarm Load
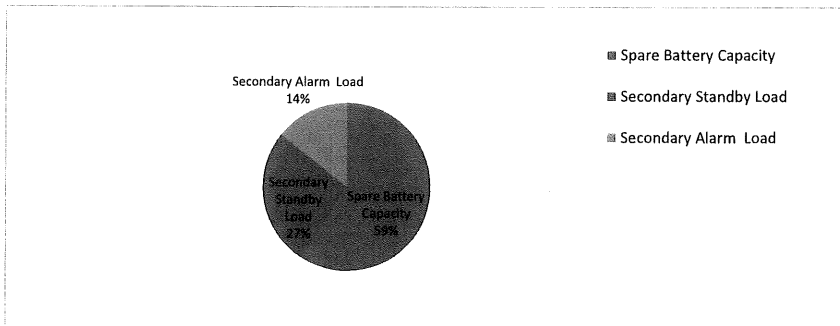
## Comments

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

| | | |
|---|---|---|
| Spare Battery Capacity | 4.13 | Battery Selection (AH) - Secondary Load Requirements (AH) |
| Secondary Standby Load | 1.87 | Secondary Standby Load (AH) * Derating Factor |
| Secondary Alarm Load | 1.00 | Secondary Alarm Load (AH) * Derating Factor |

## NOTIFIER by Honeywell

## System Current Draw - FCPS-24s8

| Total Current | |
|---|---|
| C1 | 0.091 A |
| C2 | 3.298 A |
| C3 | 0.065 A |

Select devices using the "Qty" column.
Use yellow cells to enter quantities and current values.
To show only selected devices, select "Show Selected Devices".
To clear selected devices, select "Clear Selections".

| Device | C1 - Primary Non-Alarm | | | | C2 - Primary Alarm | | | | C3 - Secondary Non-Alarm | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Qty | | Draw | Non-Alarm | Qty | | Draw | Alarm | Qty | | Draw | Non-Alarm |
| FCPS-24S8 Main Circuit Board | 1 | x | 0.09100 | 0.09100 | 1 | x | 0.14500 | 0.14500 | 1 | x | 0.06500 | 0.06500 |
| HSR15 | 24 | x | 0.00000 | 0.00000 | 24 | x | 0.08200 | 1.96800 | 24 | x | 0.00000 | 0.00000 |
| STR15 | 19 | x | 0.00000 | 0.00000 | 19 | x | 0.05700 | 1.08300 | 19 | x | 0.00000 | 0.00000 |
| HSR30 | 1 | x | 0.00000 | 0.00000 | 1 | x | 0.10200 | 0.10200 | 1 | x | 0.00000 | 0.00000 |
| | | | Total Non-Alarm Load: | 0.091 | | | Total Alarm Load: | 3.298 | | | Total Standby Load: | 0.065 |

**FCPS-24s8 Power Supply**

| | |
|---|---|
| Protected Premises: | Seaside Rehab and Healthcare FCPS 2nd floor | Date: |
| Address: | 850 Baxter Blvd |
| City: | Portland | State: Maine | Zip: |

| | |
|---|---|
| Prepared By: | Norris Inc | Phone: |
| Address: | 2257 West Broadway | Email: |
| City: | South Portland | State: Maine | Zip: 04106 |

### AC Branch Current Requirements

$\boxed{3.20}$ AMPS @ 120 VAC

Current required by source to power the fire alarm system.

### Primary Standby Load

$\boxed{0.09}$ Amps

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

### Primary Alarm Load

$\boxed{3.30}$ Amps

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

### Secondary Load Requirements

$\boxed{2.86}$ Amp Hours

Total Secondary Load from the calculation table below.

| Current Draw | | Time (hours) | Total (AH) |
|---|---|---|---|
| **Secondary Standby Load** | x | Required Standby Time | |
| 0.065 A | | 24 hours | 1.56 |
| **Secondary Alarm Load** | x | Required Alarm Time (hours) | |
| 3.298 A | | 0.250 hours | 0.82 |
| | | Total Secondary Load | 2.38 |
| | | Derating factor | x 1.2 |
| | | **Secondary Load Requirements** | **2.86** | AH |

### Battery Selection

$\boxed{7}$ Amp Hours

Select batteries from the list below.

| 7 AH BAT-1270 Battery (12 volt) |
|---|

⊙ Two     ◯ Four (two 12VDC sets in parallel)

### Battery Distribution Chart

Shows amp-hour distribution of your selections.

Secondary Alarm Load
14%

Secondary Standby Load 27%

Spare Battery Capacity 59%

▣ Spare Battery Capacity

▣ Secondary Standby Load

▣ Secondary Alarm Load
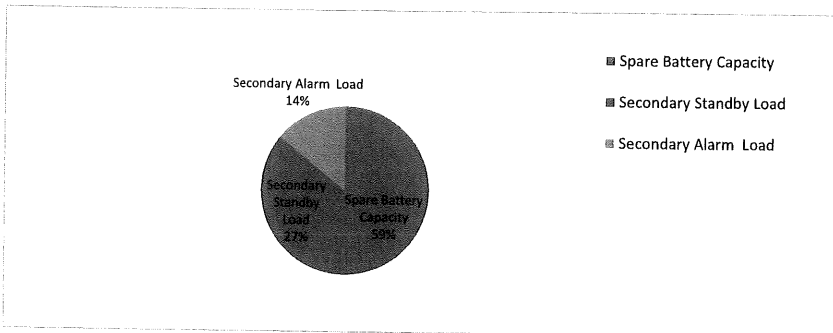
### Comments

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

| Spare Battery Capacity | 4.14 | Battery Selection (AH) - Secondary Load Requirements (AH) |
|---|---|---|
| Secondary Standby Load | 1.87 | Secondary Standby Load (AH) * Derating Factor |
| Secondary Alarm Load | 0.99 | Secondary Alarm Load (AH) * Derating Factor |

| | DATE: | |
|---|---|---|
| REVISION 2 | DATE: | |
| REVISION 1 | DATE: | |
| REVISION 0 SUBMITTAL | DATE: | 2/19/2013 |
| SYSTEM WIRING RISER | | |

| PROJECT NAME | SCALE NTS |
|---|---|
| **Seaside Rehab. (1ST FL)** | BY: CJC |
| PORTLAND, MAINE | CK BY: |

## LEGEND
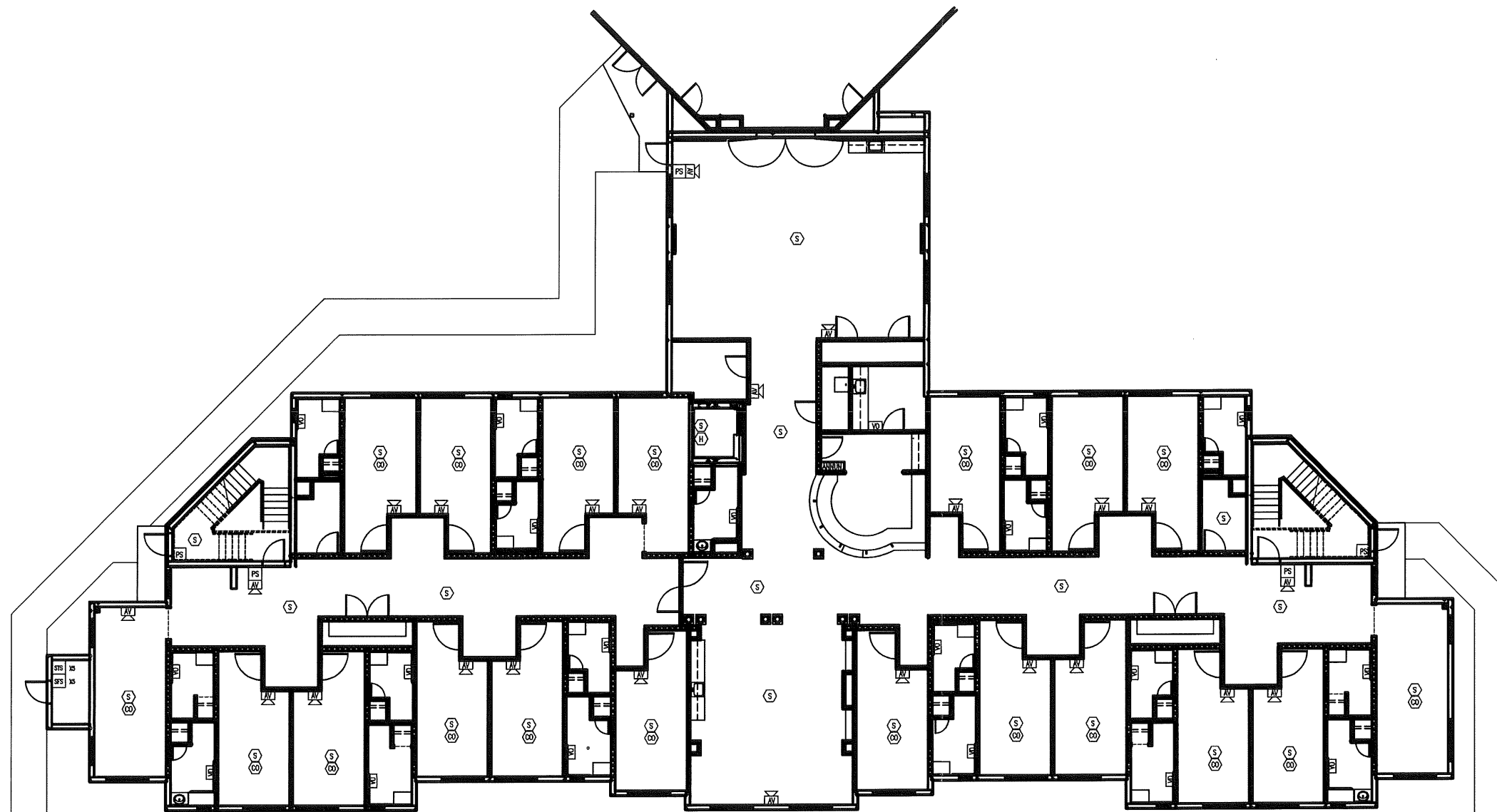
| | Symbol | Description |
|---|---|---|
| MOUNTING HEIGHT 48 INCHES | PS | PULL STATION |
| | S | SMOKE DETECTOR |
| | H | HEAT DETECTOR RATE OF RISE |
| | RT | REMOTE TEST/INDICATOR |
| | DS | DUCT SMOKE DETECTOR W/ FSP-851R HEAD |
| 80 INCHES | VO | VISUAL ONLY |
| 80 INCHES | AV | AUDIO / VISUAL |
| | FMM | MONITOR MODULE |
| | FRM | RELAY MODULE |
| | STS | SPRINKLER TAMPER |
| | SFS | SPRINKLER FLOW |

| | | DATE: |
|---|---|---|
| REVISION 2 | | |
| REVISION 1 | | |
| REVISION 0 | SUBMITTAL | 2/19/2013 |

SYSTEM WIRING RISER

| PROJECT NAME | SCALE NTS |
|---|---|
| **Seaside Rehab. (2ND FL)** | BY: CJC |
| PORTLAND, MAINE | CK BY: |

NORRIS INC
Prepared For Tomorrow; Delivered Today
2257 BROADWAY, SO PORTLAND, MAINE

SAVED AS:

SYSTEM OUTPUTS

| | CONTROL UNIT ACTIVATION | | | | | | | | NOTIFICATION | | | | | | REQUIRED FIRE SAFETY CONTROL | | | | |

Column key:
- A — ACTUATE COMMON ALARM SIGNAL INDICATOR
- B — ACTUATE AUDIBLE ALARM SIGNAL
- C — ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR
- D — ACTUATE AUDIBLE SUPERVISORY SIGNAL
- E — ACTUATE COMMON TROUBLE SIGNAL INDICATOR
- F — ACTUATE AUDIBLE COMMON TROUBLE SIGNAL
- G — DISPLAY ALPHA-NUMERIC SYSTEM STATUS MESSAGE
- H — RECORD EVENTS IN THE SYSTEM MEMORY
- I — ACTUATE GENERAL EVACUATION SIGNALS
- J — SEND FIREFIGHTERS WARNING SIGNAL TO ELEVATOR CONTROLS
- K — TRANSMIT FIRE ALARM SIGNAL TO REMOTE ALARM RECEIVING STATION
- L — TRANSMIT SUPERVISORY SIGNAL TO REMOTE ALARM RECEIVING STATION
- M — TRANSMIT TROUBLE SIGNAL TO REMOTE ALARM RECEIVING STATION
- N — ACTUATE EXTERIOR SPRINKLER ALARM STROBE HORN AT FDC LOCATION
- O — RECALL ELEVATORS TO PRIMARY RECALL FLOOR
- P — RECALL ELEVATORS TO ALTERNATE RECALL FLOOR
- Q — SIGNAL BUILDING AUTOMATION SYSTEM OF SHUTDOWN EVENT
- U — SHUTDOWN POWER TO ELEVATOR
- V — SIGNAL THE AIR HANDLERS TO SHUTDOWN

| # | SYSTEM INPUTS | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | U | V | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MANUAL FIRE ALARM PULL STATION | ● | ● | | | | | ● | ● | ● | | ● | | | | | | | | | 1 |
| 2 | AREA SMOKE DETECTOR | ● | ● | | | | | ● | ● | ● | | ● | | | | | | | | | 2 |
| 3 | ELEVATOR LOBBY SMOKE DETECTOR - PRIMARY FLOOR | ● | ● | | | | | ● | ● | ● | | ● | | | | | ● | | | | 3 |
| 4 | ELEVATOR LOBBY SMOKE DETECTOR - ALTERNATE FLOOR | ● | ● | | | | | ● | ● | ● | | ● | | | | ● | | | | | 4 |
| 5 | ELEVATOR SMOKE DETECTOR | ● | ● | | | | | ● | ● | ● | | ● | | | | | ● | | | | 5 |
| 6 | ELEVATOR HEAT DETECTOR | ● | ● | | | | | ● | ● | ● | | ● | | | | | | | ● | | 6 |
| 7 | CARBON MONOXIDE DETECTOR | | | ● | ● | | | ● | ● | | | | ● | | | | | | | | 7 |
| 8 | SPRINKLER WATERFLOW | ● | ● | | | | | ● | ● | ● | | | | | | | | | | | 8 |
| 9 | SPRINKLER TAMPER SWITCH | | | ● | ● | | | ● | ● | | | | ● | | | | | | | | 9 |
| 10 | FIRE ALARM AC POWER FAILURE | | | | | ● | ● | ● | ● | | | | | ● | | | | | | | 10 |
| 11 | FIRE ALARM SYSTEM LOW BATTERY | | | | | ● | ● | ● | ● | | | | | ● | | | | | | | 11 |
| 12 | OPEN CIRCUIT | | | | | ● | ● | ● | ● | | | | | ● | | | | | | | 12 |
| 13 | GROUND FAULT | | | | | ● | ● | ● | ● | | | | | ● | | | | | | | 13 |
| 14 | NOTIFICATION APPLIANCE CIRCUIT SHORT | | | | | ● | ● | ● | ● | | | | | ● | | | | | | | 14 |
| 15 | | | | | | | | | | | | | | | | | | | | | 15 |
| 16 | | | | | | | | | | | | | | | | | | | | | 16 |
| 17 | | | | | | | | | | | | | | | | | | | | | 17 |
| 18 | | | | | | | | | | | | | | | | | | | | | 18 |
| 19 | | | | | | | | | | | | | | | | | | | | | 19 |
| 20 | | | | | | | | | | | | | | | | | | | | | 20 |
| 21 | | | | | | | | | | | | | | | | | | | | | 21 |
| | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | U | V | |

# NOTES:

1) 4" Square deep grounded box for antenna line surge suppresser. Mount within 6' of the Radio Box enclosure.

2) AES part #13-0345-6 6' RG-8 cable assembly with N male connectors both ends to connect surge suppresser to the Radio Box enclosure. AES part #13-0346 18" RG-58 cable assembly to connect transceiver to enclosure.

3) Coaxial cable run from surge suppresser to roof mounted Antenna. Keep length of run as short as possible. RG-58 up to 25' -omit part #13-0346 and mount surge suppresser within 6' of antenna
 RG-8 up to 75'.
 LMR-400 up to 125'
 2+3 above must be run in rigid or non-metallic conduit.

4) FRM-1 number 1 -trip relay which triggers an alarm on zone 1 of the radio box.

5) FRM-1 number 2 -Disconnect relay which bypasses zone 1 on the Radio box. Use 2nd set of contacts on FRM-1 to trigger Zone 2 into alarm to indicate box in disconnect

6) FMM-101 #1 to monitor Radio Box troubles.

7) FMM-101 #2 in FACP for Disconnect activation.

8) Physical Disconnect Switch mounted at FACP Notifier AKS-1

Important! Wiring connections must have correct polarity.

## ROOF MOUNTED ANTENNA
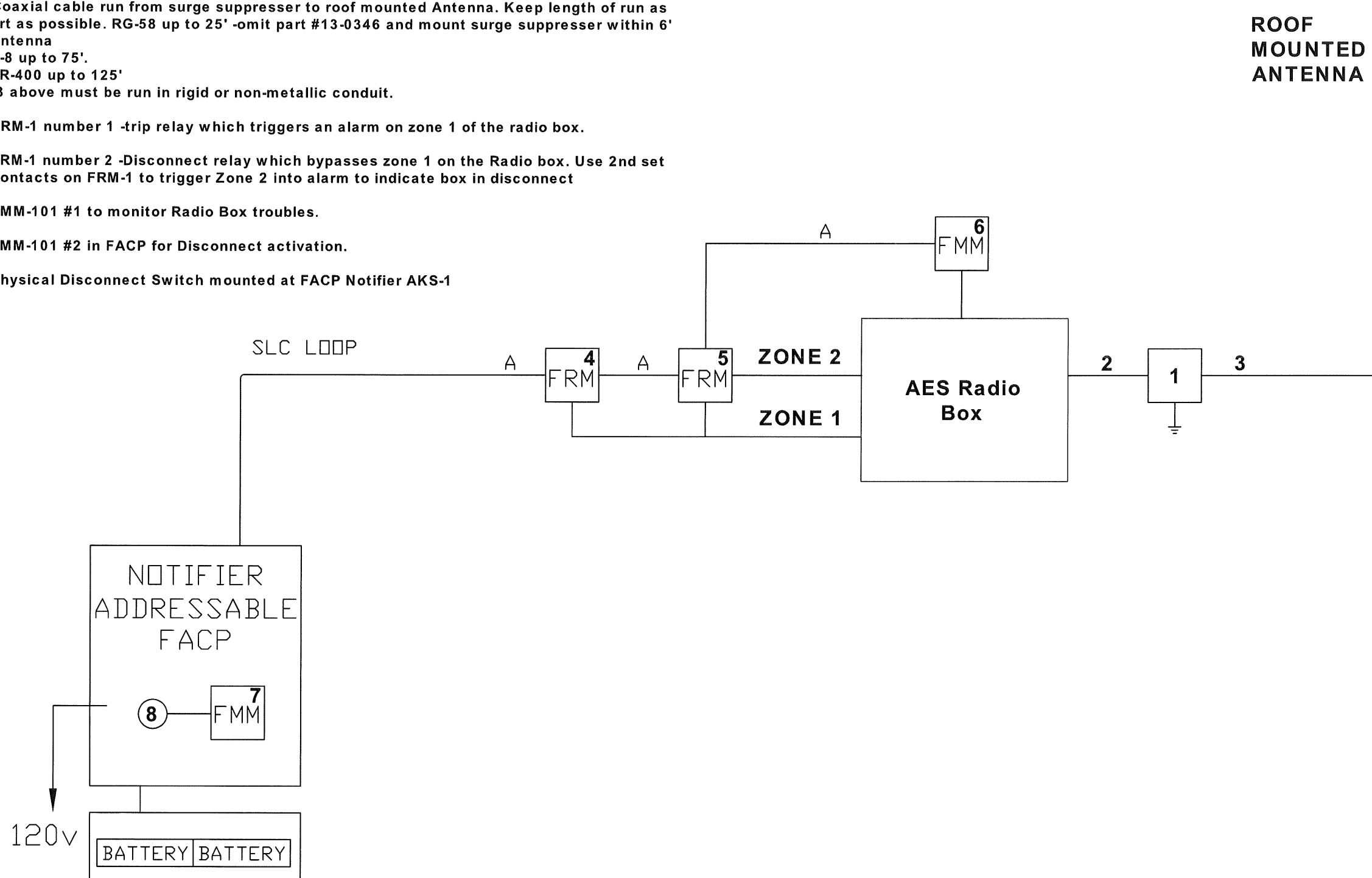
**LEGEND**

| FMM | MONITOR MODULE |
| FRM | RELAY MODULE |

SLC LOOP

A — **FRM 4** — A — **FRM 5** — ZONE 2 / ZONE 1 — **AES Radio Box** — 2 — **1** — 3

A — **FMM 6**

**NOTIFIER ADDRESSABLE FACP**

(8) — **FMM 7**

120v

| BATTERY | BATTERY |

This drawing is a typical device layout, wiring is shown diagrammatically only. This drawing has been provided as an example ONLY. Riser does not necessarily indicate all devices and appliances.  See floor plans and specification for location and quantities.  The purchaser must  accurately layout the initiating and notification devices in their proper zones/circuit.  Note: Signal Circuit 1 has a 2.5 amp load limitation, Circuits 2-3-4 have a combined load limitation of 2.5 amps.   REMOTE power supply has a 3.0 amps limitation per circuit and an 8.0 amp combined limitation for all 4 circuits. (see chart below for current vs. candela rating)

| Room Size | Candela Rating | Load (amps) |
| --- | --- | --- |
| 20' x 20' | 15 cd | 0.08 amps |
| 28' x 28' | 30 cd | 0.10 amps |
| 45' x 45' | 75 cd | 0.15 amps |
| 54' x 54' | 110 cd | 0.20 amps |

| | 4.7k END OF LINE RESISTOR | (Panel Circuits) |
| --- | --- | --- |
| A | 1 PR #12 AWG TWISTED PAIR CABLE(Up to 10,000 ft) | |
| A | 1 PR #14 AWG TWISTED PAIR CABLE(Up to 8,000 ft) | |
| A | 1 PR #16 AWG TWISTED PAIR CABLE(Up to 4,500 ft) | |
| B | 1 PR #12 AWG FPL CABLE | |
| D | 1 PR #14 AWG FPL CABLE | |
| E | 1 PR #16 AWG FPL CABLE | |
| F | 2c #12 AWG CABLE | |
| G | 2c #14 AWG CABLE | |
| H | 2c #16 AWG CABLE | |
| K | 1 CAT5 CABLE | |
| L | 1 PR #16 AWG TWISTED SHIELDED CABLE | |

| REVISION 2 | DATE: | |
| --- | --- | --- |
| REVISION 1 | DATE: | |
| REVISION 0  SUBMITTAL | DATE: | 1/06/13 |

SYSTEM WIRING RISER

| PROJECT NAME | SCALE NTS |
| --- | --- |
| **Seaside Rehab Masterbox** | BY: CJC |
| Portland, MAINE | |
| | CK BY: |

SAVED AS:

Important! Duplicate Addresses on devices of different style is NOT an error in design or printing.  All electronic devices MUST be placed in a heated room with temperature above 32 degrees

Important! Wiring connections must have correct polarity.

This drawing is an accurate layout from provided floor plans and information available at time of design. Circuiting has ben designed for maximum use of resources available with supplied equipment. Deviations from this design must be noted and approved prior to final acceptance. Note: Signal Circuit 1 has a 2.5 amp load limitation, Circuits 2-3-4 hava a combined load limitation of 2.5 amps. REMOTE power supply has a 3.0 amps limitation per circuit and an 8.0 amp combined limitation for all 4 circuits. Changes in circuiting must incorporate equipment speIfications/limitations(see chart below for current vs. candela rating. Distances and ratings shown are for wall applications ONLY, call Norris, Inc. for ceiling devices when applicable.) Twisted-Shielded Cable is NOT recommended for use on SLC wiring for this panel. Untwisted cable inside/outside conduit has a 1000' max distance sizes 12-18AWG.

| Room Size | Candela Rating | Load (amps) |
|---|---|---|
| 20' x 20' | 15 cd | 0.08 amps |
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| B | 1 PR #12 AWG FPL CABLE |
| D | 1 PR #14 AWG FPL CABLE |
| E | 1 PR #16 AWG FPL CABLE |
| F | 2c #12 AWG CABLE |
| G | 2c #14 AWG CABLE |
| H | 2c #16 AWG CABLE |
| K | 1 CAT5 CABLE |
| L | 1 PR #16 AWG TWISTED SHIELDED CABLE |

| REVISION 2 | | DATE: |
| REVISION 1 | | DATE: |
| REVISION 0 | SUBMITTAL | DATE: | 1/6/2013 |

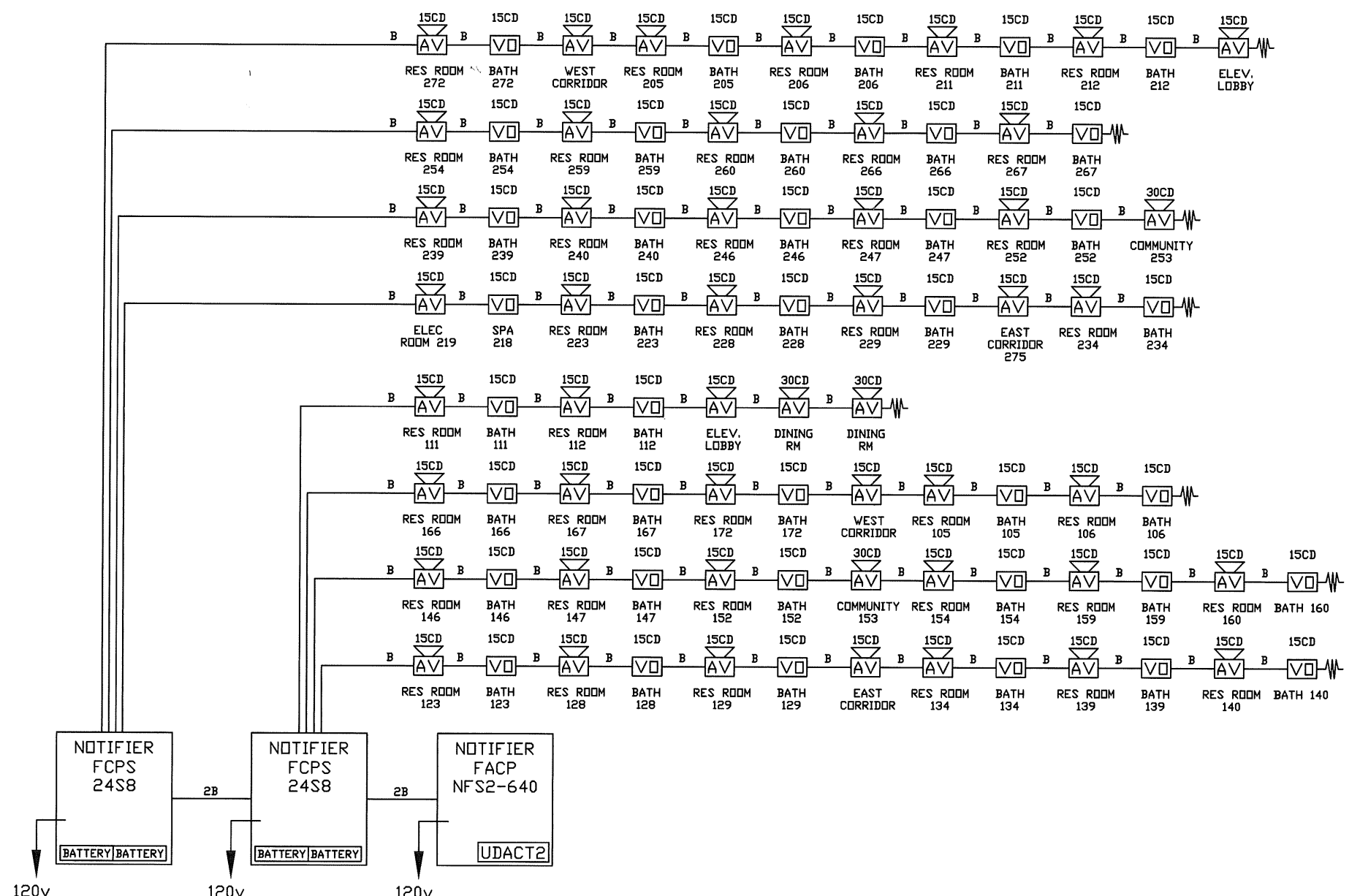SYSTEM WIRING RISER

PROJECT NAME

**Seaside Rehab (N.A.C.)**

PORTLAND, MAINE

SCALE NTS
BY: CJC
CK BY:
SAVED AS:

NORRIS INC
Prepared For Tomorrow; Delivered Today
2257 BROADWAY, So PORTLAND, MAINE

Row 1 (15CD): RES ROOM 272 (AV), BATH 272 (VO), WEST CORRIDOR (AV), RES ROOM 205 (AV), BATH 205 (VO), RES ROOM 206 (AV), BATH 206 (VO), RES ROOM 211 (AV), BATH 211 (VO), RES ROOM 212 (AV), BATH 212 (VO), ELEV. LOBBY (AV)

Row 2: RES ROOM 254 (AV), BATH 254 (VO), RES ROOM 259 (AV), BATH 259 (VO), RES ROOM 260 (AV), BATH 260 (VO), RES ROOM 266 (AV), BATH 266 (VO), RES ROOM 267 (AV), BATH 267 (VO)

Row 3: RES ROOM 239 (AV), BATH 239 (VO), RES ROOM 240 (AV), BATH 240 (VO), RES ROOM 246 (AV), BATH 246 (VO), RES ROOM 247 (AV), BATH 247 (VO), RES ROOM 252 (AV), BATH 252 (VO), COMMUNITY 253 (30CD) (AV)

Row 4: ELEC ROOM 219 (AV), SPA 218 (VO), RES ROOM 223 (AV), BATH 223 (VO), RES ROOM 228 (AV), BATH 228 (VO), RES ROOM 229 (AV), BATH 229 (VO), EAST CORRIDOR 275 (AV), RES ROOM 234 (AV), BATH 234 (VO)

Row 5: RES ROOM 111 (AV), BATH 111 (VO), RES ROOM 112 (AV), BATH 112 (VO), ELEV. LOBBY (AV), DINING RM (30CD) (AV), DINING RM (30CD) (AV)

Row 6: RES ROOM 166 (AV), BATH 166 (VO), RES ROOM 167 (AV), BATH 167 (VO), RES ROOM 172 (AV), BATH 172 (VO), WEST CORRIDOR (AV), RES ROOM 105 (VO), BATH 105 (AV), RES ROOM 106 (VO)

Row 7: RES ROOM 146 (AV), BATH 146 (VO), RES ROOM 147 (AV), BATH 147 (VO), RES ROOM 152 (AV), BATH 152 (VO), COMMUNITY 153 (30CD) (AV), RES ROOM 154 (AV), BATH 154 (VO), RES ROOM 159 (AV), BATH 159 (VO), RES ROOM 160 (AV), BATH 160 (VO)

Row 8: RES ROOM 123 (AV), BATH 123 (VO), RES ROOM 128 (AV), BATH 128 (VO), RES ROOM 129 (AV), BATH 129 (VO), EAST CORRIDOR (AV), RES ROOM 134 (AV), BATH 134 (VO), RES ROOM 139 (AV), BATH 139 (VO), RES ROOM 140 (AV), BATH 140 (VO)

NOTIFIER FCPS 24S8 — BATTERY BATTERY — 120v

NOTIFIER FCPS 24S8 — BATTERY BATTERY — 120v — 2B

NOTIFIER FACP NFS2-640 — UDACT2 — 120v — 2B

**Important! Wiring connections must have correct polarity.**

## LEGEND

| MOUNTING HEIGHT | | |
|---|---|---|
| 48 INCHES | PS | PULL STATION |
| | S | SMOKE DETECTOR |
| | H | HEAT DETECTOR |
| | RT | REMOTE TEST/INDICATOR |
| | DS | DUCT SMOKE DETECTOR W/ FSP-851R HEAD |
| 80 INCHES | VO | VISUAL ONLY |
| 80 INCHES | AV | AUDIO / VISUAL |
| | FMM | MONITOR MODULE |
| | FRM | RELAY MODULE |
| | STS | SPRINKLER TAMPER |
| | SFS | SPRINKLER FLOW |
| | DH | DOOR HOLDER |
| | CO | CARBON MONOXIDE DETECTOR |

This drawing is an accurate layout from provided floor plans and information available at time of design. Circuiting has ben designed for maximum use of resources available with supplied equipment. Deviations from this design must be noted and approved prior to final acceptance. Note: Signal Circuit 1 has a 2.5 amp load limitation, Circuits 2-3-4 have a combined load limitation of 2.5 amps. REMOTE power supply has a 3.0 amps limitation per circuit and an 8.0 amp combined limitation for all 4 circuits. Changes in circuiting must incorporate equipment spelfications/limitations(see chart below for current vs. candela rating. Distances and ratings shown are for wall applications ONLY, call Norris, Inc. for ceiling devices when applicable.) Twisted-Shielded Cable is NOT recommended for use on SLC wiring for this panel. Untwisted cable inside/outside conduit has a 1000' max distance sizes 12-18AWG.

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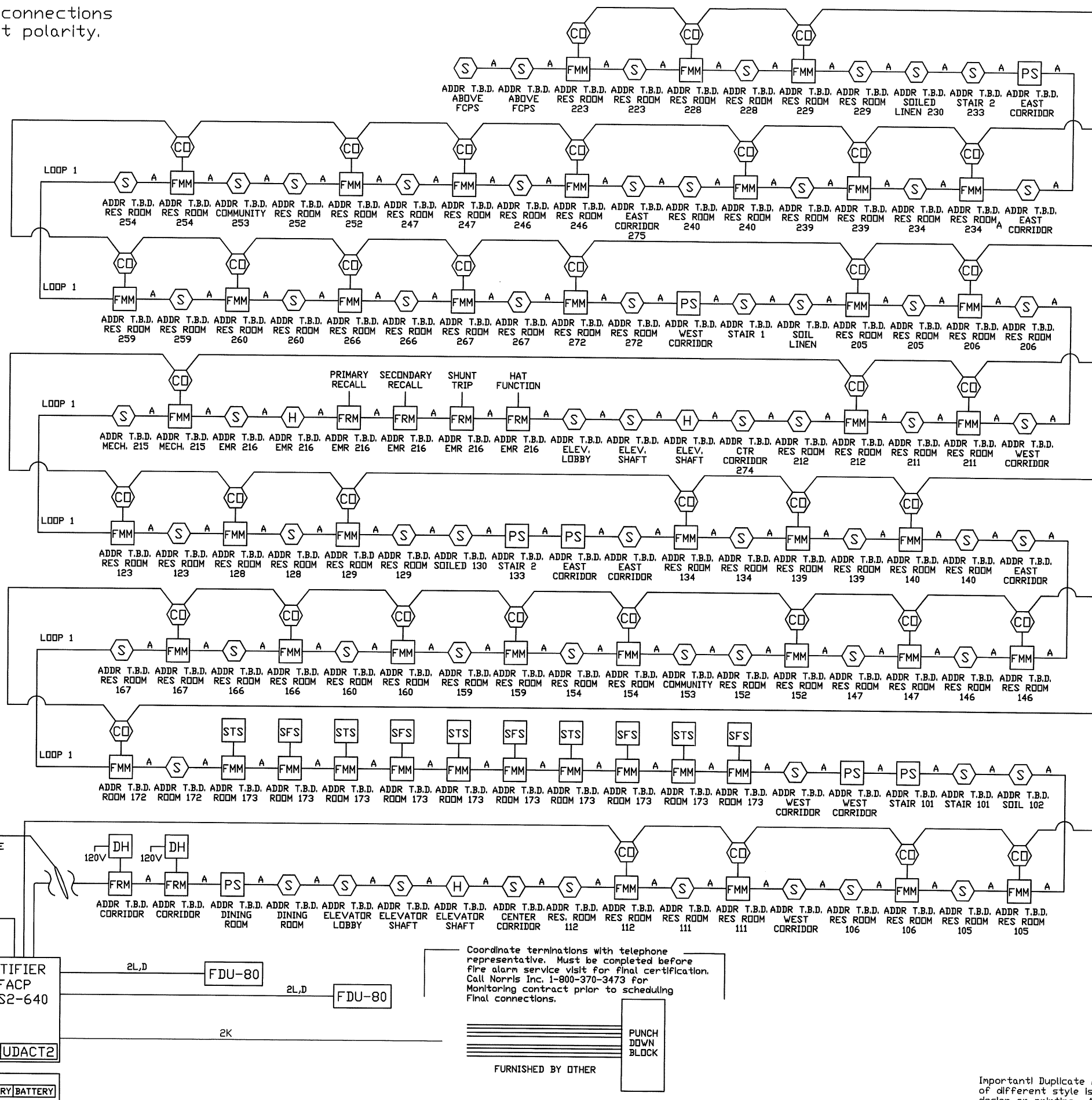| | 4.7k END OF LINE RESISTOR | (Panel Circuits) |
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| E | 1 PR #16 AWG FPL CABLE | |
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| H | 2c #16 AWG CABLE | |
| K | 1 CAT5 CABLE | |
| L | 1 PR #16 AWG TWISTED SHIELDED CABLE | |

| REVISION 2 | | DATE: |
|---|---|---|
| REVISION 1 | | DATE: |
| REVISION 0 | SUBMITTAL | DATE: 1/6/2013 |

SYSTEM WIRING RISER

PROJECT NAME
**Seaside Rehab (SLC)**
PORTLAND, MAINE

SCALE NTS
BY: CJC
CK BY:
SAVED AS:

NORRIS INC
Prepared For Tomorrow; Delivered Today
2257 BROADWAY, So PORTLAND, MAINE



--- Loop / riser diagram labels ---

**LOOP 1** (top row): ADDR T.B.D. ABOVE FCPS, ADDR T.B.D. ABOVE FCPS, ADDR T.B.D. RES ROOM 223, ADDR T.B.D. RES ROOM 223, ADDR T.B.D. RES ROOM 228, ADDR T.B.D. RES ROOM 228, ADDR T.B.D. RES ROOM 229, ADDR T.B.D. RES ROOM 229, ADDR T.B.D. SOILED LINEN 230, ADDR T.B.D. STAIR 2 233, ADDR T.B.D. EAST CORRIDOR

**LOOP 1**: ADDR T.B.D. RES ROOM 254, RES ROOM 254, COMMUNITY 253, RES ROOM 252, RES ROOM 252, RES ROOM 247, RES ROOM 247, RES ROOM 246, RES ROOM 246, EAST CORRIDOR 275, RES ROOM 240, RES ROOM 240, RES ROOM 239, RES ROOM 239, RES ROOM 234, RES ROOM 234, EAST CORRIDOR

**LOOP 1**: RES ROOM 259, RES ROOM 259, RES ROOM 260, RES ROOM 260, RES ROOM 266, RES ROOM 266, RES ROOM 267, RES ROOM 267, RES ROOM 272, RES ROOM 272, WEST CORRIDOR, STAIR 1, SOIL LINEN, RES ROOM 205, RES ROOM 205, RES ROOM 206, RES ROOM 206

PRIMARY RECALL, SECONDARY RECALL, SHUNT TRIP, HAT FUNCTION

**LOOP 1**: MECH. 215, MECH. 215, EMR 216, EMR 216, EMR 216, EMR 216, EMR 216, EMR 216, ELEV. LOBBY, ELEV. SHAFT, ELEV. SHAFT, CTR CORRIDOR 274, RES ROOM 212, RES ROOM 212, RES ROOM 211, RES ROOM 211, WEST CORRIDOR

**LOOP 1**: RES ROOM 123, RES ROOM 123, RES ROOM 128, RES ROOM 128, RES ROOM 129, RES ROOM 129, SOILED 130, STAIR 2 133, EAST CORRIDOR, EAST CORRIDOR, RES ROOM 134, RES ROOM 134, RES ROOM 139, RES ROOM 139, RES ROOM 140, RES ROOM 140, EAST CORRIDOR

**LOOP 1**: RES ROOM 167, RES ROOM 167, RES ROOM 166, RES ROOM 166, RES ROOM 160, RES ROOM 160, RES ROOM 159, RES ROOM 159, RES ROOM 154, RES ROOM 154, COMMUNITY 153, RES ROOM 152, RES ROOM 152, RES ROOM 147, RES ROOM 147, RES ROOM 146, RES ROOM 146

**LOOP 1**: ROOM 172, ROOM 172, ROOM 173, ROOM 173, ROOM 173, ROOM 173, ROOM 173, ROOM 173, ROOM 173, ROOM 173, WEST CORRIDOR, WEST CORRIDOR, STAIR 101, STAIR 101, SOIL 102

CORRIDOR, CORRIDOR, DINING ROOM, DINING ROOM, ELEVATOR LOBBY, ELEVATOR SHAFT, ELEVATOR SHAFT, CENTER CORRIDOR, RES. ROOM 112, RES ROOM 112, RES ROOM 111, RES ROOM 111, WEST CORRIDOR, RES ROOM 106, RES ROOM 106, RES ROOM 105, RES ROOM 105

INTERUPT EXISTING SLC LOOP AT CLOSEST CONVENIENT ADDRESSABLE DEVICE.

PLEASE REFER TO RADIO MASTERBOX DIAGRAM FOR CONNECTION

PLEASE REFER TO N.A.C. DRAWING FOR CONNECTION

NOTIFIER FACP NFS2-640

2L,D → FDU-80
2L,D → FDU-80
2K → PUNCH DOWN BLOCK
FURNISHED BY OTHER

UDACT2
120v
BATTERY BATTERY

120V DH, 120V DH, FRM, FRM, PS

Coordinate terminations with telephone representative. Must be completed before fire alarm service visit for final certification. Call Norris Inc. 1-800-370-3473 for Monitoring contract prior to scheduling Final connections.

Important! Duplicate Addresses on devices of different style is NOT an error in design or printing. All electronic devices MUST be placed in a heated room with temperature above 32 degrees.