

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

PERMIT ISSUED

Please Read Application And Notes, If Any, Attached

BUILDING DEPARTMENT

PERMIT

Permit Number: 101385  
FEB 17 2011

This is to certify that 800 NORTHERN CORP /Electrical Maintenance Install

has permission to Install Fire Alarm City of Portland

AT 2 MONUMENT SQ CB 032 K001001

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

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lath or other work is set-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. *[Signature]* (58)

Health Dept. \_\_\_\_\_

Appeal Board \_\_\_\_\_

Other \_\_\_\_\_  
Department Name

*[Signature]* 2/17/11  
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

SCANNED

**City of Portland, Maine - Building or Use Permit Application**  
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 10-1385	Issue Date:	CBL: 032 K001001
-----------------------	-------------	---------------------

Location of Construction: 2 MONUMENT SQ	Owner Name: 800 NORTHERN CORP	Owner Address: 25 SOUTH SERVICE RD	Phone:
Business Name:	Contractor Name: Electrical Maintenance & Install	Contractor Address: P.O. Box 15007 Portland	Phone: 2078785000
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	Zone: B-3

Past Use: Commercial	Proposed Use: Commercial - install fire Alarm	Permit Fee: \$480.00	Cost of Work: \$46,000.00	CEO District: 1
Proposed Project Description: Install Fire Alarm		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <i>w/conditions</i>	INSPECTION: Use Group: <i>B</i> Type:	
		Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)				
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied				
Signature: _____ Date: _____				

Permit Taken By: ldobson	Date Applied For: 11/03/2010	<b>Zoning Approval</b>
-----------------------------	---------------------------------	------------------------

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..  <div style="text-align: center;"> <b>PERMIT ISSUED</b>                      FEB 17 2011                      City of Portland                 </div>	<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>11/14/10</i>	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	<b>Historic Preservation</b> v.s. <input type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>Review separate thru Historic Preservation</i>
--	---	---	---

**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

**City of Portland, Maine - Building or Use Permit**

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

Permit No: 10-1385	Date Applied For: 11/03/2010	CBL: 032 K001001
-----------------------	---------------------------------	---------------------

Location of Construction: 2 MONUMENT SQ	Owner Name: 800 NORTHERN CORP	Owner Address: 25 SOUTH SERVICE RD	Phone:
Business Name:	Contractor Name: Electrical Maintenance & Install	Contractor Address: P.O. Box 15007 Portland	Phone (207) 878-5000
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	

Proposed Use: Commercial - install fire Alarm	Proposed Project Description: Install Fire Alarm
--	---

Dept: Zoning	Status: Approved with Conditions	Reviewer: Ann Machado	Approval Date: 11/04/2010
Note:			Ok to Issue: <input checked="" type="checkbox"/>
1) ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.			
2) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.			
Dept: Building	Status: Approved with Conditions	Reviewer: Jeanine Bourke	Approval Date: 02/17/2011
Note:			Ok to Issue: <input checked="" type="checkbox"/>
1) Fire Alarm systems shall be installed per Sec. 907 of the IBC 2003			
2) Separate permits are required for any electrical, plumbing, sprinkler, fire alarm HVAC systems, heating appliances, including pellet/wood stoves, commercial kitchen exhaust hood systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.			
Dept: Fire	Status: Approved with Conditions	Reviewer: Ben Wallace Jr.	Approval Date: 02/15/2011
Note: See permit 2011-01-310-FAFS in One Solution for conditions.			Ok to Issue: <input checked="" type="checkbox"/>

**Comments:**

11/15/2010-wallaceb: Good morning Dave,  
I'm reviewing the permit application for 2 Monument Sq and have a few questions and comments.  
As we discussed before, high-rise buildings require the designer to be an FPE. Who is it?  
The Master box approval form was not filled out. The information in the red box needs to be completed and can be done right on the computer when it's opened in adobe. I must have it completed before I can approve the permit.  
The following errors were noted on the input/output matrix:  
Elevator lobby smokes should return the elevator to the designated floor only and not shut down power to the elevator.  
Elevator heat detector should shut down elevator power.  
Duct detectors must be supervisory signals.  
Sprinkler tamper switch should not transmit an alarm signal to the alarm receiving station.  
For the master box on the matrix:  
pull stations and smoke detectors on basement through floor 5 shall activate Zone 1 on the AES master box.  
AES zone 2 shall be city disconnect and indicate "city disconnect" on the FACP and annunciator.  
pull stations and smoke detectors on floor 6 through penthouse shall activate Zone 3 on the AES master box.  
water flow shall activate zone 4 on the AES master box.  
Please submit a scope of work. Is the plan to replace all conventional initiation devices with new addressable devices now or will a plan of action be submitted to convert over time?

<b>Location of Construction:</b> 2 MONUMENT SQ	<b>Owner Name:</b> 800 NORTHERN CORP	<b>Owner Address:</b> 25 SOUTH SERVICE RD	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Electrical Maintenance & Install	<b>Contractor Address:</b> P.O. Box 15007 Portland	<b>Phone</b> (207) 878-5000
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Fire Alarm System	

The location of the Annunciator and FACP was not shown on the floor plans.

As soon as these are addressed I'll try and issue the permit.

Thanks,  
Ben

Lt. Benjamin Wallace Jr.  
Fire Prevention Officer  
Portland Fire Department  
380 Congress Street  
Portland, Maine 04101  
(207)756-8096  
wallaceb@portlandmaine.gov



# 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: Two Monument CBL: \_\_\_\_\_  
 Exact location: (within structure) Throughout  
 Type of occupancy(s) (NFPA & ICC): NFPA  
 Building owner: John Cocoulidis - Two Monument  
 System Designer (point of contact): David Gagnon  
 Designer phone: 207-883-3473 E-mail: daveg@norrisinc.com  
 Installing contractor: Electrical Maintenance Certificate of Fitness No: T1017  
 Contractor phone: 207-878-5000 E-mail: cmistew@aol.com

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
- Wiring diagram
- Annunciator details
- Input/ Output Matrix
- Equipment data sheets
- Electrical Permit Pulled (check alarm/com)
- Scope of Work
- 11 1/2 x 17s
- pdf copy (may be e-mailed)
- Designer qualifications
- Battery/ voltage drop calcs

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

COST OF WORK:	<u>\$46,000.00</u>
PERMIT FEE:	<u>\$480.00</u>
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)	
<b>RECEIVED</b>	
NOV - 3 2010	
Dept. of Building Inspections City of Portland Maine	

The designer shall be the responsible party for this application. Download a new copy of this application at [www.portlandmaine.gov/fire](http://www.portlandmaine.gov/fire) for every submittal. Submit all plans in electronic PDF in addition to readable 11 1/2 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](http://www.portlandmaine.gov/fire).

Applicant signature: [Signature] Date: 11/02/2010

Steven Stewart

## Benjamin Wallace - 2 Monument Square

**From:** Benjamin Wallace  
**To:** daveg@norrisinc.com; emistew@aol.com  
**Date:** 11/15/2010 2:08 PM  
**Subject:** 2 Monument Square  
**Attachments:** Benjamin Wallace.vcf

Good morning Dave,  
I'm reviewing the permit application for 2 Monument Sq and have a few questions and comments.

1. As we discussed before, high-rise buildings require the designer to be an FPE. Who is it?
2. The Master box approval form was not filled out. The information in the red box needs to be completed and can be done right on the computer when it's opened in adobe. I must have it completed before I can approve the permit.
3. The following errors were noted on the input/output matrix:
  - o Elevator lobby smokes should return the elevator to the designated floor only and not shut down power to the elevator.
  - o Elevator heat detector should shut down elevator power.
  - o Duct detectors must be supervisory signals.
  - o Sprinkler tamper switch should not transmit an alarm signal to the alarm receiving station.
  - o For the master box on the matrix:
    - pull stations and smoke detectors on basement through floor 5 shall activate Zone 1 on the AES master box.
    - AES zone 2 shall be city disconnect and indicate "city disconnect" on the FACP and annunciator.
    - pull stations and smoke detectors on floor 6 through penthouse shall activate Zone 3 on the AES master box.
    - water flow shall activate zone 4 on the AES master box.
4. Please submit a scope of work. Is the plan to replace all conventional initiation devices with new addressable devices now or will a plan of action be submitted to convert over time?
5. The location of the Annunciator and FACP was not shown on the floor plans.

As soon as these are addressed I'll try and issue the permit.  
Thanks,  
Ben

Lt. Benjamin Wallace Jr.  
Fire Prevention Officer  
Portland Fire Department  
380 Congress Street  
Portland, Maine 04101  
(207)756-8096  
wallaceb@portlandmaine.gov



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life • [www.portlandmaine.gov](http://www.portlandmaine.gov)*

Director of Planning and Urban Development  
Penny St. Louis

Job ID: 2011-01-310-FAES

Located At: 2 MONUMENT

CBL032 - - K - 001 - 001 - - - - -

## **Conditions of Approval:**

### **Zoning**

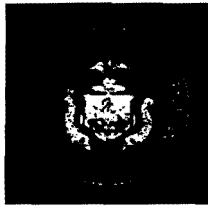
1. ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.
2. This property shall remain offices. Any change of use shall require a separate permit application for review and approval.

### **Fire**

1. The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.
2. In field installation shall be installed per code as conditions dictate.
3. Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.
4. Central Station monitoring for addressable fire alarm systems shall be by point.
5. All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".
6. Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.
7. System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
8. Fire Alarm system 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. Fire alarm system requires a wireless master box connection per city ordinance. Masterbox design and installation shall be as approved by City Electrical Division.
10. AES Zones shall be:
  11. Zone 1: Basement – Floor 5
  12. Zone 2: City Disconnect
  13. Zone 3: Floor 6 – Penthouse
  14. Zone 4: Water flow

### **Building**

1. Fire Alarm systems shall be installed per Sec. 907 of the IBC 2009
2. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life* • [www.portlandmaine.gov](http://www.portlandmaine.gov)

Director of Planning and Urban Development  
Penny St. Louis

Job ID: 2011-01-310-EAFS

Located At: 2 MONUMENT

CBL032 - - K - 001 - 001 - - - -

## **Conditions of Approval:**

### **Zoning**

1. ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.
2. This property shall remain offices. Any change of use shall require a separate permit application for review and approval.

### **Fire**

1. The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.
2. In field installation shall be installed per code as conditions dictate.
3. Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.
4. Central Station monitoring for addressable fire alarm systems shall be by point.
5. All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".
6. Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.
7. System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
8. Fire Alarm system 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. Fire alarm system requires a wireless master box connection per city ordinance. Masterbox design and installation shall be as approved by City Electrical Division.
10. AES Zones shall be:
  11. Zone 1: Basement – Floor 5
  12. Zone 2: City Disconnect
  13. Zone 3: Floor 6 – Penthouse
  14. Zone 4: Water flow

### **Building**

1. Fire Alarm systems shall be installed per Sec. 907 of the IBC 2009
2. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.

## **BUILDING PERMIT INSPECTION PROCEDURES**

Please call 874-8703 or 874-8693 (ONLY)

or email: [buildinginspections@portlandmaine.gov](mailto: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.**

1. Final Fire Inspection

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



## BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: [buildinginspections@portlandmaine.gov](mailto: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.**

### 1. Final Fire Inspection

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.

**City of Portland, Maine - Building or Use Permit Application**  
 389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2011-01-310-FAFS	Date Applied: 1/19/2011	CBL: 032 - - K - 001 - 001 - - - - -	
Location of Construction: 2 MONUMENT SQ	Owner Name: * 800 NORTHERN CORP	Owner Address: 25 SOUTH SERVICE RD JERICHO, NY - NEW YORK 11753	Phone:
Business Name:	Contractor Name: Stewart, Stewart B	Contractor Address: 798 STEVENS AVE PORTLANDMAINE04103	Phone: 5000
Lessee/Buyer's Name:	Phone:	Permit Type: FIRE ALARM - Fire Alarm	Zone: B-3
Past Use: Offices	Proposed Use: Same: Offices with New Fire Alarm System on the Ground Floor - Electric Room	Cost of Work: 78000.000000	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved w/conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A Signature: <i>Bjorn Wald</i> (58)	Inspection: Use Group: B Type: Fire Alarm Signature: <i>JMB</i>
Proposed Project Description: 2 Monument Sq Ground Floor Electric Room		Pedestrian Activities District (P.A.D.)	

Permit Taken By:	<b>Zoning Approval</b>		
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.	<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetlands <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan <input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM Date: <i>OK with conditions</i> <i>9/25/11</i>	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	<b>Historic Preservation</b> <i>within</i> <input type="checkbox"/> Not in Dist or Landmark <input type="checkbox"/> Does not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>Any exterior work requires a separate review &amp; approval</i>
	<b>CERTIFICATION</b>		

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	PHON

# Fire Conditions

The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.

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

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

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

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

Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.

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

Fire Alarm system 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.

Fire alarm system requires a wireless master box connection per city ordinance. Masterbox design and installation shall be as approved by City Electrical Division.

AES Zones shall be:

Zone 1: Basement – Floor 5

Zone 2: City Disconnect

Zone 3: Floor 6 – Penthouse

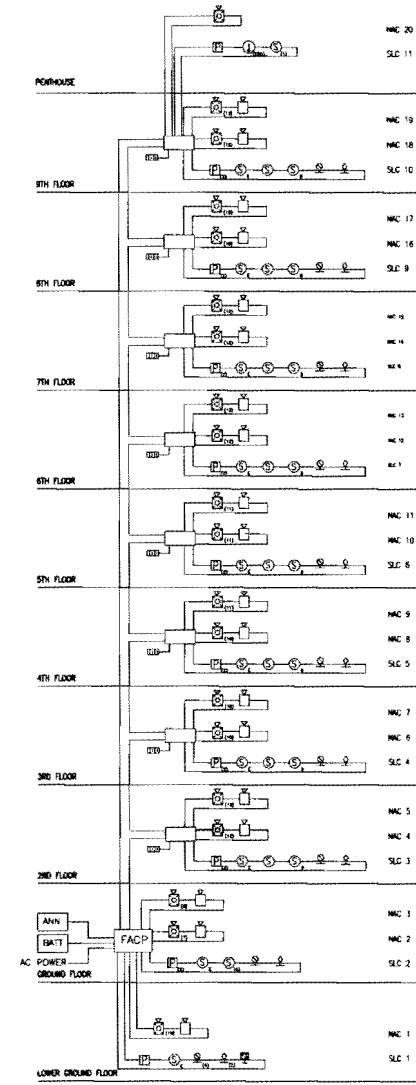
Zone 4: Water flow

**FIRE ALARM NOTES**

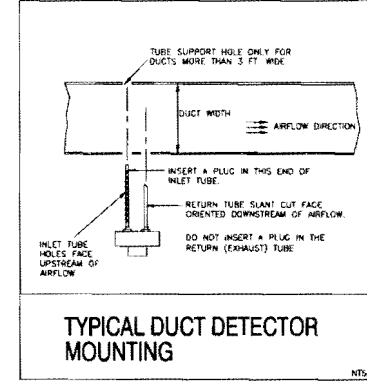
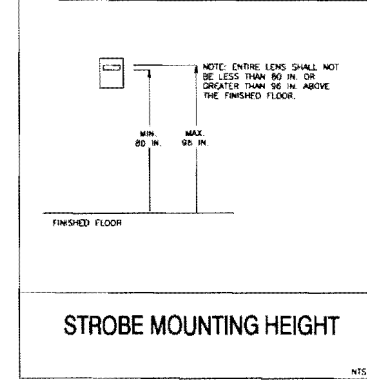
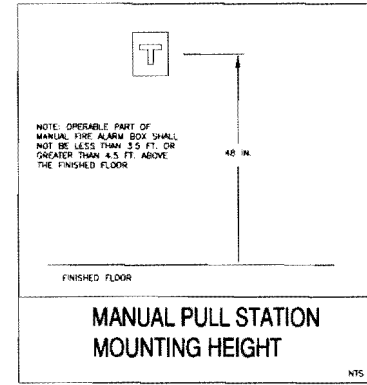
1. THE CONTRACTOR SHALL VISIT THE PROJECT SITE TO BECOME INFORMED AS TO THE NATURE AND SCOPE OF WORK REQUIRED TO REMOVE EXISTING FIRE ALARM SYSTEM COMPONENTS AND INSTALL NEW.
2. ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE NEW FIRE ALARM SYSTEM SHALL CONFORM TO ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES WHICH APPLY TO THIS SYSTEM AND PROJECT.
3. THESE DRAWINGS SHOW THE FINAL DESIGN CONFIGURATION. IT IS UP TO THE INSTALLING CONTRACTOR TO REMOVE ANY EXISTING COMPONENTS THAT CANNOT BE REUSED AS PART OF THE NEW DESIGN LAYOUT OR THAT ARE NO LONGER REQUIRED (I.E. SMOKE DETECTORS IN CORRIDORS).
4. THE EXISTING FIRE ALARM SYSTEM IS TO REMAIN IN SERVICE THROUGHOUT CONSTRUCTION OF THE NEW FIRE ALARM SYSTEM. CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT ANY SYSTEMS AND SURFACES THAT ARE TO REMAIN. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DESTRUCTION WASTES AS REQUIRED TO MAINTAIN AND TURN OVER TO THE OWNER FOR REUSE OR RECYCLATION.
6. AFTER DEMOLITION PATCH ALL WALLS AND FLOORS AS REQUIRED TO MATCH ADJACENT SURFACE AND TO ACHIEVE A SMOOTH LEVEL FINISH.
7. CONTRACTOR SHALL VERIFY THE LOCATION OF FIREFIGHTER TELEPHONE JACKS IN THE STAIRWELL.
8. CONTRACTOR SHALL VERIFY THAT THE FIRE ALARM SYSTEM MEETS WITH ALL REQUIREMENTS FOR AUDIBILITY. A SOUND LEVEL OF AT LEAST 15 dB ABOVE THE AMBIENT SOUND LEVEL IS REQUIRED.

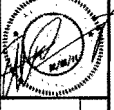
**FIRE ALARM SYMBOLS**

- SPEAKER/STROBE NOTIFICATION DEVICE (SEE "CAMBELLA HATING")
- SPEAKER NOTIFICATION DEVICE - WALL MOUNTED
- FIRE ALARM CONTROL PANEL
- ROCKETE GRAPHIC INDICATOR PANEL
- SMOKE DETECTOR
- SMOKE DETECTOR (ELEVATOR RECALL)
- SMOKE DETECTOR (DUCT DETECTOR)
- HEAT DETECTOR
- MANUAL PULL STATION
- TAMPER SWITCH
- WATER FLOW SWITCH
- PRESSURE SWITCH
- AUXILIARY POWER SUPPLY W/ BATTERY BACKUP
- EXISTING FIREFIGHTER PHONE JACK
- REMOTE POWER SUPPLY
- REMOTE TEST/INDICATOR



**RISER DIAGRAM**



  
 Prepared For: \_\_\_\_\_  
 Consulting Engineer  
**ARCHETYPE**  
 ARCHITECTURAL CONSULTANTS  
 48 Essex Street, Portland, Maine 04101  
 (207) 772-6022 Fax (207) 772-6026  
 Project: **2 MONUMENT SQUARE**  
 2 MONUMENT SQUARE  
 PORTLAND, MAINE  
 Date: 3 February 2011 Scale: 1/8" = 1'-0"  
**GENERAL NOTES, SYMBOLS & RISER DIAGRAM**  
**FA.00**



# CITY OF PORTLAND, MAINE

Department of Building Inspections

## Original Receipt

1 19 20 11

Received from E M I

Location of Work 2150 ...

Cost of Construction \$ \_\_\_\_\_ Building Fee: \_\_\_\_\_

Permit Fee \$ \_\_\_\_\_ Site Fee: \_\_\_\_\_

Certificate of Occupancy Fee: \_\_\_\_\_

Total: 800

Building (1L) \_\_\_\_\_ Plumbing (1S) \_\_\_\_\_ Electrical (12) \_\_\_\_\_ Site Plan (U2) \_\_\_\_\_

Other \_\_\_\_\_

CBL: \_\_\_\_\_

Check #: 2502 Total Collected \$ 800

**No work is to be started until permit issued.  
Please keep original receipt for your records.**

Taken by: [Signature]

WHITE - Applicant's Copy  
YELLOW - Office Copy  
PINK - Permit Copy



**CITY OF PORTLAND, MAINE**  
 Department of Building Inspections

**Original Receipt**

11.3. 2010

Received from Electric Maintenance

Location of Work 2 Monument Sq.

Cost of Construction \$ \_\_\_\_\_ Building Fee: \_\_\_\_\_

Permit Fee \$ \_\_\_\_\_ Site Fee: \_\_\_\_\_

Certificate of Occupancy Fee: \_\_\_\_\_

Total: 150

Building (IL) \_\_\_\_\_ Plumbing (I5) \_\_\_\_\_ Electrical (I2) \_\_\_\_\_ Site Plan (U2) \_\_\_\_\_

Other Fire Allowance

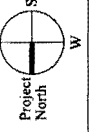
CBL: 32-12-1

Check #: 22133 Total Collected \$ 400

**No work is to be started until permit issued.  
 Please keep original receipt for your records.**

Taken by: \_\_\_\_\_

WHITE - Applicant's Copy  
 YELLOW - Office Copy  
 PINK - Permit Copy



FA.01

LOWER GROUND LEVEL  
FIRE ALARM PLAN

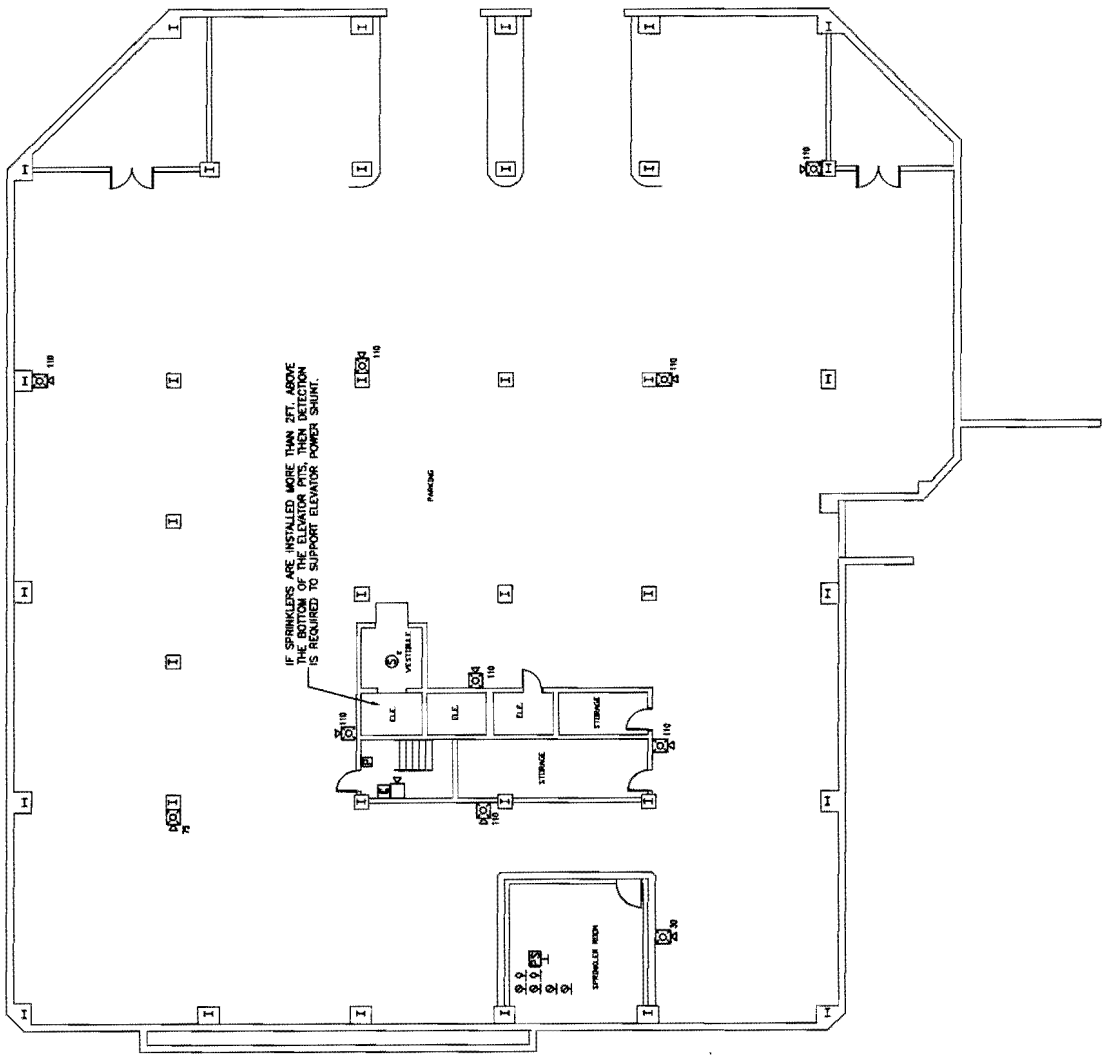
Date: 3 February 2011  
Scale: 1/8" = 1'-0"

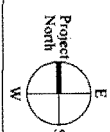
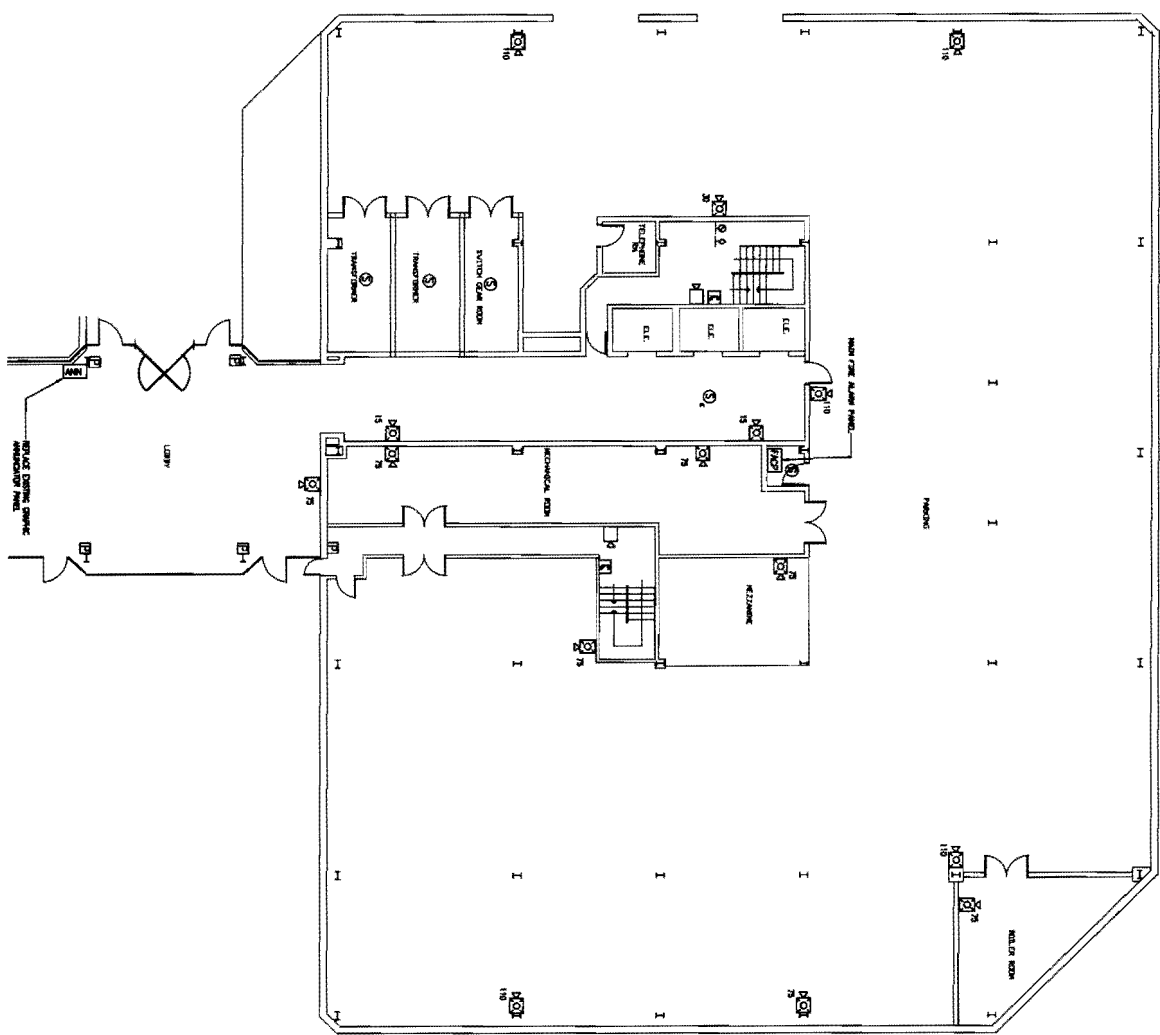
Project: 2 MONUMENT SQUARE  
2 MONUMENT SQUARE  
PORTLAND, MAINE

Architect: RCHETYPE  
ARCHITECTS  
160 UNIVERSITY AVENUE, PORTLAND, MAINE 04108  
(207) 772-0222 Fax (207) 772-0268



Prepared for: [Blank]





**FA.02**

**GROUND FLOOR  
GROUND FLOOR PLAN**

Revision:	

**Project:**  
**2 MONUMENT  
SQUARE**  
2 MONUMENT SQUARE  
PORTLAND, MAINE

**Architect:**  
**ARCHETYPE  
architects**  
48 Union Wharf Portland, Maine 04101  
(207) 772-4022 Fax (207) 772-4058

**Consulting Engineer:**  
**PERKINS+WILL**

**Prepared For:**





FA.03

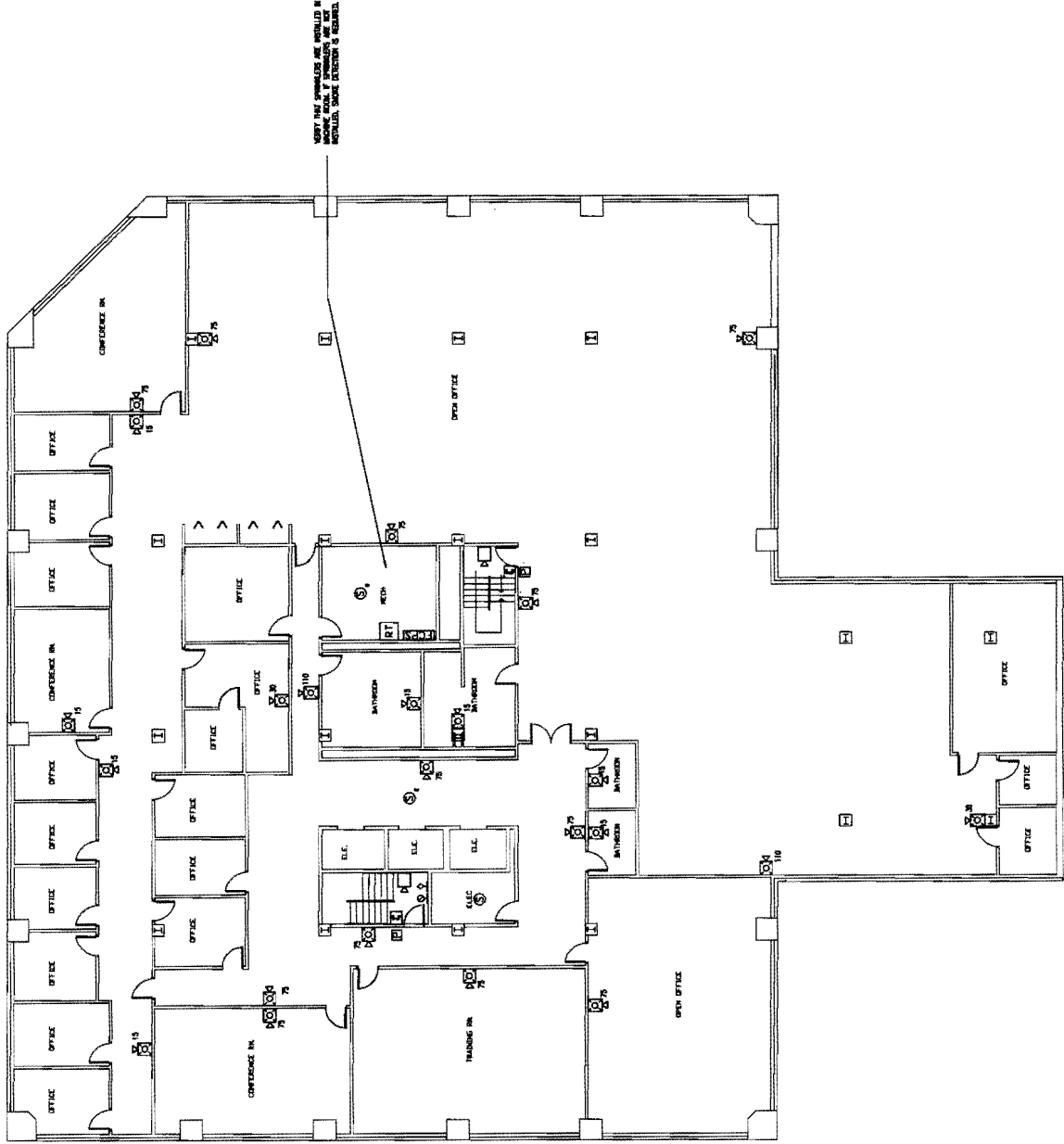
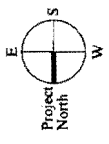
SECOND FLOOR  
FIRE ALARM PLAN

Date: 3 February 2011  
Scale: 1/8" = 1'-0"

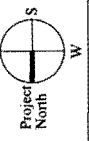
2 MONUMENT SQUARE  
PORTLAND, MAINE

Architect: **ROBERTY** Architects  
48 E. Union Street, Portland, Maine 04101  
(207) 775-6922 Fax (207) 775-4056

Consulting Engineer: **THE ENGINEERING CENTER**  
100 Commercial Street, Portland, Maine 04101  
(207) 775-6922 Fax (207) 775-4056



NOTE: ALL SYMBOLS ARE SUBJECT TO CHANGE. FIELD VERIFICATION AND REVISIONS WILL BE REQUIRED. VERIFY THESE SYMBOLS & REVISIONS.



FA.04

THIRD FLOOR  
FIRE ALARM PLAN

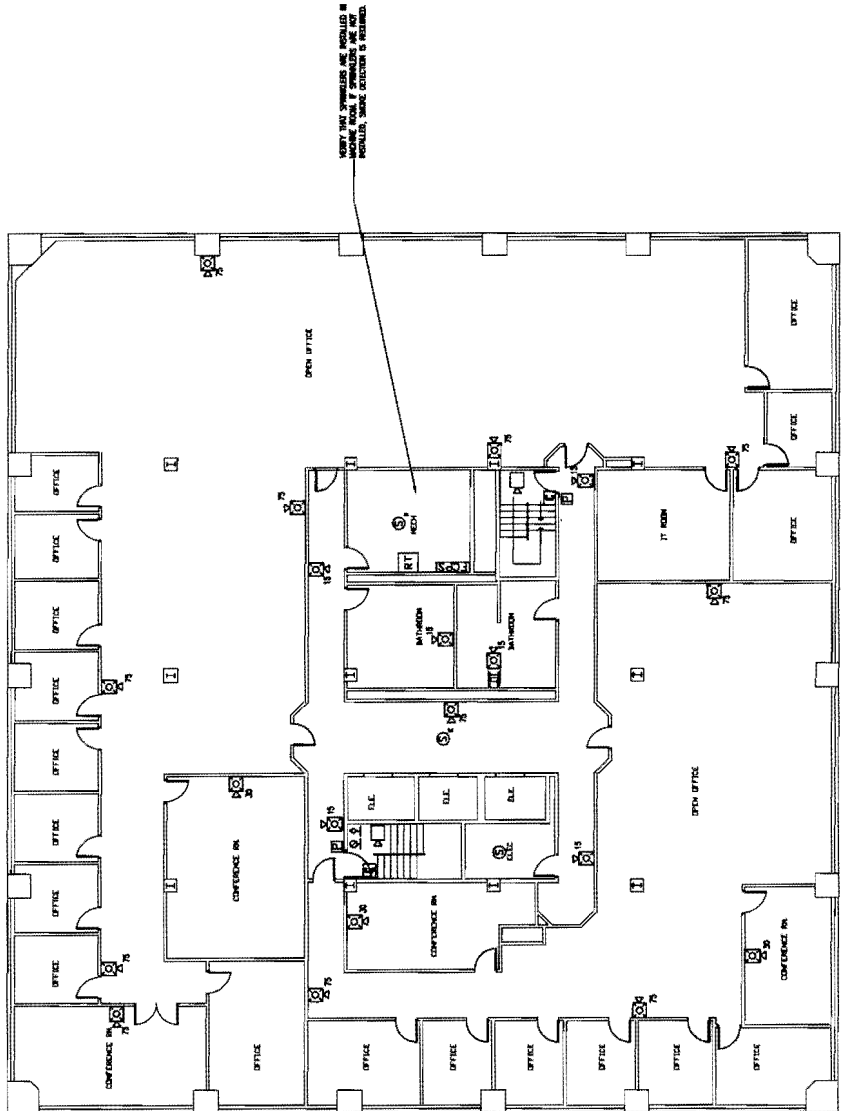
Date: 3 February 2011  
Scale: 1/8" = 1'-0"

Project: 2 MONUMENT SQUARE  
PORTLAND, MAINE

Architect: MCHETTYPE ARCHITECTS  
160 OAKMAN AVENUE PORTLAND, MAINE 04101  
(207) 772-0222 Fax (207) 772-0288

Consulting Engineer: THE ENGINE MANAGEMENT, INC.  
1000 BROADWAY PORTLAND, MAINE 04102  
(207) 772-0222

Prepared For: \_\_\_\_\_



FA.05

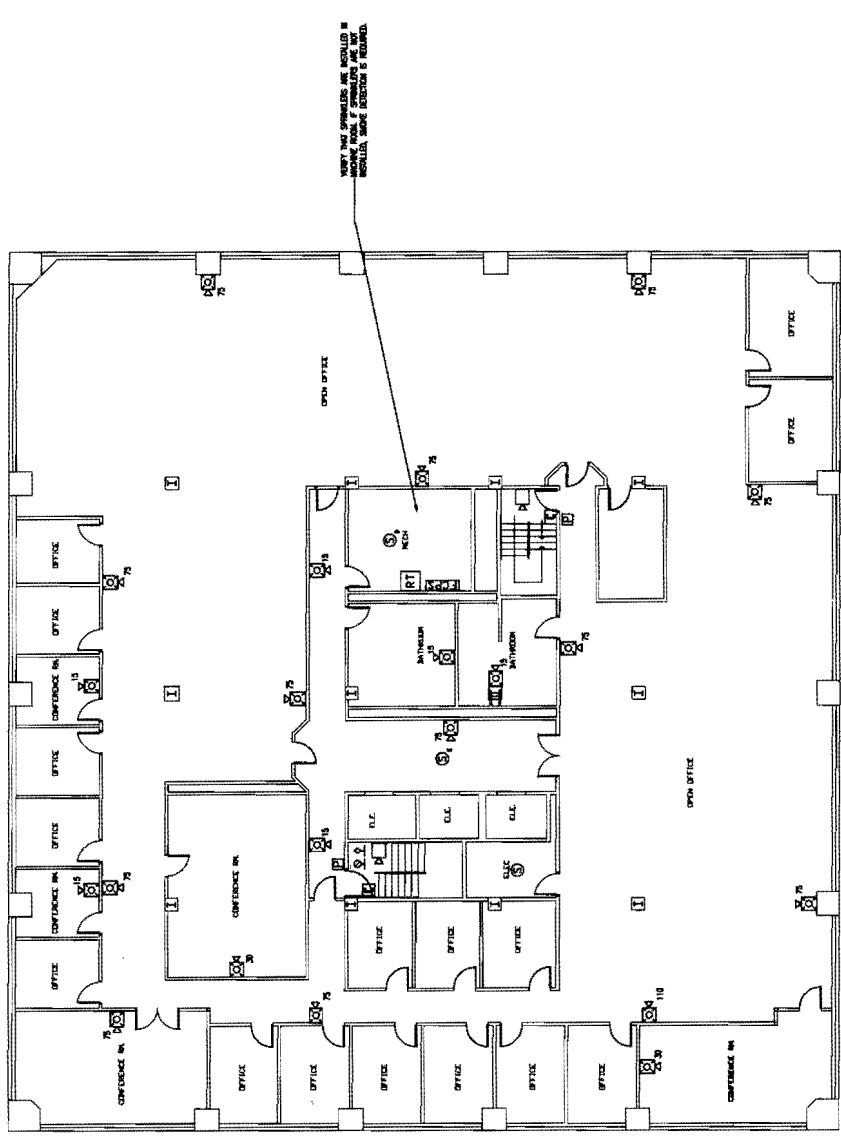
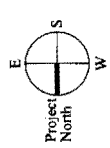
FOURTH FLOOR  
FIRE ALARM PLAN

Date: 3 February 2011  
Scale: 1/8" = 1'-0"

Project: 2 MONUMENT SQUARE  
2 MONUMENT SQUARE  
PORTLAND, MAINE

Architect: RCHBETTYE  
18 Union Street Portland, Maine 04101  
(207) 772-6022 FAX (207) 772-0354

Consulting Engineer: FIRE ALARM MANAGEMENT, INC.  
1000 Commercial Street Portland, Maine 04101  
(207) 772-6022 FAX (207) 772-0354



FA.06

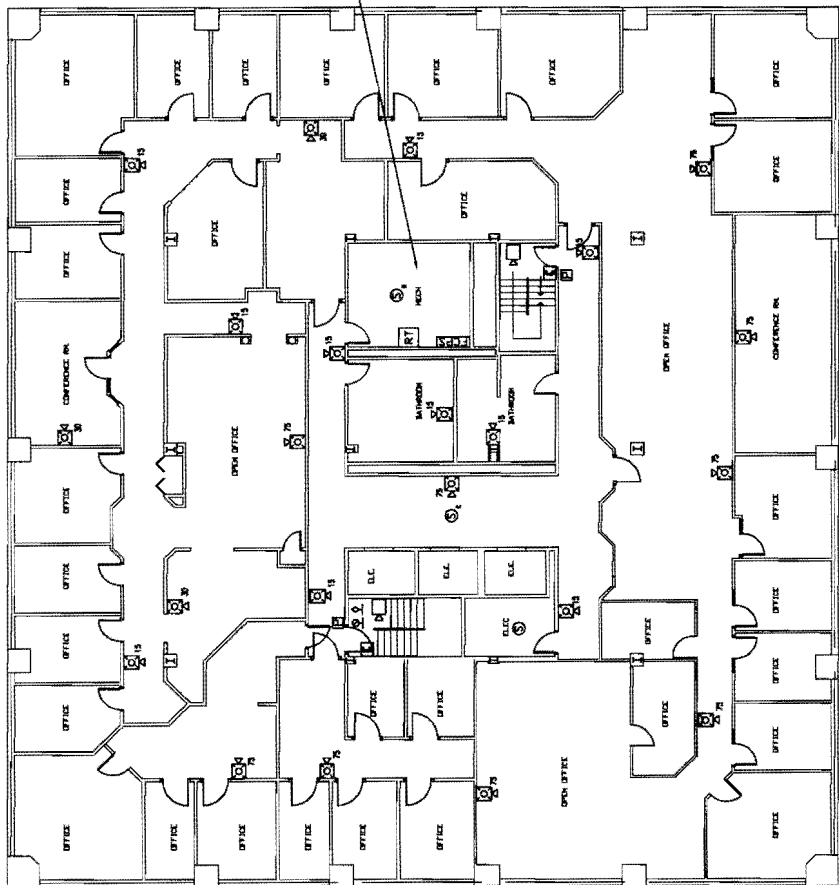
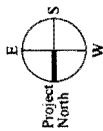
FIFTH FLOOR  
FIRE ALARM PLAN

Date: 3 February 2011  
Scale: 1/8" = 1'-0"

PROJECT  
2 MONUMENT SQUARE  
PORTLAND, MAINE

ARCHITECT  
MCHEATTYPE ARCHITECTS  
16 TRUMB STREET, PORTLAND, MAINE 04101  
(207) 773-4022 FAX (207) 773-4055

REGISTERED PROFESSIONAL ENGINEER  
MECHANICAL ENGINEERING  
PROJECT NO.



FA.07

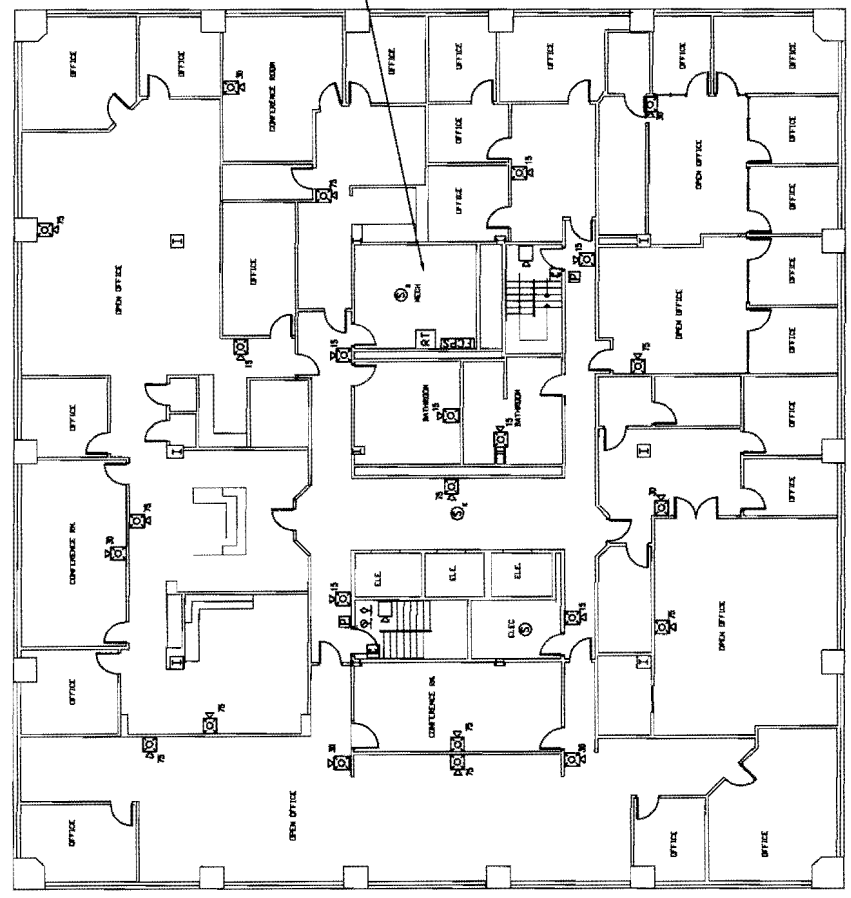
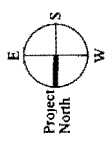
SIXTH FLOOR  
FIRE ALARM PLAN

Date: 3 February 2011  
Scale: 1/8" = 1'-0"

Project: 2 MONUMENT SQUARE  
PORTLAND, MAINE

Architect: RICHETTY & ARCHITECTS  
18 Union Street Portland Maine 04101  
(207) 772-0222 Fax (207) 772-0255

Consulting Engineer: THE ENGINEERING CENTER, INC.  
1000 Congress Street Portland Maine 04101  
(207) 772-0222 Fax (207) 772-0255



FA.08

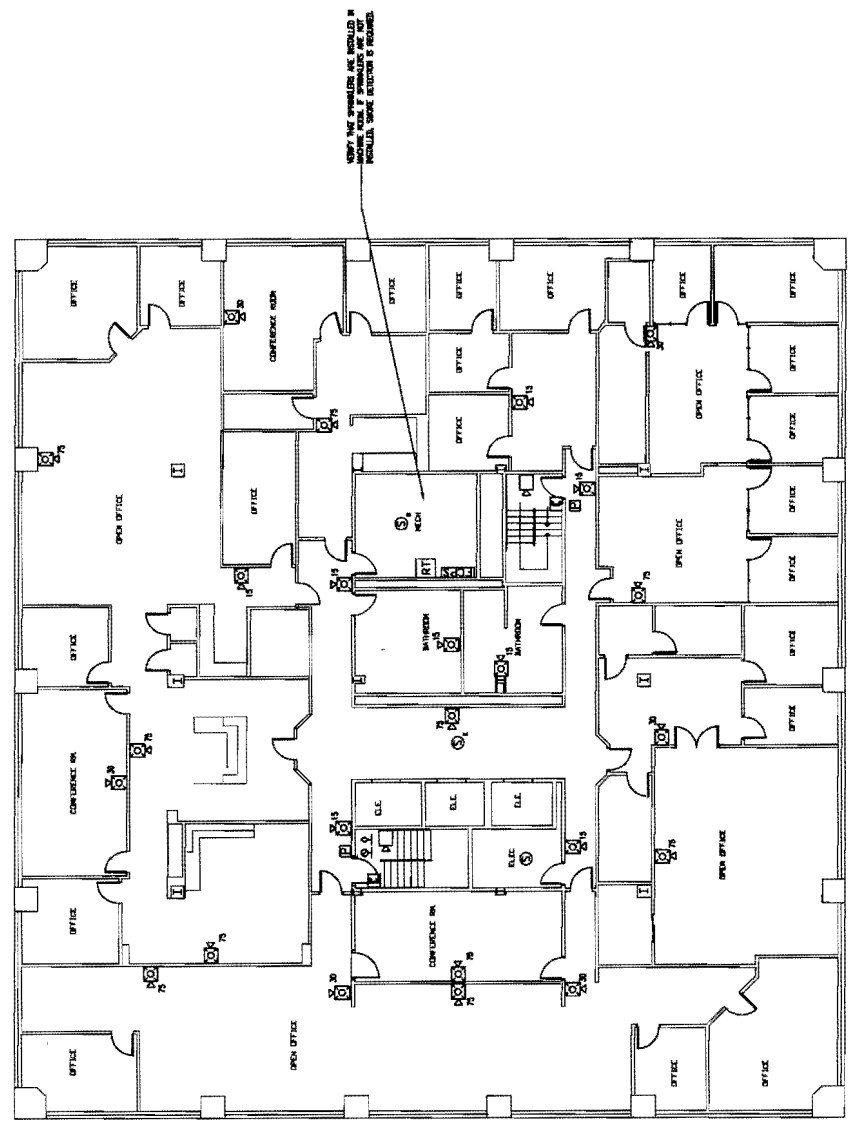
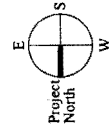
SEVENTH FLOOR  
FIRE ALARM PLAN

Date: 3 February 2011  
Scale: 1/8" = 1'-0"

Project: 2 MONUMENT SQUARE  
2 MONUMENT SQUARE  
PORTLAND, MAINE

Architect: RCHBYTYPE ARCHITECTS  
145 Union Street, Portland, Maine 04103  
(207) 772-6023 Fax: (207) 772-4058

Consulting Engineer: CONSTRUCTION MANAGEMENT, INC.  
1000 Commercial Street, Portland, Maine 04103  
(207) 772-6023 Fax: (207) 772-4058



Master Box Approval

<b>Applicant:</b> Electrical Maintenance & Installation	<b>Emergency Contact:</b> Steve Stewart
<b>App Phone #:</b> 207-878-5000	<b>Emergency phone #:</b> 207-878-5000
<b>Building Name:</b> 2 Monument Square	<b>Date of Application:</b> 2/4/11
<b>Building Address:</b> same	<b>Billing Address:</b> PO Box 15007 Portland ME 04112
<b>Occupancy:</b> business Assembly OL>300, 20 unit apartment building, etc.	<b>Comments:</b> install & testing to be done v W. Norris Inc.

Applicant completes red box and submits with Fire Alarm Permit

**1** **FIRE PREVENTION:**  Approved  Denied

Date: 02/07/11 Fire Prevention Officer: B. J. Wall

Comments: Zone 1: BASEMENT - FLR 5 ; Zone 2: City DISCONNECT  
Zone 3: FLR 6 - PENTHOUSE ; Zone 4: WATER FLOW

**2** **FIRE ALARM:** Box #: \_\_\_\_\_

**3** **ELECTRICAL DIVISION:**  Approved  Denied

Box Type:  AES Radio Box  New  Other

Test Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ In Service Date: \_\_\_\_\_

AES \_\_\_\_\_ Fire Alarm Technician

Circuit if applicable: \_\_\_\_\_

**4** **FIRE ALARM:** Same Running Assignment As Box: \_\_\_\_\_

Notifications:  All Stations  Run Books  Digitizer  Computer  Cad Box Test

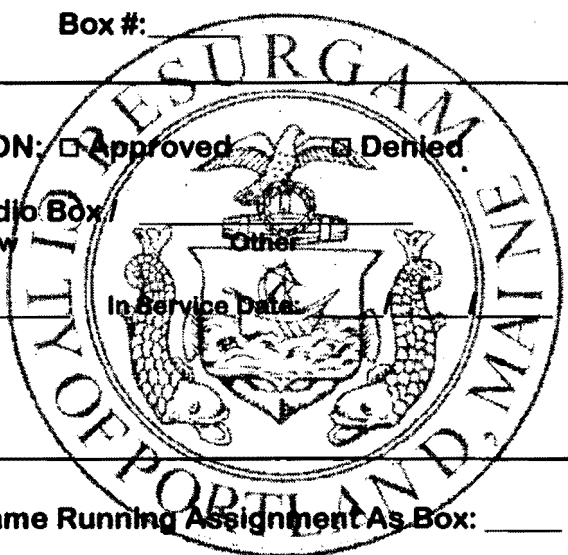
South Portland  Other \_\_\_\_\_ Dispatcher

**5** **BILLING:**  Entered \_\_\_\_\_

Financial Officer

**6** **FIRE PREVENTION:**  Filed \_\_\_\_/\_\_\_\_/\_\_\_\_

Date



**Benjamin Wallace - RE: FW: 2 Monument Square**

---

**From:** "Melissa Peters" <melissap@norrisinc.com>  
**To:** "Benjamin Wallace" <wallaceb@portlandmaine.gov>  
**Date:** 2/4/2011 11:30 AM  
**Subject:** RE: FW: 2 Monument Square  
**CC:** <EMISTEW@aol.com>  
**Attachments:** 2 monument mb approval.pdf

---

Hi Ben-

The master box approval form is attached. Steve Stewart will forward you a stamped statement from the FPE.

Thanks-

> Copy to Electrical Division

 NI Logo

**Melissa Peters**

Norris Inc  
South Portland Office  
Sales Department  
Systems Integrator

2257 West Broadway  
South Portland, ME 04106

Tel: 1-800-370-3473 x1104  
Fax: 1-207-879-0540  
Cell: 1-207-671-9506

E-Mail: melissap@norrisinc.com  
Website:

---

*Message from: melissap@norrisinc.com*  
*Message to: EMISTEW@aol.com, wallaceb@portlandmaine.gov*  
*Attached files: 1 (111171kb)*

*This message (and any associated files) is intended only for the use of the individual or entity to which it is addressed and may contain information that is confidential, subject to copyright or constitutes a trade secret. If you are not the intended recipient you are hereby notified that any dissemination, copying or distribution of this message, or files associated with this message, is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer. Messages sent to and from us may be*

file://C:\Documents and Settings\wallaceb\Local Settings\Temp\XPgrwise\4D4BE35Cport... 2/7/2011



monitored.

*Internet communications cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. Therefore, we do not accept responsibility for any errors or omissions that are present in this message, or any attachment, that have arisen as a result of e-mail transmission. If verification is required, please request a hard-copy version. Any views or opinions presented are solely those of the author and do not necessarily represent those of the company.*

---

**From:** Benjamin Wallace [mailto:wallaceb@portlandmaine.gov]  
**Sent:** Thursday, February 03, 2011 2:05 PM  
**To:** Melissa Peters  
**Cc:** EMISTEW@aol.com  
**Subject:** Re: FW: 2 Monument Square

Hi Melissa,  
 The only issues outstanding are that the plans are not stamped by the FPE responsible for the design and that I need a master box application form filled out and submitted. The plans do not show the sprinkler system being supervised on the parking level, but I'll put that as a condition so we can expedite the permit if the other two items can get corrected. I'd take a signed, stamped statement from the FPE if that would be more convenient.  
 Thanks,

Lt. Benjamin Wallace Jr.  
 Fire Prevention Officer  
 Portland Fire Department  
 380 Congress Street  
 Portland, Maine 04101  
 (207)756-8096  
 wallaceb@portlandmaine.gov

>>> "Melissa Peters" <melissap@norrisinc.com> 1/31/2011 11:00 AM >>>

Hi Ben-  
 The battery calcs for 2 Monument Square are attached. Let me know if you have any questions.  
 Thank you-



**Melissa Peters**

Norris Inc  
 South Portland Office  
 Sales Department  
 Systems Integrator

2257 West Broadway  
 South Portland, ME 04106

Tel: 1-800-370-3473 x1104  
 Fax: 1-207-879-0540  
 Cell: 1-207-671-9506

E-Mail: melissap@norrisinc.com  
Website:

---

Message from: melissap@norrisinc.com  
Message to: EMISTEW@aol.com, WALLACEB@portlandmaine.gov  
Attached files: 2 (98252kb)

*This message (and any associated files) is intended only for the use of the individual or entity to which it is addressed and may contain information that is confidential, subject to copyright or constitutes a trade secret. If you are not the intended recipient you are hereby notified that any dissemination, copying or distribution of this message, or files associated with this message, is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer. Messages sent to us from us may be monitored.*

*Internet communications cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. Therefore, we do not accept responsibility for any errors or omissions that are present in this message, or any attachment, that have arisen as a result of e-mail transmission. If verification is required, please request a hard-copy version. Any views or opinions presented are solely those of the author and do not necessarily represent those of the company.*

---

**From:** Corey Chapman  
**Sent:** Friday, January 28, 2011 9:32 AM  
**To:** Melissa Peters  
**Subject:**

Here are the battery calcs for 2 Monument Square.

---

**Corey Chapman**  
Systems Support Specialist  
Phone: 1-800-370-3473 x1109

---

### Fire Correction Comments

Plans not stamped by FPE as required.

No voltage drop and battery calcs. Will be provided. ✓

Firefighter phone locations behind door swing. I've ok'd this because they are existing locations and the contractor indicates the plans are misleading.

Move annunciator over next to the corridor to the elevators on the 2 Monument Square side of the lobby. I've ok'd the original proposed location because there is a security desk at that location.

There does not appear to be any water flow and supervision on the sprinklers in the parking level. It was omitted from plans. It will be updated.

There is no lobby smoke in the parking level elevator lobby. They will be heating this space and the plans will be updated to reflect this.

There is no provision for an AES Master Box. They will be completing the master box application form and submitting it.



# 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: 2 Monument Square CBL: 32-161

Exact location: (within structure) Grand Floor Electric Room

Type of occupancy(s) (NFPA & ICC): ~~Office~~ NFPA - Business

Building owner: Grand Metro Builders

System Designer (point of contact): Fire Risk Management  
Must be

Designer phone: 207-443-7200 E-mail: [redacted]

Installing contractor: Electrical Maintenance Int'l Certificate of Fitness No: T1017

Contractor phone: 207-878-5000 E-mail: emistew@aol.com

This is a new application: YES  NO

This is an amendment to an existing permit: YES  NO  Permit no: \_\_\_\_\_

P.O. Box 15007  
Port ME 04112

The following documents shall be provided with this application:

- Floor plans
- Wiring diagram
- Annunciator details
- Equipment data sheets
- Battery & voltage drop calculations
- Input/ Output Matrix
- Designer qualifications
- Electrical Permit Pulled (check alarm/com)

COST OF WORK: 78,000 -

PERMIT FEE: 800  
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

**RECEIVED**

JAN 19 2011

Dept. of Building Inspections  
City of Portland Maine

The **designer** shall be the responsible party for this application. Download a new copy of this application at [www.portlandmaine.gov/fire](http://www.portlandmaine.gov/fire) for every submittal. Submit all plans in electronic PDF in addition to full sized plans 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](http://www.portlandmaine.gov/fire).

Applicant signature: [Signature] Date: Jan 19, 2011



PO Box 2551  
2257 West Broadway  
South Portland, ME 04106

1.800.370.3473  
fax 207.879.0540

www.norrisinc.com

# ***SUBMITTAL PACKAGE***

**Project:** 2 Monument Square

**System:** Fire Alarm System

Submitted

**RECEIVED**



JAN 19 2011

Dept. of Building Inspections  
City of Portland Maine

**Project  
Manager:**

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

**Zach Davis**

**Electrical  
Contractor:**

Electrical Maint. & Install Inc.  
PO Box 15007  
Portland, ME. 04112

**Date:** October 20, 2010

## Company Profile

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

*-- Bradford Norris, President --*

## Mission Statement

Provide quality engineered systems, exceptional service.

## Goal

Learn...Continually Improve...Exceed Expectations

Founded in 1979 Norris Inc. has grown to become Northern New England's leading integrated system contracting and supply company. Norris Inc. is an innovated proactive organization with extensive experience in integration interdisciplinary building management systems. Our local and national affiliations assure that your project will be done properly regardless of size representing leading manufacturers our comprehensive products provide outstanding quality reliability and performance... surpassing customer application requirements and exceeding the stringent requirements of Underwriters Laboratories, National Fire Protection Association and other codes. We maintain an exceptional level of quality and provide the highest levels of customer service. Our knowledgeable technical support will insure the great service you deserve. Whether your needs involve industrial, commercial, institutional, or educational applications, you can trust that Norris Inc. has the complete resources it takes to provide the right solution right away.

---



*This is to certify that*

**NORRIS, INC.**

*is an authorized Engineered Systems Distributor for NOTIFIER*

*During the year of 2010*



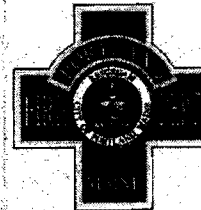
*Signed for and on behalf of NOTIFIER*

*Vice President Domestic Sales*

This  
Certificate of Fitness  
for  
**Fire Alarm Installation and Servicing Company**  
is awarded to



**Norris Incorporated**  
PO Box 2551 - 2257 West Broadway  
South Portland, ME 04106  
(207)883-3473



CF # 1008

*B. G. Wolf*

Authority Having Jurisdiction

12/31/2010

Expiration Date

THIS CERTIFICATE IS NOT AN ENDORSEMENT OF THIS COMPANY BY THE  
AUTHORITY HAVING JURISDICTION.

TERMS AND CONDITIONS OF THIS CERTIFICATE OF FITNESS SHALL BE AS  
FOLLOWS:

THIS CERTIFICATE REMAINS THE PROPERTY OF THE PORTLAND FIRE  
DEPARTMENT AND SHALL BE RETURNED UPON DEMAND;

THIS CERTIFICATE OF FITNESS IS NON-TRANSFERABLE;

THIS CERTIFICATE OF FITNESS SHALL REMAIN IN EFFECT IN SO FAR AS THE  
BEARER OF SAID INSTRUMENT SHALL COMPLY WITH RULES AND  
REGULATIONS ESTABLISHED BY THE AUTHORITY HAVING JURISDICTION.

FAILURE TO COMPLY WITH ALL RULES AND REGULATIONS OF THE  
AUTHORITY HAVING JURISDICTION WILL RESULT IN THE FOLLOWING:

FIRST OFFENCE: PLAN OF ACTION TO ADDRESS DEFICIENCIES

SECOND OFFENCE: PROBATION OF SERVICE COMPANY

THIRD OFFENCE: TERMINATION OF CERTIFICATE OF FITNESS





**Underwriters Laboratories Inc.®**

Northbrook, IL San Jose, CA  
Melville, NY

A not-for-profit organization dedicated to public safety  
and committed to quality service

Applicant ID No: 762075-001  
Service Center No 0  
Expires: 31-MAR-2011

### CERTIFICATE OF COMPLIANCE

THIS IS TO CERTIFY that the Alarm Service Company indicated below is included by Underwriters Laboratories Inc. (UL) in its Product Directories as eligible to use the UL Listing Mark in connection with Certificated Alarm Systems. The only evidence of compliance with UL's requirements is the issuance of a UL Certificate for the Alarm System and the Certificate is current under UL's Certificate Verification Service. This Certificate does not apply in any way to the communication channel between the protected property and any facility that monitors signals from the protected property unless the use of a UL listed or Classified Alarm Transport Company is specified on the Certificate.

Listed Service From: **STOWE, VT**

Alarm Service Company: (762075-001)

HOME SECURITY & MANAGEMENT CO INC  
57 CENTRAL DR  
PO BOX 695  
STOWE VT 05672

Service Center: (762075-001)

HOME SECURITY & MANAGEMENT CO INC  
57 CENTRAL DR  
PO BOX 695  
STOWE VT 05672

The Alarm Service Company is Listed in the following Certificate Service Categories:

File - Vol No.	CCN	Listing Category
S6427 - 1	UUFX	[Signal and Fire Alarm Equipment and Services] (Protective Signaling Services) Central Station

\*\*\*THIS CERTIFICATE EXPIRES ON 31-MAR-2011 \*\*\*

"LOOK FOR THE UL ALARM SYSTEM CERTIFICATE"

Engineering Manager  
08-MAR-2010



2009

NATIONAL SYSTEMS CONTRACTORS ASSOCIATION

# NSCA Membership Certificate

This is to certify that

**Norris Inc**

is an official member of the

**National Systems Contractors Association**

on this the

*First of December*

A handwritten signature in cursive script that reads 'Andrew M. Musci'.

**Andrew M. Musci**  
President

A handwritten signature in cursive script that reads 'Chuck R. Wilson'.

**Chuck Wilson**  
Executive Director

**NBFAA**

Electronic Life Safety, Security  
& Systems Professionals

**National Burglar & Fire Alarm Association**  
Norris Inc

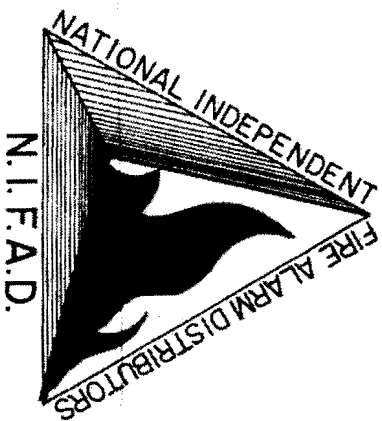
*is a member in good standing entitled to all rights  
& privileges of membership and subject to all conditions  
& objectives as defined in the association bylaws.*



Merlin J. Guilbeau  
Executive Director



Michael A. Miller  
President



# National Independent Fire Alarm Distributors Association

This is to Certify that

Morris Inc.

is a

Member in Good Standing

and is entitled to all rights and privileges of such membership

*David Palmer*

Secretary

*Ed Smith*

President

# Certificate of Membership

## AFAA

This is to Certify that

*Norris, Inc.*

Has been duly elected to membership in this organization through

*May 31, 1999*

and pledged to improve LIFE SAFETY IN AMERICA by striving to ensure  
fire protective signaling and automatic detection systems are properly designed, installed and maintained.

*James M. Zandy Jr.*  
CHAIRMAN OF THE BOARD

*Dante Beck*  
SECRETARY

**AUTOMATIC FIRE ALARM ASSOCIATION, INC.**

a non-profit organization

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

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART  
ATTN: ACCOUNTS PAYABLE  
PO BOX 15007  
PORTLAND, ME 04112  
ELEC02 207-878-5000 Fax:207-878-4999

**301200**  
**Equipment List :**

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART

**2 Monument Square**

Sales PDR

**Description**

NOTIFIER-FCPS-24S8, 8.0 amps, 120 VAC remote charger power supply  
ADI-IM-1270, 12V 7AMP BATTERY

NOTIFIER-NFS2640, Notifier NFS 640 Version 2.0  
NOTIFIER-CPU2-640, NFS2-640 Central Processing Unit - 120 VAC  
NOTIFIER-NCA-2, Network Control Annunciator  
NOTIFIER-DP-DISP2, Dress Plate used with CPU2-640  
Notifier-DP-1B, Blank Plate, same as DP-1 painted black.  
NOTIFIER-BMP-1, Blank module dress plate  
NOTIFIER-DR-D4, Door, lock & keys. Accepts 4 chassis, black.  
NOTIFIER-SBB-D4, Backbox, 4 chassis, black.  
ADI-IM12550NB, 12 Volt, 55AH Battery  
NOTIFIER-UDACT, Universal Digital Alarm Communicator Transmitter.  
NOTIFIER-DVC, Digital Voice Command, Extended Memory  
NOTIFIER-DVC-KD, Digital Voice Command, Keypad  
NOTIFIER-CA-2, Chassis, DVC, Two Rows, includes MIC-1  
NOTIFIER-DAA-5025, Digital Audio Amplifier, 50W 25VRMS  
NOTIFIER-CHS-BH1, Chassis, 12AH Battery Holder  
ADI-IM-1270, 12V 7AMP BATTERY  
NOTIFIER-TELH-1, Firefighters Telephone Handset Only  
Notifier-FHSC-S, Fire Phone storage cabinet, surface mount.  
NOTIFIER-FHS, Fireman's Telephone Hand Set.  
NOTIFIER-DPA-2, Dress Plate, DVC, Two Rows

NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station  
NOTIFIER-FMM-101, Addressable Mini Module Low temp



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

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART  
ATTN: ACCOUNTS PAYABLE  
PO BOX 15007  
PORTLAND, ME 04112  
ELEC02 207-878-5000 Fax:207-878-4999

**301200**  
**Equipment List**

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART

**2 Monument Square**

Sales PDR

**Description**

ADI-WI-MTA1, MECHANCL TEMP-ALERT  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
Notifier-FZM-1, Addressable 2-Wire Detector Monitor Module. for existing zones.  
NOTIFIER-E50-24MCW-FR, Speaker strobe 24vdc wall (mounts 4 sq)  
NOTIFIER-STR, Strobe, adjustable candela  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)

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

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART  
ATTN: ACCOUNTS PAYABLE  
PO BOX 15007  
PORTLAND, ME 04112  
ELEC02 207-878-5000 Fax:207-878-4999

**301200**  
**Equipment List :** .....

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART

**2 Monument Square**

Sales PDR

**Description**

NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch



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

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART  
ATTN: ACCOUNTS PAYABLE  
PO BOX 15007  
PORTLAND, ME 04112  
ELEC02 207-878-5000 Fax:207-878-4999

**301200**  
**Equipment List**

ELECTRICAL MAINT & INSTALL, INC.  
STEVE STEWART

**2 Monument Square**

Sales PDR

**Description**

NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-DNR, Duct Detector  
NOTIFIER-FSP-851R, Intelligent photoelectric smoke detector with remote test capab  
NOTIFIER-DST3, Sampling Tube  
NOTIFIER-FRM-1, Relay (duct detectors)  
NOTIFIER-RTS151, Remote test station; with switch  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.  
NOTIFIER-FMM-101, Addressable Mini Module sprinkler  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.  
NOTIFIER-E50-24MCW-FR, Speaker strobe 24vdc wall (mounts 4 sq)

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

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART  
ATTN: ACCOUNTS PAYABLE  
PO BOX 15007  
PORTLAND, ME 04112  
ELEC02 207-878-5000 Fax:207-878-4999

**301200**  
**Equipment List :**

**ELECTRICAL MAINT & INSTALL, INC.**  
STEVE STEWART

**2 Monument Square**

Sales PDR

**Description**

NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-FMM-101, Addressable Mini Module Heat det  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module. Elevator  
NOTIFIER-FSP-851, Intelligent Addressable Photo detector.  
NOTIFIER-B710LP, Intelligent detector base, with flange.  
NOTIFIER-FRM-1, Intelligent Addressable Relay Module.

Notifier-FDU-80, 80 Character Display Annunciator.  
NOTIFIER-ABF-1B, Annunciator flush box. Mounts one annunciator.

NOTIFIER-FCPS-24S8, 8.0 amps, 120 VAC remote charger power supply  
Notifier-PS-1270, Battery 7 ah

NOTIFIER-E50-24MCW-FR, Speaker strobe 24vdc wall (mounts 4 sq)  
Notifier-RSS-24MCW-FR, Strobe, adjustable candela

NOTIFIER-NBG-12LX, Addressable NBG-12L Pull Station; with FlashScan.

## → NFS2-640(E)

### Intelligent Addressable Fire Alarm System

**NOTIFIER**<sup>®</sup>  
by Honeywell

Intelligent Fire Alarm Control Panels

#### General

The NFS2-640 intelligent Fire Alarm Control Panel is part of the ONYX<sup>®</sup> Series of Fire Alarm Controls from NOTIFIER.

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

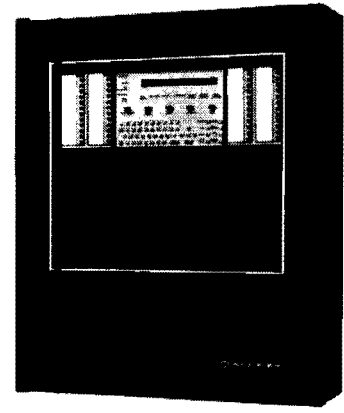
Designed with modularity and for ease of system planning, the NFS2-640 can be configured with just a few devices for small building applications, or for a large campus or high-rise application. Simply add additional peripheral equipment to suit the application.

The FireWatch Series internet monitoring modules IPDACT-2 and IPDACT-2UD permit monitoring of alarm signals over the Internet, saving the monthly cost of two dedicated business telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line.

**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

- Listed to UL Standard 864, 9th edition.
- 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, 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), NCA-2, DVC, ONYXWorks, NCS, NFS-3030, NFS-640, and ).
  - Standard network for up to 103 nodes (NFS2-3030, NFS2-640, NFS-320(C), 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 amp 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<sup>®</sup> Tools online or offline programming utility. Upload/Download, save, store, check, compare, and simulate panel databases. Upgrade panel firmware.
- Autoprogramming and Walk Test reports.
- Optional universal 636-point DACT.
- 80-character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).
- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with tally.
- Autoprogramming and Walk Test reports.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.



NFS2-640

- 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 amp hour 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.

#### → NCA-2 640-CHARACTER DISPLAY FEATURES:

- Backlit, 640-character display.
- Supports SCS Series smoke control system in both HVAC or FSCS modes (not UL-Listed for FSCS).
- Printer and CRT EIA-232 ports.
- EIA-485 annunciator and terminal mode ports.
- Alarm, Trouble, Supervisory, and Security relays.

#### FLASHSCAN<sup>®</sup> 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<sup>®</sup>) – 0.02 to 2.0%/foot obscuration.
  - Acclimate Plus<sup>™</sup> – 0.5 to 4.0%/foot obscuration.
  - IntelliQuad<sup>™</sup> – 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.

**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.

**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 classic mode compatible.
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

**RELEASING FEATURES:**

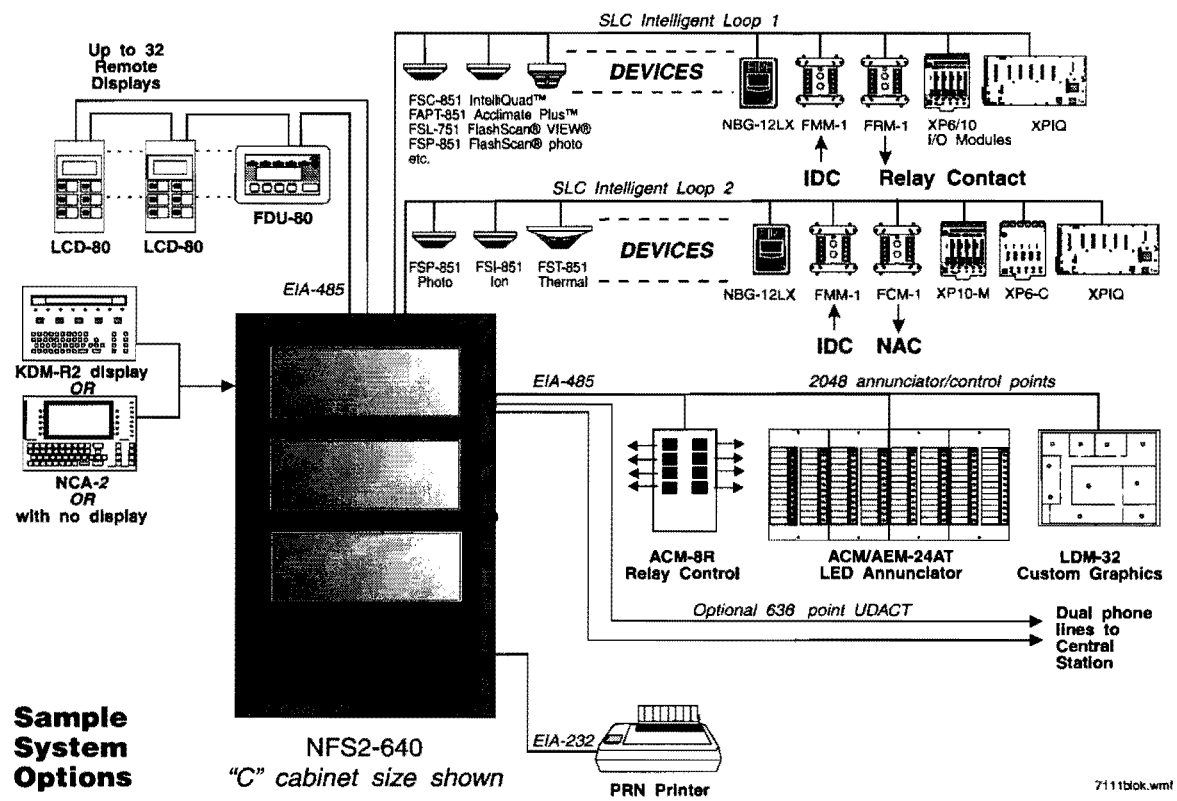
- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure CO<sub>2</sub> listed.

**VOICE AND TELEPHONE FEATURES:**

- Up to eight channels of digital audio.
- 50 and 75 watt digital amplifiers (DAA series).
- Solid-state digital message generation.
- Firefighter telephone option.
- 30- to 120-watt high-efficiency amplifiers (AA Series).
- Backup tone generator and amplifier option.
- Multichannel voice transponder (XPIQ).

**HIGH-EFFICIENCY OFFLINE SWITCHING  
3.0 AMP 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 pro-

gram 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 CHS4 series chassis or, for Digital Voice Command products, in CA-1 or CA-2. (For DVC and DAA components see DVC Manual; for DVC-AO applications, see AA Series 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 (see "Network Options" on page 6). 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.

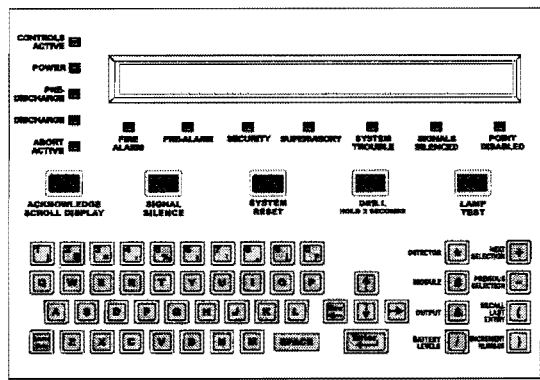
## KDM-R2 Controls and Indicators

**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.



### 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 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 and DAA series amplifiers. See DN-7047.

➔ **CPU2-640:** Central processing unit with integral 3.0 amp (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 amp, (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.

### AUDIO OPTIONS

**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 DAA Series amplifiers. 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 or XPIQ Series amplifiers. Four-channel operation supported. See DN-7045.

**DAA-5025:** 50W, 25 Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. See DN-7046.

**DAA-5070:** 50W, 70.7 Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. See DN-7046.

**DAA-7525:** 75W, 25 Vrms Digital Audio Amplifier assembly with DAA-PS power supply board. Shipped mounted to its chassis (no battery charger on DAA-7525 power supply board). See DN-60257.

**CHS-BH1:** Battery chassis; holds two 12.0 AH batteries. Mounts one the left side of DAA 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 NCA-2 or BP-CA2 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.

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

**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.

**\*NOTE:** 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.

**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.

**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.

**XPIQ:** The XPIQ quad intelligent voice transponder for distributed multichannel voice evacuation systems, an integrated audio amplification and distribution subsystem controlled by FACP. Capable of playing up to four simultaneous messages. Accepts up to four 25-watt amplifiers. See XPIQ data sheet, DN-6823.

#### POWER SUPPLIES, STANDARD CABINETS

**ACPS-610:** 6.0 or 10 Amp 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 six-amp and eight-amp power supplies with battery charger. See DN-6927.

**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 DAA-series or AA-series amplifier.

**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 separately; 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.

#### 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.

#### COMPATIBLE DEVICES, EIA-485 PORTS

**ACS:** Annunciator Control Modules ACM/AEM-24AT and ACM/AEM-48A; remote serial annunciator/control systems. See DN-0524 and DN-6862.

**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.

**LCD-80/FDU-80:** 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) and FDU-80 (DN-6820).

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

**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 ACM-8R data sheet DN-3558.

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

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

**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.

**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.*

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

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

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

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

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

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

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

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

**B501BH-2:** Standard sounder base. Replaces B501BH. *See DN-60054.*

**B501BHT-2:** Temporal tone sounder base. Replaces B501BHT. *See DN-60054.*

**B200SR:** Intelligent 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-REL:** FlashScan releasing control module. *See DN-60390.*

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

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

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

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

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

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

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

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

#### NETWORK OPTIONS

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

**HS-NCM-W/MF/SF/WMF/WSF/MFSF:** High-speed network communications modules. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454.*

**RPT-W, RPT-F, RPT-WF:** Standard-network repeater board with wire connection (RPT-W), fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). *See DN-6971.*

**NCS5-W-ONYX:** Network Control Station, Wire. UL-Listed graphics PC with mouse, 19" color flat-screen LCD monitor. Order as necessary for network systems. Each NCS consumes one of 103 network addresses. *See DN-6868 (previous NCS-W), ONYX DN-6869.*

**NCS5-F-ONYX:** Network Control Station, Fiber. UL-Listed graphics PC with mouse, 19" color flat-screen LCD monitor. Order as necessary for network systems. Each NCS consumes

one of 103 network addresses. *See DN-6868 (previous NCS-F), ONYX DN-6869.*

**ONYXWorks-NW:** UL-listed graphics PC workstation for standard NOTI•FIRE•NET with wire media. Includes NFN Gateway wire version (NFN-GW-PC-W) and 19" color flat-screen LCD monitor. Each ONYXWorks workstation consumes one of 103 network addresses. *See DN-7048.*

**ONYXWORKS-HNW:** UL-listed graphics PC workstation for wire high-speed NOTI•FIRE•NET. Includes HS-NFN Gateway (NFN-GW-PC-HNW) and 19" color flat-screen LCD monitor. Each ONYXWorks consumes one of up to 200 network addresses. *See DN-7048.*

**ONYXWorks-NF:** UL-listed graphics PC workstation for standard NOTI•FIRE•NET with fiber media. Includes NFN Gateway wire version (NFN-GW-PC-F) and 19" color flat-screen LCD monitor. Each ONYXWorks workstation consumes one of 103 network addresses. *See DN-7048.*

**ONYXWORKS-HNSF:** UL-listed graphics PC workstation for single-mode-fiber high-speed NOTI•FIRE•NET. Includes HS-NFN Gateway (NFN-GW-PC-HNSF) and 19" color flat-screen LCD monitor. Each ONYXWorks consumes one of up to 200 network addresses. *See DN-7048.*

**ONYXWORKS-HNMF:** UL-listed graphics PC workstation for multi-mode-fiber high-speed NOTI•FIRE•NET. Includes HS-NFN Gateway (NFN-GW-PC-HNMF) and 19" color flat-screen LCD monitor. Each ONYXWorks consumes one of up to 200 network addresses. *See DN-7048.*

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

#### OTHER OPTIONS

**IPDACT-2/2UD, IPDACT Internet Monitoring Module:** Mounts in IPENC enclosure. Connects to primary and secondary DACT telephone output ports for internet communications over customer-provided ethernet connection. Requires compatible Tel-dat 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.

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

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

**DPI-232:** Direct Panel Interface, specialized modem for extending serial data links to remotely located FACPs and/or peripherals. *See DN-6870.*

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

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

**VeriFireUG-TCD:** VeriFire Tools CD-ROM. Upgrade.

**BAT Series:** Batteries. NFS2-640 utilizes two 12 volt, 18 to 200 AH batteries. This series of products replaces the previous PS Series. *See DN-6933.*

**NFS-LBB:** Battery Box (required for batteries larger than 25 AH).

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

**411:** Slave digital alarm communicator. *See DN-6619.*

**411UDAC:** Digital alarm communicator. *See DN-6746.*

**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.





# 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-24/48.

## Specifications

- Primary input power, **CPU2-640 board:** 120 VAC, 50/60 Hz, 3.0 A. **CPU2-640E board:** 220/240 VAC, 50/60 Hz, 1.5 A.
- Total output 24 V power: 6.0 A in alarm.

**NOTE:** The power supply has a total of 6.0 Amps 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 25 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.

## 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 # 6025**
- **CSFM:** 7170-0028:244; 7165-0028:243
- **City of Chicago**
- **City and County of Denver**

## Standards

The NFS2-640 complies with the following UL Standards and NFPA 72 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)

NOTI-FIRE-NET™, IntelliQuad™, and ONYXWorks™ are trademarks; and Acclimate® Plus™, FlashScan®, NION®, NOTIFIER®, ONYX®, UniNet®, VenFire®, and VIEW® are registered trademarks of Honeywell International Inc. Microsoft® and Windows® are registered trademarks of Microsoft Corporation. Echelon® is a registered trademark of Echelon Corporation. IBM® is a registered trademark of IBM Corporation. LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company. ©2009 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

## → 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.

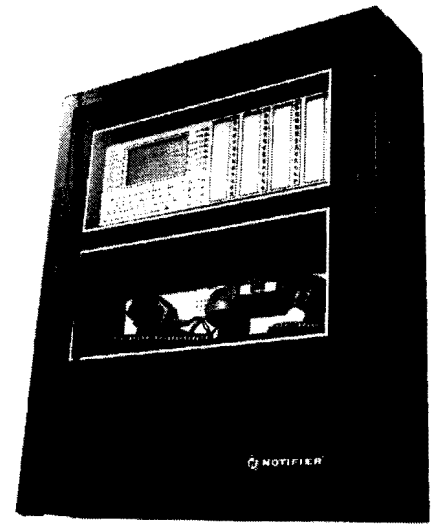
**DR-A4R:** Door assembly, LEXAN window, one tier, RED.

**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.

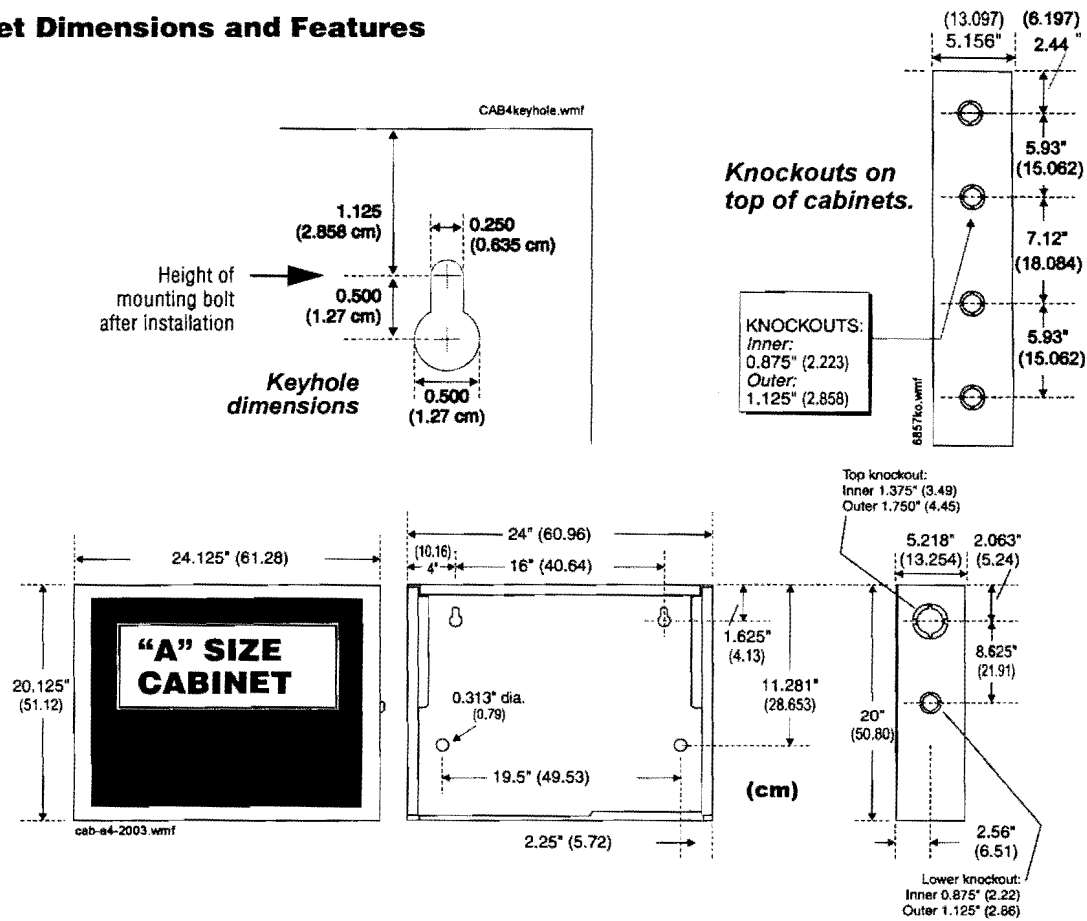
**ADP-4B:** Annunciator dress panel.

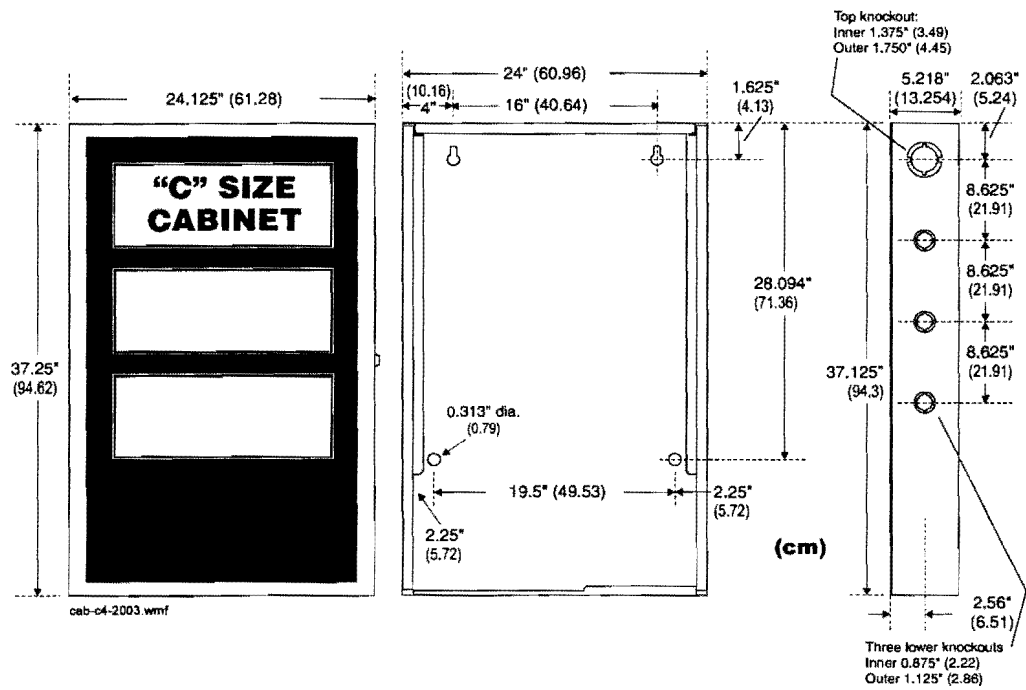
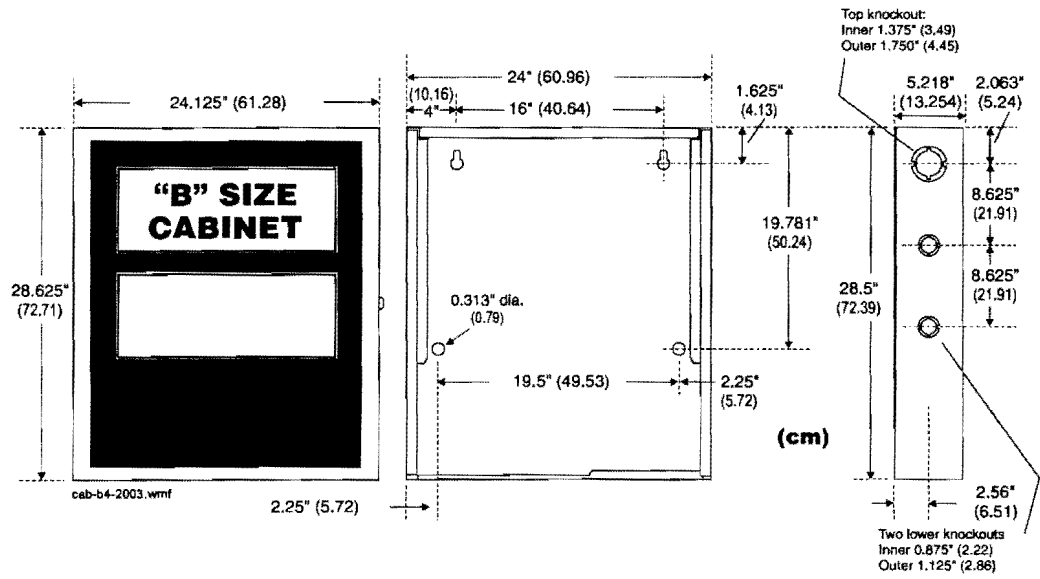
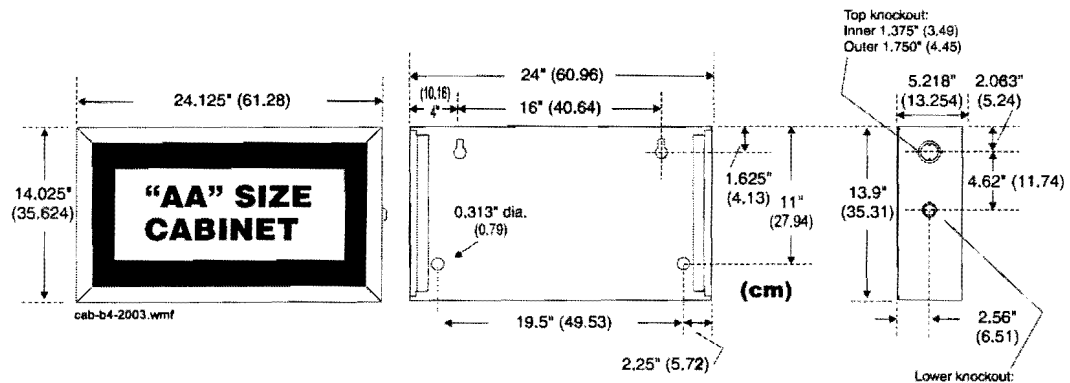
**Agency Listings and Approvals**

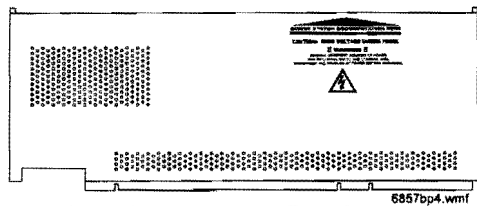
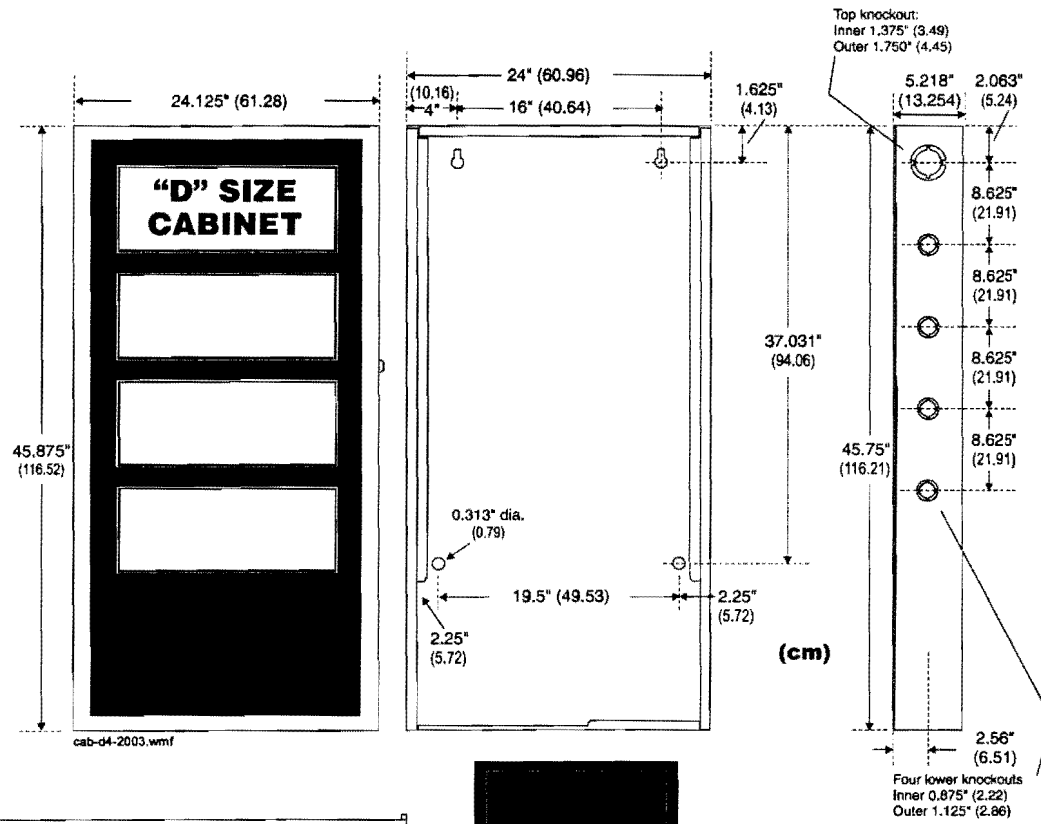
These listings and approvals below apply to the CAB-4 Series Cabinets. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- 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).

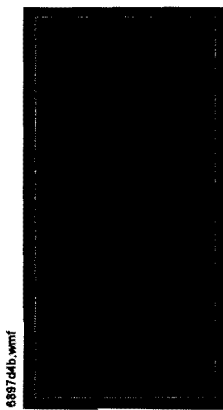
**Cabinet Dimensions and Features**







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).



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

ONYX® and NOTIFIER® are registered trademarks of Honeywell International Inc. LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.  
©2006 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

# → BAT Series Batteries

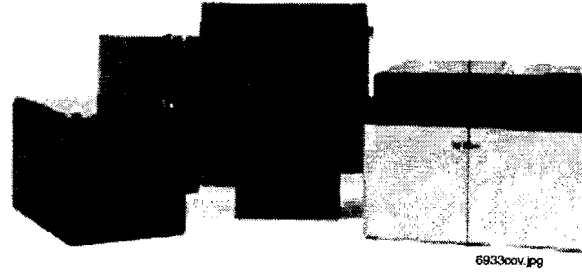
## Sealed Lead-Acid or Gell Cell



Power Supplies

### General

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



### Features

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

### 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*).

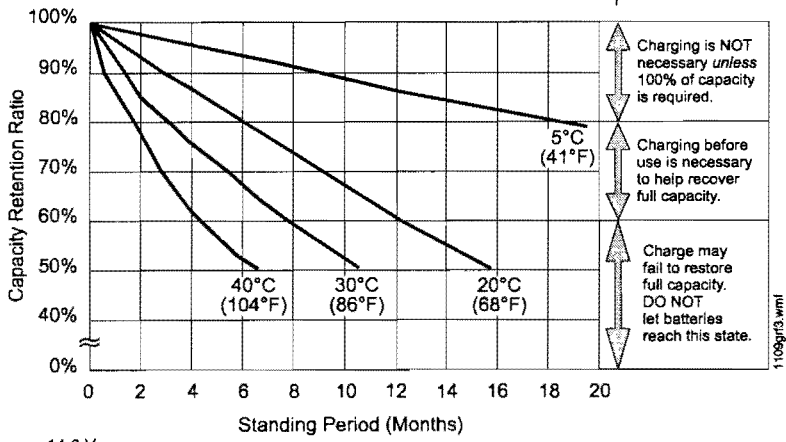
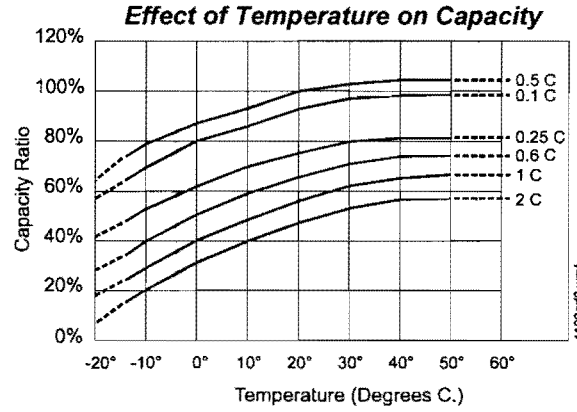
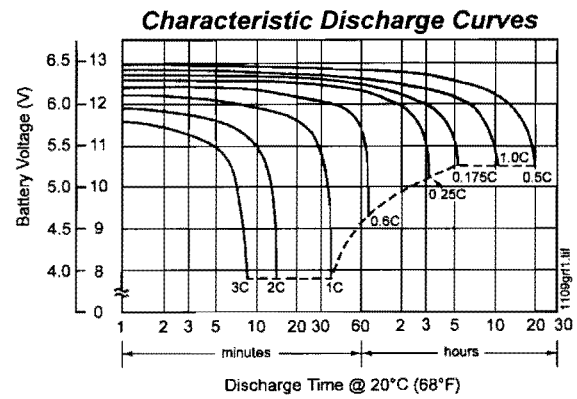
### Part Number Reference

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).

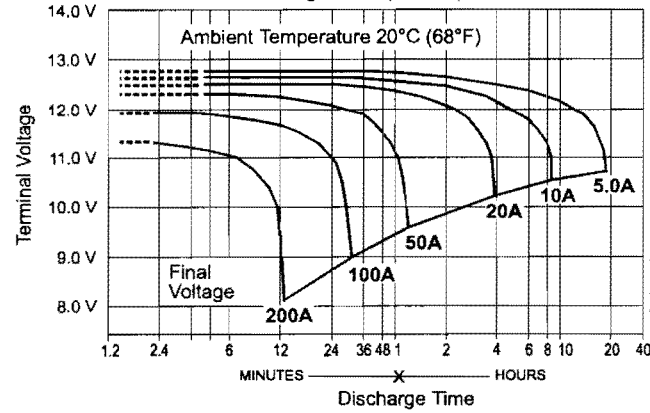
**POWER-SONIC**  
Part Number Reference

110911.tbl

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



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



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



**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	T2.11	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

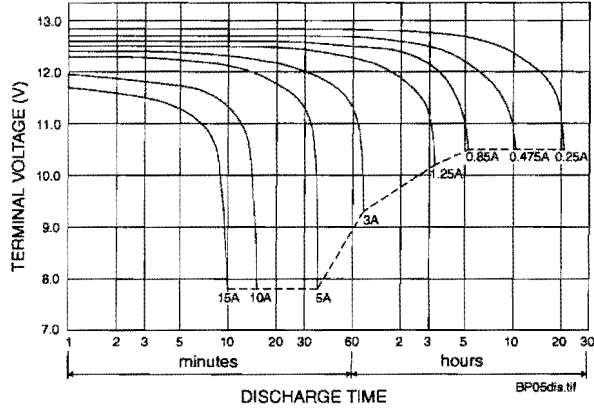
**Constant Power Discharge Characteristics at 25°C/77°F for BP12-12**

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

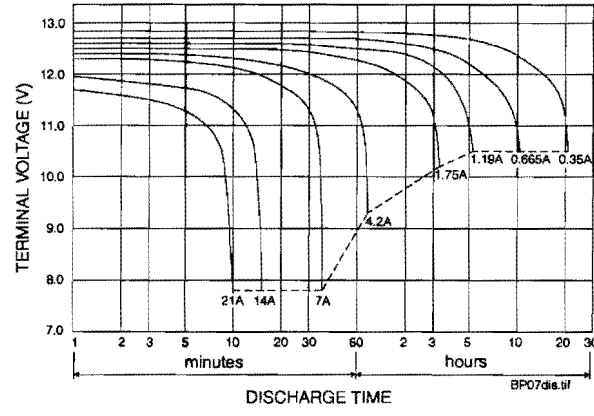
**Constant Power Discharge Characteristics at 25°C/77°F for BP26-12**

# B & B BATTERY

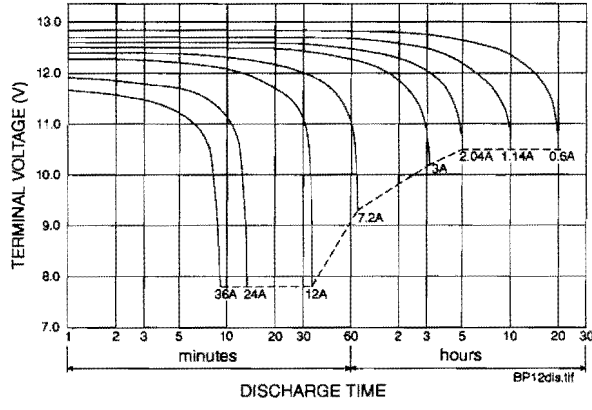
**BP5-12 Battery Discharge Characteristics (25°C/77°F)**



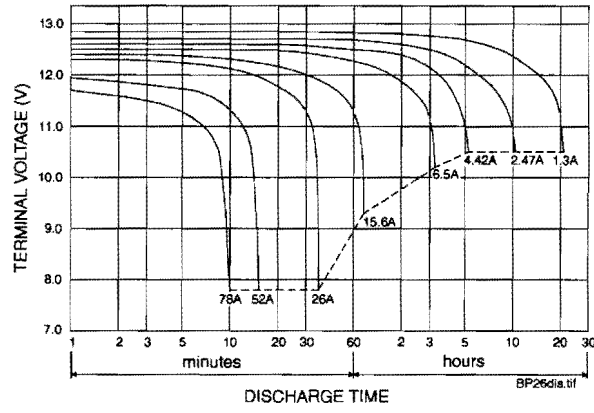
**BP7-12 Battery Discharge Characteristics (25°C/77°F)**



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



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



**BP05-12**



**BP12-12**



**BP26-12**

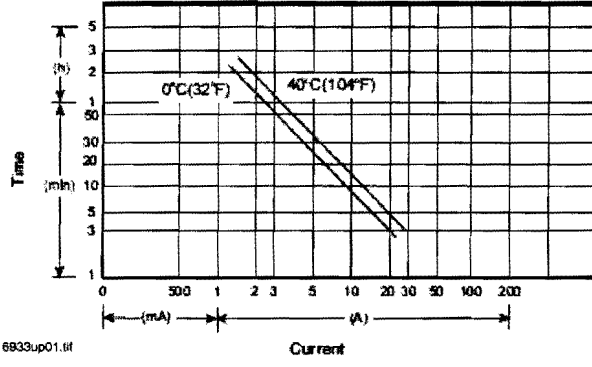


# UPG BATTERY

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

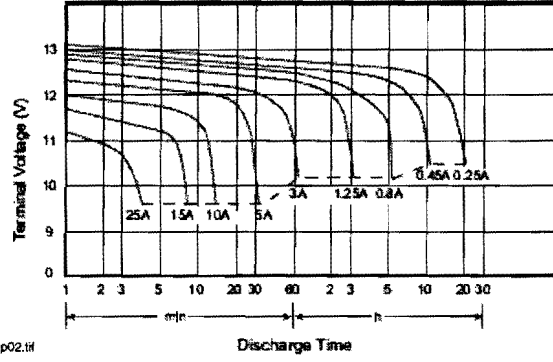
## UB1250 (previously SA1250) Diagrams

UB1250/SA1250 discharge current vs. time



6933up01.tif

UB1250/SA1250 discharge characteristics (25°C/77°F)



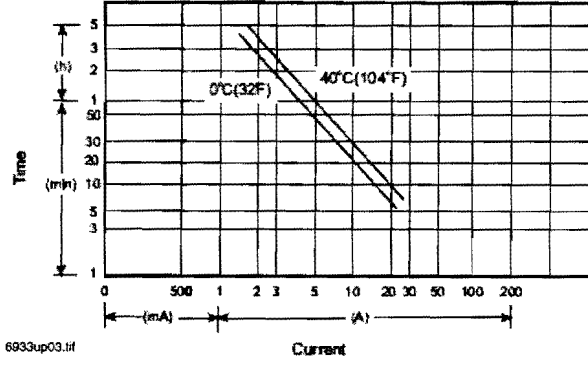
6933up02.tif

## 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%.

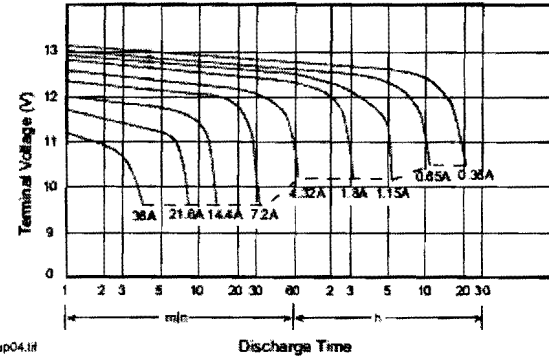
## SA1272 Diagrams

SA1272 discharge current vs. time



6933up03.tif

SA1272 discharge characteristics (25°C/77°F)



6933up04.tif

## SA1272 Specifications

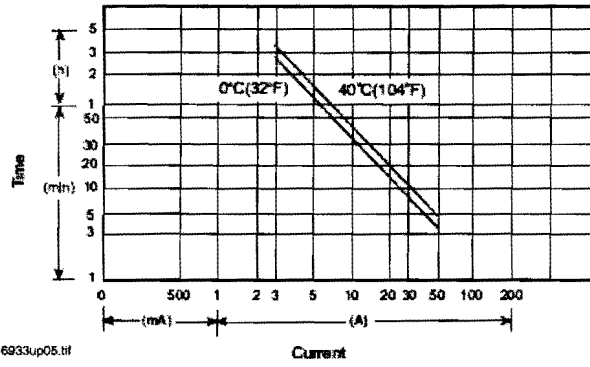
- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 7.2 AH.
- Dimensions: total height 100 mm (3.94"); container height 94 mm (3.70"); length 151 mm (5.95"); width 65 mm (2.56").
- Weight: approximately 2.66 kg (5.85 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 77°F): ~ 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.

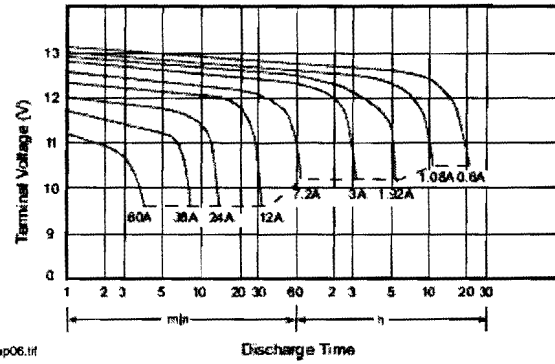
### UB12120 (was SA12120) Diagrams

UB12120/SA12120 discharge current vs. time



6933up05.tif

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



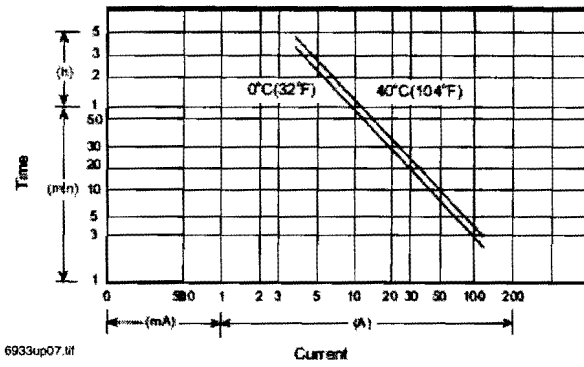
6933up06.tif

### 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%.

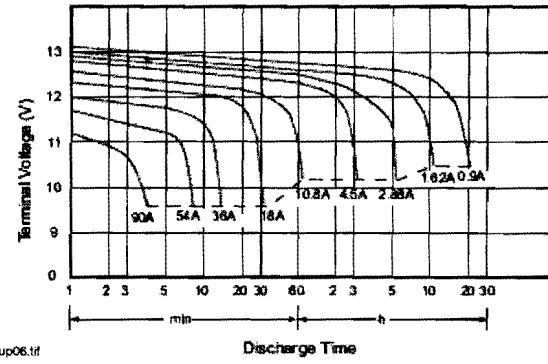
### UB12180 (was SA12180) Diagrams

UB12180/SA12180 discharge current vs. time



6933up07.tif

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



6933up06.tif

### UB12180, SA12180 Specifications

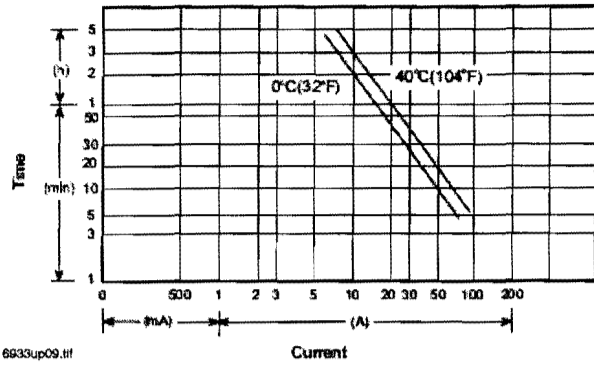
- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 18.0 AH.
- Dimensions: total height 167 mm (6.58"); container height 167 mm (6.58"); length 181 mm (7.13"); width 76 mm (2.99").
- Weight: approximately 6.06 kg (13.36 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 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.

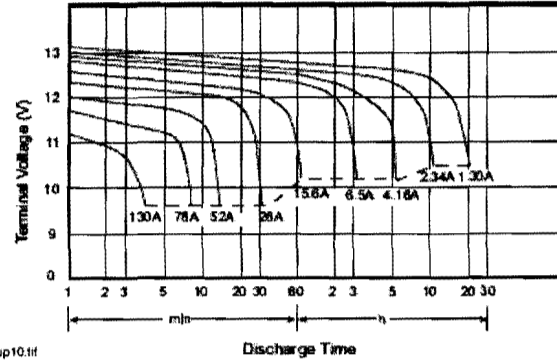
## UB12260 (was SA12260) Diagrams

UB12260/SA12260 discharge current vs. time



6933up09.tif

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



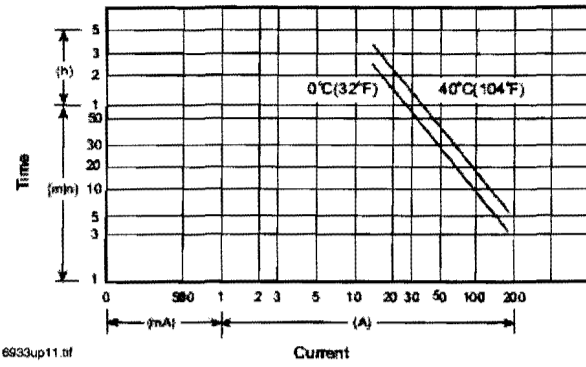
6933up10.tif

## 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%.

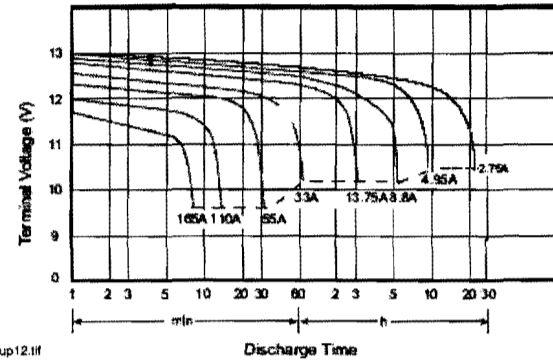
## UB12550 (was SA12550) Diagrams

UB12550/SA12550 discharge current vs. time



6933up11.tif

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



6933up12.tif

## UB12550, SA12550 Specifications

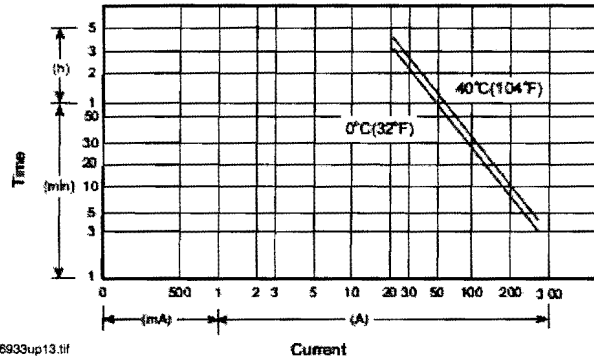
- Nominal voltage: 12 V.
- Nominal capacity (20 hr): 55.0 AH.
- Dimensions: total height 234.5 mm (9.23"); container height 216.5 mm (8.52"); length 229 mm (9.02"); width 138 mm (5.43").
- Weight: approximately 19.0 kg (41.8 lbs).
- Container material: UL94HB ABS, UL94V-0 ABS.
- Internal resistance (25°C, 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.

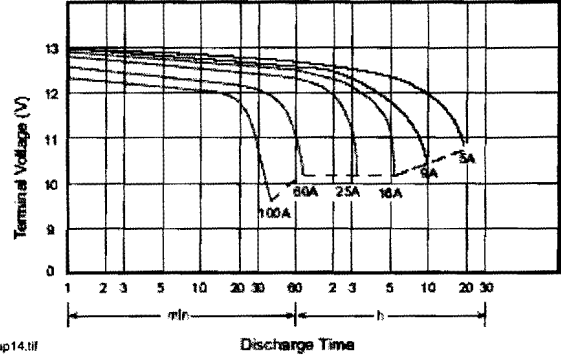
## UB121000 (XSA121000A) Diagrams

UB121000/XSA121000A discharge current vs. time



6933up13.tif

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



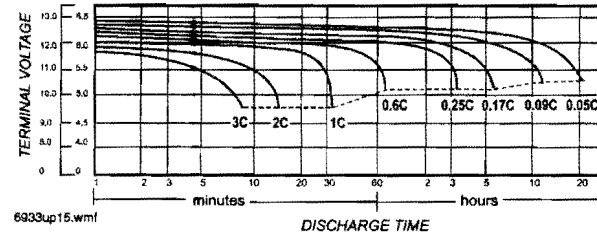
6933up14.tif

## 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%.

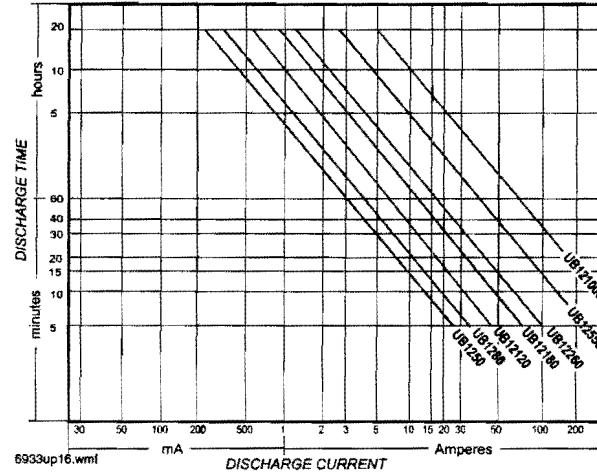
## UPG Summary Diagrams

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	$-\frac{3.3}{-1.8}$ mV/°F/cell	0.3	T <sup>3</sup> 24	T <sup>3</sup> 20	0 - 40°C (32 - 104°F)
For cycle service		2.40 ~ 2.50	$-\frac{5}{-2.8}$ 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.

---

NOTIFIER® is a registered trademark of Honeywell International Inc.  
Batteries display trademarks of the manufacturer.  
©2009 by Honeywell International Inc. All rights reserved. Unauthorized use  
of this document is strictly prohibited.

---

---

**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.

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

---



# → UDACT

## Universal Digital Alarm Communicator Transmitter

**NOTIFIER**  
by Honeywell

Annunciator Control Systems

### General

The Universal Digital Alarm Communicator Transmitter (UDACT) is designed for use on the Notifier NFS-320, NFS2-640, NFS2-3030, NFS-640 and NFS-3030 Fire Alarm Control Panels and on the NCA-2 and NCA Network Control Annunciator. When used in conjunction with the NCA-2 network control annunciators the UDACT can report the status of all control panels on NOTIFIRE•NET™. The UDACT transmits system status to UL listed Central Station Receivers via the public switched telephone network.

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

The UDACT is compact in size and may be mounted externally in a separate cabinet. EIA-485 annunciator communications bus and regulated 24-volt connections are required.

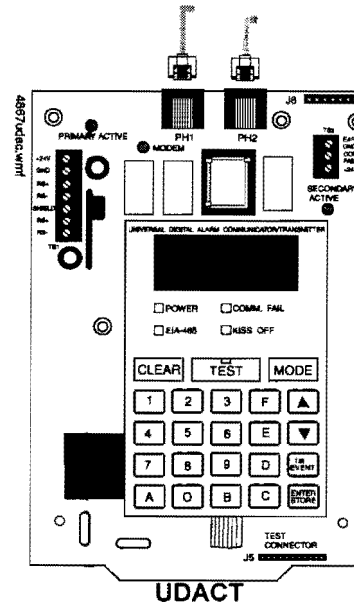
The UDACT is capable of transmitting the status of software zones (Alarm and Trouble), System Trouble, Panel Off-Normal, Supervisory, Bell Trouble, Low Battery, and AC Fail. The UDACT is capable of transmitting all of the zone and point status associated with each panel.

When the UDACT 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 manual for specific reporting parameters). The first 568 points transmitted may be programmed for a variety of types, including fire, waterflow, supervisory, etc. Remaining points transmitted are for fire alarm only.

**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

- Maximum of 14 point trouble messages transmitted per hour.
- Dual phone lines.
- Dual telephone line voltage detect.
- Surface Mount Technology.
- Compact in size: 6.75" x 4.25" (17.145 x 10.795 cm).
- Built-in programmer.
- Built-in 4-character red 7-segment LED display.
- Manual Test Report function.
- Manual Transmission Clear function.
- Mounts in a separate enclosure (ABS-8RB or UBS-1).
- 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 Troubles including: loss of phone lines, communication failure with either Central Station, total communications failure.
- Troubleshoot Mode converts keypad to DTMF touchpad.
- Individual LEDs for: Power, EIA-485 Loss, Manual Test, Kissoff, Comm Fail, Primary Line Seize, Secondary Line Seize and Modem Communications.
- Open Collector relay driver for Total Communications Failure or UDACT trouble.
- Real-time clock.
- Extensive transient protection.
- Simple EIA-485 interface to host panel.

### Agency Listings and Approvals

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

- UL Listed: S635
- ULC Listed: CS100 Vol. VII
- MEA: 328-94-E; 317-01-E3
- CSFM: 7300-0028:174; 7165-0028:214; 7165-0028:224; 7170-0228:216; 7170-0028:223; 7165-0028:243, 7170-0028:244
- INDUSTRY CANADA: 2132 6030 A
- FCC: 1W6-USA-20723-AL-E
- FM Approved

### Communication Formats

- 3+1 Standard
- 4+1 Standard
- 4+2 Standard
- 4+1 and 4+2 Ademco Express
- Ademco Contact ID

**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.

### Ordering Information

**UDACT:** 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 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).

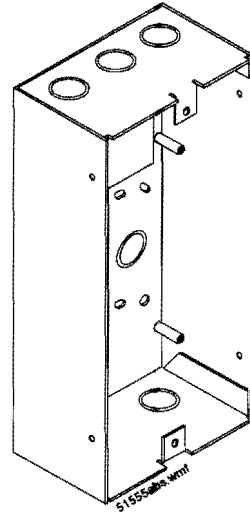
**UBS-1:** Metal enclosure. Includes viewing window and optional relay mounting capability.

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

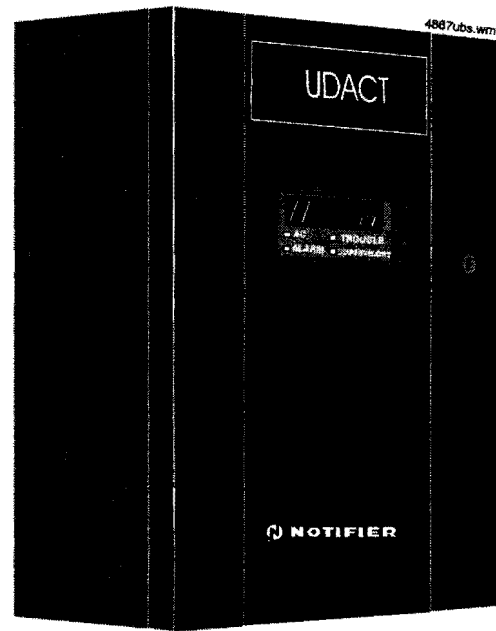
**R-20E:** DPDT Two Form-C relays. Contacts rated for 10A @ 115 VAC. Connects to open collector relay driver.

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

**ROM1-UDACT:** EPROM upgrade kit.



**ABS-8RB**  
for remote mounting  
[9.94"(25.2476cm)H x  
4.63"(11.7602cm)W x  
2.5"(6.35cm)D]



**UDACT**  
shown in UBS-1

	Format # (Addresses 16 & 42)	Ademco 685 (1)	Silent Knight 9000	ITI CS-4000 (3)	FBI CP220FB	Osborne Hoffman Models 1 & 2	Radionics 6000/6500 (5)	Sescoa 3000R (7)	SurGuard MLR-2 (9)
0	4 + 1 Ademco Express	X			X				X
1	4 + 2 Ademco Express	X			X	X(8)			X
2	3 + 1 /Standard/1800/2300	X	X (2)	X	X(4)	X	X(5,6)	X	X
3	(NOT USED)								
4	3 + 1 /Standard/1900/1400	X	X (2)		X(4)	X		X	X
5	(NOT USED)								
6	4 + 1 /Standard/1800/2300	X	X (2)	X	X(4)	X	X(5)	X	X
7	(NOT USED)								
8	4 + 1 /Standard/1900/1400	X	X (2)		X(4)	X		X	X
9	(NOT USED)								
A	4 + 2 /Standard/1900/2300	X	X (2)	X	X(4)	X	X(5)	X	X
B	(NOT USED)								
C	4 + 2 /Standard/1900/1400	X	X (2)		X(4)	X		X	X
D	(NOT USED)								
E	Ademco Contact ID	X			X	X			X
F	(NOT USED)								

- 1.) With 685-8 Line Card with Rev. 4.4d software.
- 2.) With 9002 Line Card Rev. 9035 software or 9032 Line Card with 9326A software.
- 3.) Rev. 4.0 software.
- 4.) FBI CP220FB Rec-11 Line Card with Rev. 2.6 software and a memory card with Rev. 3.8 software.
- 5.) Model 6500 with Rev. 600 software.
- 6.) Model 6000 with Rev. 204 software.
- 7.) With Rev. B control card at Rev. 1.4 software and Rev. C line card at Rev. 1.5 software.
- 8.) Model 2 only.
- 9.) Version 1.62 software.

NOTI•FIRE•NET™ is a trademark and Notifier® is a registered trademark of Honeywell International Inc.  
©2006 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

**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.



Made in the U.S. A.

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

## → DVC Series

**Digital Voice Command  
DVC-EM, DVC-EMF, DVC-EMSF**

**NOTIFIER**<sup>®</sup>  
by Honeywell

Voice Control Systems

### General

The DVC is the heart of an integrated, full-featured Audio Command Center. The DVC Digital Voice Command combines the capabilities of a powerful digital audio processor, an event-driven audio message generator, and a router. Designed for use with Digital Audio Loop (DAL) devices such as DAA2, DAX and DAA series digital amplifiers, each DVC supports a dedicated audio network with up to eight channels of audio, five channels of firefighter telephone communications, and control and supervision for up to 32 DAL devices. DVCs are available in versions supporting wire, multi-mode fiber, or single-mode fiber media. Larger audio systems incorporating hundreds of amplifiers can be created by networking additional DVC units via **NOTI•FIRE•NET**<sup>™</sup>.

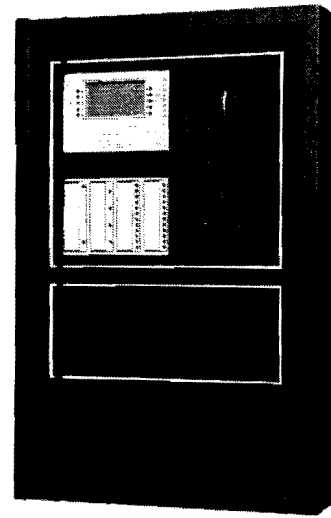
The DVC may be networked with ONYX<sup>®</sup> Series panels via **NOTI•FIRE•NET** with an NCA-2, or with an NFS2-3030 (running in network monitor mode). A DVC can be connected directly with a single NFS2-640 or NFS2-3030 Fire Alarm Control Panel (FACP) to create a standalone integrated audio solution as well. Refer to the DVC manual for details.

When used as an Audio Command Center with Emergency Paging capability, the optional DVC-KD Keypad Display is required.

**NOTE:** Unless otherwise noted, the term "DVC" refers to the DVC-EM, DVC-EMF, and DVC-EMSF models.

### Features

- Listed to UL Standard 864, 9th edition.
- Programmable from NUP port using *VeriFire<sup>®</sup> Tools* with:
  - DVC-EM: up to 32 minutes of standard quality or 4 minutes of high quality digital audio storage of user-selected/created messages and tones. Supports twisted-pair wire media.
  - DVC-EMF: Same as DVC-EM, except supports multi-mode fiber-optic media.
  - DVC-EMSF: Same as DVC-EM, except supports single-mode fiber-optic media.
- Up to 1000 audio sequences.
- Message prioritization.
- Equations support flexible programming for distribution of messages.
- Electrically isolated digital audio ports for direct connection with up to 32 Digital Audio Loop (DAL) devices. Style 4 or 7 configurations supported.
- DCC (Display and Control Center) capabilities when used with optional DVC-KD.
- Firefighters' Telephone Communications to local FFT riser on DVC, 32 local DAL device FFT risers, and FFT communication to additional command stations via **NOTI•FIRE•NET**<sup>™</sup>.
- Local paging microphone option.
- Remote microphone option.
- Broad All-Call functionality when used with DVC-KD (DVC-Keyboard Display): All Call, Page Active Evac Areas, Page Active Alert Areas, Page Inactive Areas.



**DVC**  
Shown using CA-2 mounting option,  
SBB-C4, and ADDR-C4 door.

- Auxiliary input for 12 V<sub>p-p</sub> analog low-level audio sources. Includes user audio level adjustment feature.
- Auxiliary input accepts external audio sources such as telephone paging or background music. High impedance input accepts 600 ohm, line level, 1.0 VRMS, or 1.41 V<sub>p-p</sub> low level audio. Selectable AGC, user control of audio level, and audio supervision are supported.
- Associated NCA-2, or NFS2-3030 (programmed for network monitor mode) supports **NOTI•FIRE•NET** applications.
- Multiple audio command centers supported via **NOTI•FIRE•NET**.
- Distribution of one channel of standard-level paging audio on **NOTI•FIRE•NET**.
- Three standalone, non-network mode options:
  - NFS2-3030 (NUP to NUP) digital and analog.
  - NFS2-640 (NUP to NUP) analog audio only.
  - NFS2-640 with NCA-2 (NUP to NUP to NUP) digital and analog.
- Push-to-talk relay, or logic argument.
- Isolated alarm bus input, to be used for backup activation of alarm messages when normal digital communication is lost.

### Installation Options

The DVC provides flexible configurations based on one-row or two-row chassis options that mount into size "B", "C", or "D" CAB-4 Series cabinets.

The CA-2 supports a DVC, paging microphone, optional FFT telephone, and mounting location for an NCA-2 or NFS2-3030D CPU. The ADDR audio door series can be used when a CA-2 is mounted in the top two rows. The CA-1 supports a DVC and an optional microphone in a single row. For firefight-

ers' telephone applications with a CA-1, the CFFT-1 can be mounted in the row below the CA-1.

**NOTE:** For NFS2-640/DVC applications using DAL devices, an NCA-2 is required to annunciate DAL device events. Refer to the DVC System Audio Product Application Guide (part number M-AG-DVC) for more details on DVC applications).

## Specifications

- **24 VDC power (TB1):** 24 VDC, 1.0 A, non-resettable, power-limited by the source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Digital audio ports, wire media, A and B (TB2, TB3):** Maximum distance per segment is 1900 feet (579.12 m) on Belden 5320UJ (18 AWG, TP) FPL cable: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair, foil-shielded, power-limited. Consult wiring documentation provided in document P/N 52916ADD:C Addendum to DVC and DAA Manuals.
- **Digital audio ports, single- and multi-mode fiber-optic RXA, TXA, RXB, and TXB (J100, J101, J102, and J103):** ST@ style, supervised. Multi-mode fiber-optic cable: 50/125 or 62.5/125 micrometers. Single-mode fiber-optic cable: 9/125 micrometers. Attenuation of cabling between two nodes (fiber-optic circuits are point-to-point) must not exceed the following maximum attenuations: 4.2 dB for multi-mode with 50/125 micrometer cable @ 850 nm. 8.0 dB for multi-mode with 62.5/125 micrometer cable @ 850 nm. 5.0 dB for single-mode with 9/125 micrometer cable @ 1300 nm.
- **Auxiliary input A (AUX A, TB4):** Signal strength from low-level analog audio input: maximum 1.0 VRMS, or 1.41 V<sub>p-p</sub>. Optional supervision is selectable through programming. Recommended wiring: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair; max. 14 AWG (2.08 mm<sup>2</sup>). Auxiliary input must be in the same room as the DVC.
- **Auxiliary input B (AUX B, TB14):** Signal strength from low-level analog audio input: 12 V<sub>p-p</sub> nominal, 15 V<sub>p-p</sub> maximum. Optional supervision is selected through programming. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Remote microphone interface (TB9):** Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair. Power-limited. Maximum distance between remote microphone and DVC: 1000 feet (300 m).
- **Push-to-talk interface (TB10):** Dry contact. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Alarm bus (TB12):** Power-limited by source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **FFT riser (TB13):** Power-limited output. Class A (Style Z) or Class B (Style Y) operation. Style Y two-wire connections require a 3.9K ohm, 1/2 watt resistor (P/N K-3.9K). Maximum wiring resistance (including individual telephone zone to last handset) permitted is 50 ohms, 10,000 feet (3048 m) maximum wiring distance at 12 AWG (3.31 mm<sup>2</sup>) to last handset.
- **Optional DVC-AO analog audio output circuits (TB5, TB6, TB7, and TB8):** Supervised, power-limited outputs. Signal strength: +12 V<sub>p-p</sub> nominal, +15 V<sub>p-p</sub> maximum. Recommended wiring: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair; max. 14 AWG (2.08 mm<sup>2</sup>). Maximum impedance: 66 ohms.

## Standards and Codes

The Digital Voice Command DVC, DVC-EM, DVC-EMF, and DVC-EMSF comply with the following standards:

- NFPA 72 2002 National Fire Alarm Code.
- Underwriters Laboratories Standard UL 864, 9th edition.
- Underwriters Laboratories of Canada (ULC) ULC-S527-99 Standard of Control Units for Fire Alarm Systems.

## Listings and Approvals

The listings and approvals below apply to the DVC, DVC-EM, DVC-EMF, and DVC-EMSF Digital Voice Command. 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:** file S635.
- **ULC Listed:** file S635.

The DVC is approved by the following agencies except for use with a DAA2 or DAX Series amplifier, or DS-FM Series fiber conversion module:

- **FM Approved.**
- **CSFM approved:** file 7165-0028:224 (NFS2-3030); 7165-0028:243 (NFS2-640).
- **FDNY:** COA#6026 (NFS2-3030); COA#6025 (NFS2-640).
- **City of Chicago approved:** High Rise, Class 1, Class 2 (NFS2-3030, NFS2-640, NCA-2).
- **City of Denver approved** (NFS2-3030).
- **PSB Corporation approved (Singapore) (NFS2-3030).**

## Product Line Information

**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. Supports twisted-pair wire media.

**DVC-EMF:** Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. Supports multi-mode fiber-optic ports, requires DAA-5025F, or DAA-5070F, or DAA-7525F.

**DVC-EMSF:** Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. Supports single-mode fiber-optic ports, requires DAA-5025SF, DAA-5070SF, or DAA-7525F.

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

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

**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).

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

**CFFT-1:** The CFFT-1 Chassis for Firefighters' Telephone mounts in the row directly under a DVC that is mounted in a CA-1 single row chassis. The CFFT-1 includes one FFT handset. The DP-CFFT Dress Plate (separately ordered, required) has one open position for mounting an ACS annunciator or a BMP-1 Blank Module Plate.

**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 NFS2-3030 or NCA-2 mounted on a half-chassis. The right side houses a microphone/handset well. The CA-2 assembly includes a microphone. DPA-2B dress plate is required (*below*); the VP-2B Vent Plate is also required for top row configurations. ADDR Series doors with two-tier visibility are available for use with the CA-2 configuration: ADDR-B4, ADDR-C4, ADDR-D4 (*below*).

**DPA-2B:** Dress plate required for CA-2 chassis assembly.

**VP-2B:** Vent plate required for cabinet configurations where the DPA-2B is used for the top two row position.

➔ **TELH-1:** Firefighters' Telephone Handset for use with the DVC when mounted in the CA-2 chassis. Order separately.

**ADDR-B4:** Two-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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 data sheet DN-6857*).

**ADDR-C4:** Three-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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 data sheet DN-6857*).

**ADDR-D4:** Four-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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 data sheet DN-6857*).

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

**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.

**ACT-4:** Audio-coupling transformer. Used to electronically isolate DVC-AO analog risers.

**ACT-25, ACT-70:** Audio-coupling transformers for 25V and 70V high-level audio. Used to isolate and convert high-level audio to low-level, supporting applications with large numbers of analog amplifiers.

**DAX-3525(E)/DAX-3570(E):** 35W, 25 or 70.7VRMS. Digital audio amplifiers with charging power supply and 2 Class B or 1 Class A output, shipped mounted on chassis. Options: BDA-25/70 backup amplifier, DS Fiber modules.

**DAX-5025(E)/DAX-5070(E):** 50W, 25 or 70.7VRMS. Digital audio amplifiers with power supply and 2 Class B or 1 Class A output, shipped mounted on chassis. Options: BDA-25/70 backup amplifier, DS Fiber modules.

**DAA2-5025(E)/DAA2-5070(E):** 50W, 25 or 70.7VRMS. Digital audio amplifiers with charging power supply and 4 Class B or 2 Class A outputs, shipped mounted on chassis. RM-1 port, FFT port, Aux audio port. Supports optional BDA for backup amplifier or 2-channel operation, and DS Fiber modules.

**DAA2-7525(E):** 75W, 25VRMS. Digital audio amplifiers with power supply and 4 Class B or 2 Class A outputs, shipped mounted on chassis. RM-1 port, FFT port, Aux audio port. Supports optional BDA for backup amplifier or 2-channel operation, and DS Fiber modules.

**BDA-25, BDA-70:** Backup Digital Amplifier, 25 or 70.7VRMS, can be configured to act as a one-to-one backup for DAX and DAA2 series amplifiers. For DAA2 Series only, supports alternative second channel operation.

**DS-RFM, DS-FM, DS-SFM:** Fiber conversion modules for DAX and DAA2 Series amplifiers.

**DAA Series Digital Audio Amplifiers:** Legacy DAA Series amplifiers are compatible with DVC systems running SR4.0. For specific information on DAA-50 series amplifiers, refer to DN-7046. For information on DAA-7525 Series, refer to DN-60257.

• **DAA-5025:** 50W, 25Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. See DN-7046. (*For multi-mode fiber-optic media order DAA-5025F. For single-mode fiber-optic media order DAA-5025SF.*)

• **DAA-5070:** 50W, 70.7Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. See DN-7046. (*For multi-mode fiber-optic media order DAA-5070F. For single-mode fiber-optic media order DAA-5070SF.*)

• **DAA-7525:** 75W, 25Vrms Digital Audio Amplifier assembly with DAA-PS power supply board. Shipped mounted to its chassis (no battery charger on DAA-7525 power supply board). Supports twisted-pair wire media. See DN-60257. (*For multi-mode fiber-optic media order DAA-7525F. For single-mode fiber-optic media order DAA-7525SF.*)

ONYX®, NOTIFIER®, and VeriFire® are registered trademarks and NOTI-FIRE-NET™ is a trademark of Honeywell International Inc. ST® is a registered trademark of AT&T.  
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

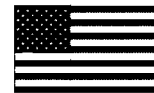
For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.  
[www.notifier.com](http://www.notifier.com)



FlashScan® and NOTIFIER® are registered trademarks and FireWatch™ is a trademark of Honeywell International Inc. ©2009 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

**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.



Made in the U.S. A.

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

# → NBG-12LX

## Addressable Manual Pull Station

**NOTIFIER**<sup>®</sup>  
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 bicolour 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 mm<sup>2</sup> 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<sup>®</sup> protocol loops.
- Dual-color LED blinks green to indicate normal on FlashScan<sup>®</sup> 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  $\mu$ A.
- **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<sup>®</sup> 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:** C1313066760047
- **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.

Notifier® and FlashScan® are a registered trademarks of Honeywell International Inc.  
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

## ➔ MTA-1 - WINLAND TEMP ALERT



The professional looking MTA-1 requires no power for operation. Simply set the separately adjustable high and low set points within +32 to +100 deg F (0 to 38 deg C) range. If the monitored temperature rises above the high set point, a dry contact closure output is provided. If the monitored temperature falls below the low set point, a second dry contact closure output is provided. Contacts: 12VDC at 50mA (max)

The MTA-1 Mechanical Temp Alert adds reliable and economical temperature protection to your residential or commercial security system. The design can be used anywhere the monitoring of high and low temperature limits is critical. The unit allows you to separately zone out high and low temperature alarm signals. Simply select an acceptable temperature range by setting the adjustable high and low limits from +32° to +100°F (0° to +38°C). If temperatures in the monitored area rise above or fall below the set limits, the temperature indicator contacts one of the preset limit arms providing a dry contact closure, which can like a switch be used to turn on an existing alarm panel, telephone communicator, or wireless alarm system.

**Applications**

- Residential or Vacation Homes
- Commercial Buildings
- Office and Computer Areas
- Unattended Buildings
- Greenhouses & Animal Buildings
- Freezers and Refrigerated Rooms
- Buildings with Controlled Climates

**Features**

- Requires no power for operation
- Adjustable high and low set points
- Easily to read temp indicator in F or C
- Provides (2) dry contact closure outputs 1-high alarm, 1-low alarm
- Easy surface mount installation
- One year parts and labor; subject to conditions of limited warranty.

## → E50 Series

### Speaker and Speaker Strobes

**NOTIFIER**<sup>®</sup>  
by Honeywell

Audio/Visual Devices

#### Description

The Cooper Wheelock Series E50 Speakers and Speaker Strobes feature high efficiency sound output, with dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. They are designed to provide a sleek, aesthetic appearance for emergency voice/alarm communications systems. All Series E50 models mount to standard 4" x 2-1/8" electrical boxes (with no extension ring required) and incorporate a speaker mounting plate for faster installation. The grille cover snaps on so no mounting screws are visible. Attractive surface boxes are also available for surface installations.

The Series E50 Speaker Strobe models use Cooper Wheelock low current draw Series RSS strobes for wall mounted applications. Strobe options include patented MCW multi-candela strobes with field selectable candela settings of 15/30/75/110 cd or high intensity MCWH strobes with field selectable 135/185 candela. Models with 1575 candela (75 cd on axis) are also offered.

Series E50 Speakers and Speaker Strobes provide high audio output with clear audibility and are designed to meet the critical needs of the life safety industry for effective emergency voice communications, tone signaling and visible signaling to alert the hearing impaired.

The strobe portion of all Series E Speaker Strobes may be synchronized when used in conjunction with the Cooper Wheelock SM, DSM Sync Modules or the Cooper Wheelock's PS-24-8MC Power Supply with Patented Sync Protocol. Cooper Wheelock synchronized strobes offer an easy way to comply with ADA and NFPA regulations concerning photosensitive epilepsy.

Series E50 Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances). All inputs employ IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring and are compatible with FACP line supervision.

Color options for the Series E50 Speakers and Speaker Strobes are red or off-white.

#### Features

Approvals include: UL Standard 1971, UL Standard 1480, New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM) and Chicago (BFP). See approvals by model in Specifications and Ordering Information

ADA/NFPA/ANSI compliant

Complies with OSHA 29 Part 1910.165

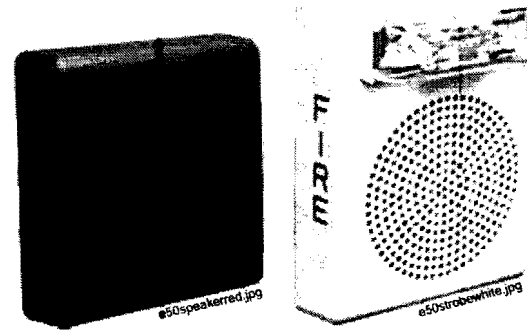
Wall mount speaker strobe models with field selectable candela settings of 15/30/75/110cd or 135/185cd (Multi-Candela models), or 1575cd (Single Candela model)

Field selectable taps for 25 or 70 VRMS operation from 1/8 watt up to 2 watts

High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ

24 VDC strobes produce 1 flash per second with wide UL "Regulated Voltage" of 16 to 33 volts using filtered DC or unfiltered VRMS input voltage

Synchronize with Cooper Wheelock SM, DSM or Cooper Wheelock PS-12/24-8CP and PS-12/24-8MP Power Supply with built-in sync protocol



Series E50  
Speaker

Series E50  
Speaker Strobe

Mount to 4" square x 2-1/8" deep backbox with no extension ring required

Snap on grille cover with no visible mounting screws

Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires



**WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT.**

**VISIT [WWW.COOPERWHELOCK.COM](http://WWW.COOPERWHELOCK.COM) OR CONTACT COOPER WHELOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

#### General Notes

Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.

All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.

Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).

Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).

"Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

E50 Speaker Strobes	E50 Strobe Current - Wall Mount						
	241575W	24MCW			24MCWH		
	1575cd	15cd	30cd	75cd	110cd	135cd	185cd
24VDC	.060	.041	.063	.109	.140	.195	.270
UL max.*	.090	.060	.092	.165	.220	.300	.420

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

Watts	1/8	1/4	1/2	1	2
E50 Speaker	77	79.5	82.5	85	88
E50 Speaker Strobe	77	79.5	82.5	85	88

\*\*NOTE: dBA ratings are based on UL testing under UL Standard 1480

### Architectural/Engineering Specifications

The speaker appliances shall be Cooper Wheelock Series E50 Speakers and the speaker strobe appliances shall be Cooper Wheelock Series E50 Speaker Strobes or approved equals. The speakers shall be UL Listed under Standard 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL Standard 1971 for Signaling Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class B.

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All models shall have listed sound output of up to 89 dBA at 10 feet and a listed frequency response of 400 to 4000

Hz. The speaker shall incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall be of low current design. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mounting. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required.

When synchronization is required, the strobe portion of the appliance shall be compatible with the Cooper Wheelock's SM, DSM sync modules or Cooper Wheelock PS-24-8MC Power Supply with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The speaker and speaker strobe appliances shall be designed for indoor flush mounting to 4" x 2-1/8" electrical boxes without need for an extension ring or surface mounting to Cooper Wheelock's E50SB or E50SSB surface boxes. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover. The finish of the Series E50 speakers and speakers strobes shall be white or red.

### 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:** S2652 (all); S5391 (E50-241575W-FR, E50-241575W-FW, E50-24MCW-FR, E50-24MCW-FW)
- **MEA:** 151-92-E
- **CSFM:** 7125-0785-165; 7320-0785:166
- **FM Approved**
- **Bureau of Fire Protection - Chicago**

### Ordering Information

Model	Wall Mount	Ceiling Mount	Strobe Candela	Grill Color	Flush Mount Backbox	Surface Mount Backbox	Mounting Options	Agency Approvals				
								UL	MEA	CSFM	FM	BFP
E50-R	X	X	-	Red	4" x 4" x 2-1/8"	E50SB-R	E,Q,P,Q,R,U,Y,AA	X	X	X	X	*
E50-W	X	X	-	White	4" x 4" x 2-1/8"	E50SB-W	E,Q,P,Q,R,U,Y,AA	X	X	X	X	*
E50-241575W-FR	X	-	15 (75 on Axis)	Red	4" x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	X	X	X	*
E50-241575W-FW	X	-	15 (75 on Axis)	White	4" x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	X	X	X	*
E50-24MCW-FR	X	-	15/30/75/110	Red	4" x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	X	X	X	*
E50-24MCW-FW	X	-	15/30/75/110	White	4" x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	X	X	X	*
E50-24MCWH-FR	X	-	135/185	Red	4" x 4" x 2-1/8"	E50SSB-R	E,Q,U,BB	X	X	X	X	*
E50-24MCWH-FW	X	-	135/185	White	4" x 4" x 2-1/8"	E50-SSB-W	E,Q,U,BB	X	X	X	X	*

\*NOTE: PENDING.

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

©2008 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

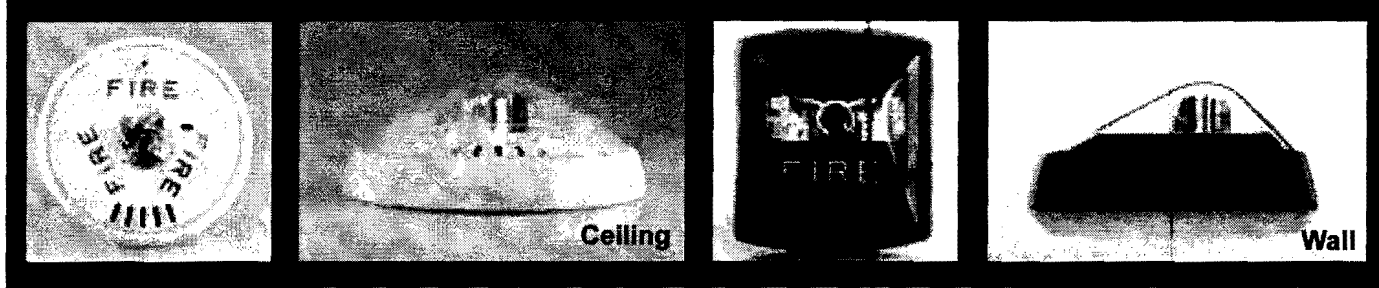


Made in the U.S. A.

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

**EXCEDER™**

Finally, Design and Safety Meet...











**Description:**

The Wheelock® Exceder™ Series of notification appliances feature a sleek modern design that will please building owners with reduced total cost of ownership. Installers will benefit from its comprehensive feature list, including the most candela options in one appliance, low current draw, no tools needed for setting changes, voltage test points, 12/24 VDC operation, universal mounting base and multiple mounting options for both new and retrofit construction.

The Wheelock® Exceder™ Series incorporates high reliability and high efficiency optics to minimize current draw allowing for a greater number of appliances on the notification appliance circuit. All strobe models feature an industry first of 8 candela settings on a single appliance. 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 captivated screw to prevent the screw from falling during installation.

- Save up to **48%** in current draw\*
- Up to **9** models now in **1** appliance
- Save up to **14%** cost of installation\*\*

-  Sleek Modern Aesthetics
-  Finger Slide Switches
-  Voltage Test Points
-  Multiple Voltages
-  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
-  Universal Mounting Base \*\*\*  
Ceiling and Wall  
Mounts to 5 Backbox Types
-  Environmentally Friendly  
Low Current Draw

**Compatibility and Requirements**

- Synchronize using the 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 1 flash per second over the "Regulated Voltage" range

\* Compared to competitive models    \*\*\* Patented  
\*\* Compared to previous models



**NOTE: All CAUTIONS and WARNINGS are identified by the symbol ▲. All warnings are printed in bold capital letters.**

**▲ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT [WWW.COOPERNOTIFICATION.COM](http://WWW.COOPERNOTIFICATION.COM) OR CONTACT COOPER NOTIFICATION FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

**General Notes:**

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range".
- 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).

**Low Current Draw = Fewer Power Supplies**

Strobe Ratings per UL Standard 1971		UL Max Current*													
		24 VDC / 24 FWR												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
ST	8.0-33.0	0.057	0.070	0.085		0.135	0.163	0.182		0.205			0.253	0.110	0.140
STC	8.0-33.0	0.061		0.085	0.103	0.135	0.163		0.182		0.205	0.253		0.110	

Horn Strobe Ratings per UL 1971 & UL 464 at 24 VDC		UL Max Current* at 99 c BA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.082	0.095	0.102		0.148	0.176	0.197		0.242			0.282	0.125	0.159
HSC	8.0-33.0	0.082		0.102	0.141	0.148	0.176		0.197		0.242	0.282		0.125	

		UL Max Current* at 95 c 3A													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.073	0.083	0.087		0.139	0.163	0.186		0.230			0.272	0.122	0.153
HSC	8.0-33.0	0.073		0.087	0.128	0.139	0.163		0.186		0.230	0.272		0.122	

		UL Max Current* at 90 d 3A													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.065	0.075	0.084		0.136	0.157	0.184		0.226			0.267	0.120	0.148
HSC	8.0-33.0	0.065		0.084	0.120	0.136	0.157		0.184		0.226	0.267		0.120	

Horn Ratings per UL 464				
Model	Regulated Voltage Range VDC	99 dB	95 dB	90 dB
HN	16-33.0	0.064	0.044	0.022
HNC	16-33.0	0.084	0.044	0.022
HN	8.0-17.5	0.047	0.026	0.017
HNC	8.0-17.5	0.047	0.026	0.017



\* UL max current rating is the maximum RMS current within the listed voltage range (16-33 VDC for 24 VDC units). For strobes the UL max current is usually at the minimum listed voltage (16 VDC for 24 VDC units). For audibles the max current is usually at the maximum listed voltage (33 VDC for 24 VDC units). For unfiltered ratings, see installation instructions.

## Specification & Ordering Information

Model	Strobe Candela	Sync w/ SM, DSM or PS-6 & PS-8	12/24 VDC*	Mounting Options
<b>Easy to remember model codes</b>				
<b>8 candelas on 1 device</b>				
<b>1 gang, 2 gang, 4" sq, 3.5" octal &amp; 4" octal boxes</b>				
<b>Horn Strobes</b>				
HSR	15/1575/30/75/95/110/135/185	X	X	UMB**
HSW	15/1575/30/75/95/110/135/185	X	X	UMB**
HSRC	15/30/60/75/95/115/150/177	X	X	UMB**
HSWC	15/30/60/75/95/115/150/177	X	X	UMB**
<b>Strobes</b>				
STR	15/1575/30/75/95/110/135/185	X	X	UMB**
STW	15/1575/30/75/95/110/135/185	X	X	UMB**
STRC	15/30/60/75/95/115/150/177	X	X	UMB**
STWC	15/30/60/75/95/115/150/177	X	X	UMB**
<b>Horn</b>				
HNR		X	X	UMB**
HNW		X	X	UMB**
HNRC		X	X	UMB**
HNWC		X	X	UMB**

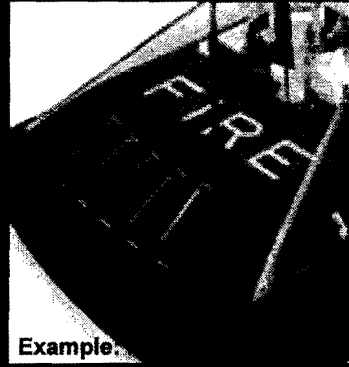
\*12 VDC models feature 15 & 15/75 settings

\*\*UMB = Universal Mounting Base

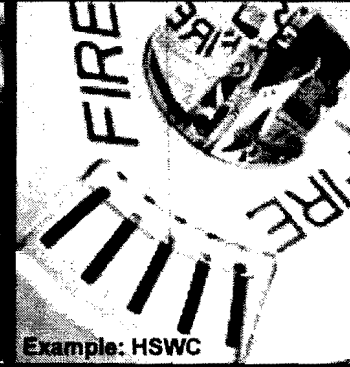
### Model Legend

- HN = Horn
- ST = Strobe
- HS = Horn Strobe
- C = Ceiling Mount
- W = White
- R = Red

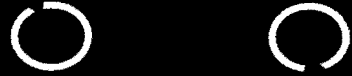
Example 1: STRC = Strobe, Red, Ceiling Mount  
 Example 2: HSR = Horn Strobe, Red, Wall Mount  
 Example 3: HSW = Horn Strobe, White, Wall Mount



Example:

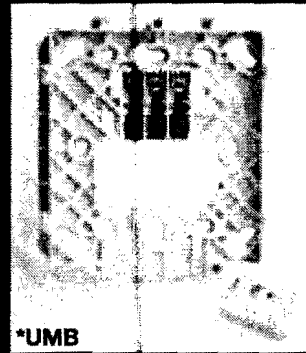


Example: HSWC



Voltage test points for quick troubleshooting and easy spot checking (wall models only)

8 candela settings



\*UMB



Contact Cover

Common base for wall and ceiling with 5 mounting options

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

## Architects and 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 (1) 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 (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

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-inch square, 3.5-inch octal, 4-inch octal 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.

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 be 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.

When synchronization is required, the appliance shall be compatible with Wheelock®'s SM, DSM Sync Modules, Wheelock® Power Supplies or other manufacturer's 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 (1) 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.

**Wall Appliances** – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC

**Ceiling Appliances** – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION  
3 YEAR WARRANTY

Exceder - Spec Sheet 11/09

#### NJ Location

273 Branchport Ave.  
Long Branch, NJ 07740  
P: 800-631-2148  
F: 732-222-8707

[www.coopernotification.com](http://www.coopernotification.com)

#### FL Location

7565 Commerce Ct.  
Sarasota, FL 34243  
P: 941-487-2300  
F: 941-487-2389

#### VA Location

4401 Wilson Boulevard, Suite 22  
Arlington, VA 22203  
P: 877-459-7726  
F: 703-294-6560

Cooper Notification is Wheelock®    

**COOPER**Notification

## → DAA-50 Series

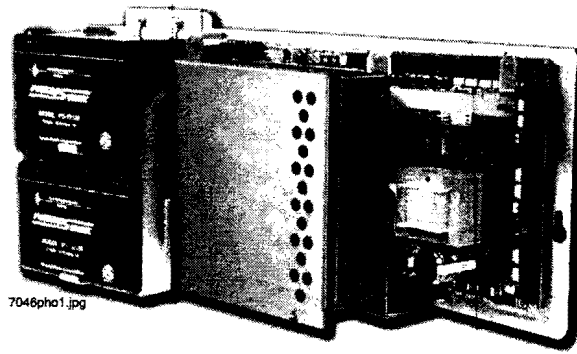
### Digital Audio Amplifiers

**NOTIFIER**<sup>®</sup>  
by Honeywell

Voice Control Systems

#### General

The **DAA-50 Series Amplifiers** are multi-featured Digital Audio Amplifiers designed for audio networks of up to 32 DAA amplifiers terminating at a DVC Digital Voice Command. Each DAA is capable of accessing and processing one of up to eight audio channels on the DVC audio loop, amplifying the signal, and distributing it via four Class B or two Class A outputs at 50 watts. DAA-50 amplifiers can store backup alarm and trouble messages, and provide an adjustable background music input. An optional Firefighter's telephone riser on each DAA-50 amplifier supports FFT communications riser. Each DAA-50 incorporates a powerful digital signal processor, a charging power supply, a 50 watt amplifier, built-in audio NAC outputs, and a chassis which mounts in a single row of CAB-4 and EQ Series cabinets. An optional battery chassis mounts two 12.0 AH batteries in the same standard chassis row.



7046pha1.jpg

#### Features

- Listed to **UL Standard 864, 9th edition.**
- 50 W total output power at 25 VRMS (DAA-5025 series) or 70.7 VRMS (DAA-5070 series)
- Multiple versions provide connection options for twisted-pair wire, single-mode fiber, and multi-mode fiber media
- Two Class A high-level audio outputs; or alternately, four Class B outputs supported. Outputs dynamically share the 50 W - the total power can be dedicated to a single output if required.
- FireFighter's Telephone Riser supports 7 active firefighter telephones. Release 3.0 and higher supports optional configurations: direct connection for up to 7 firefighter telephones, or connection to multiple FTM-1 modules.
- Audio output activation via network control-by-event equations resident within the DVC
- Two digital audio ports support Style 4 or 7 configurations.
- Auxiliary input for 12 Vp-p analog low-level audio.
- Auxiliary input for 1 VRMS, to be used for background music input, an interface with a telephone paging source, or other compatible audio sources. Audio levels can be adjusted by end user. Continuous supervision for active DAA output circuits.
- Programmable through **VeriFire® Tools.**
- Up to two minutes of standard quality backup digital message storage (from a **VeriFire Tools** message library, or created by the installer) for use in the event of communication loss.
- Power supply and battery charger capable of supporting up to 55 AH batteries
- Battery charger disable provides battery sharing option for one or more DAA-50 amplifiers or with a charging power supply
- Isolated alarm bus input, to be used for backup activation of alarm messages when normal digital communication is lost
- Relay contacts that will activate on a trouble condition provide an option for redundant annunciation to a local panel

#### Installation

The DAA arrives from the factory already installed on its chassis. The DAA mounts in one tier of any CAB-4 Series or EQ Series cabinet; the DAA tier can be covered using a DP-1B dress panel, ordered separately (CAB-4 Series only).

Batteries for the DAA may be installed in any of the following configurations:

- In a **CHS-BH1** optional battery chassis. The CHS-BH1 battery chassis will hold two 12.0 AH batteries, and mounts on the left side of the DAA chassis, so that the DAA and batteries are contained in a single cabinet tier.
- In the battery row (bottom) of the CAB-4 Series cabinet, or in the bottom row of an EQ Series cabinet.
- In a cabinet adjacent to the cabinet that holds the DAA, with connections in conduit. External battery charging is supported.

#### Specifications

##### DAA-PS POWER SUPPLY BOARD

- **AC power (TB1):** 115 - 120 VAC, 60 Hz input, 4.5 A maximum; **or for "E" versions,** 220 - 240 VAC, 50/60 Hz input, 2.3 A maximum. **Recommended wiring:** 12 to 14 AWG (1.6 mm O.D.) with 600 VAC insulation
- **Battery connections (TB3):** Supplied cable connections to batteries.

##### DAA-5025/70 BOARDS

###### Digital audio ports, wire media, A and B (TB2, TB3):

- Maximum distance per segment is 1900 feet (579.12 m) on Belden 5320UJ (18 AWG, TP) FPL cable: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair, unshielded, power-limited. See wiring documentation, P/N 52916ADD: *C Addendum to DVC and DAA Manuals*. Electrically isolated ports support Style 4 or 7 wiring.
- **Digital audio ports, "F" versions:** Digital audio loop connectors A and B support multi-mode fiber. Maximum attenuation is 4.2 dB for multi-mode with 50/125 micrometer cable @ 850 nm; 8.0 dB for multi-mode with 62.5/125 micrometer cable @ 850 nm.

- **Digital audio ports, "SF" versions:** Digital audio loop connectors A and B support single-mode fiber. Maximum attenuation is 5.0 dB for single-mode with 9/125 micrometer cable @ 1300 nm.
- **Alarm bus (TB4):** Power-limited by source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Trouble bus (TB5):** Dry contact. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **FFT riser (TB13):** Power-limited output. Class A (Style Z) or Class B (Style Y) operation. Style Y two-wire connections require a 3.9K ohm, 1/2 watt resistor (P/N R-3.9K). Maximum wiring resistance (including individual telephone zone to last handset) permitted is 50 ohms, 10,000 feet (3048 m) maximum wiring distance at 12 AWG (3.31 mm<sup>2</sup>) to last handset.
- **Auxiliary input A (AUX A, TB9):** Signal strength from low-level analog audio input: 1 VRMS maximum. Optional supervision (selected through programming). Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair. Auxiliary input must be in the same room as the DAA.
- **Auxiliary input B (AUX B, TB8):** Signal strength from low-level analog audio input: 12 Vp-p nominal, 15 Vp-p maximum. Optional supervision (selected through programming). Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Speaker circuits (TB10, TB11, TB12, and TB13):** Power-limited outputs. 50 watts dynamically shared among the four outputs. Supervision determined by programming. Recommended wiring: 12 to 18 AWG (3.31 to 0.821 mm<sup>2</sup>) twisted-pair.
- **End-of-line resistors:** For Class A: 10K ohm, 1/2 watt, P/N R-10K. For Class B: 20K ohm, 1/2 watt, P/N R-20K.

### Standards and Codes

The DAA-50 Series Digital Audio Amplifiers comply with the following standards:

- NFPA 72 2002 National Fire Alarm Code.
- Underwriters Laboratories Standard UL 864; 9th Edition.
- Underwriters Laboratories of Canada (ULC) ULC-S527-99 Standard of Control Units for Fire Alarm Systems.
- Part 15 Class A of the conducted and radiated emissions as required by FCC.

### Listings and Approvals

These listings and approvals apply to the basic DAA-50 Series Digital Audio Amplifiers. 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:** file S635.
- **ULC Listed:** file S635.
- **FM Approved**
- **CSFM approved:** file 7170-0028:223, 7170-0028:244.
- **MEA approved:** file 232-06-E, 128-07-E (wire only).
- **City of Chicago approved:** High Rise, Class 1, Class 2 (NFS2-3030, NFS2-640, NCA-2).
- **City of Denver approved.**
- **PSB Corporation approved (Singapore) (NFS2-3030).**

### Product Line Information

**DAA-5025:** Digital Audio Amplifier (50 W, 25 VRMS), assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5025F:** Digital Audio Amplifier (50W, 25 VRMS), multimode fiber, assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5025SF:** Digital Audio Amplifier (50W, 25 VRMS), single-mode fiber, assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5070:** Digital Audio Amplifier (50 W, 70.7 VRMS), assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5070F:** Digital Audio Amplifier (50 W, 70.7 VRMS), multimode fiber, assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5070SF:** Digital Audio Amplifier (50 W, 70.7 VRMS), single-mode fiber, assembly with DAA-PS power supply board, shipped mounted to its chassis.

#### 220-240VAC VERSIONS

**DAA-5025E:** Digital Audio Amplifier (50 W, 25 VRMS, 240 VAC), assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5025EF:** Digital Audio Amplifier (50 W, 25 VRMS), multimode fiber, 240 VAC, assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5025ESF:** Digital Audio Amplifier (50 W, 25 VRMS), single-mode fiber, 240 VAC, assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5070E:** Digital Audio Amplifier (50 W, 70.7 VRMS, 240VAC), assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5070EF:** Digital Audio Amplifier (50 W, 70.7 VRMS), multimode fiber, 240 VAC, assembly with DAA-PS power supply board, shipped mounted to its chassis.

**DAA-5070ESF:** Digital Audio Amplifier (50 W, 70.7 VRMS), single-mode fiber, 240 VAC, assembly with DAA-PS power supply board, shipped mounted to its chassis.

#### ACCESSORIES

**DP-1B:** Dress panel; covers one tier of CAB-4 Series cabinet.

**CHS-BH1:** Battery chassis; holds two 12.0 AH batteries. Mounts on the left side of DAA chassis.

**ACT-25, ACT-70:** Audio-coupling transformers. Used with AA-30 or DAA-series amplifiers to drive thousands of amplifiers in large system applications.

ONYX®, NOTIFIER®, and VeriFire® are registered trademarks of Honeywell International Inc.  
©2008 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

## → AFAWS Series

### Emergency Telephone Stations and Telephone Accessories

**NOTIFIER**<sup>®</sup>  
by Honeywell

Voice Control Systems

#### General

These Emergency Telephone Stations provide a reliable means of communication for firefighters and other personnel.

#### Features

- Heavy-duty construction.
- Keylock or thumb-latch.
- Push-to-talk switch on telephone handset.
- Doors fit either recessed or surface enclosures.
- Red baked-enamel finish.
- Armored cable or standard telephone coiled cord.
- Available with or without a "break-glass" door feature.
- Master station connection LED indicator.

#### Applications

Stations feature a locked door design, with either a break-glass or non-break-glass feature. When a locked door is not required, an optional thumb catch allows for fast, safe entry into the housing.

The telephone handsets are available with either standard coiled cord or a durable security-type armored cable.

The hook configuration consists of two Form-C switches which permits a variety of wiring uses. The handset rests on a handsome chrome cradle which actuates the switch mechanism.

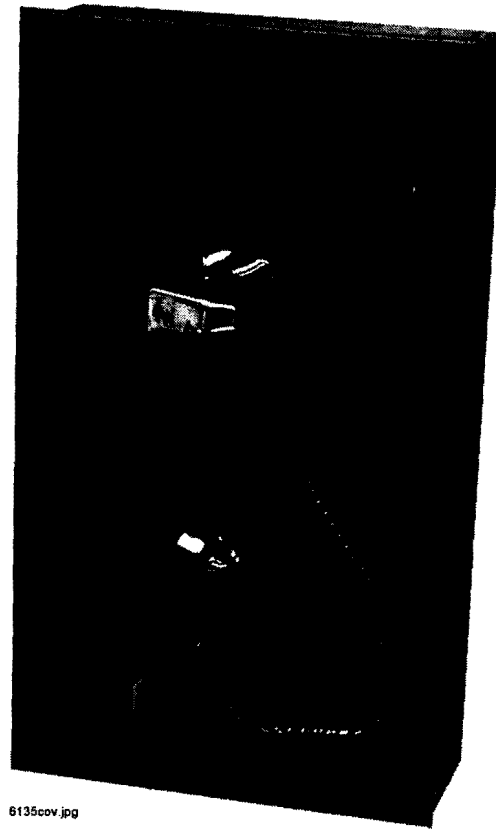
#### Installation

Either recessed or surface enclosures may be used with these Emergency Telephone Stations. If a recessed enclosure is used, the telephone assembly must be a model designed for recessed enclosures. The same is true of surface enclosures.

#### 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.

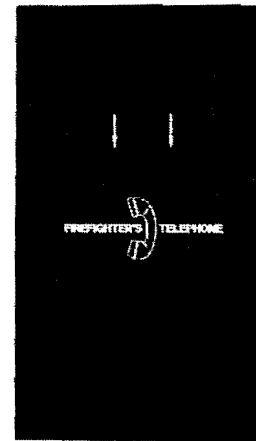
- **UL:** S635
- **ULC:** CS118/CS733
- **CSFM:** 7300-0028:0193
- **MEA:** 82-98-E (AFAWS-TELA)
- **City of Chicago** approved: Class 1, Class 2
- **City of Denver** approved



6135cov.jpg



6135lock.jpg



6135latch.jpg

Solid doors on surface-mount models with Keylock (left) and Latch (Right) closures.

## AFAWS Product Line Information

The front door, backbox, and telephone assembly for AFAWS Series telephone stations must be ordered separately.

### HANDSET AND HOOKSWITCH ASSEMBLIES

**AFAWS-TELC:** Telephone with Coiled Cord Assembly

**AFAWS-TELA:** Telephone, Armored Cord Assembly

### TELEPHONE STATION ENCLOSURES

**AFAWS-BX:** Backbox  
15" (381.0mm)H x 8-3/8" (212.85mm)W x 3-3/8" (85.73mm)D

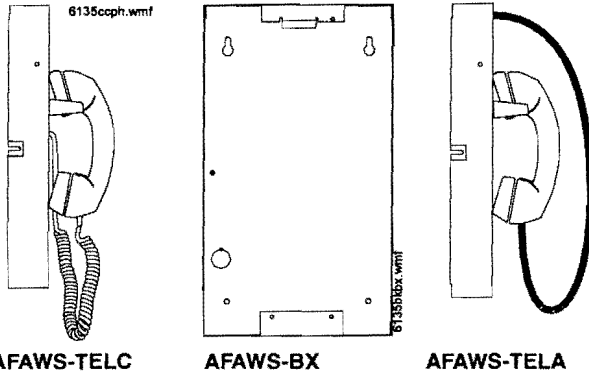
**AFAWS-LS:** Latch Door for Surface-Mount  
15-3/16" (385.60mm)H x 8-9/16" (217.45mm)W

**AFAWS-LR:** Latch Door for Recessed-Mount  
16-3/16" (411.00mm)H x 9-9/16" (242.85mm)W

**AFAWS-KS:** Keylock Door for Surface-Mount  
15-3/16" (385.60mm)H x 8-9/16" (217.45mm)W

**AFAWS-KR:** Keylock Door for Recessed-Mount  
16-3/16" (411.00mm)H x 9-9/16" (242.85mm)W

**BRKG-B:** Breakglass Insert  
Includes a tempered glass plate, a hammer attached to a chain, and a screw to attach the hammer to the trim ring.



AFAWS-TELC

AFAWS-BX

AFAWS-TELA

### PORTABLE FIREMAN'S TELEPHONE HANDSET

**FHS:** Fireman's Handset.

This handset comes with a coiled cord. The attached plug fits Fireman's Phone Jack, model FPJ, allowing firefighters to make direct communication with a central control area



## TELEPHONE RECEPTACLES

**FPJ:** Fireman's Phone Jack

Receptacle is semi-flush mounted with a single-gang box (box is not furnished with receptacle). The receptacle has a single phone jack mounted on an attractive, single-gang, stainless steel plate. Color-coded wires, 6 inches long, are prewired to the jack to enable fast and accurate wiring to the system.



0083ph2-1.tif

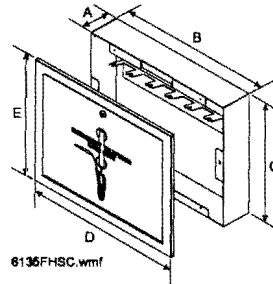
## EMERGENCY TELEPHONE CABINETS

**FHSC-R:** Storage Cabinet for 6 FHS Fireman's handsets; recessed mounting.

**FHSC-S:** Storage Cabinet for 6 FHS Fireman's handsets; surface mounted.

### CABINET DIMENSIONS

Dimensions Pictured Below	FHSC-R Recessed Mount	FHSC-S Surface Mount
Dimension "A"	3.25" (82.6mm)	3.25" (82.6mm)
Dimension "B"	17" (432mm)	17" (432mm)
Dimension "C"	13.375 (340mm)	13.375 (340mm)
Dimension "D"	18.312 (465mm)	17.312 (440mm)
Dimension "E"	14.625 (371mm)	13.625 (346mm)



6136FHSC.wmf

NOTIFIER® is a registered trademark of Honeywell International Inc.  
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

# → FSP-851, FSP-851T, & FSP-851R

Intelligent Plug-In Photoelectric

**NOTIFIER**<sup>®</sup>  
by Honeywell

Intelligent/Addressable Devices

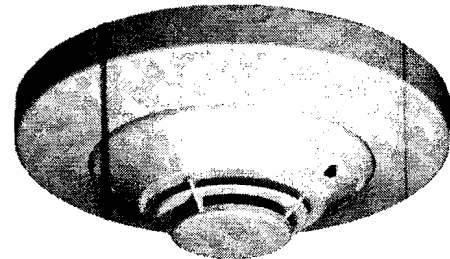
## General

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).

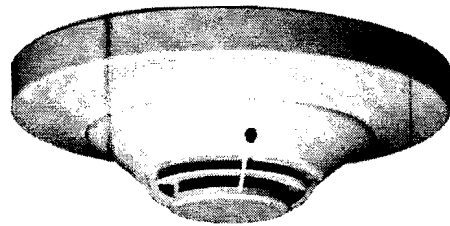
**FlashScan**® (U.S. Patent 5,539,389) is a communication protocol developed by Notifier that greatly increases the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices in the group has new information, the panel's CPU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

## 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.



FSP-851 with B710LP base



FSP-851T with B710LP base

## Specifications

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

**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](http://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<sup>2</sup>); 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:** C1313066760036
- **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.



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.

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

## → Intelligent Bases

**B200SR, B710LP(A), B2241BI(A),  
B224RB(A), B501, B501BH-2, B501BHT-2,  
Mounting Kits, and Accessories**

**NOTIFIER**<sup>®</sup>  
by Honeywell

Addressable Devices

### General

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

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

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

### Specifications

#### Diameter:

- B501: 4.1" (104 mm).
- B224BI, B224RB, B710LP: 6.1" (155 mm).
- B501BH-2, B501BHT-2: 6.0" (152 mm).
- B200SR: 6.875" (17.46 cm).

#### Wire gauge:

- B224BI, B224RB: 14 to 24 AWG.
- B710LP, B501, B501BH-2, B501BHT-2, B200SR: 12 to 24 AWG.

#### Temperature range:

- B224BI, B224RB, B501BH-2, B501BHT-2, B200SR: 32°F to 120°F (0°C to 49°C).
- B501 and B710LP, -4°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 B200SR:

**External supply voltage:** 16 to 33 VDC (VFWR)

**Standby current:** 500 µA maximum.

- Alarm current: 35 mA maximum.

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

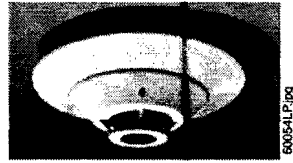
**SLC standby current:** 300 µF.



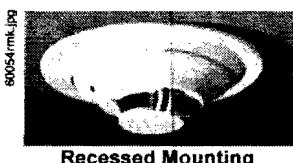
Flangeless Mounting Base



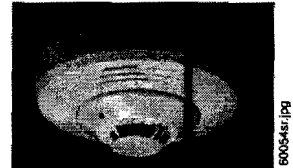
Relay Base



Flanged Mounting Base



Recessed Mounting



Standard Sounder Base



Flangeless Surface Mounting

- **Sound output:** measured in a UL reverberant room at 10 feet, 24 Volts (continuous tone). Greater than 85 dBA minimum.

#### 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-2, B501BHT-2:

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

**Standby current:** 1.0 mA maximum.

**Alarm current:** 15 mA maximum.

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

**Startup capacitance:** 200 µF.

**Sounder delay time:** 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) octago-

nal, 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.

### Product Line Information

#### INTELLIGENT BASES

- B501:** Flangeless mounting base.
- B501A:** Flangeless mounting base, ULC Listed.
- B501BP:** Bulk pack of **B501** (10).
- ➔ **B710LP:** Flanged mounting base.
- B710LPA:** Flanged mounting base, ULC Listed.
- B710LPBP:** Flanged mounting base.
- B200SR:** Intelligent sounder base capable of producing sound output with T3 or continuous tone. Replaces the B501BH series bases in retrofit applications.
- B501BH-2:** Plug-in System Sensor standard *sounder* detector base, steady tone. Includes B501 base.
- B501BHT-2:** Plug-in System Sensor *temporal tone* sounder base.
- B501BHA:** Plug-in System Sensor standard *sounder* detector base, steady tone, with ULC Listing. Includes **B501** base.
- B501BHTA:** Plug-in System Sensor *temporal tone* sounder base, with ULC listing.
- B224RB:** Relay base.
- B224RBA:** Relay base, ULC Listed.
- B224BI:** Isolator base.
- B224BIA:** Isolator base, ULC Listed.

#### MOUNTING KITS AND ACCESSORIES

- RMK400:** Recessed mounting kit.
- SMK400E:** Surface mounting kit, flangeless.
- SMB600:** Surface mounting kit, flanged.
- F110:** Retrofit flange for B501B, B524.
- RA100Z:** Remote LED annunciator.
- RA100ZA:** Remote LED annunciator, ULC Listed.
- M02-04-00:** Detector test magnet.
- M02-09-00:** Test magnet with telescoping handle.
- XR2B:** Detector removal tool (*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, package of 10 (for use with photo and ion detectors).
- WCK-200B:** White detector kit, package of 10 (for use with photo and ion detectors).

#### Agency Listings and Approvals

The listings and approvals below apply to intelligent bases as noted. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S911
- **ULC Listed:** S911
- **FM Approved**
- **MEA:** 22-95-E, 205-94-E Vol. 2; 257-06-E
- **CSFM:** 7300-1653:109; 7300-1653:126, 7300-1653:191

### Junction Box Selection Guide

Base Models	Single Gang	Double 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
B200SR	Yes	Yes	No	Yes	Yes	No	No	No	No	No
B501	No	No	Yes	No	No	Yes	Yes	Yes	Yes	No
B710LP	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No
B224RB	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
B224BI	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes
B501BH-2	No	No	No	No	Yes	No	No	No	No	No
B501BHT-2	No	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.

FlashScan®, NOTIFIER® and System Sensor® are registered trademarks of Honeywell International Inc. ©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

## → 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 often 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.

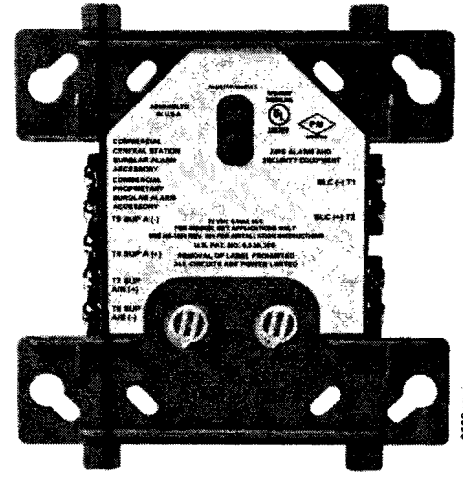
#### FMM-1(A) Monitor Module

- 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).

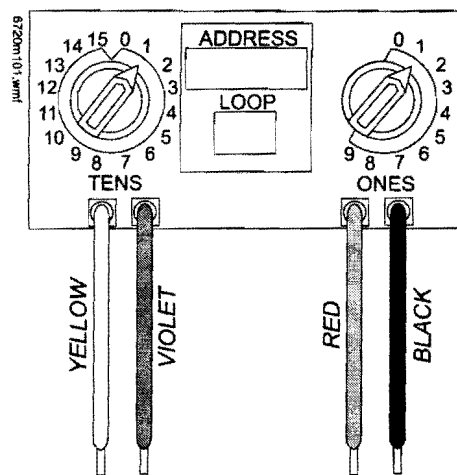
**Humidity range:** 10% to 93% noncondensing.

**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  $\mu$ A, 1 communication every 5 seconds, 47k EOL; 600  $\mu$ A Max. (Communicating, IDC Shorted).

**Maximum IDC wiring resistance:** 40 ohms.

**Maximum IDC Voltage:** 11 Volts.

**Maximum IDC Current:** 400  $\mu$ A.

**EOL resistance:** 47K ohms.

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

**Humidity range:** 10% to 93% noncondensing.

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

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

## FZM-1(A) Interface Module

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

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

#### FZM-1(A) APPLICATIONS

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

#### FZM-1(A) OPERATION

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

#### FZM-1(A) SPECIFICATIONS

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

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

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

**Average operating current:** 300  $\mu$ A, 1 communication and 1 LED flash every 5 seconds, 3.9k eol.

**EOL resistance:** 3.9K ohms.

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

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

**Humidity range:** 10% to 93% noncondensing.

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

## FDM1(A) Dual Monitor Module

The FDM-1(A) Dual Monitor Module is intended for use in intelligent, two-wire systems. It provides two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open contact fire alarm and supervisory devices; or either normally open or nor-

mally 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  $\mu$ A (LED flashing).

**Maximum IDC wiring resistance:** 1,500 ohms.

**Maximum IDC Voltage:** 11 Volts.

**Maximum IDC Current:** 240  $\mu$ A

**EOL resistance:** 47K ohms.

**Maximum SLC Wiring resistance:** 40 Ohms.

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

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

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

#### **FDM-1(A) AUTOMATIC ADDRESSING**

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

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



#### **CAUTION:**

Avoid duplicating addresses on the system.

### **Installation**

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

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

### **Agency Listings and Approvals**

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

- **UL:** S635
- **ULC:** S635
- **FM Approved**
- **CSFM:** 7300-0028:202 (For Domestic only)
- **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)

### **Product Line Information**

**NOTE:** "A" or 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.



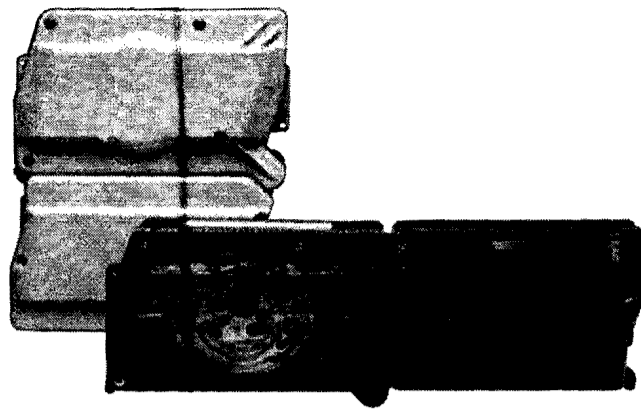
## → Intelligent Non-Relay Photoelectric Duct Smoke Detector

The InnovairFlex™ Series are the only duct smoke detectors flexible enough to fit configurations from square to rectangular and everything in between.

### Features

- Photoelectric, integrated low-flow technology (detector head sold separately)
- Air velocity rating from 100 ft/min to 4000ft/min (0.5m/s to 20.32m/sec)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature (-4°F to 158°F) and humidity (0% to 95% non-condensing)
- Patented sampling tube installs from front or back of the detector with no tools required
- New Cover tamper signal
- Increased wiring space with a newly added 3/4-inch conduit knockout
- Available space within housing to accommodate mounting of relay module
- Easily accessible code wheels on sensor head (sold separately)
- Clear cover for convenient visual inspection
- UL 268A listed
- Remote testing capability
- Requires com line power only
- NEMA Type 4 UL listed for non-hazardous indoor and outdoor applications (**DNRW only**)
- UV Resistant, UL listed housing and cover material (**DNRW only**)

### Agency Listings



InnovairFlex™

The InnovairFlex **DNR** intelligent non-relay photoelectric duct smoke detector and **DNRW** watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

DNRW duct smoke detector, with its NEMA 4 rating, is listed as a watertight enclosure providing protection against falling dirt, rain, and windblown dust, splashing and hose directed water, allowing operators to use the detector in the most extreme environments.

These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4000 feet per minute, temperatures of -4°F to 158°F, and a humidity range of 0 to 95 percent (non-condensing).

An improved cover design isolates the sensor head from the low-flow feature for simple maintenance. A cover tamper feature was added to indicate a trouble signal for a removed or improperly installed sensor cover. The InnovairFlex housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of relay module.

The InnovairFlex duct smoke detector can be customized to meet local codes and specifications without additional wiring. The new innovairFlex product line is compatible with all previous Innovair models, including remote test accessories.

**WARNING:** Duct smoke detectors have specific limitations.

DUCT SMOKE DETECTORS ARE:

**NOT** a substitute for an open area smoke detector,  
**NOT** a substitute for early warning detection, and  
**NOT** a replacement for a building's regular fire detection system.  
Refer to NFPA 72 and 90A for additional duct smoke detector application information.

## InnovairFlex Duct Smoke Detector Specifications

### Architectural/Engineering Specifications

The air duct smoke detector shall be a System Sensor InnovairFlex™ DNR Intelligent Non-Relay Photoelectric Duct Smoke Detector and DNRW Watertight NEMA4 Duct Smoke Detector. The detector housing shall be UL listed per UL 268A specifically for use in air handling systems. The flexible housing of the duct smoke detector fits both square and rectangular footprints. The detector shall operate at air velocities of 100 ft/min to 4000 ft/min (0.5 m/sec to 20.32 m/sec). The unit shall be capable of providing a trouble signal in the event that the sensor cover is removed or improperly installed. It shall be capable of local testing via magnetic switch or remote testing using the RTS451KEY/RTS151KEY remote test station. Terminal connections shall be of the strip and clamp method suitable for 12–18 AWG wiring.

### Physical Specifications

<b>Size: (Rectangular)</b>	14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth
<b>(Square)</b>	7.75 in (19.7cm) Length; 9 in (22.9cm) Width ; 2.5 in (6.35cm) Depth
<b>Weight:</b>	1.6 lb (0.73 kg)
<b>Environmental Rating:</b>	NEMA4 (DNRW only)
<b>Operating Temperature Range:</b>	-4°F to 158°F (-20°C to 70°C)
<b>Storage Temperature Range:</b>	-22°F to 158°F (-30°C to 70° C)
<b>Operating Humidity Range:</b>	0% to 95% relative humidity (non-condensing)
<b>Air Duct Velocity:</b>	100 to 4000 ft/min (0.5 to 20.32 m/s)
<b>DCOIL (if included):</b>	17.5 – 26.4 VDC, 95 mA max

### Electrical Ratings

Please see detector head installation manual for electrical specifications

### Accessory Current Loads at 24 VDC

Device	Standby	Alarm
RA400Z/RA100Z	0 mA	12 mA Max.
RTS451/RTS451KEY	0 mA	12 mA Max.
RTS151/RTS151KEY		

## Installing the InnovairFlex Sampling Tube

The InnovairFlex sampling tube may be installed from the front or back of the detector. The tube locks securely into place and can be removed by releasing the front or rear locking tab (front locking tab shown below right).

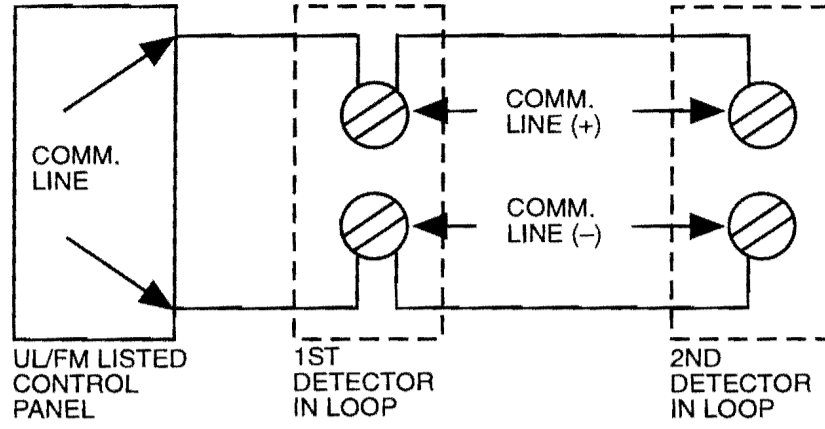


A05-0422-003

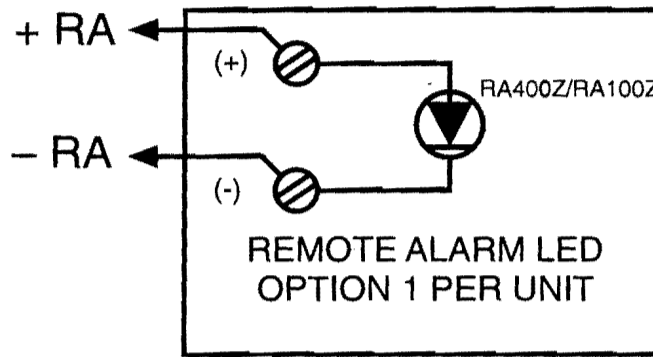


## Wiring for Intelligent Non-Relay Duct Smoke Detector

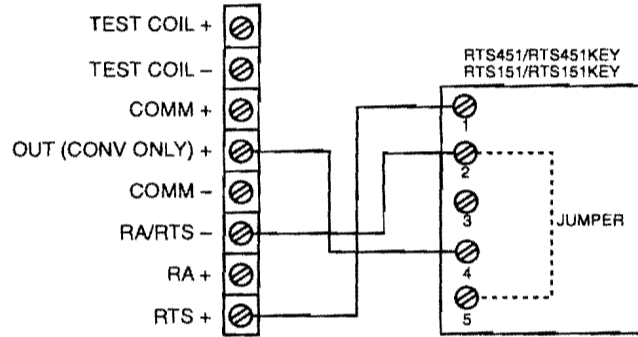
System wiring diagram for DNR:



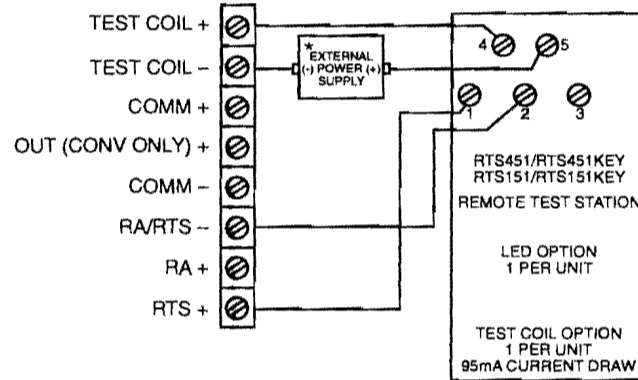
DNR to RA400Z/RA100Z:



DNR to RTS451/RTS451KEY/RTS151/RTS151KEY with "R" Remote Test Capable Detector Head Option::



DNR to RTS451/RTS451KEY/RTS151/RTS151KEY with DCOIL Option\*:

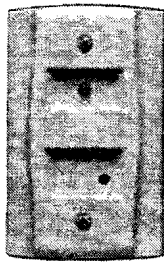


### \*Important Notes

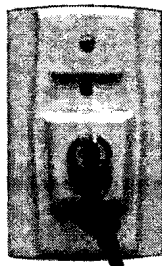
- The use of either RTS451/RTS151 or RTS451KEY/RTS151KEY requires the installation of an accessory coil, DCOIL, sold separately. Please refer to the DNR or DNRW installation manual for more information.
- The RTS451/RTS451KEY/RTS151/RTS151KEY test coil circuit requires an external 24 VDC power supply which must be UL listed.

## Accessories

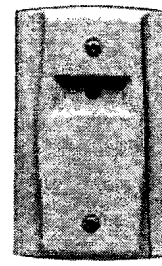
System Sensor provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detector accessories are UL listed.



RTS151 UL S2522



RTS151KEY UL S2522



RA100Z UL S2522

## Ordering Information

Part No.	Description
DNR	Intelligent non-relay photoelectric low-flow duct smoke detector
DNRW	Watertight intelligent non-relay photoelectric low-flow duct smoke detector
<b>Accessories</b>	
Dcoil	Remote test coil required with RTS451/RTS451KEY/RTS151/RTS151KEY
DST1	Metal sampling tube duct width up to 1ft (0.3m)
DST1.5	Metal sampling tube duct widths 1 ft to 2 ft (0.3 to 0.6 m)
DST3	Metal sampling tube duct widths 2 ft to 4 ft (0.6 to 1.2 m)
DST5	Metal sampling tube duct widths 4 ft to 8 ft (1.2 to 2.4 m)
DST10	Metal sampling tube duct widths 8 ft to 12 ft (2.4 to 3.7 m)
DH4000E-1	Weatherproof enclosure
ETX	Metal exhaust tube duct width 1ft (0.3m)
M02-04-00	Test magnet
P48-21-00	End cap for metal sampling tubes
RA400Z/RA100Z	Remote annunciator alarm LED
RTS451/RTS151	Remote test station
RTS451KEY/RTS151KEY	Remote test station with key lock



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

©2010 System Sensor  
Product specifications subject to change without notice. Visit [systemsensor.com](http://systemsensor.com) for  
current product information, including the latest version of this data sheet.  
A05-0472-004 • 2/10 • #2308

## → FCM-1(A) & FRM-1(A) Series

### Control and Relay Modules

**NOTIFIER**<sup>®</sup>  
by Honeywell

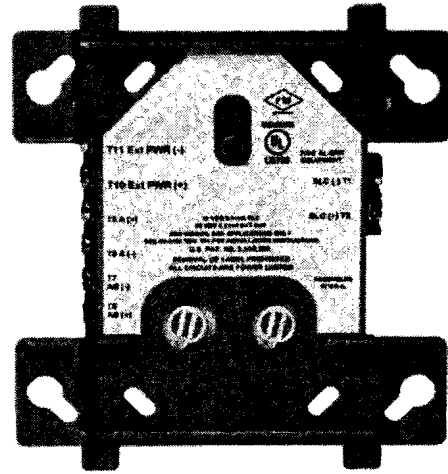
Intelligent / Addressable Devices

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



FCM-1(A)

#### Features

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

#### Applications

The FCM-1(A) is used to switch 24 VDC audible/visual power, high-level audio (speakers), or control telephone devices. The FRM-1(A) may be programmed to operate dry contacts for applications such as door holders or Air Handling Unit shut-down, 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<sup>®</sup> releasing applications.

#### Construction

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

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

#### Operation

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

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

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

#### Specifications for FCM-1(A)

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

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

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

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

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

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

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

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

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

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

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

### Specifications for FRM-1(A)

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

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

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

**EOL resistance:** not used.

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

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

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

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

### Agency Listings and Approvals

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

- **UL:** S635
- **ULC:** S3705 (A version only)
- **FM Approved**
- **CSFM:** 7300-0028:202, 7300-0028:219
- **MEA:** 14-00-E
- **FDNY:** COA #6038, #6026

### 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.*

Notifier® and FlashScan® are registered trademarks of Honeywell International Inc.  
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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

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



Made in the U.S. A.

# ➔ Duct Smoke Detector Accessories

for Notifier/System Sensor Products



Miscellaneous

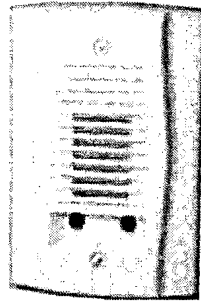
### General

Duct smoke detector accessories add functionality to the duct smoke system by allowing quick, convenient inspections at eye level and effective audible and visual notification options. All System Sensor duct smoke detectors and accessories are UL listed.

### Specifications

#### APA151 PIEZO ANNUNCIATOR

The APA151 piezo annunciator, which replaces the APA451 with a new, improved look, provides an audible alarm signal, a red LED to indicate alarm status, and a green LED to indicate power status. It is intended for use with System Sensor 4-wire conventional duct smoke detector applications without a system control panel, to comply with NFPA 90A.

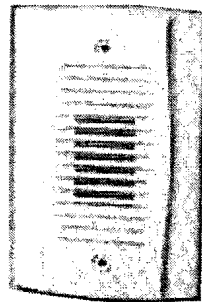


APA151.wmf

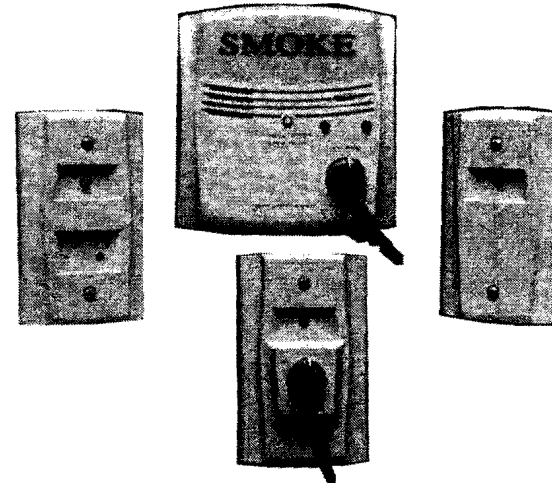
APA151 Piezo Annunciator	
Voltage	Regulated 24 VDC
Operating Voltage	16 to 33 VDC
Maximum Alarm Current	30 mA
Temperature Range	32°F to 120°F (0°C to 49°C)
Relative Humidity	10 to 93%, non-condensing
Wire Gauge	12 to 18 AWG
Dimensions	4.6" H x 2.9" W x .45" D

#### MHR/MHW MINI-HORNS

The MHR and MHW SpectrAlert® Advance mini-horns feature temporal or continuous tones at high and low volume settings. Their small footprint allows mounting to single-gang back boxes for applications where a small device is desired.



MHR.wmf, MHW.wmf

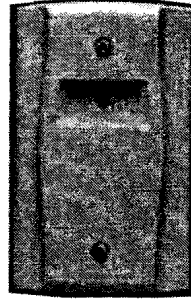


60535cov.wmf

MHR/MHW SpectrAlert Advance Mini-Horns	
Voltage	Regulated 12 DC or FWR (Full Wave Rectified) or Regulated 24 VDC or FWR
Operating Voltage	8 to 33 VDC (9 to 33 VDC with Sync-Circuit™ Module)
Sounder Current Draw	22 mA RMS max. at 8 to 17.5 Volts DC 17 mA RMS max. at 8 to 17.5 Volts FWR 29 mA RMS max. at 16 to 33 Volts DC 25 mA RMS max. at 16 to 33 Volts FWR
Temperature Range	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Nominal Sounder Frequency	3 kHz
Wire Gauge	12 to 18 AWG
Dimensions	4.6"H x 2.9"W x 0.45"D

**RA100Z/RA100ZA REMOTE ANNUNCIATORS**

The RA100Z and RA100ZA remote annunciators are designed for both conventional and intelligent applications. Their red LED provides visual indication of an alarm condition.

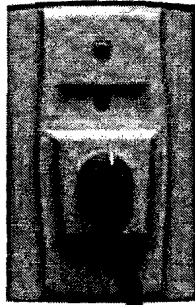
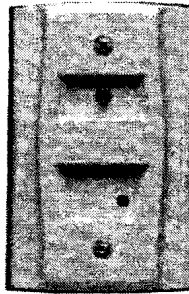


RA100Z.wmf

RA100Z/RA100ZA Remote Annunciator	
Voltage Range	Conventional System: 3.1 to 32 VDC Intelligent System: 18 to 32 VDC
Maximum Alarm Current	10 mA
Dimensions	4.6"H x 2.8"W x 1.3"D

**RTS151/RTS151KEY REMOTE TEST STATIONS**

The RTS151 and RTS151KEY remote test stations are automatic fire detector accessories designed to test duct smoke detectors from a convenient location. For 4-wire detectors, the RTS151KEY test station features a multi-colored LED that alternates between steady green and red. For 2-wire detectors, the LED illuminates red for alarm.



RTS151.wmf, RTS151KEY.wmf

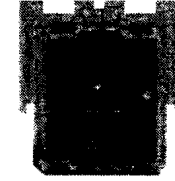
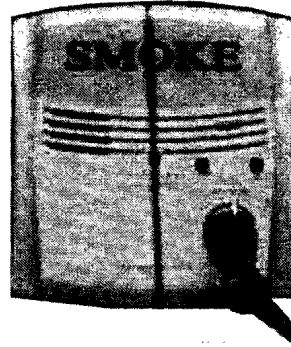
➔ RTS151 Remote Test Station	
Power Requirements	Alarm LED 2.8 to 32 VDC, 10 mA max. Total Current: 95 mA max.
Test Switch	10 VA @ 32 VDC
Reset Switch	10 VA @ 32 VDC
Alarm Response Time	40 seconds max.
Temperature Range	14°F to 140°F (-10°C to 60°C)
Relative Humidity	95% non-condensing
Wire Gauge	14 to 18 AWG
Dimensions	4.8"H x 2.9W x 1.4"D

**RTS151KEY Remote Test Station with Key**

Power Requirements	Power LED (Green): 14 to 35 VDC, 12 mA max. Alarm LED (RED): 2.8 to 32 VDC, 12 mA max.
Alarm Response Time	40 seconds max.
Temperature Range	14°F to 140°F (-10°C to 60°C)
Relative Humidity	95% non-condensing
Wire Gauge	14 to 18 AWG
Dimensions	4.6"H x 2.75W x 1.8"D

**RTS2/RTS-AOS MULTI-SIGNALLING ACCESSORIES**

The RTS2 and RTS2-AOS multi-signaling accessories are designed to work with InnovairFlex 4-wire conventional duct smoke detectors. These accessories include a key switch that can be used to select one of two connected sensors to be tested, reset, or both by a push button switch. They also enable sensitivity measurements using the SENS-RDR sensitivity reader (sold separately). The AOS (Add-On Strobe) is an optional accessory included with the RTS2-AOS model.



RTS-AOS.wmf, AOS.wmf

**RTS2 and RTS-AOS Multi-signaling Accessory**

Voltage	20 to 29 VDC
Power Requirements	Standby: 3.0 mA max. Trouble: 16.0 mA max. Alarm without Strobe: 30 mA max. Alarm with Strobe: 55 mA max.
Sounder	85 dBA at 10 ft.
Temperature Range	14°F to 140°F (-10°C to 60°C)
Relative Humidity	95% non-condensing
Wire Gauge	14 to 22 AWG
Dimensions	4.8"W x 5.3"H x 1.6"D

---

### Product Line Information

**APA151:** Piezo Annunciator

**MHR:** Mini-Horn, Red

**MHW:** Mini-Horn, White

**RA100Z/RA100ZA:** Remote Annunciator

**RTS151:** Remote Test Station

**RTS151KEY:** Remote Test Station with Key

**RTS2:** Multi-signaling Accessory

**AOS:** Add-On Strobe

**RTS2-AOS:** Multi-Signaling Accessory

### 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 products. 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: S4011**
- **FM Approved**
- **CSFM: 7135-1653:196**

FlashScan®, NOTIFIER® and System Sensor® are registered trademarks of Honeywell International Inc.  
©2009 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

**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.



Made in the U.S. A.

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



## → FDU-80

### 80 Character Liquid Crystal Display

**NOTIFIER**<sup>®</sup>  
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.



#### 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.

©2009 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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.

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

## → FCPS-24S6(C/E) & FCPS-24S8(C/E)

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



Power Supplies

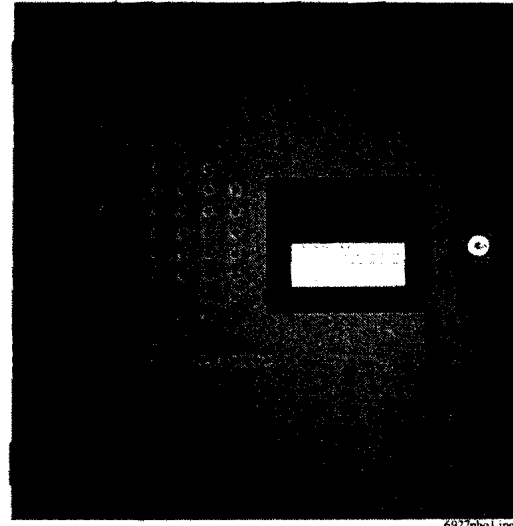
#### General

The FCPS-24S6E (6-amp) and FCPS-24S8E (8-amp) are remote power supplies with battery charger. The FCPS-24S6/-24S8 may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may be used as stand-alone supplies. Primary applications include notification appliance (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<sup>2</sup>" 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).



6927pb01.jpg

- 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<sup>2</sup>) 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<sup>2</sup>) 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.



# System Power Requirements

Notifier NFS2-640 Fire Alarm Control Panel

Protected Premises: <u>2 Monument Square FACP</u>	Date: <u>10/1/2010</u>
Address: _____	
City: <u>Portland</u>	State: <u>Maine</u> Zip: _____
Prepared By: <u>Norris Inc.</u> Phone: _____	
Address: <u>2257 West Broadway</u> Email: _____	
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

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

Current required by source to power the fire alarm system.

**Primary Standby Load**  Amps

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

**Primary Alarm Load**  Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements**  Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
<b>Secondary Standby Load</b>	x	<b>Required Standby Time</b>	
1.994 A		24 hours	47.85
<b>Secondary Alarm Load</b>	x	<b>Required Alarm Time (hours)</b>	
7.281 A		15 Minutes	
		0.250 hours	1.82
<b>Total Secondary Load</b>			49.67
Derating factor			x 1.1
<b>Secondary Load Requirements (Amp Hours)</b>			<b>54.64</b> AH

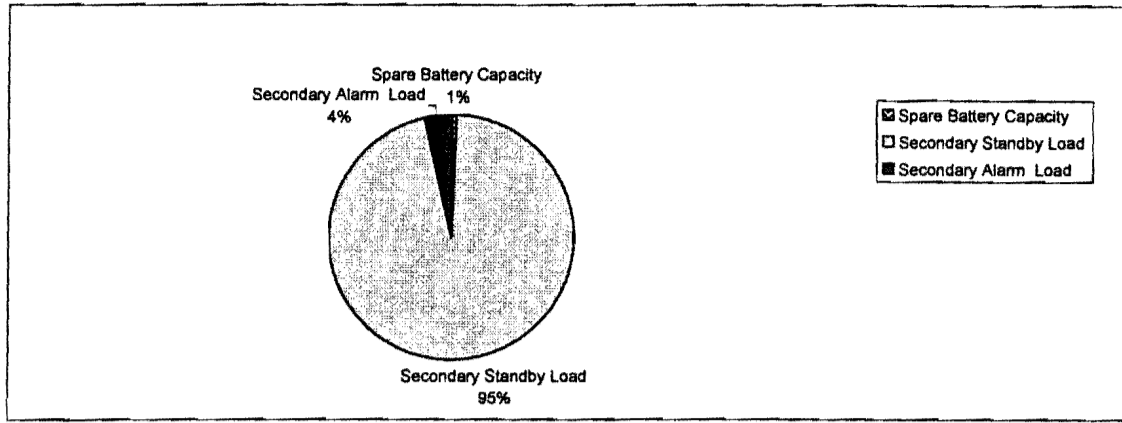
**Battery Selection**  Amp Hours

Select batteries from the list below.

- Two
  Four (two 12VDC sets in parallel)

**Battery Distribution Chart**

Shows amp-hour distribution of your selections.

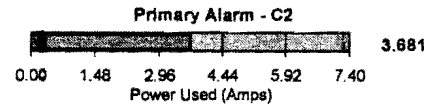
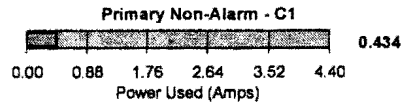


**Comments**

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	0.36	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	52.64	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	2.00	Secondary Alarm Load (AH) * Derating Factor

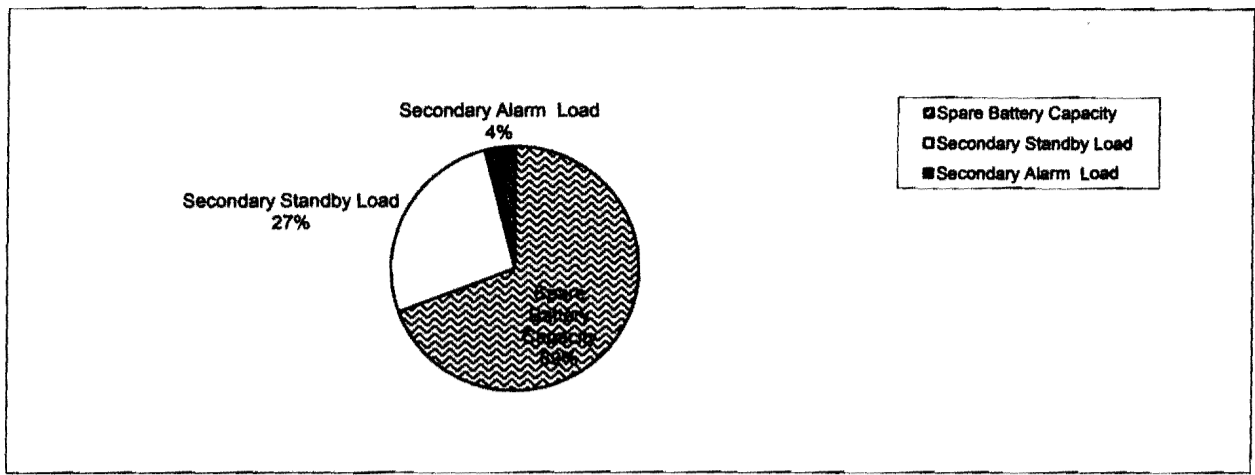
Total Current	
C1	0.434 A
C2	3.681 A
C3	1.994 A
C4	7.281 A



Device	C1 - Non-Alarm Current			C2 - Alarm Current			C3 - Standby Current					
	Qty	Draw	Total	Qty	Draw	Total	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
# of NACs in use	4	x	0.03500	0.14000	4	x	0.03500	0.14000	4	x	0.03500	0.14000
DAA-5025/DAA-5070	4	x	0.00000	0.00000	4	x	0.00000	0.00000	4	x	0.38000	1.52000

**Battery Distribution Chart**

Shows amp-hour distribution of your selections.



**Comments**

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

Spare Battery Capacity	4.85	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.28	Secondary Alarm Load (AH) * Derating Factor

Protected Premises: <u>2 Monument Square FCPS #2</u>		Date: <u>10/1/2010</u>	
Address: _____			
City: <u>Portland</u>	State: <u>Maine</u>	Zip: _____	
Prepared By: <u>Norris Inc</u>		Phone: _____	
Address: <u>2257 West Broadway</u>		Email: _____	
City: <u>South Portland</u>	State: <u>Maine</u>	Zip: <u>04106</u>	

**AC Branch Current Requirements**      2.70 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**      1.38 Amps  
 Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements**      2.29 Amp Hours  
 Total Secondary Load from the calculation table below.

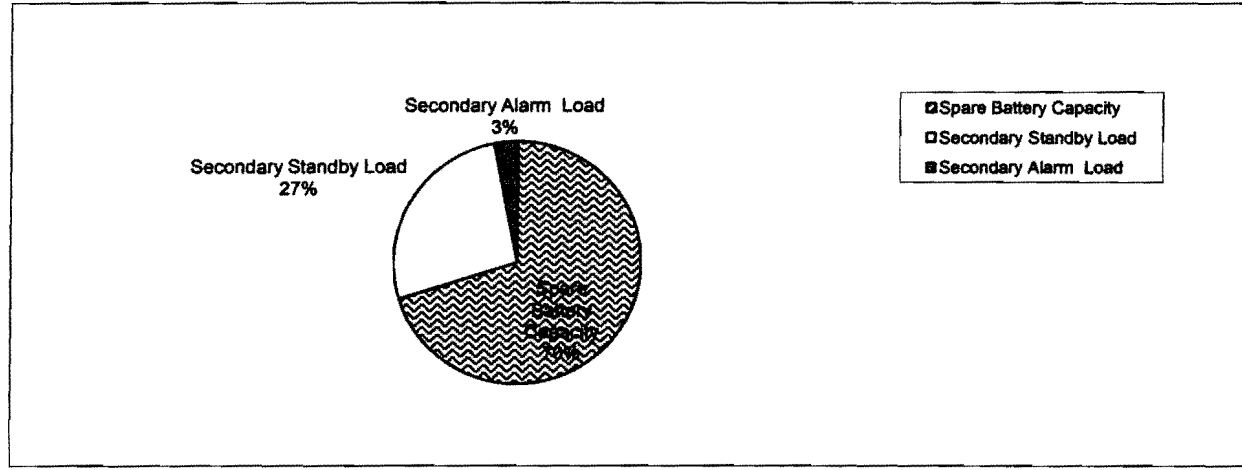
Current Draw	Time (hours)	Total (AH)
<b>Secondary Standby Load</b> 0.065 A	x Required Standby Time 24 hours	1.56
<b>Secondary Alarm Load</b> 1.379 A	x Required Alarm Time (hours) 0.250 hours	0.34
<b>Auxiliary Power Supply Load</b> 0.000 A	x Required Alarm Time (hours) 0.004 hours	0.00
<b>Total Secondary Load</b>		1.90
Derating factor		x 1.2
<b>Secondary Load Requirements</b>		<b>2.29</b> AH

**Battery Selection**      7 Amp Hours  
 Select batteries from the list below.  
7.0 AH BAT-1270 Battery (12 volt)  
 Two       Four (two 12VDC sets in parallel)



**Battery Distribution Chart**

Shows amp-hour distribution of your selections.



**Comments**

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

Spare Battery Capacity	4.91	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.22	Secondary Alarm Load (AH) * Derating Factor

Total Current	
<b>C1</b>	<b>0.091 A</b>
<b>C2</b>	<b>0.717 A</b>
<b>C3</b>	<b>0.065 A</b>

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 - Non Alarm Current				C2 - Alarm Current				C3 - Standby Current					
	Qty		Draw	Non-Alarm	Qty		Draw	Alarm	Qty		Draw	Standby		
FCPS-24S8 Main Circuit Board	1	x	0.09100	0.09100	1	x	0.14500	0.14500	1	x	0.06500	0.06500		
E50-2430MCW-FR	1	x	0.00000	0.00000	1	x	0.09200	0.09200	1	x	0.00000	0.00000		
E50-2415MCW-FR	6	x	0.00000	0.00000	6	x	0.06000	0.36000	6	x	0.00000	0.00000		
RSS-2415MCW-FR	2	x	0.00000	0.00000	2	x	0.06000	0.12000	2	x	0.00000	0.00000		
<b>Total Non-Alarm Load:</b>				<b>0.091</b>	<b>Total Alarm Load:</b>				<b>0.717</b>	<b>Total Standby Load:</b>				<b>0.065</b>

**FCPS-24s8 Power Supply**

Protected Premises: <u>2 Monument Square FCPS #4</u>	Date: <u>10/1/2010</u>
Address:	
City: <u>Portland</u>	State: <u>Maine</u> Zip: _____
Prepared By: <u>Norris Inc</u> Phone: _____	
Address: <u>2257 West Broadway</u>	Email: _____
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

**AC Branch Current Requirements** 2.70 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** 1.26 Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements** 2.25 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
<b>Secondary Standby Load</b>	x	<b>Required Standby Time</b>	
0.065 A		24 hours	1.56
<b>Secondary Alarm Load</b>	x	<b>Required Alarm Time (hours)</b>	
1.257 A		0.250 hours	0.31
<b>Auxiliary Power Supply Load</b>	x	<b>Required Alarm Time (hours)</b>	
0.000 A		0.084 hours	0.00
<b>Total Secondary Load</b>			1.87
Derating factor			x 1.2
<b>Secondary Load Requirements</b>			<b>2.25</b> AH

**Battery Selection** 7 Amp Hours

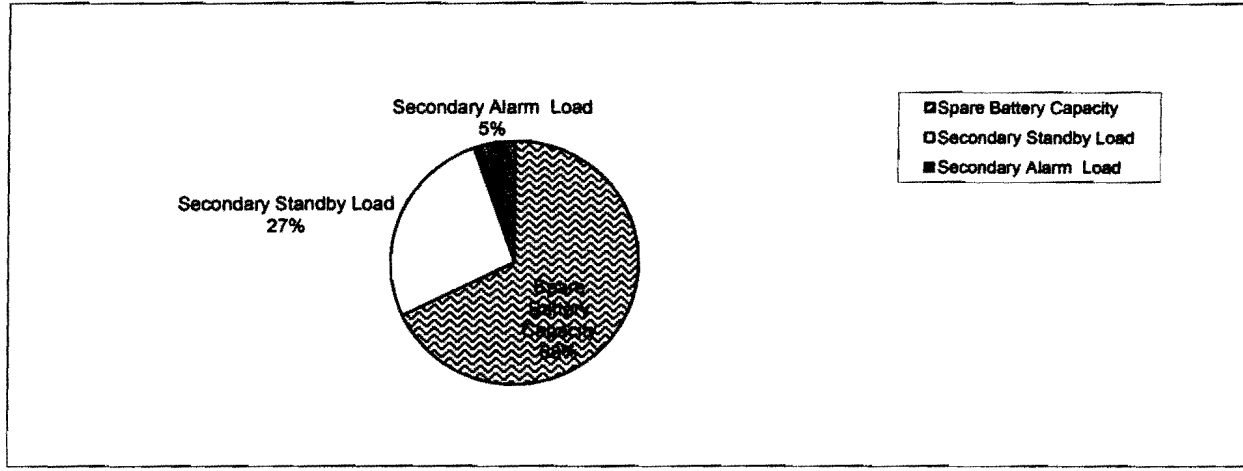
Select batteries from the list below.

7.0 AH BAT-1270 Battery (12 volt)

- Two     
  Four (two 12VDC sets in parallel)

**Battery Distribution Chart**

Shows amp-hour distribution of your selections.



**Comments**

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

Spare Battery Capacity	4.75	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.38	Secondary Alarm Load (AH) * Derating Factor

Total Current	
<b>C1</b>	<b>0.091 A</b>
<b>C2</b>	<b>1.257 A</b>
<b>C3</b>	<b>0.065 A</b>

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 - Non-Alarm Current				C2 - Alarm Current			C3 - Standby Current				
	Qty		Draw	Non-Alarm	Qty	Draw	Alarm	Qty	Draw	Standby		
FCPS-24S8 Main Circuit Board	1	x	0.09100	0.09100	1	x	0.14500	0.14500	1	x	0.06500	0.06500
E50-2415MCW-FR	9	x	0.00000	0.00000	9	x	0.06000	0.54000	9	x	0.00000	0.00000
RSS-2430MCW-FR	1	x	0.00000	0.00000	1	x	0.09200	0.09200	1	x	0.00000	0.00000
RSS-2415MCW-FR	8	x	0.00000	0.00000	8	x	0.06000	0.48000	8	x	0.00000	0.00000
<b>Total Non-Alarm Load:</b>				<b>0.091</b>	<b>Total Alarm Load:</b>			<b>1.257</b>	<b>Total Standby Load:</b>			<b>0.065</b>

Protected Premises: <u>2 Monument Square FCPS #5</u>	Date: <u>10/1/2010</u>
Address: _____	
City: <u>Portland</u>	State: <u>Maine</u> Zip: _____
Prepared By: <u>Norris Inc</u> Phone: _____	
Address: <u>2257 West Broadway</u>	Email: _____
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

**AC Branch Current Requirements** 2.70 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** 1.17 Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements** 2.22 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
<b>Secondary Standby Load</b>	x	<b>Required Standby Time</b>	
0.065 A		24 hours	1.56
<b>Secondary Alarm Load</b>	x	<b>Required Alarm Time (hours)</b>	
1.165 A		0.250 hours	0.29
<b>Auxiliary Power Supply Load</b>	x	<b>Required Alarm Time (hours)</b>	
0.000 A		0.084 hours	0.00
<b>Total Secondary Load</b>			<b>1.85</b>
Derating factor			x 1.2
<b>Secondary Load Requirements</b>			<b>2.22</b> AH

**Battery Selection** 7 Amp Hours

Select batteries from the list below.

7.0 AH BAT-1270 Battery (12 volt)

- Two
  Four (two 12VDC sets in parallel)

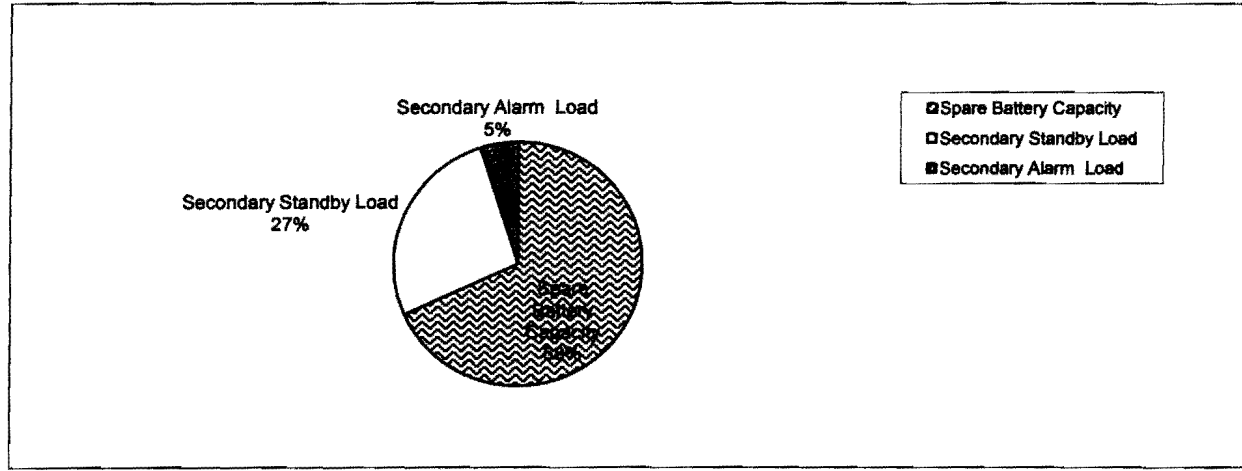
Total Current	
C1	0.091 A
C2	1.165 A
C3	0.065 A

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 - Non-Alarm Current				C2 - Alarm Current				C3 - Standby Current					
	Qty		Draw	Non-Alarm	Qty		Draw	Alarm	Qty		Draw	Standby		
FCPS-24S8 Main Circuit Board	1	x	0.09100	0.09100	1	x	0.14500	0.14500	1	x	0.06500	0.06500		
E50-2415MCW-FR	12	x	0.00000	0.00000	12	x	0.06000	0.72000	12	x	0.00000	0.00000		
RSS-2415MCW-FR	5	x	0.00000	0.00000	5	x	0.06000	0.30000	5	x	0.00000	0.00000		
<b>Total Non-Alarm Load:</b>				<b>0.091</b>	<b>Total Alarm Load:</b>				<b>1.165</b>	<b>Total Standby Load:</b>				<b>0.065</b>

### Battery Distribution Chart

Shows amp-hour distribution of your selections.



### Comments

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

Spare Battery Capacity	4.78	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.35	Secondary Alarm Load (AH) * Derating Factor



Total Current	
C1	0.091 A
C2	0.925 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 - Non-Alarm Current				C2 - Alarm Current				C3 - Standby Current					
	Qty		Draw	Non-Alarm	Qty		Draw	Alarm	Qty		Draw	Standby		
FCPS-24S8 Main Circuit Board	1	x	0.09100	0.09100	1	x	0.14500	0.14500	1	x	0.06500	0.06500		
E50-2415MCW-FR	8	x	0.00000	0.00000	8	x	0.06000	0.48000	8	x	0.00000	0.00000		
RSS-2415MCW-FR	5	x	0.00000	0.00000	5	x	0.06000	0.30000	5	x	0.00000	0.00000		
<b>Total Non-Alarm Load:</b>				<b>0.091</b>	<b>Total Alarm Load:</b>				<b>0.925</b>	<b>Total Standby Load:</b>				<b>0.065</b>

Protected Premises: <u>2 Monument Square FCPS #6</u>	Date: <u>10/1/2010</u>
Address:	
City: <u>Portland</u>	State: <u>Maine</u> Zip: _____
Prepared By: <u>Norris Inc</u>	Phone: _____
Address: <u>2257 West Broadway</u>	Email: _____
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

**AC Branch Current Requirements** 2.70 Amps @ 120 VAC

Current required by source to power the fire alarm system.

**Primary Standby Load** 0.09 Amps

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

**Primary Alarm Load** 0.93 Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements** 2.15 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
<b>Secondary Standby Load</b>	x	<b>Required Standby Time</b>	
0.065 A		24 hours	1.56
<b>Secondary Alarm Load</b>	x	<b>Required Alarm Time (hours)</b>	
0.925 A		0.250 hours	0.23
<b>Auxiliary Power Supply Load</b>	x	<b>Required Alarm Time (hours)</b>	
0.000 A		0.084 hours	0.00
<b>Total Secondary Load</b>			1.79
<b>Derating factor</b>			x 1.2
<b>Secondary Load Requirements</b>			<b>2.15</b> AH

**Battery Selection** 7 Amp Hours

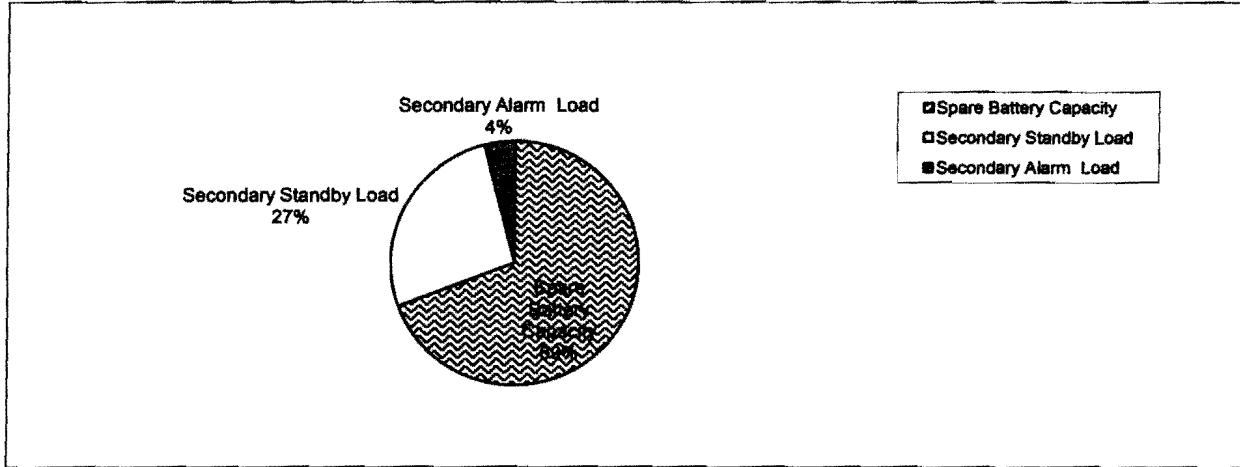
Select batteries from the list below.

7.0 AH BAT-1270 Battery (12 volt)

- Two     
  Four (two 12VDC sets in parallel)

**Battery Distribution Chart**

Shows amp-hour distribution of your selections.



**Comments**

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

Spare Battery Capacity	4.85	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.28	Secondary Alarm Load (AH) * Derating Factor

Protected Premises: <u>2 Monument Square FCPS #7</u>		Date: <u>10/1/2010</u>
Address: _____		
City: <u>Portland</u>	State: <u>Maine</u>	Zip: _____
Prepared By: <u>Norris Inc</u>		Phone: _____
Address: <u>2257 West Broadway</u>		Email: _____
City: <u>South Portland</u>	State: <u>Maine</u>	Zip: <u>04106</u>

**AC Branch Current Requirements**       Amps @ 120 VAC

Current required by source to power the fire alarm system.

**Primary Standby Load**       Amps

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

**Primary Alarm Load**       Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements**       Amp Hours

Total Secondary Load from the calculation table below.

Current Draw	x	Time (hours)	Total (AH)
<b>Secondary Standby Load</b> 0.065 A	x	<b>Required Standby Time</b> 24 hours	1.56
<b>Secondary Alarm Load</b> 1.225 A	x	<b>Required Alarm Time (hours)</b> 0.250 hours	0.31
<b>Auxiliary Power Supply Load</b> 0.000 A	x	<b>Required Alarm Time (hours)</b> 0.084 hours	0.00
<b>Total Secondary Load</b>			1.87
<b>Derating factor</b>			x 1.2
<b>Secondary Load Requirements</b>			<b>2.24</b> AH

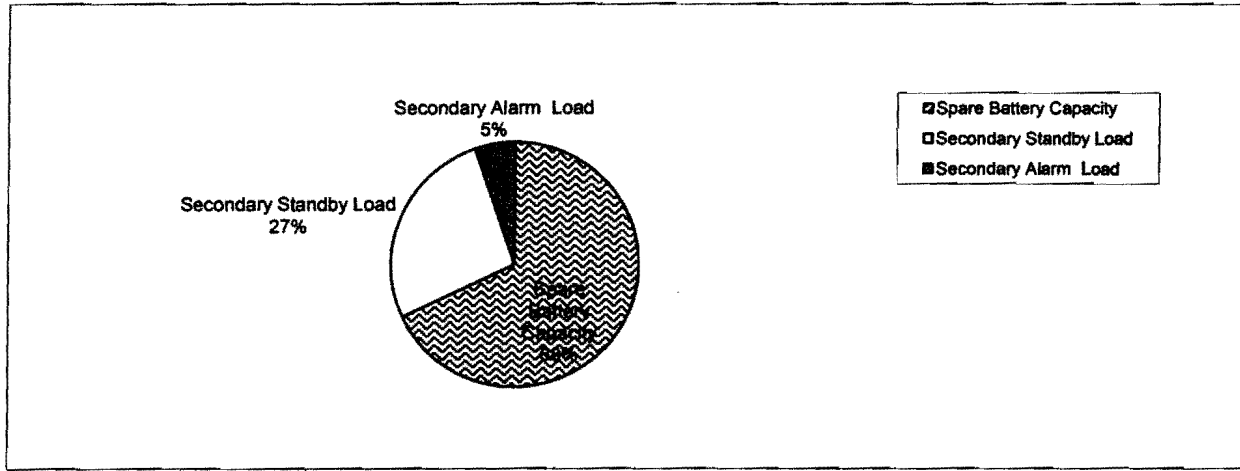
**Battery Selection**       Amp Hours

Select batteries from the list below.

- Two     
  Four (two 12VDC sets in parallel)

**Battery Distribution Chart**

Shows amp-hour distribution of your selections.



**Comments**

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

Spare Battery Capacity	4.76	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	1.87	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.37	Secondary Alarm Load (AH) * Derating Factor

Total Current	
<b>C1</b>	<b>0.091 A</b>
<b>C2</b>	<b>1.225 A</b>
<b>C3</b>	<b>0.065 A</b>

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 - Non-Alarm Current				C2 - Alarm Current				C3 - Standby Current				
	Qty		Draw	Non-Alarm	Qty		Draw	Alarm	Qty	Draw	Standby		
FCPS-24S8 Main Circuit Board	1	x	0.09100	0.09100	1	x	0.14500	0.14500	1	x	0.06500	0.06500	
E50-2415MCW-FR	12	x	0.00000	0.00000	12	x	0.06000	0.72000	12	x	0.00000	0.00000	
RSS-2415MCW-FR	6	x	0.00000	0.00000	6	x	0.06000	0.36000	6	x	0.00000	0.00000	
<b>Total Non-Alarm Load:</b>				<b>0.091</b>	<b>Total Alarm Load:</b>				<b>1.225</b>	<b>Total Standby Load:</b>			<b>0.065</b>



# System Power Requirements

Notifier NFS2-640 Fire Alarm Control Panel

Protected Premises: <u>2 Monument Square FACP</u>	Date: <u>10/1/2010</u>
Address: _____	
City: <u>Portland</u>	State: <u>Maine</u> Zip: _____
Prepared By: <u>Norris Inc.</u> Phone: _____	
Address: <u>2257 West Broadway</u>	Email: _____
City: <u>South Portland</u>	State: <u>Maine</u> Zip: <u>04106</u>

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

Current required by source to power the fire alarm system.

**Primary Standby Load**  Amps

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

**Primary Alarm Load**  Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements**  Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
<b>Secondary Standby Load</b> 1.994 A	x	Required Standby Time	
		24 hours	47.85
<b>Secondary Alarm Load</b> 7.281 A	x	Required Alarm Time (hours)	
		15 Minutes	
		0.250 hours	1.82
Total Secondary Load			49.67
Derating factor			x 1.1
<b>Secondary Load Requirements (Amp Hours)</b>			<b>54.64</b> AH

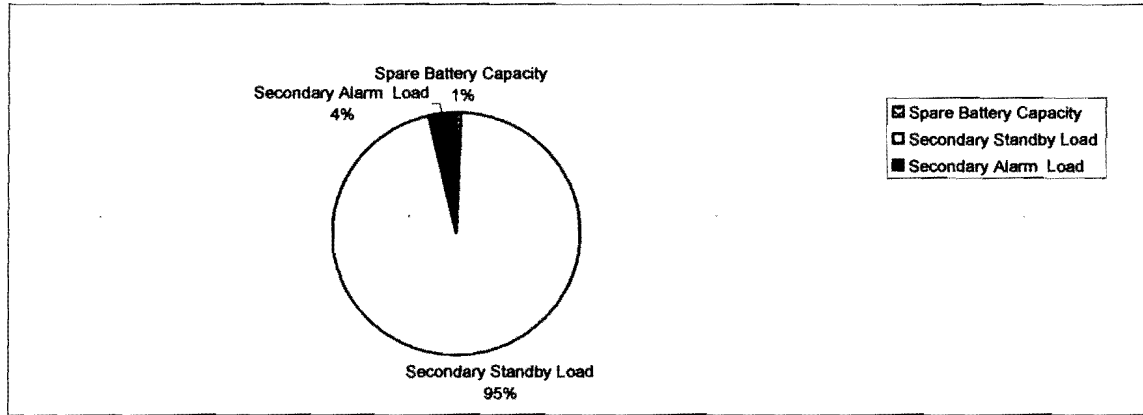
**Battery Selection**  Amp Hours

Select batteries from the list below.

- Two  Four (two 12VDC sets in parallel)

**Battery Distribution Chart**

Shows amp-hour distribution of your selections.



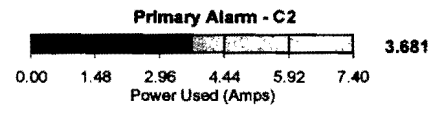
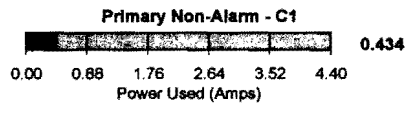
**Comments**

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	0.36	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	52.64	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	2.00	Secondary Alarm Load (AH) * Derating Factor



Total Current	
C1	0.434 A
C2	3.681 A
C3	1.994 A
C4	7.281 A



Device	C1 - Non-Alarm Current				C2 - Alarm Current				C3 - Standby Current			
	Qty		Draw	Total	Qty		Draw	Total	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
# of NACs in use	4	x	0.03500	0.14000	4	x	0.03500	0.14000	4	x	0.03500	0.14000
DAA-5025/DAA-5070	4	x	0.00000	0.00000	4	x	0.00000	0.00000	4	x	0.38000	1.52000

FSP-851	61	x	0.00036	0.02196					61	x	0.00036	0.02196		
FSP-851R	8	x	0.00030	0.00240					8	x	0.00030	0.00240		
FST-851	6	x	0.00030	0.00180					6	x	0.00030	0.00180		
NBG-12LX	20	x	0.00030	0.00600					20	x	0.00030	0.00600		
FCM-1	8	x	0.00030	0.00240					8	x	0.00030	0.00240		
FRM-1	20	x	0.00020	0.00400					20	x	0.00020	0.00400		
FMM-101	14	x	0.00038	0.00525					14	x	0.00038	0.00525		
SLC Loop Device Activation Current					1	x	0.40000	0.40000						
E50-2415MCW-FR	12	x	0.00000	0.00000	12	x	0.06000	0.72000	12	x	0.00000	0.00000		
E50-2430MCW-FR	3	x	0.00000	0.00000	3	x	0.09200	0.27600	3	x	0.00000	0.00000		
E50-2475MCW-FR	7	x	0.00000	0.00000	7	x	0.16500	1.15500	7	x	0.00000	0.00000		
E50-24110MCW-FR	2	x	0.00000	0.00000	2	x	0.22000	0.44000	2	x	0.00000	0.00000		
RSS-2415MCW-FR	5	x	0.00000	0.00000	5	x	0.06000	0.30000	5	x	0.00000	0.00000		
<b>Total Non-Alarm Load:</b>				<b>0.434</b>	<b>Total Alarm Load:</b>				<b>3.681</b>	<b>Total Standby Load:</b>				<b>1.994</b>

**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			3.681	3.681
APS-6R	0	x	0.000	
APS2-6R	0	x	0.000	
AA-30	0	x	3.000	
AA-120	0	x	7.300	
ACPS-2406	0	x	6.000	
FCPS-24S6	0	x	6.000	
FCPS-24S8	0	x	8.000	
DAA-5025/DAA-5070	4	x	0.900	3.600
ACPS-610	0	x	10.000	
Other Power Supply	0	x	0.000	
Other Power Supply	0	x	0.000	
<b>Total Standby Alarm Load:</b>				<b>7.281</b>



NAME 2 MONI  
SYS  
-ITAL

REVISION

# DEPARTMENT OF PORTLAND, MAINE

## Division of Building Inspections

### Original Receipt

Location of Work

Cost of Construction

Permit Fee

21 West 11.2  
11.2  
20 10

Building Fee  
Site Fee  
Certificate of Occupancy Fee

Building (IL)

Plumbing (IS)

Other

Electrical (I2)

Test

Site Plan (I2)

CBL: 32-16-1

Check #: 22133

No work

Total

**CITY OF PORTLAND, MAINE**  
**Department of Building Inspections**

**Original Receipt**

\_\_\_\_\_ 1. 19 \_\_\_\_\_ 20 11 \_\_\_\_\_

Received from E. M. I.

Location of Work 2151 ...

Cost of Construction \$ \_\_\_\_\_ Building Fee: \_\_\_\_\_

Permit Fee \$ \_\_\_\_\_ Site Fee: \_\_\_\_\_

Certificate of Occupancy Fee: \_\_\_\_\_

Total 800

Building (1L) \_\_\_\_\_ Plumbing (15) \_\_\_\_\_ Electrical (12) \_\_\_\_\_ Site Plan (U2) \_\_\_\_\_

Other \_\_\_\_\_

CBL: \_\_\_\_\_

Check #: 2502 Total Collected \$ 800


**No work is to be started until permit issued.  
Please keep original receipt for your records.**

Taken by: [Signature]

WHITE - Applicant's Copy  
YELLOW - Office Copy  
PINK - Permit Copy

Applicant's Copy

Permit issued.  
for your records.

REVISION 2	DATE:
REVISION 1	DATE:
REVISION 0 SUBMITTAL	DATE: 9/21/10
SYSTEM WIRING RISER	
PROJECT NAME 2 MONUMENT SQUARE	SCALE: NTS
	BY: CJC
	CK BY:
 Prepared For Tomorrow, Delivered Today 2257 W BROADWAY, SO PORTLAND, MAINE 04106	SAVED AS:

SYSTEM INPUTS		CONTROL UNIT ACTIVATION								SYSTEM OUTPUTS					REQUIRED FIRE SAFETY CONTROL										
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	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	IN-DUCT SMOKE DETECTOR	●	●					●	●	●		●								●					5
6	SPRINKLER WATERFLOW	●	●					●	●	●		●													6
7	SPRINKLER TAMPER SWITCH			●	●			●	●			●	●												7
8	FIRE ALARM AC POWER FAILURE					●	●	●	●					●											8
9	FIRE ALARM SYSTEM LOW BATTERY					●	●	●	●					●											9
10	OPEN CIRCUIT					●	●	●	●					●											10
11	GROUND FAULT					●	●	●	●					●											11
12	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●	●	●					●											12
13	ELEVATOR HEAT DETECTOR	●	●					●	●	●	●	●						●							13
14																									14
15																									15
16																									16
17																									17
18																									18
19																									19
20																									20
21																									21