

City of Portland, Maine - Building or Use Permit Application

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

Permit No: 10-0411	Issue Date:	CBL: 048 A008001
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Location of Construction: 122 PARK AVE	Owner Name: 122-124 PARK AVENUE LLC	Owner Address: PO BOX 7225	Phone:
Business Name:	Contractor Name: Norris, Inc.	Contractor Address: 2257 W Broadway, PO Box 2551 Sout	Phone 2078833473
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	Zone: R-6

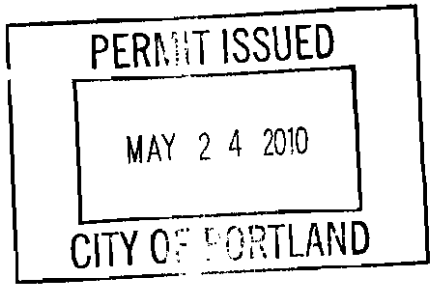
Past Use: Multi-unit - 20 Residential D.U.	Proposed Use: Multi-unit - install Fire Alarm 20 Residential D.U.	Permit Fee: \$80.00	Cost of Work: \$5,771.00	CEO District: 2	6,700 ⁺
		FIRE DEPT: w/conditions	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: R-2	Type: Fire Alarm

Proposed Project Description: install Fire Alarm	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i> 5/24/10
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: Idobson	Date Applied For: 04/26/2010	Zoning Approval
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- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- 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..

Special Zone or Reviews <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>[Signature]</i> 4/26/10	Zoning Appeal <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: <i>[Signature]</i>	Historic Preservation <input checked="" 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>[Signature]</i>
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CERTIFICATION

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SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

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Signature: *[Signature]* Date: 5/24/10

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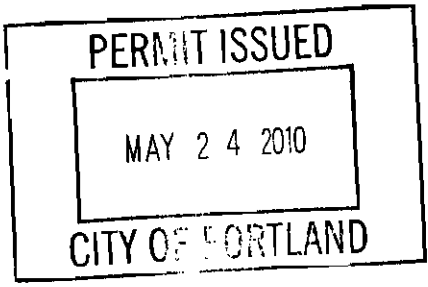
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RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK
CITY OF PORTLAND

Please Read
Application And
Notes, If Any,
Attached

BUILDING INSPECTION

PERMIT

PERMIT ISSUED
Permit Number: 100411
MAY 24 2010
CITY OF PORTLAND

This is to certify that 122-124 PARK AVENUE LL Norris, IL

has permission to install Fire Alarm

AT 122 PARK AVE

City of Portland - 048 A008001

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 closed-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] (202)

Health Dept. _____

Appeal Board _____

Other _____
Department Name

[Signature] 5/24/10
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

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Proposed Project Description: install Fire Alarm		FIRE DEPT: 4 conditions 5/20/10 Signature: <i>Bjorn</i>	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: R-2 Type: Fire Alarm IBL-2003 Signature: <i>JMB</i> 5/24/10	

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

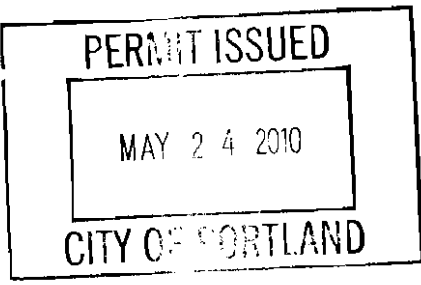
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 Date Applied For: 04/26/2010

Zoning Approval

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

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Business Name:	Contractor Name: Norris, Inc.	Contractor Address: 2257 W Broadway, PO Box 2551 Sout	Phone (207) 883-3473
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	

Proposed Use: Multi-unit - 20 residential dwelling units - install Fire Alarm	Proposed Project Description: install Fire Alarm
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Dept: Zoning Status: Approved with Conditions Reviewer: Marge Schmuckal Approval Date: 04/26/2010

Note: Ok to Issue:

- 1) This is NOT an approval for an additional dwelling unit. You SHALL NOT add any additional kitchen equipment including, but not limited to items such as stoves, microwaves, refrigerators, or kitchen sinks, etc. Without special approvals.
- 2) This property shall remain a twenty (20) residential unit family dwelling. Any change of use shall require a separate permit application for review and approval.
- 3) 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: 05/24/2010

Note: Ok to Issue:

- 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, commercial hood exhaust 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: 05/20/2010

Note: Ok to Issue:

- 1) The entire structure shall comply with NFPA 101 "Existing Apartments". The front and rear exit stair enclosures shall be seperated with fire rated construction.
- 2) Installation of a Fire Alarm system requires a Knox Box to be installed per city crdinance
- 3) Central Station monitoring for addressable fire alarm systems shall be by point.
- 4) As-built documents shall be submitted in pdf to the Building Inspections Office upon completion of job.
- 5) All smoke detectors and smoke alarms shall be photoelectric. Carbon Monoxide detectors are required in the dwelling units by State law.
- 6) System acceptance and commissioning must be co-ordinated with the Fire Department. Call 874-8703 to schedule.
- 7) All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS". Records cabinate, FACP, annunciator(s), and pull stations shall be keyed alike.
- 8) Dwelling unit heat detectors may be conventional devices provided they are monitored via an indication addressable relay module for alarm, integrity and power. The relay module shall be indicating, labeled and located outside the primary dwelling unit door. End of Line "EOL" resistors shall be labeled on the device where they are located.
- 9) 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. No master box is required.

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Comments:

4/29/2010-wallaceb: Awaiting complete resubmittal. Must be addressable system. Heat detectors required in dwelling units. Disconnect switch must not be a key switch. Must be in panel. Disconnect switch should be a supervisory signal, not trouble.

BUILDING PERMIT INSPECTION PROCEDURES

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

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the City of Portland Inspection 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 with construction.**

 X **Final inspection required at completion of work.**

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

Department of Building Inspections

Original Receipt

4-26 2010

Received from

Harris LLC

Location of Work

122-124 Park Ave

Cost of Construction \$ _____

Building Fee: _____

Permit Fee \$ _____

Site Fee: _____

Certificate of Occupancy Fee: _____

Total: 80

Building (IL) _____

Plumbing (L5) _____

Electrical (I2) _____

Site Plan (U2) _____

Other _____

CBL: 1227 4848

Check #: 28613

Total Collected \$ 80

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

Taken by: S. J.

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



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: 124 PARK AVE CBL: 48-AS

Exact location: (within structure) (SAME)

Type of occupancy(s) (NFPA & ICC): APARTMENT BUILDING

Building owner: 122-124 PARK AVE, LLC

System Designer (point of contact): DAVE GAGNON, NORRIS, INC

Designer phone: (207) 883-3473 E-mail: dave.g@norrisinc.com

Installing contractor: NORRIS, INC Certificate of Fitness No: 1008

Contractor phone: (207) 883-3473 E-mail: dave.g@norrisinc.com

This is a new application: YES NO

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

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 comm/alarm)

\$

COST OF WORK: 5771.00

PERMIT FEE: 80
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

APR 26 2010

The designer shall be the responsible party for this application. Download a new Building Inspections www.portlandmaine.gov/fire for every submittal. Submit all plans on 11X17 copies or electronic PDF's 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.

Applicant signature: Peter R Date: 4/26/10



PO Box 2551
2257 West Broadway
South Portland, ME 04106

1.800.370.3473
Fax 207.879.0540

www.norrisinc.com

SUBMITTAL PACKAGE

Project: 124 Park Ave.

System: Fire Alarm System

Submitted Norris Inc.

**By: 2257 West Broadway
South Portland, Maine 04106
Telephone: (800) 370-3473**

Project Manager: Corey Chapman

**Electrical Contractor: Norris Inc.
2257 West Broadway
South Portland, Maine 04106**

Date: 4/22/10



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

Project Number: 23123

For :
124 Park Avenue, Fire Alarm Upgrade Customer P.O.: CATHY WIRTH

** QUOTATION ** to:
HH SAWYER REALTY CO PO BOX 7225 PORTLAND, ME 04112-
Tel: 207-772-6579 Fax: 773-0680

Project Site:

Mfr-Part No.	Qty	Description	Unit Price	Extended
		1 FireWarden-100-2 fire alarm control panel. Black		
		7 Pull Station Dual Action Addressable		
		12 Intelligent Addressable Photo detector, with base.		
		2 Intel. Addressable ROR Thermal detector w/ base.		
		20 Intel. Addressable ROR Thermal detector w/ base.		
		2 Addressable Relay Module		
		2 Addressable Mini Module		
		1 Radio Masterbox (Sec. 2.5-26 Residential Occ, 20 or more units)		
		1 8 Zone Fire Subscriber, 8 Supervised Zones,		
		1 TRANSFORMER 16VAC 40VA		
		1 12V 7AMP BATTERY		
		1 5dB Omni directional UHF Antenna		
		1 Cable Assembly; 10 Ft. RG-58 BNC male?N male		
		1 Standard Coaxial Surge Protector, N female		
		1 Cable Assembly; 100 Ft. RG-8 W/1 N male?X (on spool)		
		1 N-Type Plug (male), crimp style for RG-8 Coax (9913)		
		1 Relay, DPDT, Multivolt, Track mount		
		1 Phenolic label with 2 sided tape -- "xxxx"		



FireWarden-100-2(E)

Intelligent Addressable FACP
with Built-In Communicator

 **NOTIFIER**[®]
by Honeywell

Addressable

General

The Notifier FireWarden-100-2 (NFW2-100) is a combination FACP (Fire Alarm Control Panel) and DACT (Digital Alarm Communicator/Transmitter) all on one circuit board. This compact intelligent addressable control panel has an extensive list of powerful features.

The SLC (Signaling Line Circuit) of the FireWarden-100-2 operates using a Rapid Group Polling communication protocol technology that polls multiple devices simultaneously for a quicker device response time. This patented technology allows a fully-loaded panel with up to 198 devices to report an incident and activate the notification circuits in under 10 seconds. With this improved polling, devices can be wired on standard twisted, unshielded wire up to a distance of 10,000 feet. (Consult the wire table on page 3 for specific installation instructions.)

The FireWarden-100-2's quick-remove chassis protects the electronics during construction. The backbox can be installed allowing field wiring to be pulled. When construction is completed, the electronics can be quickly installed with just two bolts.

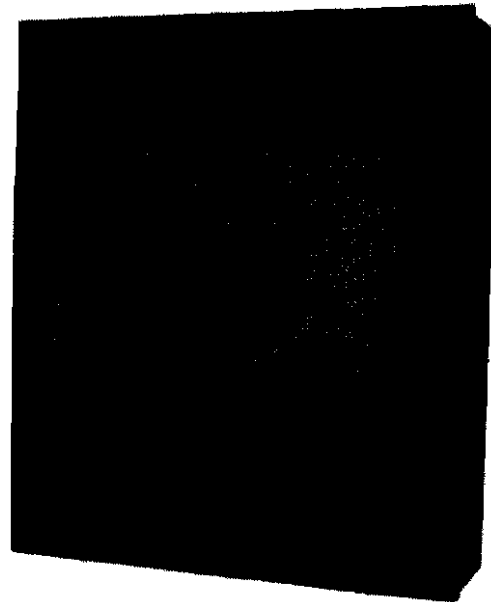
Available accessories include LED, graphic and LCD annunciators, and reverse polarity/city box transmitter.

The panel is programmed through the FACP's keypad or via a standard PS-2 computer keyboard, which can be plugged directly into the printed circuit board. This permits easy typing of address labels and other programming information.

NOTE: Unless otherwise specified, the terms FireWarden-100-2 is used in this document to refer to both the FireWarden-100-2 and the FireWarden-100-2E FACP's (Fire Alarm Control Panels).

Features

- Listed to UL standard 864, 9th edition.
- On-board DACT.
- Four Style Y (Class B) or two Class A (Style Z) NAC circuits.
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules.
- Up to 32 annunciators or remote annunciators via EIA-485.
- EIA-232 printer/PC interface (variable baud rate) on main circuit board.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- Detector sensitivity test capability (NFPA 72 compliant).
- History file with 1,000-event capacity.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- Automatic device type-code verification.
- One person audible or silent walk test with walk-test log and printout.
- Point trouble identification.
- Waterflow (nonsilenceable) selection per monitor point.



7101notw.jpg

- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and presignal delay per point (NFPA 72 compliant).

NOTE: Only detectors may participate in PAS.

SLC LOOP:

- SLC can be configured for NFPA Style 4, 6, or 7 operation.
- SLC supports up to 198 addressable devices per loop (99 detectors and 99 monitor, control, or relay modules).
- SLC loop maximum length 10,000 ft. (3,000 m).
See wire table on page 3.

NOTIFICATION APPLIANCE CIRCUITS (NACS):

- Four onboard NACs with additional NAC capability using output control modules (NC-100).
- Silence Inhibit and Auto Silence timer options.
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability.
- Selectable strobe synchronization per NAC.
- 2.5 amps maximum per each NAC circuit.

NOTE: Maximum or total 24VDC system power shared between all NAC circuits and auxiliary power outputs is 3.6 amps. (System power increases to 6.6 amps with optional XRM-24 transformer.)

PROGRAMMING AND SOFTWARE:

- Autoprogram (learn mode) reduces installation time.
- Custom English labels (per point) may be manually entered or selected from an internal library file.
- Two programmable Form-C relay outputs.
- 99 software zones.
- Continuous fire protection during online programming at the front panel.

- Program Check automatically catches common errors not linked to any zone or input point.

User interface

LED INDICATORS

- AC POWER (green)
- FIRE ALARM (red)
- SUPERVISORY (yellow)
- ALARM SILENCED (yellow)
- SYSTEM TROUBLE (yellow)
- MAINTENANCE/PRESIGNAL (yellow)
- DISABLED (yellow)
- BATTERY FAULT (yellow)
- GROUND FAULT (yellow)

KEYPAD CONTROLS

- ACKNOWLEDGE/STEP
- ALARM SILENCE
- DRILL
- SYSTEM RESET (lamp test)
- 16-key alpha-numeric pad (similar to telephone keypad)
- 4 cursor keys
- ENTER

Ordering Options

NFW2-100(E): 198-point addressable Fire Alarm Control Panel, one SLC loop. Includes 80-character LCD display, single printed circuit board mounted on chassis, and cabinet.

NFW2-100R: Same as NFW2-100, except in a red backbox.

4XTM Reverse Polarity Transmitter Module: Provides supervised output for local energy municipal box transmitter, alarm, and trouble.

DP-9692B: Optional dress panel for FireWarden-100-2.

TR-CE-B: Trim Ring for semi-flush mounting.

BB-26: Battery backbox, holds up to two 26 AH batteries and CHG-75.

NFS-LBB: Battery box, houses two 55 AH batteries.

CHG-75: Battery charger for lead-acid batteries with a rating of 25 to 75 AH.

CHG-120: Remote battery charging system for lead-acid batteries with a rating of 55 to 120 AH. Requires additional NFS-LBB for mounting.

NOTE: CHG-120 or CHG-75 required for batteries larger than 18AH.

BAT Series: Batteries, see data sheet DN-6933.

XRM-24(E): Optional transformer. Increases system power to 6.6 amps. Use XRM-24E with FireWarden-100-2E.

PRT/PK-CABLE: Cable printer/personal computer interface cable.

PRN-6: UL listed compatible event printer. Uses tractor-fed paper.

COMPATIBLE ANNUNCIATORS

ACM-8R: Relay module provides 8 Form-C 5.0 amp relays.

ACM Annunciator Series: LED-type fire annunciators capable of providing up to 99 software zones of annunciation. Available in increments of 16 or 32 points to meet a variety of applications.

LDM Graphic Series: Lamp Driver Module series for use with custom graphic annunciators.

FDU-80 (Liquid Crystal Display) point annunciator: 80-character, backlit LCD-type fire annunciators capable of displaying English-language text.

NOTE: For more information on Compatible Annunciators for use with the FireWarden-100-2, see the following data sheets (document numbers) ACM-8R (DN-3558), ACS/ACM Series (DN-0524), LDM Series (DN-0551), FDU-80 (DN-6820).

COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

NI-100: Addressable low-profile ionization smoke detector.

NP-100: Addressable low-profile photoelectric smoke detector.

NP-100T: Addressable low-profile photoelectric smoke detector with thermal sensor.

NH-100: Fast-response, low-profile heat detector.

NH-100R: Fast-response, low-profile heat detector with rate-of-rise option.

ND-100: Photoelectric low-flow duct smoke detector.

ND-100R: Photoelectric low-flow duct smoke detector with relay option.

NMM-100: Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 4.0" (10.16 cm.) box. Includes plastic cover plate and end-of-line resistor. Module may be configured for either a Style B (Class B) or Style D (Class A) IDC.

NDM-100: Dual Monitor Module. Same as NMM-100 except it provides two Style B (Class B) only IDCs.

NMM-100P: Miniature version of NMM-100. Excludes LED and Style D option. Connects with wire pigtails. May mount in device backbox.

NZM-100: Similar to NMM-100, but may monitor up to 20 conventional two-wire detectors. Requires resettable 24 VDC power. Consult factory for compatible smoke detectors.

NC-100: Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

NC-100R: Addressable relay module containing two isolated sets of Form-C contacts, which operate as a DPDT switch. Mounts directly to a 4.0" (10.16 cm.) box, surface mount using the SMB500.

NOT-BG12LX: Addressable manual pull station with interface module mounted inside.

N100-ISO: Fault Isolator Module.

SMB500: Used to mount all modules except the NMM-100P.

NZM-100-6 Six-zone interface module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F.

NOTE: For more information on Compatible Addressable Devices for use with the FireWarden-100-2, see the following data sheets (document numbers): N100-ISO (DN-6994), NP-100/NP-100T (DN-6995), NI-100 (DN-6996), NH-100/NH-100R (DN-6997), ND-100/ND-100R (DN-7006), NMM-100/NMM-100P/NDM-100/NZM-100 (DN-6999), NC-100/NC-100R (DN-7000), NOT-BG12LX (DN-7001), and NZM-100-6 (DN-60150).

Wiring Requirements

While shielded wire is not required, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Wire size should be no smaller than 18 AWG (0.78 mm²) and no larger than 12 AWG (3.1 mm²). The wire size depends on the length of the SLC circuit. Use the table below to determine the specific wiring requirements for the SLC.

SLC Wire Requirements	Distance in Feet (m)	Wire Size	Wire Type
Twisted-pair, unshielded	10,000 feet (3,048 m)	12 AWG (3.31 mm ²)	<i>Non-Plenum (FPLR):</i> Genesis 4315, Belden 5020UL
			<i>Plenum (FPLP):</i> Genesis 4515, Belden 6020UL
Twisted-pair, unshielded	8,000 feet (2,438 m)	14 AWG (2.08 mm ²)	<i>Non-Plenum (FPLR):</i> Genesis 4313, Belden 5120UL
			<i>Plenum (FPLP):</i> Genesis 4513, Belden 6120UL
Twisted-pair, unshielded	4,875 feet (1,486 m)	16 AWG (1.31 mm ²)	<i>Non-Plenum (FPLR):</i> Genesis 4311, Belden 5220UL
			<i>Plenum (FPLP):</i> Genesis 4511, Belden 6220UL
Twisted-pair, unshielded	3,225 feet (983 m)	18 AWG (0.821 mm ²)	<i>Non-Plenum (FPLR):</i> Genesis 4306, Belden 5320UL
			<i>Plenum (FPLP):</i> Genesis 4506, Belden 6320UL

FireWarden-100-2 Wire Requirements

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signalling Line Circuits..... 1
- Addressable device capacity..... 198
- Programmable software zones..... 99
- Annunciators..... 32

Electrical Specifications

AC Power: FireWarden-100-2: 120 VAC, 60 Hz, 3.0 amps. FireWarden-100-2(E): 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

Battery: Two 12 V 18AH lead-acid batteries. Battery charger capacity: 7 - 18 AH. FireWarden-100-2 cabinet holds maximum of two 18 AH batteries.

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Each terminal block provides connections for two Style Y (Class B) or one Style Z (Class A) for a total of four Style Y (Class B) or two Style Z (Class A) NACs. Maximum signaling current per circuit: 2.5 amps. End-of-Line Resistor: 4.7K ohm, 1/2 watt (P/N 71252 UL listed) for Style Y (Class B) NAC. Refer to panel documentation and *Notifier Device Compatibility Document* for listed compatible devices.

Two Programmable Relays and One Fixed Trouble Relay: Contact rating: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive). Form-C relays.

Special Application Power (24 VDC Nominal): Jumper selectable (JP4) for conversion to resettable power output. Up to 0.5 amps total DC current available from each output. Power-limited.

Four-Wire Resettable Special Application Smoke Detector Power (24 VDC nominal): Up to 0.5 amps for powering four-wire smoke detectors. Power-limited. Refer to *Notifier Device Compatibility Document* for listed compatible devices.

Remote Sync Output: Remote power supply synchronization output. Nominal special application power: 24 VDC. Maximum current: 40 mA. End-of-Line Resistor: 4.7K ohm. Output linked to NAC 1 control. Supervised and power-limited.

Telephone Interface: Requires dedicated business telephone number with a minimum of 7 volts DC. Obtain dedicated phone line directly from your local phone company. Do not use shared phone lines or PBX (digital) type phone line extensions.

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE-B):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

Weight: 26.9 lbs. (12.20 kg.) **Dimensions:** 20.00" (50.80 cm.) high x 22.5" (57.15 cm.) wide x 8.5" (21.59 cm.) deep.

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.

NFPA Standards

The FireWarden-100-2 complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTM).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTM is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **AUTO DETECTOR SELF TEST**

Agency Listings and Approvals

The listings and approvals below apply to the basic FireWarden-100-2 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:** S635
- **FM approved**
- **CSFM:** 7165-0028:235
- **MEA:** 120-06-E, Volume 2

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Made in the U.S.A.

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



NP-100(A), NP-100T(A), NP-100R(A)

**Addressable Photoelectric Detectors
for the FireWarden Series**

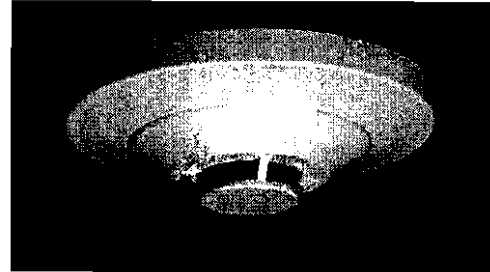
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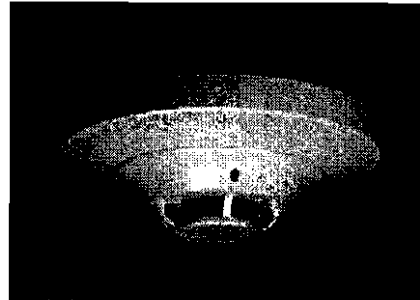
Addressable

General

The NP-100 and NP-100T addressable, low-profile plug-in photoelectric detectors use a state-of-the-art photoelectric sensing chamber with communications to provide open area protection and are used exclusively with NOTIFIER's FireWarden Series (FireWarden-100-2 and FireWarden-50) Addressable Fire Alarm Control Panels (FACPs). The NP-100T adds thermal sensors that will alarm at a fixed temperature of 135°F (57°C). Since these detectors are addressable, they will help emergency personnel quickly locate a fire during its early stages, potentially saving precious rescue time while also reducing property damage. Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (P/N RA100Z(A)). The NP-100R is a remote test capable detector for use with DNR(W) duct smoke detector housings.



NP-100 with B710LP base



NP-100T with B710LP base

Features

SLC loop:

- Two-wire loop connection.
- Unit uses base for wiring.

Addressing:

- Addressable by device.
- Direct Decade entry of address: 01 – 99 with FireWarden-100-2, and 01 – 50 with FireWarden-50.

Architecture:

- Unique single-source, dual-chamber design to respond quickly and dependably to a broad range of fires.
- Sleek, low-profile design.
- Integral communications and built-in type identification.
- Built-in tamper-resistant feature.
- Removable cover and insect-resistant screen for simple field cleaning.

Operation:

- Withstands air velocities up to 4,000 feet-per-minute (20 m/sec.) without triggering a false alarm.
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level.
- Visible LED "blinks" when the unit is addressed (communicating with the fire panel) and latches on in alarm.

Mechanicals:

- Sealed against back pressure.
- Direct surface mounting or electrical box mounting.
- Mounts to: single-gang box, 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or 4.0" (10.16 cm) square electrical box (using a plaster ring — included).

Other system features:

- Fully coated circuit boards and superior RF/transient protection.
- 94-V0 plastic flammability rating.
- Low standby current.

Options:

- Remote LED output connection (P/N RA100Z).

Applications

Use photoelectric detectors in life-safety applications to provide a broad range of fire-sensing capability, especially where smoldering fires are anticipated. Ionization detectors are often better than photoelectric detectors at sensing fast, flaming fires.

Construction

These detectors are constructed of off-white LEXAN®. NP-100(T) plug-in, low-profile smoke detectors are designed to commercial standards and offer an attractive appearance.

Installation

NP-100(T) plug-in detectors use a detachable mounting base to simplify installation, service and maintenance. Mount base on box which is at least 1.5 inches (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box with plaster ring.
- 4.0" (10.16 cm) octagonal box.
- 3.5" (8.89 cm) octagonal box.
- Single-gang box.

NOTE: Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class B) wiring. NP-100R mounts in a DNR(W) duct detector housing.

Operation

Each NP-100/T/R uses one of 99 possible addresses on the FireWarden-100-2 and one of 50 possible addresses on the FireWarden-50 Signaling Line Circuit (SLC). It responds to regular polls from the system and reports its type and status.

The NP-100/T/R addressable photoelectric sensor's unique unipolar chamber responds quickly and uniformly to a broad range of smoke conditions and can withstand wind gusts up to 4,000 feet-per-minute (20 m/sec.) without sending an alarm level signal. Because of its unipolar chamber, the NP-100/T/R is approximately two times more responsive than most photoelectric sensors. This makes it a more stable detector.

Detector Sensitivity Test

Each detector can have its sensitivity tested (required per NFPA 72, Chapter 14 on *Inspection, Testing and Maintenance*) when installed/connected to a FireWarden-100-2 or FireWarden-50 addressable fire alarm control panel. The results of the sensitivity test can be printed off the FireWarden-100-2 or FireWarden-50 for record keeping.

Specification

Voltage range: 15 – 32 VDC (peak).

Standby current: 300 µA @ 24 VDC.

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

Air velocity: 4,000 ft./min. (20 m/sec.) maximum.

Diameter: 6.1" (15.5 cm) installed in B710LP base.

Height: 2.1" (5.33 cm) installed in B710LP base.

Weight: 3.6 oz. (102 g).

Operating temperature range: for NP-100: 0°C to 49°C (32°F to 120°F); for NP-100T: 0°C to 38°C (32°F to 100°F). NP-100R: installed in a DNR(W) -20°C to 70°C (-4°F to 158°F).

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

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

Listings

Listings and approvals below apply to the NP-100 and NP-100T detectors. 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 S1115.
- CSFM approved: file 7272-0028:231.
- MEA approved: file 243-02-E Vol. 2.
- Maryland State Fire Marshal: permit 2173.
- FM approved.

Product Line Information

NP-100: Addressable photoelectric detector; B710LP base included.

NP-100A: Same as NP-100 with ULC Listing (B710LPA base included).

NP-100T: Same as NP-100 but with *thermal* element; B710LP base included.

NP-100TA: Same as NP-100T with ULC Listing (B710LPAbase included).

NP-100R: Remote test capable addressable photoelectric detector for use with a DNR(W) duct detector housing.

B710LP: Plug-in detector base. Dimensions: 6.1" (15.5 cm). Mounting: 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, 3.5" (8.89 cm) octagonal box, or single-gang box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

B224RB: Plug-in System Sensor *relay* detector base. **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

B224BI: Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases (*see DN-6994*). **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

B200SR: Sounder base capable of producing temporal-3 or steady sound output.

ACCESSORIES:

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. *For use with B501 and B710LP bases only.*

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

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

M02-04-00: Test magnet.

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

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

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

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

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

WCK-200B: White detector covers, box of 10 .

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NC-100R(A)

Relay Module for FireWarden Series Panels



Addressable

General

The NC-100R(A) Addressable Relay Module provides NOTIFIER's FireWarden Series intelligent control panels with two isolated sets of Form-C dry-contact outputs for activating a variety of auxiliary devices, such as fans, dampers, door holders, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

Features

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop.
- Integral LED "blinks" green each time a communication is received from the control panel and turns on in steady when activated.
- High noise immunity (EMF/RFI).
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct Decode entry of address: 01 – 99 with the FireWarden-100-2(C) and 01 – 50 with the FireWarden-50(C).

Applications

The NC-100R(A) may be programmed to operate dry contacts for door holders, Air Handling Unit shutdown, etc., and to reset four-wire smoke detector power.

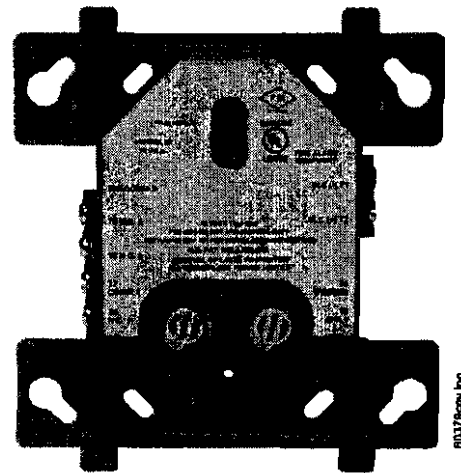
Construction

- The face plate is made of off-white heat-resistant plastic.
- Controls include two rotary switches for direct-dial entry of address setting.
- The NC-100R(A) provides two Form-C dry contacts that switch together.

Operation

Each NC-100R(A) uses one of the addresses on a SLC loop. It responds to regular polls from the control panel and reports its type and status. The LED blinks with each poll received. On command, it activates its internal relay.

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.



NC-100R(A)

Specifications

Normal operating voltage: 15 to 32 VDC.

Maximum SLC current draw: 6.5 mA (LED).

Average operating current: 230 μ A direct poll (CLIP mode), 255 μ A group poll with LED flashing.

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" (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 mm) deep box.

Relay Contact Ratings

Load Description	Application	Maximum Voltage	Current Rating
Resistive	Non-Coded	30 VDC	3.0 A
Resistive	Coded	30 VDC	2.0 A
Resistive	Non-Coded	110 VDC	0.9 A
Resistive	Non-Coded	125 VAC	0.9 A
Inductive (L/R=5ms)	Coded	30 VDC	0.5 A
Inductive (L/R=2ms)	Coded	30 VDC	1.0 A
Inductive (PF=0.35)	Non-Coded	125 VAC	0.5 A

Agency Listings and Approvals

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

- **UL/ULC Listed:** S635.
- **CSFM approved:** file 7300-0028:230.
- **FM approved.**
- **MEA approved:** file 72-01-E, Vol. 2.

Product Line Information

NC-100R: Intelligent addressable relay module.

NC-100RA: Intelligent addressable relay module, ULC listed model.

SMB500: Optional surface-mount backbox.

NOTE: For installation instructions, see document 156-2593-001 and refer to the SLC Wiring Manual, document 52304.

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Monitor Modules

dn-6999:b1

NMM-100(A), NMM-100P(A), NZM-100(A), and NDM-100(A) for FireWarden Series Panels



Intelligent Addressable Devices

General

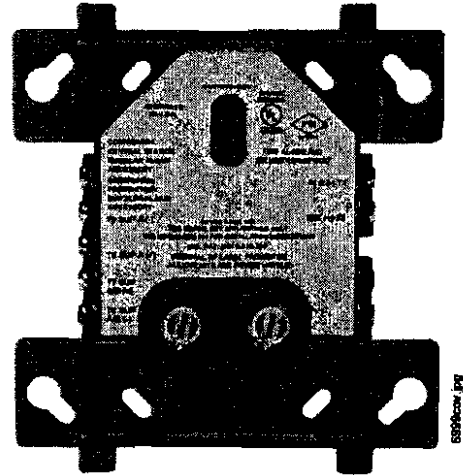
Four different monitor modules are available for Notifier's FireWarden Series intelligent control panels for a variety of applications. Monitor modules supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (NZM-100(A)).

NMM-100(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.

NMM-100P(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 NMM-100P(A) to often be mounted in a single-gang box behind the device it monitors.

NZM-100(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.

NDM-100(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.



NMM-100(A) (Type H)

NMM-100(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 Decade entry of address: 01 – 99 on FireWarden-100-2, 01 – 50 on FireWarden-50.
- LED flashes during normal operation and latches on steady to indicate alarm.

The NMM-100(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.

NMM-100(A) APPLICATIONS

Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit.

NMM-100(A) OPERATION

Each NMM-100(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).

NMM-100(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

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

Maximum IDC wiring resistance: 40 ohms.

EOL resistance: 47K ohms.

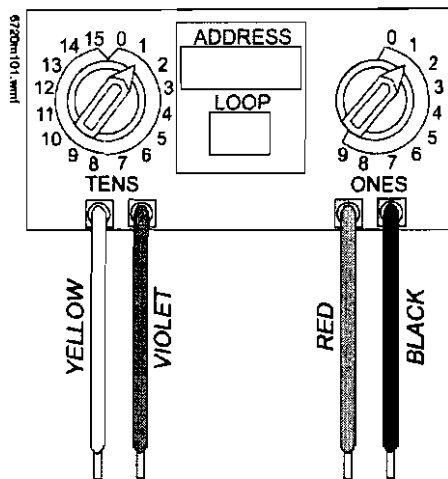
Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

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

NMM-100P(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 Decade entry of address: 01 – 99 on FireWarden-100-2, 01 – 50 on FireWarden-50.



The NMM-100P(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 NMM-100P(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. NMM-100P(A)

NMM-100P(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.

NMM-100P(A) OPERATION

Each NMM-100P(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).

NMM-100P(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

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

Maximum IDC wiring resistance: 40 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 400 μ A.

EOL resistance: 47K ohms.

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

Humidity range: 10% to 93% noncondensing.

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

Wire length: 6" (15.24 cm) minimum.

NZM-100(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 Decade entry of address; 01 – 99 on FireWarden-100-2, 01 – 50 on FireWarden-50.
- LED flashes during normal operation.
- LED latches steady to indicate alarm on command from control panel.

The NZM-100(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.

NZM-100(A) APPLICATIONS

Use the NZM-100(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.

NZM-100(A) OPERATION

Each NZM-100(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).

NZM-100(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 ohms.

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

EOL resistance: 3.9K ohms.

External supply voltage (between Terminals T3 and T4): DC voltage: 24 volts power limited. Rippls 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.

NDM-100(A) Dual Monitor Module

The NDM-100(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. The module has a single panel-controlled LED.

NOTE: The NDM-100(A) provides two Style B (Class B) IDC circuits ONLY. Style D (Class A) IDC circuits are NOT supported in any application.

NDM-100(A) SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

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

Maximum IDC wiring resistance: 1,500 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 μ A

EOL resistance: 47K ohms.

Maximum SLC Wiring resistance: 40 Ohms.

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

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

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

NDM-100(A) AUTOMATIC ADDRESSING

The NDM-100(A) automatically assigns itself to two addressable points, starting with the original address. For example, if the NDM-100(A) is set to address "26", then it will automatically assign itself to addresses "26" and "27".

NOTE: "Ones" addresses on the NDM-100(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

NMM-100(A), NZM-100(A), and NDM-100(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 NMM-100P(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: 7300-0028:230 (NMM-100, NMM-100P, NZM-100); 7300-0028:237 (NDM-100)
- MEA: 72-01-E Vol. 2 (NMM-100, NMM-100P, NZM-100); 227-03-E Vol. 3 (NDM-100)

Product Line Information

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

NMM-100(A): Monitor module.

NMM-100P(A): Monitor module, miniature.

NZM-100(A): Monitor module, two-wire detectors.

NDM-100(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 52304.

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



NH-100 Series

Intelligent Addressable Thermal Detectors for FireWarden Series

NOTIFIER[®]
by Honeywell

Addressable

General

The **NOTIFIER NH-100 Series** thermal detectors are addressable sensors that use a state-of-the-art thermistor sensing circuit for fast response. These sensors provide open-area protection and are intended for use with the **FireWarden Series** (FireWarden-100-2 and FireWarden-50) addressable Fire Alarm Control Panels (FACPs).

The **NH-100** and **NH-100R** sensors provide fixed temperature alarm detection at 135°F (57°C). The **NH-100R** sensor also responds to rate-of-rise conditions of greater than 15°F (8.3°C) per minute. The **NH-100H** is a fixed high-temperature detector that activates at 190°F (88°C). These thermal detectors provide addressable property protection in a variety of applications.

Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (**RA400Z**).

Features

SLC loop:

- Two-wire SLC loop connection.
- Unit uses base for wiring.

Addressing:

- Addressable by device.
- Direct Decade entry of address: 01 – 99 with FireWarden-100-2, 01 – 50 with FireWarden-50.

Architecture:

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Integral communications and built-in device-type identification.
- Built-in tamper resistant feature.
- Built-in functional test switch activated by external magnet.

Operation:

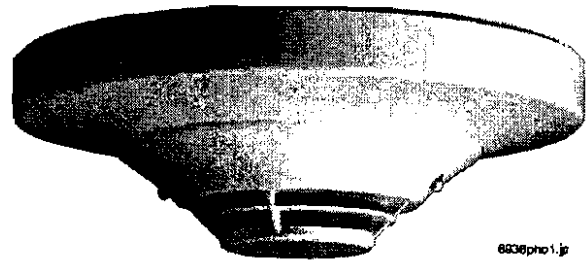
- Factory preset at 135°F (57°C) for the **NH-100** and **NH-100R**; 190°F (88°C) for the **NH-100H**.
- Rate-of-rise triggers at 15°F (8.3°C) per minute for the **NH-100R**.
- 360°-field viewing angle of the visual alarm indicators (two bicolor LEDs). LEDs blink green in Normal condition and turn on steady red in Alarm.
- Visible LEDs "blink" every time the unit is addressed.

Mechanicals:

- Sealed against back pressure.
- SEMS screws for wiring of the separate base.
- Designed for direct-surface or electrical-box mounting.
- Plugs into separate base for ease of installation and maintenance.
- Separate base allows interchange of photoelectric, ionization and thermal sensors.

Other system features:

- Remote test feature from the panel.
- Walk test with address display.



NH-100 with B710LP base

- Low standby current.
- 94-5V plastic flammability rating.

Options:

- Remote LED output connection to optional **RA400Z** remote LED annunciator.
- Recessed (**RMK400**) or surface (**SMK400E**) base mounting kits.

Installation

NH-100 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on box that is at least 1.5" (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box.
- 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
- Single-gang box (except relay or isolator base).

NOTE: Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring only.

Applications

Use thermal detectors for protection of property.

Construction

These detectors are constructed of off-white Bayblend®. The **NH-100 Series** plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each **NH-100 Series** detector uses one of 99 (**FireWarden-100-2**) or 50 (**FireWarden-50**) possible addresses on a control panel SLC loop. It responds to regular polls from the control panel and reports its type and the status. If it receives a test command from the panel (or a local magnet test), it stimulates its electronics and reports an alarm. It blinks its LEDs when polled and turns the LEDs on when commanded by the panel.

The NH-100 Series offers features and performance that represent the latest in thermal detector technology.

Specifications

Diameter: 6.1" (15.5 cm) installed in B710LP.

Height: 2.1" (5.33 cm).

Weight: 4.8 oz. (137 g).

Installation temperature:

- NH-100, NH-100R: -4°F to 100°F (-20°C to 38°C).
- NH-100H: -4°F to 150°F (-20°C to 66°C).

Humidity range: 10% to 93% relative humidity (noncondensing).

Voltage range: 15 to 32 VDC peak.

Standby current: 300 µA @ 24 VDC (one communication every five seconds with LED blink enabled).

LED current: 6.5 mA @ 24 VDC.

Mounting: B710LP flanged base, included.

Fixed-temperature setpoint: 135°F (57°C) for the NH-100 and NH-100R; 190°F (88°C) for the NH-100H.

Rate-of-rise detection: responds to greater than 15°F (8.3°C) per minute.

Altitude rating: 10,000 feet.

Listings and Approvals

Listings and approvals below apply to the NH-100 Series detectors. 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 S747.
- CSFM approved: file 7270-0028:234.
- MEA approved: file 387-02-E Vol. II.
- FM approved.

Product Line Information

NH-100: Intelligent thermal sensor; 135° F (57° C) B710LP base included.

NH-100R: Same as NH-100 with *rate-of-rise* feature; B710LP base included.

NH-100H: Intelligent fixed high-temperature thermal detector; 190° F (88° C) B710LP base included.

B710LP: Plug-in detector base (included). **Dimensions:** 6.1" (15.5 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, 3.5" (8.89 cm) octagonal box, or single-gang box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

B224RB: Plug-in System Sensor *relay* detector base. **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

B224BI: Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases (see DN-6994). **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square

box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

B501BH-2: Plug-in System Sensor standard *sounder* base. **Diameter:** 6.0" (15.24 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring. Mounting boxes have a minimum depth of 1.5" (3.81 cm).

B501BHT-2: Plug-in System Sensor *temporal tone* sounder base.

ACCESSORIES:

RA400Z: Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501 and B710LP bases only.

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

RMK400: Recessed mounting kit. For use with B501 base only.

M02-04-00: Test magnet.

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

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

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

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www.notifier.com

→ 7750F

AES IntelliNet
CORPORATION | For Alarm Monitoring

RF Subscriber Unit

UL Fire and AA Burglary Listed
NFPA-72 Compliant

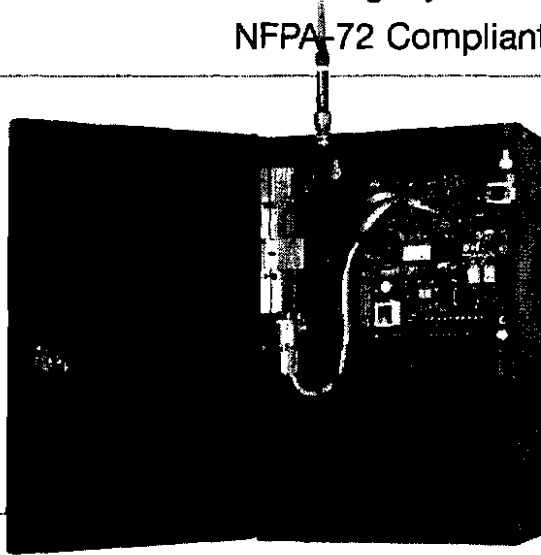
UL Listed

UL Listed Central station

Remote Station

864,827,1610,365,681

CSFM



Advanced Wireless Alarm Monitoring

The 7750-F smart subscriber unit links an alarm panel to an alarm monitoring central station. This 2-way transceiver and repeater in one is housed in a full size locking steel cabinet for superior performance. The 7750-F supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses phone line cuts and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7750-F the first choice for all wireless alarm communication needs.

Full Data for Fire and Burglary

Use with the optional Firetap for full fire data or the IntelliTap for full burglary data.

Available Configurations

7750 F 4x4 – 4 reversing polarity inputs plus 4 programmable EOL inputs

7750 F 8 – 8 programmable EOL inputs

Available Options

FireTap 7768

IntelliTap 7067

NEMA 4 Enclosure

High Gain Antenna

Back Up Battery

Available in Burglary Beige or Fire Red

- UL Listed (Fire & AA Burglary)
- NFPA-72 Compliant
- 864, 827,1610,365, 681
- Options for Full Data for Fire and Burglary
- Available in 4 & 8 Zone Configurations
- Built-in Power Supply and Battery Charger



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

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

7750F RF Subscriber Unit

Technical Specifications

Radio

Standard CSAA frequency ranges: 450-470 MHz and 130-174 MHz, VHF and UHF. Others available

Standard Output Power

2 watts (requires FCC license)

Power Input

16.5 VAC, 40VA UL listed Class II transformer required

Voltage

12 VDC nominal

Current

175mA standby; 800mA transmit

Alarm Signal Inputs

- 4 individually programmable Zones: NO/NC/EOL, trouble restore
- RS-232

Operating Temperature Range

0° to 50°C, 32° to 122°F

Storage Temperature Range

-10° to 60°C, 14° to 140°F

Relative Humidity Range

0-85% RHC non-condensing

Back up Battery

12V, 7 AH option

Low Battery Reporting

22.5-minute test cycle

AC Status

Reports to central station after approximately 4 minutes without AC power, reports power restored after approximately 4 minutes of restored power

Antenna Cut (local reporting)

12 VDC signal output at output J4, 200 mA max load

Open Collector Output

200mA maximum load

Size

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

Weight

6.4 lbs, 2.9 Kilograms (excluding battery)

Colors

Available in standard Burglary Beige or Fire Red Please specify when ordering

Available Options

- 7750F-8 RF subscriber unit with 8 EOL inputs
- 7750F-4x4 RF subscriber unit with 4 EOL inputs and 4 reverse polarity inputs
- 7768 - FireTap
- 7067 - IntelliTap

Please specify when ordering

Available configurations

- 4 EOL Inputs
- 8 EOL inputs
- 4 EOL inputs w/4 reverse polarity inputs
- NEMA 4 Enclosure

AES-IntelliNet™ is the industry leader in delivering high quality wireless mesh networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-IntelliNet networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-IntelliNet alarm monitoring systems are deployed at hundreds of thousands of locations in over 130 countries.



For more information

Call 800-AES-NETS (800-237-6387)

AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA

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

Web www.aes-intellinet.com



NOT-BG12LX

Addressable Manual Pull Station For FireWarden Series Panels

 **NOTIFIER**[®]
by Honeywell

Intelligent/Addressable Devices

General

The Notifier NOT-BG12LX 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 FireWarden series intelligent control panels. Because the NOT-BG12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

Features

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

Construction

Shell, door, and handle are molded of durable LEXAN[®] (or polycarbonate equivalent) with a textured finish.

Specifications

- Normal operating voltage: 24 VDC.
- Maximum SLC loop voltage: 28.0 VDC.
- Maximum SLC loop current: μ A.
- Ambient Temperature: 32°F to 120°F (0°C to 49°C)
- Relative Humidity: 93% \pm 2% RH (noncondensing) at 32°C \pm 2°C (90°F \pm 3°F)
- For use indoors in a dry location

Installation

The NOT-BG12LX 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 NOT-BG12LX 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).



The NOT-BG12LX
Addressable Manual Pull Station

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 – 99 on FireWarden-100-2, 1 – 50 for FireWarden-50).

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 LEXAN (or polycarbonate equivalent) 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.

BG12TR: Optional trim ring.

17021: Keys, set of two.

Product Line Information

NOT-BG12LX: Dual-action addressable pull station. Includes key locking feature.

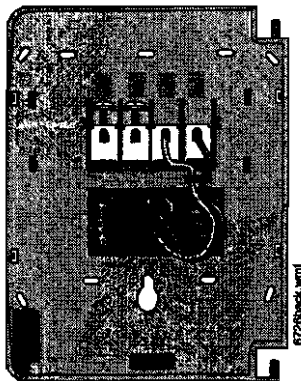
SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

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 Listed:** S692
- **MEA:** 67-02-E Vol. IV
- **CSFM:** 7150-0028:199
- **FM Approved**

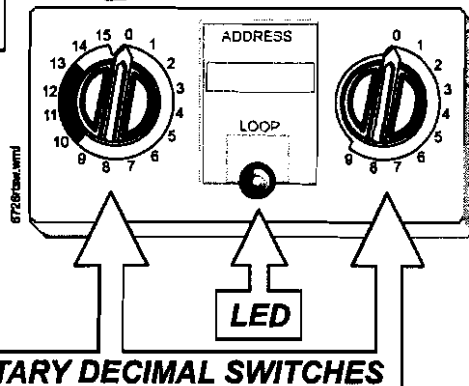


Back of station without door

Terminal Connections:
1 SLC (-); 2 SLC (+)

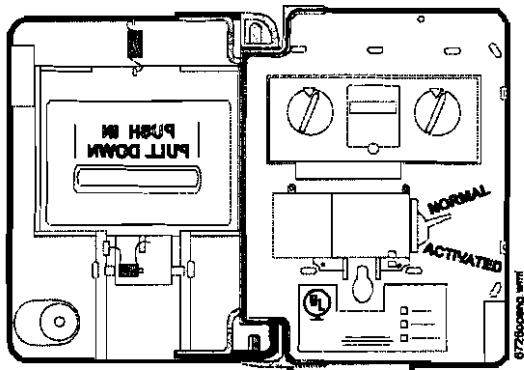


**Detail of
BREAKAWAY TAB***



ROTARY DECIMAL SWITCHES

*Do not remove tab.



Cover open to show easy access to miniature monitor module, rotary switch, and UL label.

Patented:

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

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System Power Requirements

NFW2-100 Rev. 2 Fire Alarm Control Panel

Protected Premises: 124 Park Ave		Date: 5/7/2010
Address: 124 Park Ave.		
City: Portland	State: Maine	Zip:
Prepared By: Norris Inc.		Phone:
Address:		Email:
City: South Portland	State: Maine	Zip:

AC Branch Current Requirements 3.00 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

Primary Standby Load 0.31 Amps

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

Primary Alarm Load 1.58 Amps

Current load on the primary power supply during alarm conditions.

Secondary Load Requirements 8.04 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
Secondary Standby Load 0.268 A	x	Required Standby Time	
		24 hours	6.43
Secondary Alarm Load 1.581 A	x	Required Alarm Time (hours)	
		0.167 hours	0.26
Auxiliary Power Supply Load 0.000 A	x	Required Alarm Time (hours)	
		0.167 hours	0.00
Total Secondary Load			6.70
Derating factor			x 1.2
Secondary Load Requirements			8.04 AH

Battery Selection 12 Amp Hours

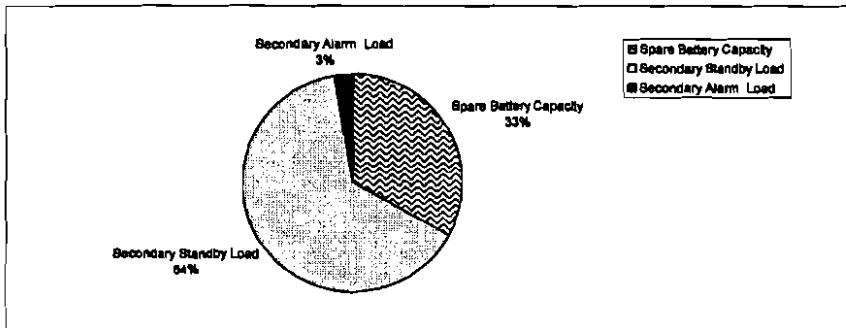
Select batteries from the list below.

12 AH BAT-12120 Battery (12 volt)

Two Four (two 12VDC sets in parallel)

Battery Distribution Chart

Shows amp-hour distribution of your selections.



Comments

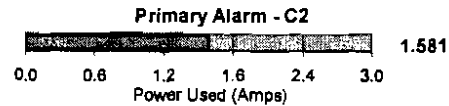
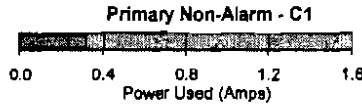
1. Batteries will fit in the FACP cabinet.
2. Selected battery size meets secondary load requirements.
3. The selected batteries (12AH) are within the charger range of this power supply (7-18AH).

Spare Battery Capacity	3.98	Battery Selection (AH) - Secondary Load Requirements (AH)
Secondary Standby Load	7.72	Secondary Standby Load (AH) * Derating Factor
Secondary Alarm Load	0.32	Secondary Alarm Load (AH) * Derating Factor



System Current Draw - NFW2-100 Rev. 2

Current Draw	
C1	0.313 A
C2	1.581 A
C3	0.268 A



Device	C1 - Non-Alarm Current			C2 - Alarm Current			C3 - Standby Current					
	Qty	Draw	Non-Alarm	Qty	Draw	Alarm	Qty	Draw	Standby			
1. System												
Main Circuit Board	1	x	0.30000	0.30000	1	x	0.32500	0.32500	1	x	0.25500	0.25500
XRM-24	0	x	0.00000		0	x	0.00000		0	x	0.00000	
2. Power Supplies/Chargers												
CHG-75	0	x	0.00000		0	x	0.00000		0	x	0.06000	
CHG-120	0	x	0.00000		0	x	0.00000		0	x	0.06000	
MPM-2	0	x	0.00600		0	x	0.00600		0	x	0.00600	
3. NAC Power - TB3 and TB4 (maximum current - 2.5A per NAC)												
NS-2430MCW-FR	8	x	0.00000	0.00000	8	x	0.10700	0.85600	8	x	0.00000	0.00000
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Notification Appliance	0	x	0.00000		0	x	0.00000		0	x	0.00000	
Current draw from TB3 (nonalarm)	0	x	0.00000		0	x	0.00000		0	x	0.00000	
Other compatible devices	0	x	0.00000		0	x	0.00000		0	x	0.00000	
4. ANN-BUS Devices												
N-ANN-80	0	x	0.03700		0	x	0.04000		0	x	0.01500	
N-ANN-LED	0	x	0.02800		0	x	0.06800		0	x	0.02800	
N-ANN-RLY	0	x	0.01500		0	x	0.07500		0	x	0.01500	
N-ANN-I/O	0	x	0.03500		0	x	0.20000		0	x	0.03500	
N-ANN-S/PG	0	x	0.04500		0	x	0.04500		0	x	0.04500	
5. ACS Annunciators + Non-Resettable Power												
ACM-8R	0	x	0.03000		0	x	0.15800		0	x	0.03000	
AFM-16AT/AFM-32A Series	0	x	0.04000		0	x	0.05600		0	x	0.04000	
ACM-16AT/ACM-32A Series	0	x	0.04000		0	x	0.05600		0	x	0.04000	
AEM-16AT/AEM-32A Series	0	x	0.00200		0	x	0.01800		0	x	0.00200	
AFM-16A	0	x	0.02500		0	x	0.06500		0	x	0.02500	
FDU-80	0	x	0.06400		0	x	0.06400		0	x	0.02500	
LDM-32	0	x	0.00000		0	x	0.05600		0	x	0.04000	
LDM-E32	0	x	0.00000		0	x	0.01800		0	x	0.00200	
UDACT Communicator	0	x	0.04000		0	x	0.10000		0	x	0.04000	
5. Resettable Power												
Four-wire Detector Heads	0	x	0.00000		0	x	0.00000		0	x	0.00000	
Power Supervision Relays	0	x	0.02500		0	x	0.02500		0	x	0.02500	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Initiating Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
6. Addressable Devices												
NI-100	0	x	0.00030						0	x	0.00030	
NP-100	12	x	0.00030	0.00360					12	x	0.00030	0.00360
NP-100T	0	x	0.00030						0	x	0.00030	

NH-100	0	x	0.00030					0	x	0.00030		
NH-100R	22	x	0.00030	0.00660				22	x	0.00030	0.00660	
ND-100	0	x	0.00030					0	x	0.00030		
ND-100R	0	x	0.00030					0	x	0.00030		
NDM-100	0	x	0.00075					0	x	0.00075		
NMM-100	0	x	0.00040					0	x	0.00040		
NMM-100P	2	x	0.000375	0.00075				2	x	0.000375	0.00075	
N100-ISO	0	x	0.000450					0	x	0.000450		
NZM-100	0	x	0.00027					0	x	0.00027		
NZM-100-6	0	x	0.00200					0	x	0.00200		
NOT-BG12LX	7	x	0.00023	0.00161				7	x	0.00023	0.00161	
NC-100	0	x	0.00039					0	x	0.00039		
NC-100R	2	x	0.00027	0.00054				2	x	0.00027	0.00054	
N-100ISO	0	x	0.00040					0	x	0.00040		
[]	0	x	0.00000					0	x	0.00000		
[]	0	x	0.00000					0	x	0.00000		
[]	0	x	0.00000					0	x	0.00000		
Max Alarm Draw - All Addressable Devices					1	x	0.40000	0.40000				
7. Optional modules												
4XTM	0	x	0.00500		0	x	0.01100		0	x	0.00500	
Reverse Polarity Alarm output	0	x	0.00000		0	x	0.00500		0	x	0.00000	
Reverse Polarity Trouble output	0	x	0.00000		0	x	0.00500		0	x	0.00000	
8. Compatible Devices not listed												
ADD Miscellaneous Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
ADD Miscellaneous Device	0	x	0.00000		0	x	0.00000		0	x	0.00000	
Other compatible devices	0	x	0.00000		0	x	0.00000		0	x	0.00000	
Total Non-Alarm Load:				0.313	Total Alarm Load:			1.581	Total Standby Load:			0.268



NFW2-100 Rev. 2 - AC Branch Current

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".

Note: These selections only determine the AC branch current. If these devices will affect the battery requirements, you need to select them on the System Current Draw sheet.

120 VAC 220/240 VAC

Device	Qty		Current	Total
NFW2-100 R2	1	x	3.00 A	3.00 A
CHG-75	0	x	2.00 A	
CHG-120	0	x	2.00 A	
[]	0	x	0.00 A	
[]	0	x	0.00 A	
			AC Branch Required:	3.00 A

Wheelock NS/NH Series

NS Series Horn Strobes NH Series Horns



Audio/Visual Devices

General

The Wheelock Series NS Horn Strobe Appliances will satisfy virtually all requirements for indoor, wall mount applications.

The Series NH Horn and the horn portion of the Series NS include a selectable continuous horn tone or temporal pattern (Code 3) with selectable dBA settings of 90 or 95 dBA.

Strobe options include 1575cd or Wheelock's patented Multi-Candela strobe with field selectable candela settings of 15/30/75/110cd.

These versatile Horn Strobe Appliances may be synchronized when used in conjunction with the Wheelock SM or DSM Sync Modules or a Power Supply with the Wheelock patented Sync Protocol. Additionally, the audible may be silenced while maintaining strobe activation.

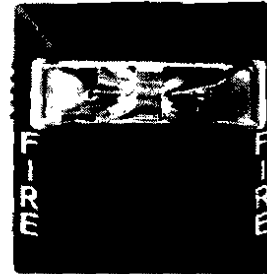
All models of the Series NS and NH are designed for maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72/ANSI 117.1/UFC and UL Standards 1971 and 464 as well as meeting ADA requirements concerning photosensitive epilepsy.

Features

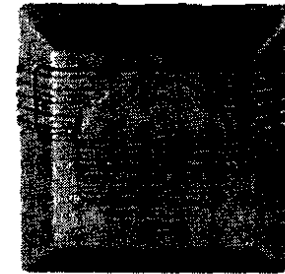
- Field selectable Candela settings 15/30/75/110cd (24 VDC Multi-Candela models) or 1575cd in 12 or 24 VDC.
- Selectable Continuous Horn or Temporal (Code 3).
- 2 selectable dBA settings of 90 and 95 dBA in both tones.
- 12 and 24 VDC models with UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage.
- Patented Universal Mounting Plate.
- Wall mount.
- ADA/NFPA/UFC/ANSI compliant.
- Complies with OSHA 29, Part 1910.165.
- NH Horn is selectable 12 or 24 VDC in 1 unit.
- Synchronize with Wheelock SM or DSM Sync Module or the Power Supply with built-in Sync Protocol.
- Patent Pending Universal Mounting Plate for single-gang, double-gang 4" (10.16c m) square, or 100 mm European backboxes, or Wheelock's SHBB shallow surface backbox.
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires.

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).



NS Horn Strobe



NH Horn



Multi-Candela Indicator
(bottom of Strobe Lens)

6601 (not for 660) (not for 660) (not for 660)

- "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."



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

Model	Input Voltage VDC	Regulated Voltage Range VDC/FWR	Strobe Candela (CD)
NS-24MCW	24	16.0-33.0	15/30/75/110
NS-241575W	24	16.0-33.0	15 (75 on axis)

Table 2: dBA Ratings for Series NS/NH Horn

Description	Volume	Reverberant dBA @ 10ft per UL 454		Anechoic dBA @ 10ft	
		12VDC	24VDC	12VDC	24VDC
		Continuous Horn	High	83	87
	Low	76	81	84	90
Code 3 Horn	High	79	82	89	95
	Low	72	76	84	90

Table 4: *Average RMS Current Ratings

NS-241575W		
Voltage	High (95) dBA	Low (90) dBA
16.0 VDC	.120	.116
24.0 VDC	.094	.093
33.0 VDC	.102	.078

Table 3: *Average RMS Current Ratings

NS-24MCW with High (95 dBA) Setting				
Voltage	15cd	30cd	75cd	110cd
16.0 VDC	.077	.113	.195	.268
24.0 VDC	.065	.087	.134	.174
33.0 VDC	.069	.085	.117	.134
NS-24MCW with Low (90 dBA) Setting				
Voltage	15cd	30cd	75cd	110cd
16.0 VDC	.070	.106	.188	.261
24.0 VDC	.052	.072	.126	.158
33.0 VDC	.045	.060	.097	.114

Table 5: *Average Mean Current Ratings NH Horn 24 Volt Models

Voltage	High (95) dBA	Low (90) dBA
16.0 VDC	.019	.017
24.0 VDC	.028	.022
33.0 VDC	.039	.027

Table 6: Sync Models/Power Supply

Model Number	Input Voltage (VDC)	Average Mean Current @ 24 VDC	Mounting Options
SM-12/24-R	24	.028	W
DSM-12/24-R	24	.035	W

NOTE: SM Sync Module is rated for 3.0 amperes @ 24 VDC. DSM Sync Module is rated for 3.0 amperes per circuit. The maximum number of interconnected DSM Modules is twenty (20).

* Average RMS Current is per UL average RMS method and Average Mean Current is per UL average mean method. NH models use average mean current. For rated in Rush and Peak current across UL Listed voltage range for both filtered DC and VRMS (FWR), see installation instructions.

Table 7: UL Maximum Current**

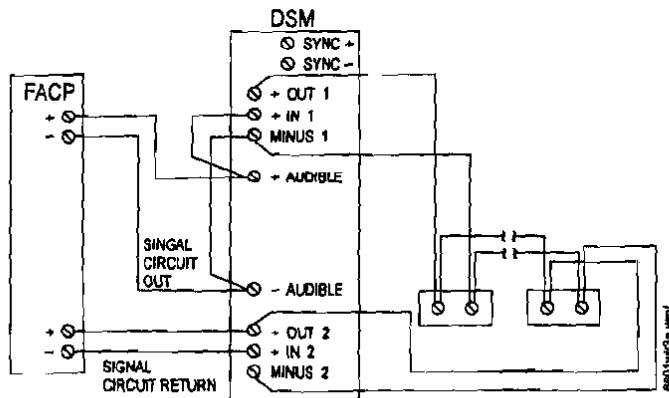
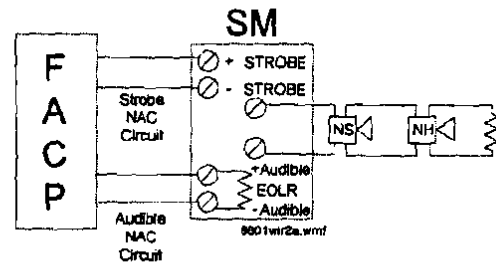
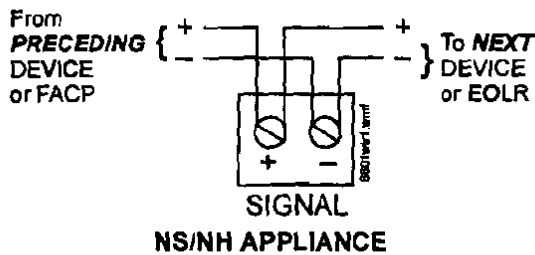
Series NS/NH 24 VDC		Audible	Wall Mount Strobe Models				
		NH-12/24	NS-241575W	NS-24MCW			
		@24VDC	15/75cd	15cd	30cd	75cd	110cd
High (95) dBA	24VDC	.044	.104	.074	.107	.184	.244
Low (90) dBA	24VDC	.018	.096	.066	.101	.177	.232
Series NS/NH 12 VDC		Audible	Wall Mount	** RMS current ratings are per UL 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 audibles, the max current is usually at the listed voltage (33V for 24V units). For unfiltered FWR ratings, see installation instructions.			
		NH-12/24	Aud/Strobe				
		@12VDC	NS-121575W				
High (95) dBA	12VDC	.021	.220				
Low (90) dBA	12VDC	.012	.210				



WARNING: CONTACT WHEELOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS (P83983) SERIES NS-24MCW, (P84234) SERIES NS-12 AND 24 VDC SINGLE CANDELA MODELS, (P83600) SERIES NH AND "GENERAL INFORMATION" SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:

- TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.
- FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.
- COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW.
- ADDING, REPLACING OR CHANGING APPLIANCES OR CHANGING CANDELLA SETTINGS WILL AFFECT CURRENT DRAW. RECALCULATE CURRENT DRAW TO INSURE THAT THE TOTAL AVERAGE CURRENT AND TOTAL PEAK REQUIRED BY ALL APPLIANCES DO NOT EXCEED THE RATED CAPACITY OF THE POWER SOURCES OR FUSES.
- THE VOLTAGE APPLIED TO THE PRODUCTS MUST BE WITHIN THEIR "REGULATED VOLTAGE RANGE."
- INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.
- INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
- THESE APPLIANCES ARE NOT DESIGNED TO BE USED ON CODED SYSTEMS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF.
- FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, AND/OR PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.
- CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.

Wiring Diagrams



NOTE: NS/NH must be set on Code 3 horn tone to achieve synchronized temporal (Code 3) tone. Refer to installation instruction (P83983, P83600 respectively).

NOTE: For detail using SM or DSM Sync Module refer to data sheet S3000 or installation instructions P83123 for SM and P83177 for DSM.

Architectural/Engineering Specifications

The audible/visual notification appliances shall be Wheelock Series NS Horn Strobe appliances and Series NH Horn appliances or approved equals. The Series NS appliances shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired for Indoor Fire Protection Service). The Series NH Horn shall be UL Listed under Standard 464 (Fire Protective Signaling). The horn strobe shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by the Fire Alarm Control Panel (FACP).

The audible portion of the appliance shall have a minimum of two (2) field selectable settings for dBA levels (90 and 05 dBA) and shall have a choice of continuous or temporal (Code 3) audible outputs.

The strobe portion of the appliance 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 NS shall be of low current design. Where wall mount, Multi-Candela appliances are specified, the strobe intensity shall never have field selectable settings and shall be rated per UL Standard 1971 for 15/30/75/110 candela. The selector switch for selecting the candela setting 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 (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's SM, DSM Sync Modules or a Power Supply with Wheelock's 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 strobes shall revert to a non-synchronized flash-rate. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation.

The Series NS Horn Strobes and NH Horn shall incorporate a patented Universal Mounting Plate that shall allow mounting to a single-gang, double-gang, 4 inch square, and 100 mm European backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided.

All notification appliances shall be backward compatible.

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 progress. Consult factory for listing status.

- ULC Listed: E5946
- ULC Listed: CS 243, CS 356
- CSFM: 7125-0785:142
- MEA: 151-92-E
- FM Approved

Ordering Information

Model	Strobe Candela	Non-Sync	Sync w/ SM, DSM	24 VDC	12 VDC	2 Wire	Mounting Options	Agency Approvals				
								UL	MEA	CSFM	FM	BFP
NS-24MCW-FR	15/30/75/110	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-24MCW-FW	15/30/75/110	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-241575W-FR	15 (75 on axis)	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NH-12/24-R	12V, 24V	X	X	X	X	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X

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



Made in the U.S.A.

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

Important! Wiring connections must have correct polarity.

LEGEND

MOUNTING HEIGHT			
48 INCHES	PS	PULL STATION	
	S	SMOKE DETECTOR	
	R	HEAT DETECTOR RATE OF RISE	
	F	HEAT DETECTOR FIXED TEMP	
	RT	REMOTE TEST/INDICATOR	
	DS	DUCT SMOKE DETECTOR	Note: Remove J1 Jumper
80 INCHES	VO	VISUAL ONLY	
80 INCHES	AV	AUDIO / VISUAL	
	NZM 100	ZONE MODULE	
	NC 100	CONTROL MODULE	
	NMM	MONITOR MODULE 100=4 SQUARE, 100p=mini-mod	
	NC 100r	RELAY MODULE	
	STS	SPRINKLER TAMPER	
	SFS	SPRINKLER FLOW	
	DH	DOOR HOLDER 120V AC	


This drawing is a typical device layout, wiring is shown diagrammatically only. This drawing has been provided as an example ONLY. Riser does not necessarily indicate all devices and appliances. See floor plans and specification for location and quantities. The purchaser must accurately layout the initiating and notification devices in their proper zones/circuit. Note: All signal circuits have a 2.5 amp load limitation and a combined load limitation of 3.0 amps or 6.0 amps if XRM-24 is added to the panel. There can be 4 class B nac circuits or 2 class A nac circuits. REMOTE power supply has a 3.0 amp limitation per circuit and an 8.0 amp combined limitation for all 4 circuits. (See chart below for current vs. candle rating)

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

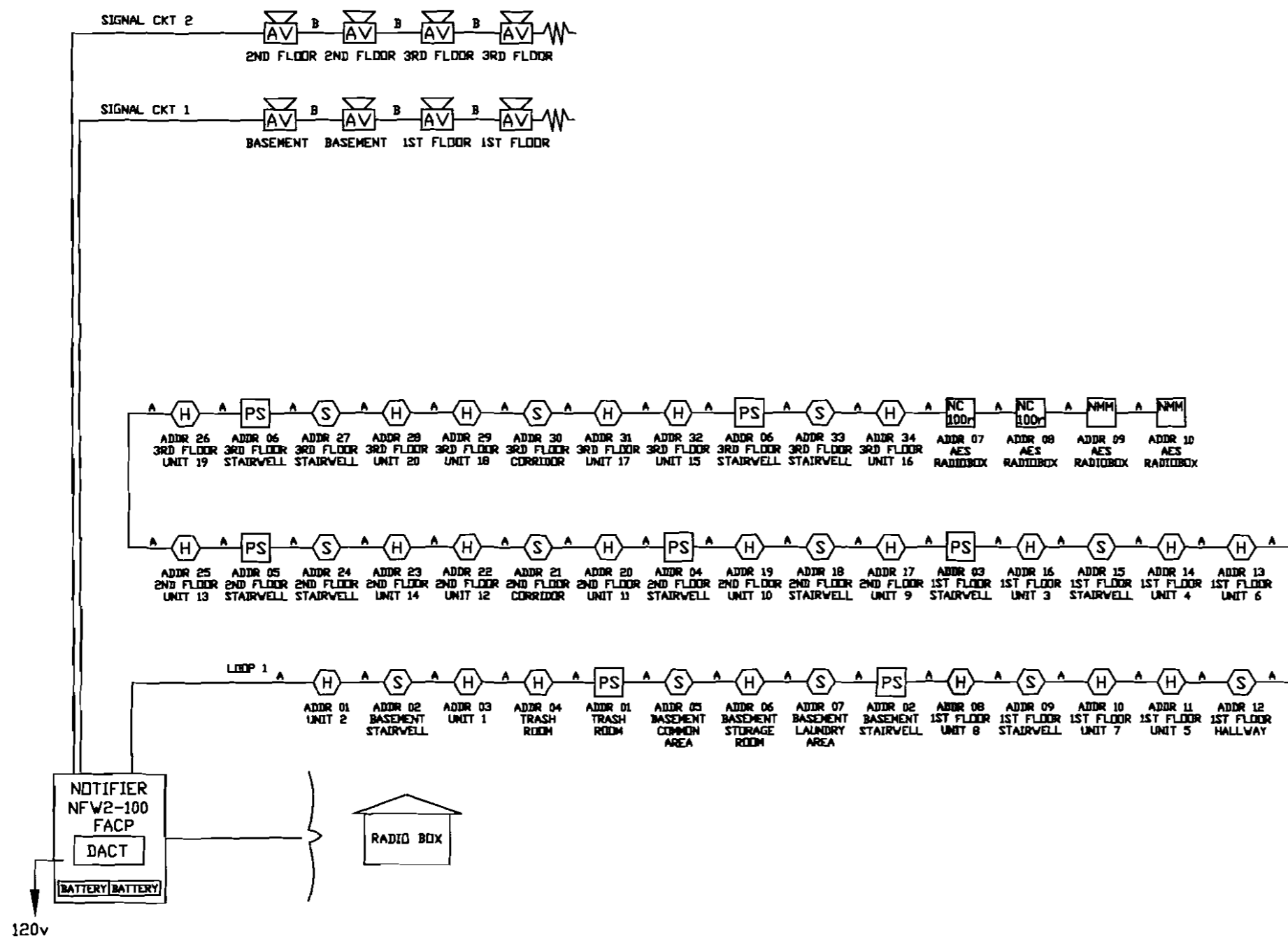
- A 1 PR #12 AWG TWISTED-PAIR UNSHIELDED CABLE FPL GENESIS 4515, BELDEN 6620UL (Up to 10,000 ft)
- A 1 PR #14 AWG TWISTED-PAIR UNSHIELDED CABLE FPL GENESIS 4513, BELDEN 6120UL (Up to 8,000 ft)
- A 1 PR #16 AWG TWISTED-PAIR UNSHIELDED CABLE FPL GENESIS 4511, BELDEN 6220UL (Up to 4,500 ft)
- B 1 PR #12 AWG FPL CABLE
- D 1 PR #14 AWG FPL CABLE
- E 1 PR #16 AWG FPL CABLE
- F 2c #12 AWG CABLE
- G 2c #14 AWG CABLE
- H 1 PR #16 AWG TWISTED-PAIR SHIELDED CABLE FPL
- J 1 CAT5 CABLE

REVISION 2	DATE:
REVISION 1	DATE:
REVISION 0 SUBMITTAL	DATE: 5/7/10

SYSTEM WIRING RISER

PROJECT NAME	SCALE NTS
124 PARK AVE. PORTLAND, MAINE	BY: GJC
 Prepared For Tomorrow, Delivered Today	CK BY:
	SAVED AS:

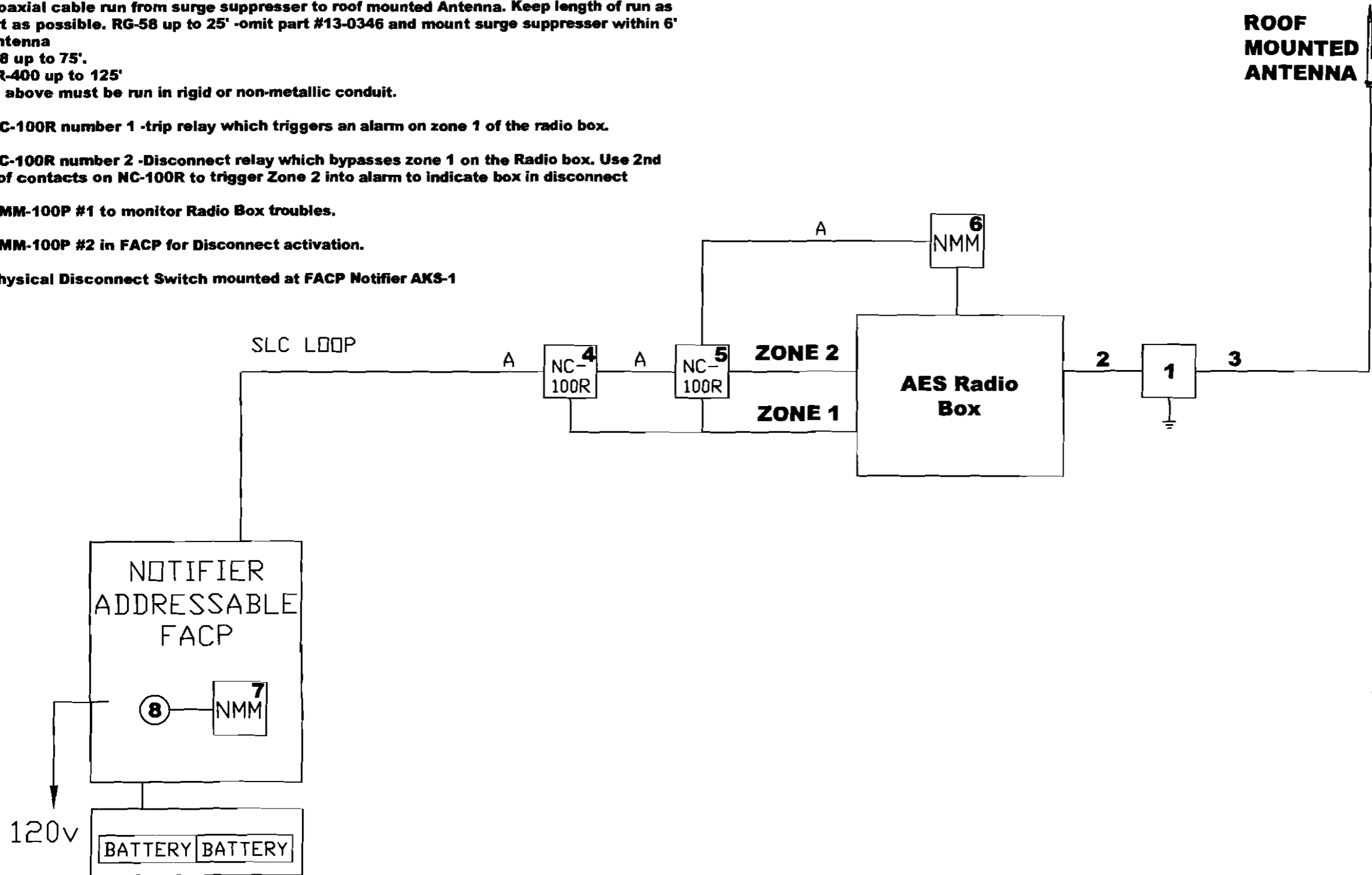
Important! Duplicate Addresses on devices of different style is NOT an error in design or printing. All electronic devices MUST be placed in a heated room with temperature above 32 degrees. Never run wires parallel to any other wiring. Make sure to always run cables in separate raceways. Fire alarm wiring can emit noise that may affect other devices. Shielded cable can be used if cable is run near sensitive equipment



NOTES:

- 1) 4" Square deep grounded box for antenna line surge suppresser. Mount within 6' of the Radio Box enclosure.
- 2) AES part #13-0345-6 6' RG-8 cable assembly with N male connectors both ends to connect surge suppresser to the Radio Box enclosure. AES part #13-0346 18" RG-58 cable assembly to connect transceiver to enclosure.
- 3) Coaxial cable run from surge suppresser to roof mounted Antenna. Keep length of run as short as possible. RG-58 up to 25' -omit part #13-0346 and mount surge suppresser within 6' of antenna
 RG-8 up to 75'.
 LMR-400 up to 125'
 2+3 above must be run in rigid or non-metallic conduit.
- 4) NC-100R number 1 -trip relay which triggers an alarm on zone 1 of the radio box.
- 5) NC-100R number 2 -Disconnect relay which bypasses zone 1 on the Radio box. Use 2nd set of contacts on NC-100R to trigger Zone 2 into alarm to indicate box in disconnect
- 6) NMM-100P #1 to monitor Radio Box troubles.
- 7) NMM-100P #2 in FACP for Disconnect activation.
- 8) Physical Disconnect Switch mounted at FACP Notifier AKS-1

Important! Wiring connections must have correct polarity.



LEGEND

MOUNTING HEIGHT	Symbol	Description
48 INCHES	PS	PULL STATION
	S	SMOKE DETECTOR
	R	HEAT DETECTOR RATE OF RISE
	F	HEAT DETECTOR FIXED TEMP
	RT	REMOTE TEST/INDICATOR
	DS	DUCT SMOKE DETECTOR <small>Note: Remove J1 Jumper</small>
80 INCHES	VO	VISUAL ONLY
80 INCHES	AV	AUDIO / VISUAL
	DSM	DUAL SYNC MODULE
	ISM	ISOLATION MODULE
	NMM	MONITOR MODULE
	NC-100R	RELAT MODULE
	STS	SPRINKLER TAMPER
	SFS	SPRINKLER FLOW

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

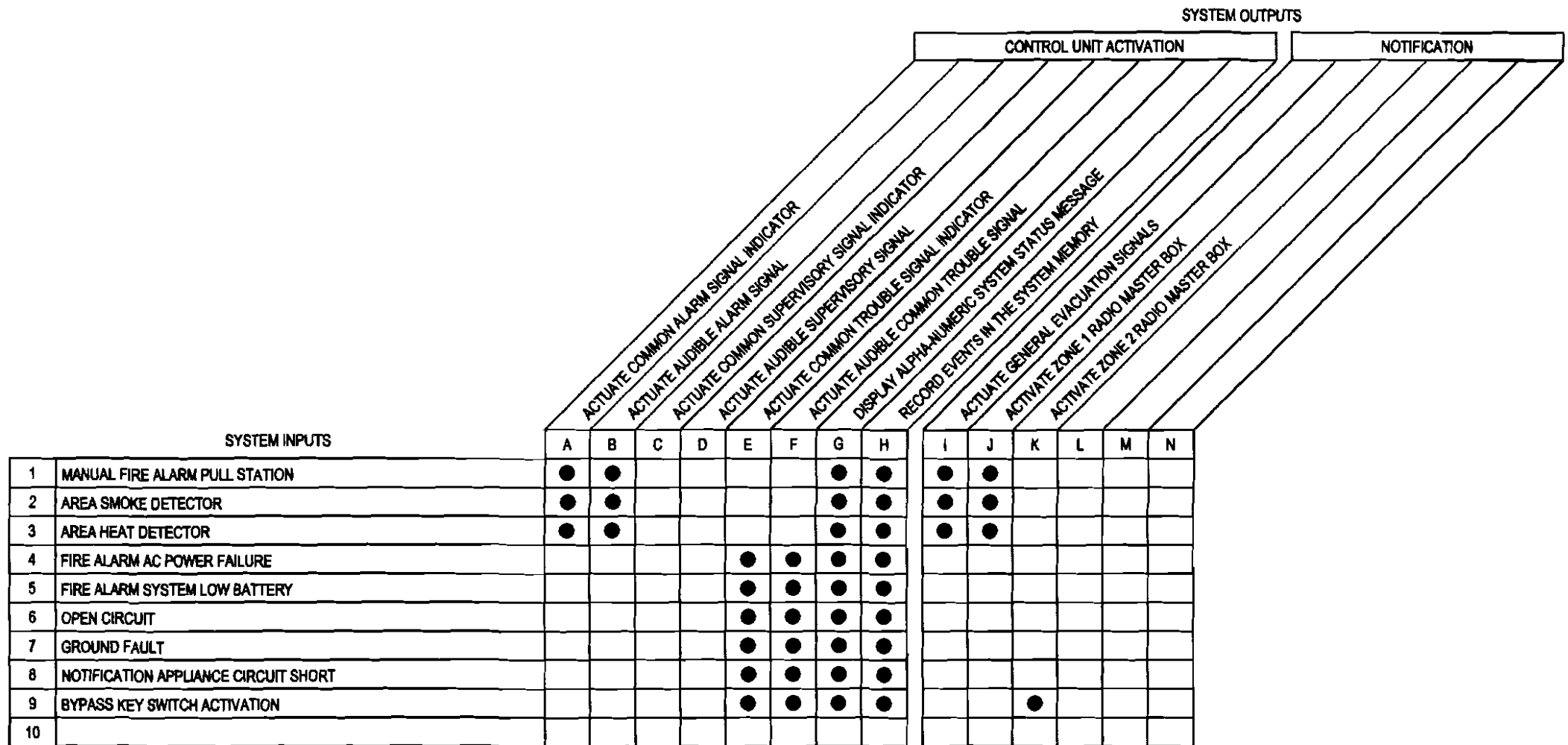
Room Size	Candela Rating	Load (amps)
20' x 20'	15 cd	0.08 amps
28' x 28'	30 cd	0.10 amps
45' x 45'	75 cd	0.15 amps
54' x 54'	110 cd	0.20 amps

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

REVISION 2	DATE:
REVISION 1	DATE:
REVISION 0 SUBMITTAL	DATE: 3/23/10

SYSTEM WIRING RISER	
PROJECT NAME AES Masterbox Portland, MAINE	SCALE NTS BY: HEAD CK BY:
 NORRIS INC <small>Prepared For: American National Safety</small> 2257 BROADWAY, So PORTLAND, MAINE	
SAVED AS:	

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




This drawing is a typical device layout, wiring is shown diagrammatically only. This drawing has been provided as an example ONLY. Riser does not necessarily indicate all devices and appliances. See floor plans and specification for location and quantities. The purchaser must accurately layout the initiating and notification devices in their proper zones/circuit. Note: All signal circuits have a 2.5 amp load limitation and a combined load limitation of 3.0 amps or 6.0 amps if XRM-24 is added to the panel. There can be 4 class B nac circuits or 2 class A nac circuits. REMOTE power supply has a 3.0 amp limitation per circuit and an 8.0 amp combined limitation for all 4 circuits. (see chart below for current vs. candela rating)

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

- A 1 PR #12 AWG TWISTED-PAIR UNSHIELDED CABLE FPL GENESIS 4515, BELDEN 6020UL (Up to 10,000 ft)
- A 1 PR #14 AWG TWISTED-PAIR UNSHIELDED CABLE FPL GENESIS 4513, BELDEN 6120UL (Up to 8,000 ft)
- A 1 PR #16 AWG TWISTED-PAIR UNSHIELDED CABLE FPL GENESIS 4511, BELDEN 6220UL (Up to 4,500 ft)
- B 1 PR #12 AWG FPL CABLE
- D 1 PR #14 AWG FPL CABLE
- E 1 PR #16 AWG FPL CABLE
- F 2c #12 AWG CABLE
- G 2c #14 AWG CABLE
- H 1 PR #16 AWG TWISTED-PAIR SHIELDED CABLE FPL
- J 1 CAT5 CABLE

REVISION 2	DATE:
REVISION 1	DATE:
REVISION 0 None	DATE: 4/22/10

SYSTEM WIRING RISER

PROJECT NAME 124 Park Ave. Portland, MAINE	SCALE NTS BY: EAD CK BY:
 NORRIS INC Prepared For Tomorrow, Delivered Today	
SAVED AS	