

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

BUILDING INSPECTION

PERMIT

Permit Number: 091406
PERMIT ISSUED

Please Read
Application And
Notes, If Any,
Attached

This is to certify that LOCKARD ROBERT A /Anthony Mancini Contractor

has permission to install Fire Alarm System

AT 336 ALLEN AVE CB# 344 E036001

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 otherwise 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] (see)
Health Dept. _____
Appeal Board _____
Other _____
Department Name

[Signature] R/15/09
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

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

| | | |
|-----------------------|-------------|---------------------|
| Permit No: 09-1406 | Issue Date: | CBL: 344 E036001 |
|-----------------------|-------------|---------------------|

| | | | |
|--|---|---|---------------------|
| Location of Construction: 336 ALLEN AVE | Owner Name: LOCKARD ROBERT A | Owner Address: 69 HANCOCK RD | Phone: |
| Business Name: | Contractor Name: Anthony Mancini Electrical Contract | Contractor Address: 179 Sheridan Street Portland | Phone 2077745829 |
| Lessee/Buyer's Name | Phone: | Permit Type: Fire Alarm System | Zone: B-2 |

| | | | | |
|-------------------------------------|---|------------------------|-----------------------------|--------------------|
| Past Use: Commercial "Walgreens" | Proposed Use: Commercial "Walgreens" - install Fire Alarm System | Permit Fee: \$60.00 | Cost of Work: \$4,000.00 | CEO District: 5 |
|-------------------------------------|---|------------------------|-----------------------------|--------------------|

| | | |
|--|---|--|
| FIRE DEPT: <i>at conditions</i> 12/15/09 | <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied | INSPECTION: Use Group: <i>M</i> Type: <i>Fire Alarm</i> <i>IBC 2003</i> |
| Signature: <i>[Signature]</i> | Signature: <i>[Signature]</i> 12/15/09 | |

Proposed Project Description:
install Fire Alarm System

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)
Action: Approved Approved w/Conditions Denied
Signature: _____ Date: _____

| | | |
|-----------------------------|---------------------------------|------------------------|
| Permit Taken By: Ldobson | Date Applied For: 12/11/2009 | Zoning Approval |
|-----------------------------|---------------------------------|------------------------|

- 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>12/11/09</i> | 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: _____ | 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> |
|--|---|---|

PERMIT ISSUED

DEC 16 2009

City of Portland

CERTIFICATION

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

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

City of Portland, Maine - Building or Use Permit

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

| | | |
|------------------------------|--|----------------------------|
| Permit No: 09-1406 | Date Applied For: 12/11/2009 | CBL: 344 E036001 |
|------------------------------|--|----------------------------|

| | | | |
|---|--|--|--------------------------------|
| Location of Construction: 336 ALLEN AVE | Owner Name: LOCKARD ROBERT A | Owner Address: 69 HANCOCK RD | Phone: |
| Business Name: | Contractor Name: Anthony Mancini Electrical Contract | Contractor Address: 179 Sheridan Street Portland | Phone (207) 774-5829 |
| Lessee/Buyer's Name | Phone: | Permit Type: Fire Alarm System | |

| | |
|--|---|
| Proposed Use: Commercial "Walgreens" - install Fire Alarm System | Proposed Project Description: install Fire Alarm System |
|--|---|

Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 12/11/2009
Note: **Ok to Issue:**

Dept: Building **Status:** Approved with Conditions **Reviewer:** Jeanine Bourke **Approval Date:** 12/15/2009
Note: **Ok to Issue:**

- 1) Separate permits are required for any electrical, plumbing, sprinkler, fire alarm or HVAC or exhaust systems. Separate plans may need to be submitted for approval as a part of this process.
- 2) Fire Alarm systems shall be installed per Sec. 907 of the IBC 2003

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Ben Wallace Jr. **Approval Date:** 12/15/2009
Note: **Ok to Issue:**

- 1) The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.
- 2) Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance
- 3) System acceptance and commissioning must be co-ordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
- 4) All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP and keyed alike, labeled "FIRE ALARM RECORDS".

PERMIT ISSUED

09-1406

City of Portland



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: 330 ALLEN AVE CBL: _____

Exact location: (within structure) THROUGHOUT BUILDING

Type of occupancy(s) (NFPA & ICC): MERCHANTILE OCCUPANCY

Building owner: WALGREENS

System Designer: MOESHER + ASSOCIATES ARCHITECTS

Designer phone: 978-456-6906 E-mail: _____

Installing contractor: ANTHONY MANCINI INC License No: ME 60003358

Contractor phone: 207-774-5829 E-mail: KWRIGHT@MANCINI/ELECTRIC.COM

This is a new application: YES NO

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

The following documents have been provided with this application:

- Floor plans: YES NO
- Wiring diagram: YES NO
- Annunciator details: YES NO
- Bid specifications: YES NO
- Equipment data sheets: YES NO
- Battery & voltage drop calculations: YES NO
- Sequence of operations: YES NO
- Designer/ personnel qualifications: YES NO

COST OF WORK: \$4,000.⁰⁰
 PERMIT FEE: \$60.⁰⁰
 (\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

DEC 11 2009

**Dept. of Building Inspections
City of Portland Maine**

Download a new copy of this document from Inspection Division on-line at www.portlandmaine.gov 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 NFPA 70, NFPA 72, and Fire Department Technical Standard(s).

Applicant signature: Anthony Mancini Date: 12/10/09

DEFINITIONS

- FIRE ALARM SYSTEM:** A combination of components consisting of initiating devices, signal devices and control devices; all of which either report to or receive a signal from a central control point (FACP).
- HIGH-RISE:** Any structure seventy-five (75) feet or more above grade level. Lineal measure shall be from the lowest point of the occupiable space to the top floor of the structure as determined by the Fire Chief.
- CLASS "C" FIRE ALARM SYSTEM:** A fire alarm system of the least degree, intended to be used in occupancies where life safety hazards are minimal and the occupant load is low.
- CLASS "B" FIRE ALARM SYSTEM:** A fire alarm system intended to be used where life safety hazards are greater than usual due to higher fire loads, larger structures or greater occupant loads.
- CLASS "A" FIRE ALARM SYSTEM:** A fire alarm system required in all structures where the greatest hazards are present due to fire loads, high occupant density or excessive size. These systems are intended for use where total evacuation is impractical and/or the earliest possible warning is desirable and a need exists for the control of panic.

GENERAL REQUIREMENTS
SECTION 1.0

- 1.1 All structures, as herein defined, shall be provided with some level of early warning, installed and maintained as detailed by this ordinance and other referenced publications. The intent of this ordinance is to provide early warning to all persons where danger from fire may not be immediately evident, to allow those persons to safely evacuate the area and/or take other appropriate action.
- 1.2 The Fire Prevention Bureau shall review each building permit application for all structures except one (1) and two (2) family homes, to determine the need and extent of fire alarm protection.
- 1.3 The level of protection required shall be based on the size and type of construction, occupancy classification (as determined by NFPA 101) and building contents.
- 1.4 Fire alarm protection may be required in structures not specifically required to be protected by other sections of these standards to offset exit deficiency, mixed occupancies or other safety situations not otherwise addressed.
- 1.4.1 At the discretion of the Fire Chief, state of the art alternate fire protection systems may be accepted as an equivalent substitute to the fire alarm systems detailed in these standards.
- 1.5 Some level of fire alarm protection shall be required for any of the following occupancies:
- High-rise buildings (any occupancy classification, class “A” system required)
 - High Hazard Occupancies/Public Assemblies
 - Educational Occupancies
 - Detention and Correctional Occupancies
 - Hotels and Dormitories
 - Apartment Buildings (4 or more stories or 11 or more units)
 - Residential Board and Care Facility
 - Mercantile Occupancies
 - Business Occupancies (when occupied by 50 or more persons)
 - Industrial Occupancies (when occupied by 50 or more persons or any high hazard classification)
 - Storage (when stored materials are classified as hazardous and the structure is normally occupied)
 - Special Structures (when determined by the Fire Prevention Bureau)
 - Any mixed occupancy that includes a residential use.
- 1.6 All equipment used in any one structure shall be of the same manufacturer. All control equipment shall be listed under “UL” category UOJZ as a single control unit. Partial listings shall not be acceptable.
- 1.7 All control equipment must have transient protection devices to comply with UL864 requirements.
- 1.8 The installation of any fire alarm system shall comply with the performance standards for a Type “A”, “B” or “C” system or as specified or modified by the Fire Prevention Bureau.
- 1.9 The “Performance Standards” for Type “A”, “B”, and “C” systems shall be met unless waived by the Fire Chief in his discretion.
- 1.10 All structures requiring a fire alarm system shall be provided with a “Knox Box” – make, model and size as determined by the Portland Fire Prevention Bureau. Knox Box shall be located as specified by the fire department. All keys required to operate the fire alarm system shall be placed within this box.

-
- 1.11 All installations shall comply with the applicable requirements of NFPA 72, The National Electrical Code, and the Fire Prevention Bureau.
- 1.12 All applications for “Fire Alarm Permits” shall be made at the building inspection office on forms provided by the Fire Prevention Bureau. All information requested on the forms shall be completed when applicable to the proposed installation and all supportive documentation provided before the permit can be reviewed.
- 1.13 In addition to the “Fire Alarm Permit”, the installer shall apply for an electrical permit through the building inspection office.
- 1.14 Any application for a Class A or B fire alarm system shall include:
- 1) A copy of the Bid Specification.
 - 2) Complete descriptive data indicating “UL” listings for all system components.
 - 3) A complete description of the sequence of operation.
 - 4) A complete wiring diagram for all components being connected to the system.
 - 5) Floor plans indicating the placement of all equipment.
 - 6) Annunciator details showing the labeling of all zones.
 - 7) Battery Calculations.
- 1.14.1 Any application for a Class C fire alarm system shall include those items listed above as required by the Fire Prevention Bureau.
- 1.15 Any additions or modifications from approved plans will require the submission of an amendment and approval from the fire department.
- 1.16 After the completion of installation, the installation contractor shall provide the Fire Prevention Bureau with a “Fire Alarm Acceptance Report” per NFPA 72 before the “Certificate of Occupancy” can be issued.
- 1.17 All fire alarm wiring shall be protected from vandalism by means of electrical mechanical tubing (“EMT”) or metal conduit or concealment within the wall cavity.
- 1.18 Any fire alarm system, including all peripheral devices, shall be maintained and kept operational at all times. Whenever any initiating device is activated and rendered inoperable, it shall be repaired or replaced within twenty-four (24) hours. Any other component needing repair or replacement shall be started within twenty-four (24) hours of disablement and continued until completed as parts are received.
- 1.19 Any alarm system requiring more than one (1) zone shall be provided with individual zone disconnects.
- 1.20 Any Class “A” or “B” fire alarm system shall submit CAD drawings of said system.

CONTROL EQUIPMENT
SECTION 2.0

- 2.1 The Fire Alarm Control Panel (FACP) or an annunciator panel shall be placed at the primary point of entry as defined by the Fire Prevention Bureau.
- 2.2 Programmable systems shall be capable of being programmed onsite.
- 2.3 PACP and annunciator panels shall have visual and audio trouble indicators.
- 2.4 All control features shall be placed within the FACP only.
- 2.5 Any FACP which is placed within a space shall have the door leading to that space labeled with the words "Fire Alarm Control Panel".
- 2.6 The tripping of a tamper switch shall activate a trouble condition only and shall not sound the evacuation signals.
- 2.7 The activation of a Class "A" or "B" fire alarm system shall automatically send a signal to either the "Municipal" fire alarms or an approved "Central Receiving Station" when required by Municipal Ordinance 2.5. "Municipal" Fire Alarm Connections shall be approved by the Fire Chief.
- 2.8 Any structure required to have a fire alarm system shall provide a firefighter communication system, which, at the discretion of the Fire Chief, may consist a telephone communication system or a state of the art system such as a fixed repeater system. Said system shall be a Motorola Approved Fixed repeater system and shall meet the interface requirements of the City of Portland's 800 mhz radio system. All such equipment shall be properly installed and regularly maintained by the property owner and will be available for inspection and use of the City of Portland 24/7.

INITIATING DEVICES
SECTION 3.0

- 3.1 Exhaust hood extinguishing systems, halon systems, and standpipe systems shall be electrically connected to the evacuation system.
- 3.2 Detection devices located within concealed spaces or spaces deemed inaccessible by the Fire Prevention Bureau shall have an indicator visual to the firefighter from all normally occupied spaces approved by the Fire Prevention Bureau.
- 3.3 Any initiating device not connected to the FACP shall be so labeled.
- 3.4 All fire alarm pull stations, control equipment, and audio visual equipment shall be red, with the exception that FACP may be a different color when proper labeling is provided.
- 3.5 All areas that are part of a defined exit system (hallways, stairways, lobbies, etc.) and any areas prone to smoldering fires shall be protected with smoke detectors. All other areas shall be protected with heat detectors. The heat detectors shall be rate-of-rise in all cases when practical.
- 3.6 The fusing of any sprinkler head shall activate the fire alarm.
- 3.7 All detection devices shall be protected against radio frequency activation.

SIGNALING DEVICES
SECTION 4.0

- 4.1 The use of bells as a signal device is prohibited in any system.
- 4.2 All Class “A” systems shall be provided with two (2) separate signal circuits installed so as to reduce the chances of both being damaged by a single incident.
- 4.3 The activation of the fire alarm system in all high-rise occupancies shall sound an audible and visible alarm on the floor of initiation, the two (2) floors above, and the floor below. Whenever any incident requires the activation of a floor connected to other floors by means of an unprotected vertical opening, the alarm activation shall be extended to include all floors so interconnected. If a second zone goes into alarm, then a general evacuation shall be sounded.
- 4.4 All other structures shall sound a general evacuation throughout all floors unless otherwise approved by this office.
- 4.5 All residential occupancies requiring a fire alarm system shall equip each living with an approved “mini-horn” connected to the FACP.
- 4.6 The use of chimes shall be restricted to hospitals, nursing homes, convalescent homes, institutions for the mentally handicapped, and other occupancies where sudden loud noises might cause panic or confusion to the occupants. Any occupancy using chimes as the signal devices must provide staff which is awake twenty-four (24) hours a day.
- 4.7 The Fire Prevention Bureau may require multi-lingual voice evacuation systems in all facilities using prerecorded voice evacuation systems. Prerecorded messages shall use a female voice and state the following at the completion of a thirty (30) second alert tone:

“Attention Please! The fire alarm system has detected an emergency condition within the building. Please proceed to the nearest stairway and exit the building. Do not use the elevators.”

TYPE A FIRE ALARM SYSTEM PERFORMANCE STANDARDS
SECTION 5.0

- 5.1 Type "A" Fire Alarm System Performance Standards.
- 1) "UL" Listed
 - 2) Meet all applicable NFPA; local and state standards
 - 3) Supervision of all peripheral devices
 - 4) Addressable detection devices
 - 5) Alarm Verification
 - 6) Voice communications
 - 7) Firefighter telephones and/or radio communications
 - 8) Municipal connection
 - 9) Separate audio and visual trouble indication
 - 10) Individual zone or device disconnect
 - 11) Building systems status indication
 - 12) Elevator recall
 - 13) Sprinkler activation and zone indication
 - 14) History recall
 - 15) Prerecorded messages
 - 16) Drill switch
 - 17) "Knox Box"
 - 18) Field programmable
 - 19) Two (2) separate signal circuits per floor.

**TYPE B FIRE ALARM SYSTEM PERFORMANCE STANDARDS
SECTION 6.0**

- 6.1 Type "B" fire alarm system performance standards:
- 1) "UL" Listing
 - 2) Meet all applicable NFPA, local, and state standards
 - 3) Zone indication
 - 4) Separate audio and visual trouble indication
 - 5) Municipal connection capabilities
 - 6) Supervision of all peripheral devices
 - 7) Sprinkler activation and zone indication (when applicable)
 - 8) Individual zone disconnect
 - 9) Drill switch

TYPE C FIRE ALARM SYSTEM PERFORMANCE STANDARDS
SECTION 7.0

7.1 Type "C" Fire Alarm System Performance Standards.

- 1) "UL" Listed
- 2) Meet all applicable NFPA, local, and state standards
- 3) Zone indication
- 4) Separate audio and visual trouble indication
- 5) Supervision of all peripheral devices
- 6) Sprinkler activation and zone indication (when applicable)

PM Construction Co., Inc.

19 Industrial Park Road
PO Box 728
Saco, Maine 04072
(207) 282-7697
(207) 283-4549 Fax

LETTER OF TRANSMITTAL

DATE: 11/25/09 JOB #: 09-1-114

RE: Walgreens – Allen Ave, Portland

RE: Fire Alarm submittal

TO: Attn: Kevin Wright
Mancini Electric
179 Sheridan Street
Portland, ME 04101
(207)774-5829

- WE ARE SENDING YOU:** Attached Under separate cover via _____ the following:
- Shop drawings Prints Plans Samples Specifications
- Copy of letter Change order _____

| COPIES | DATE | NO. | DESCRIPTION |
|--------|----------|-----|----------------------|
| 1 | 11/18/09 | | Fire Alarm Submittal |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

THESE ARE TRANSMITTED as checked below:


- For approval Approved as submitted Resubmit copies for approval
- For your use Approved as noted Submit ___ copies for distribution
- As requested Returned for corrections Return ___ corrected prints
- For review and comment _____ Return prints after use
- FOR BIDS DUE** _

SHIPPING:

- UPS Ground UPS Next Day Air Electronic Mail
- FEDEX Ground Fedex Overnight Hand Deliver
- Priority Mail Regular Mail

REMARKS:

Copy to: File / Tim Rivard

Signed: 
Laura J. Blanchette

If enclosures are not as noted, please notify us immediately.

FIRE - LITE MS - 9200UDLS

FIRE ALARM SYSTEM SUBMITTALS

FOR THE

Walgreens

STORE #12326
SWC of Washington Ave. & Allen
Portland, ME 04103

Equipment & Submittal Furnished By:



F.E. MORAN, INC.

Alarm and Monitoring Services

33341 Kelly Rd.
Fraser, MI 48026
PH. 586.228.5788

CHECKED

TO BE USED FOR
ACCURACY, EFFECT CONTIGUOUS
WORK, AND COMPLIANCE WITH
CONTRACT REQUIREMENTS.
P.M. CONSTRUCTION CO.

BY

DATE

TITLE

9/24

#22

Walgreens

FIRE ALARM SYSTEM SUBMITTAL TABLE OF CONTENTS

CATALOG DATA SHEETS

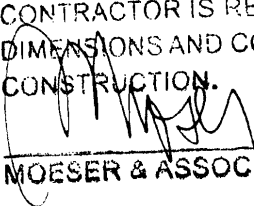
| <i>MFG.</i> | <i>PART NO.</i> | <i>PART DESCRIPTION</i> |
|---------------|-----------------|---|
| Firelite | MS9200UDLS | Addressable Fire Alarm Control Panel |
| Firelite | ANN-80 | LCD Fire Alarm Annunciator |
| Powersonic | PS-12180 | Sealed Lead Acid Battery 12volt 18 amp |
| Firelite | BG-12LX | Addressable Manual Pull Station |
| Firelite | SD355 | Photoelectric Smoke Detector |
| Firelite | MMF-300 | Addressable Monitor Module |
| | MDF-300 | Addressable Dual Monitor Module |
| | CRF-300 | Addressable Control Relay Module |
| Wheelock | AS-24MCW-FR | Fire Alarm Horn Strobe Wall |
| | RSS-24MCW-FR | Fire Alarm Strobe Wall |
| | AS-24MCC-FR | Fire Alarm Horn Strobe Ceiling |
| | ASWP-2475W-FR | Fire Alarm Horn Strobe Wall Outdoor |
| System Sensor | DH100ACDCLP | 4-Wire Duct Detectors |
| | RTS451 | Duct Detector Test Switch |
| Firelite | MS9200UDLS | Battery Calculation |
| Wheelock | NAC | Voltage Drop Calculation |
| AES Radio | AES p/n 7788F | RF Subscriber Unit For Fire Dept Monitoring |
| Altronix | T-1656C | 16.5 Power Supply Unit for AES Power Input |

ARCHITECTS REVIEW

REVIEWED AS NOTED

RESUBMIT

THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE ARCHITECTS ESTABLISHED CRITERIA. THIS REVIEW DOES NOT WAIVE THE REQUIREMENTS OF THE CONSTRUCTION CONTRACT OR THE NEED FOR THE CONTRACTOR TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR THE STRUCTURAL INTEGRITY OF ANY MATERIAL AND SYSTEMS USED. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS FOR ALL NEW AND EXISTING CONSTRUCTION.



MOESER & ASSOCIATES

11/2/09
DATE

MS-9200UDLS(E) Rev 2

**Intelligent Addressable FACP
with Built-In Communicator**

FIRE·LITE® Alarms
by Honeywell

Addressable

General

The Fire•Lite MS-9200UDLS Rev 2 with Version 4.0 firmware 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.

While the MS-9200UDLS Rev 2 may be used with an SLC configured in the CLIP (Classic Loop Interface Protocol) mode, it can also operate in LiteSpeed™ mode—Fire•Lite's latest polling technology—for a quicker device response time. LiteSpeed's patented technology polls 10 devices at a time. This improvement allows a fully-loaded panel with up to 198 devices to report an incident and activate the notification circuits in under 10 seconds. With Litespeed polling, devices can be wired on standard twisted, unshielded wire up to a distance of 10,000 feet. (Consult the wire table on page 5 for specific installation instructions.)

The MS-9200UDLS Rev 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.

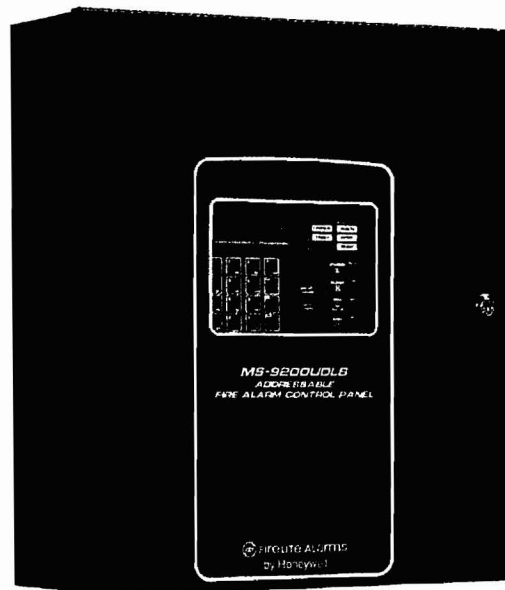
Available accessories include ANN-BUS devices as well as ACS LED, graphic and LCD annunciators, and reverse polarity/city box transmitter.

The integral DACT transmits system status (alarms, supervisories, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote and local programming of the control panel using the PS-Tools Upload/Download utility. In addition, the control panel may be programmed or interrogated off-site via the public switched telephone network. Any personal computer with Windows® XP or greater, a compatible modem, and PS-Tools, the Fire•Lite Upload/Download software kit, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status and system voltages. The panel can also be 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.

Version 4.0 firmware supports the following: ANN-bus devices, AD355 (LiteSpeed), USB port, NAC circuit diagnostics, a new report has been added to the walk-test that lists untested devices, new device types added: audio telephone type code for ACC 25/50ZST, Photo Supervisory and auto-resettable Drill (non-latching).

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

NOTE: Unless otherwise specified, the term MS-9200UDLS is used in this document to refer to both the MS-9200UDLS and the MS-9200UDLS(E) FACP's (Fire Alarm Control Panels).



Features

- Listed to UL standard 864, 9th edition.
- On-board DACT.
- Remote site or local USB port upload/download, using PS-Tools.
- Four Style Y (Class B) or two Class A (Style Z) NAC circuits. (Up to 6.0 amps total NAC power when using optional XRM-24B.)
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules or LCD-80F, ANN-80 or ACS Annunciators.
- ANN-BUS for connection to following optional modules (cannot be used if ACS annunciators are used):
 - ANN-80(-W) Remote LCD Annunciator
 - ANN-I/O LED Driver
 - ANN-S/PG Printer Module
 - ANN-RLY Relay Module
 - ANN-LED Annunciator Module
 - ANN-RLED Annunciator Module alarms only
- ACS/TERM:
 - ACS Annunciators: Up to 32 ACM Series annunciators (ACM-16AT or ACM-32 series). Cannot be used if ANN-BUS devices are used.
 - Terminal-mode Annunciators: Up to 32 LCD-80F remote annunciators.

- EIA-232 printer/PC interface (variable baud rate) on main circuit board, for use with optional UL-listed printer PRN-6F.
- 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.
- 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 5.

NOTIFICATION APPLIANCE CIRCUITS (NACS):

- Four onboard NACs with additional NAC capability using output control modules (CMF-300 or CMF-300-6). The four Class B NACs can be converted to two Class A NACs with NACKEY (included).
- 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 24VDC system power output is shared among all NAC circuits and 24VDC special-application auxiliary power outputs. Total available output is 3.0 amps. Using the optional XRM-24B transformer increases 24VDC output to 6.0 amps.

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.
- Three Form-C relay outputs (two programmable).
- 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.
- **OFFLINE PROGRAMMING:** Create the entire program in your office using a Windows®-based software package (order programming kit PS-Tools, separately). Upload/download system programming locally to the MS-9200UDLS(E) Rev 2 in less than one minute.
- USB programming with standard Male-A to Male-B cable.

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

Product Line Information

MS-9200UDLS Rev 2: 198-point addressable Fire Alarm Control Panel, one SLC loop. Includes 80-character LCD display, single printed circuit board mounted on chassis, and cabinet. 120 VAC operation.

MS-9200UDLSE Rev 2: Same as **MS-9200UDLS Rev 2**, except with 240 VAC operation.

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

PK-CD: Contains PS-Tools Programming software for Windows®-based PC computer (cable not included).

DP-9692: Optional dress panel for MS-9200UDLS Rev 2.

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

BB-26: Battery backbox, holds up to two 25 AH batteries and CHG-75.

BB-55F: Battery box, houses two 55 AH batteries.

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

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

BAT Series: Batteries, see data sheet DF-52397.

XRM-24B(E): Optional transformer. Increases system power output to 6.0 amps. Use XRM-24BE with MS-9200UDLS Rev 2(E).

PRT/PK-CABLE: Cable printer/personal computer interface cable; required for printer or for local upload/download programming.

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

IPDACT-2/2UD, IPDACT Internet Monitoring Module: Mounts in bottom of enclosure with optional mounting kit (PN IPBRKT). Connects to primary and secondary DACT telephone output ports for internet communications over customer provided ethernet internet connection. Requires compatible Teldat VisorALARM Central Station Receiver. Can use DHCP or static IP. (See data sheet df-60407 or df-52424 for more information.)

IPBRKT: Mounting kit for IPDACT-2/2UD in common enclosure.

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

COMPATIBLE ANNUNCIATORS

ANN-80(-W): LCD Annunciator is a remote LCD annunciator that mimics the information displayed on the FACP LCD display. Recommended wire type is un-shielded. (Basic model is red; order -W version for white; see DF-52417.)

ANN-LED: Annunciator Module provides three LEDs for each zone: Alarm, Trouble and Supervisory. Ships with red enclosure (see DF-60241).

ANN-RLED: Provides alarm (red) indicators for up to 30 input zones or addressable points. (See DF-60241).

ANN-RLY: Relay Module, which can be mounted inside the cabinet, provides 10 programmable Form-C relays. (See DF-52431.)

ANN-S/PG: Serial/Parallel Printer Gateway module provides a connection for a serial or parallel printer. (See DF-52429.)

ANN-I/O: LED Driver Module provides connections to a user supplied graphic annunciator. (See DF-52430.)

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

ACS-LED Zone 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.

LCD-80F (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 MS-9200UDLS Rev 2, see the following data sheets (document numbers) ACM-8RF (DF-51555), ACS/ACMSeries (DF-52378), LDM Series (DF-51384), LCD-80F (DF-52185).

LITESPEED COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

SD355T: Addressable low-profile photoelectric smoke detector with thermal sensor.

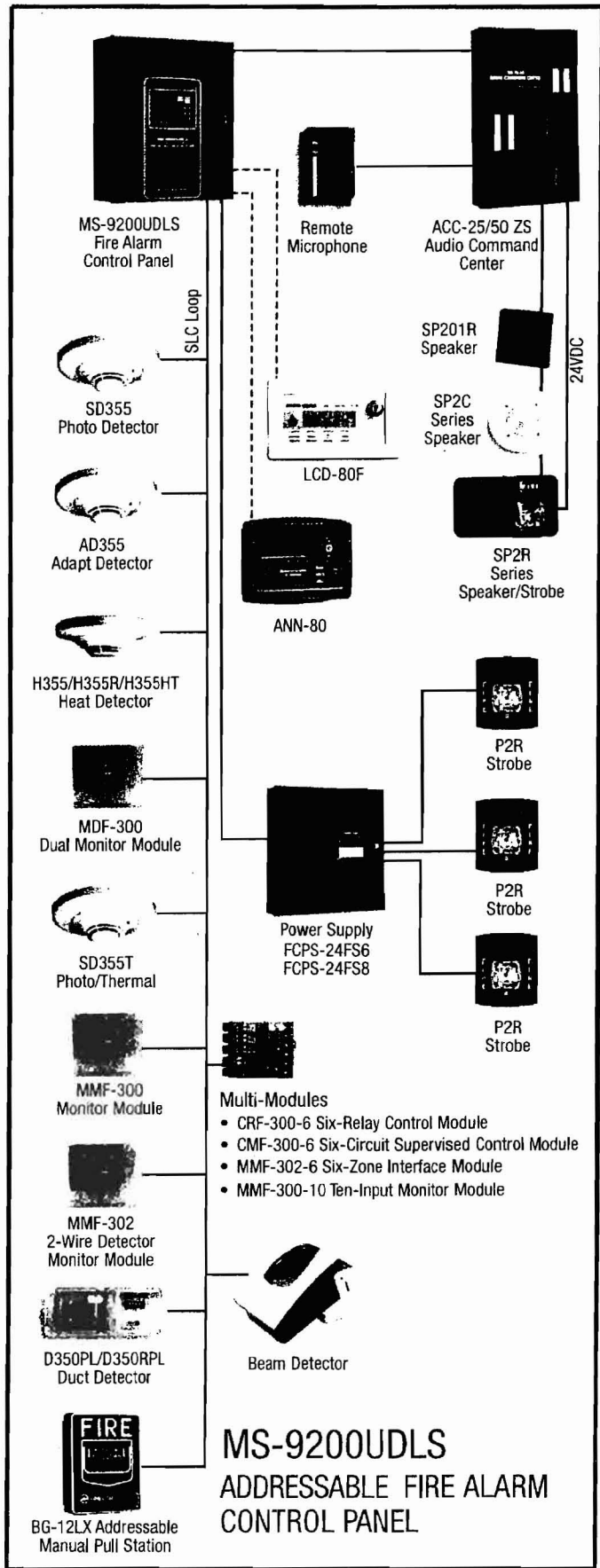
H355: Fast-response, low-profile heat detector.

H355R: Fast-response, low-profile heat detector with rate-of-rise option.

H355HT: Fixed high-temperature detector that activates at 190F/88C.

AD355: Low-profile, intelligent, "Adapt" multi-sensor detector (B350LP base included).

BEAM355: Intelligent beam smoke detector.



BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D350PL: Photoelectric low-flow duct smoke detector.

D350RPL: Photoelectric low-flow duct smoke detector with relay option.

MMF-300: 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.

MDF-300: Dual Monitor Module. Same as MMF-300 except it provides two Style B (Class B) only IDCs.

MMF-301: Miniature version of MMF-300. Excludes LED and Style D option. Connects with wire pigtails. May mount in device backbox.

MMF-302: Similar to MMF-300, but may monitor up to 20 conventional two-wire detectors. Requires resettable 24 VDC power. Consult factory for compatible smoke detectors.

CMF-300: 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.

CRF-300: 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.

BG-12LX: Addressable manual pull station with interface module mounted inside.

I300: Fault Isolator Module. This module isolates the SLC loop from short circuit conditions (required for Style 6 or 7 operation).

SMB500: Used to mount all modules except the MMF-301 and M301.

MMF-300-10: Ten-input monitor 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.

MMF-302-6: 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.

CMF-300-6: Six-circuit supervised control 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.

CRF-300-6: Six Form-C relay control 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: 1) For more information on Compatible Addressable Devices for use with the MS-9200UDLS Rev 2, see the following data sheets (document numbers): AD355 (DF-52386), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-52374), CMF/CRF Series (DF-52130), CP355 (DF-52383), D350PL/D350RPL (DF-52398), H355 Series (DF-52385), I300 (DF-52389), MMF-300 Series/MDF-300 (DF-52121), MMF-300-10 (DF-52347), MMF-302-6 (DF-52356), SD355/SD355T (DF-52384). 2) Legacy 300 Series detection devices such as the CP300/CP350, SD300(T)/SD350(T) and older modules such as the M300, M301, M302, C304, and BG-10LX are **not compatible** with LiteSpeed polling. If the SLC contains one of these devices, polling must be set for standard CLIP protocol. Please consult factory for further information on previous 300 Series devices.

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 following table to determine the specific wiring requirements for the SLC.

| SLC Protocol | Wire Requirements | Distance in Feet (m) | Wire Size | Wire Type |
|--------------|--|-----------------------|---|---|
| CLIP | Twisted-pair, shielded | 10,000 feet (3,048 m) | 12 AWG (3.31 mm ²) | Belden 9583, Genesis 4410, Signal 98230, WPW D999 |
| | Twisted-pair, shielded | 8,000 feet (2,438 m) | 14 AWG (2.08 mm ²) | Belden 9581, Genesis 4408, Signal 98430, WPW D995 |
| | Twisted-pair, shielded | 4,875 feet (1,486 m) | 16 AWG (1.31 mm ²) | Belden 9575, Genesis 4406, & 4606, Signal 98630, WPW D991 |
| | Twisted-pair, shielded | 3,225 feet (983 m) | 18 AWG (0.78 mm ²) | Belden 9574, Genesis 4402 & 4602, Signal 98300, WPW D975 |
| | Untwisted, unshielded wire, in or out of conduit | 3,000 feet (914 m) | 12 – 18 AWG (3.31 mm ² – 0.821 mm ²) | |
| LiteSpeed | 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 |

MS-9200UDLS Rev 2 Wire Requirements

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signalling Line Circuits..... 1
- Addressable device capacity..... 198
- Programmable software zones..... 99
- ACS Annunciators..... 32
- ANN-bus devices..... 8

Electrical Specifications

AC Power: MS-9200UDLS Rev 2: 120 VAC, 60 Hz, 3.0 amps. MS-9200UDLS Rev 2E: 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. MS-9200UDLS Rev 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 *Fire•Lite 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 0.3 amps total DC current available from each output. Power-limited.

Four-Wire Resettable Special Application Smoke Detector Power (24 VDC nominal): Up to 0.3 amps for powering four-wire smoke detectors. Power-limited. Refer to the *Fire•Lite 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: Unless used with Teldat VISORALARM, requires dedicated business telephone number with a minimum of 5 volts DC (off-hook voltage). 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):** 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 MS-9200UDLS Rev 2 complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (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, 4XTMF is required.)
- **PROPRIETARY** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **CENTRAL STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **OT, PSDN** (Other Technologies, Packet-switched Data Network)

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9200UDLS Rev 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:** S624
- **FM approved**
- **CSFM:** 7165-0075:208
- **MEA:** 120-06-E

LiteSpeed™ is a trademark; and FireLite® Alarms is a registered trademark of Honeywell International Inc. Microsoft® and Windows® are registered trademarks of the Microsoft Corporation.

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



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



Made in the U.S. A.

For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105. www.firelite.com

ANN-80

80-Character LCD Serial Annunciator

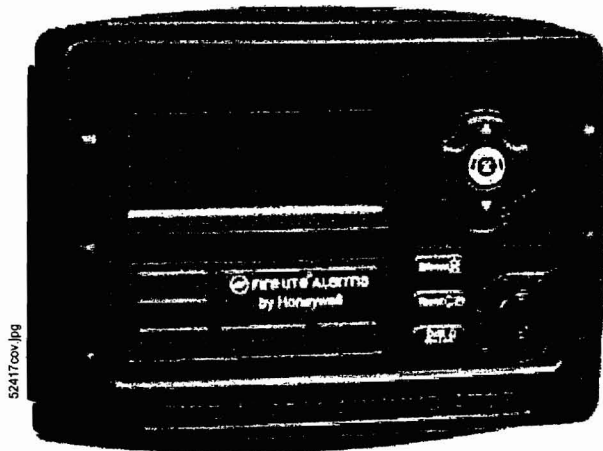

Annunciators

General

The ANN-80 annunciator is a compact, backlit, 80-character LCD fire annunciator that mimics the Fire Alarm Control Panel (FACP) display. It provides system status indicators for AC Power, Alarm, Trouble, Supervisory, and Alarm Silenced conditions. The ANN-80 and the FACP communicate over a two-wire serial interface employing the ANN-BUS communication format. Connected devices are powered, via two additional wires, by either the host FACP or a remote UL-listed, filtered power supply. ANN-80 is red; for white, order ANN-80-W.

The ANN-80 displays English-language text of system point information including device type, zone, independent point alarm, trouble or supervisory status, as well as any custom alpha labels programmed into the control panel. It includes control switches for remote control of critical system functions. (A keyswitch prevents unauthorized operation of the control switches.)

Up to eight ANN-80s may be connected to the ANN-Bus of each FACP. No programming is required, which saves time during system commissioning.



Features

- Listed to UL Standard 864, 9th Edition.
- Backlit 80-character LCD display (20 characters x 4 lines).
- Mimics all display information from the host panel.
- Control switches for System Acknowledge, Signal Silence, Drill, and Reset.
- Control switches can be independently enabled or disabled at the FACP.
- Keyswitch enables/disables control switches and mechanically locks annunciator enclosure
- Keyswitch can be enabled or disabled at the FACP.
- Enclosure supervised for tamper.
- System status LEDs for AC Power, Alarm, Trouble, Supervisory, and Alarm Silence.
- Local sounder can be enabled or disabled at the FACP.
- ANN-80 connects to the ANN-BUS terminal on the FACP and requires minimal panel programming.
- Displays device type identifiers, individual point alarm, trouble, supervisory, zone, and custom alpha labels.
- Time-and date display field.
- Aesthetically pleasing design constructed of durable Lexan.
- Surface mount directly to wall or to single, double, or 4" square electrical box.
- Semi-flush mount to single, double, or 4" square electrical box.
- Can be remotely located up to 6,000 feet (1,800 m) from the panel.
- Backlight turns off during AC loss to conserve battery power but will turn back on if an alarm condition occurs.
- May be powered by 24 VDC from the host FACP or by remote power supply (requires 24 VDC).
- Up to eight ANN-80s can be connected on the ANN-BUS.

Controls and Indicators

- AC Power
- Alarm

- Trouble
- Supervisory
- Alarm Silenced

Specifications

- **Operating voltage range:** 18 VDC to 28 VDC
- **Current consumption @ 24 VDC nominal (filtered and non-resettable):** 40 mA maximum.
- **Ambient temperature:** 32°F to 120°F (0°C to 49°C).
- **Relative humidity:** 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F).
- 5.375" (13.65 cm.) high x 6.875" (17.46 cm.) wide x 1.375" (3.49 cm.) deep.
- For use indoors in a dry location.
- All connections are power-limited and supervised.

Agency Listings and Approvals

The listings and approvals below apply to the ANN-80. 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:** S2424
- **FM approved** (ANN-80)
- **CSFM:** 7120-0075:211
- **MEA:** 442-06-E (ANN-80)

The ANN-BUS

POWERING THE DEVICES ON THE ANN-BUS FROM AUXILIARY POWER SUPPLY

The ANN-BUS can be powered by an auxiliary power supply when the maximum number of ANN-BUS devices exceeds the ANN-BUS power requirements. See the FACP manual for more information.

ANN-BUS DEVICE ADDRESSING

Each ANN-BUS device requires a unique address (ID Number) in order to communicate with the FACP. A maximum of 8 devices can be connected to the FACP ANN-BUS communication circuit. See the FACP manual for more information.

WIRE REQUIREMENTS: COMMUNICATIONS CIRCUIT

The ANN-80 connects to the FACP ANN-BUS communications circuit. To determine the type of wire and the maximum wiring distance that can be used with FACP ANN-BUS accessory modules, it is necessary to calculate the total worst case current draw for all modules on a single 4-conductor bus. The total worst case current draw is calculated by adding the individual worst case currents for each module.

NOTE: For total worst case current draw on a single ANN-BUS refer to appropriate FACP manual.

After calculating the total worst case current draw, the following table specifies the maximum distance the modules can be located from the FACP on a single wire run. The table ensures 6.0 volts of line drop maximum. In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor.

These cases are marked in the chart with an asterisk (*). Maximum length can never be more than 6,000 feet (1,800 m), regardless of gauge used. See table below.

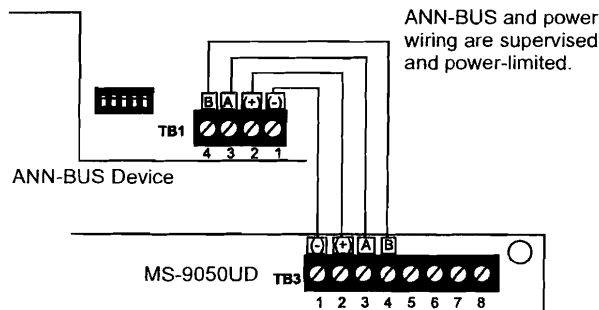
WIRE REQUIREMENTS: POWER CIRCUIT

- 14 to 18 AWG (0.75 - 2.08 mm²) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop from source to end of circuit.
- All connections are power-limited and supervised.
- A maximum of eight ANN-80 modules may be connected to this circuit.

| Communication Pair Wiring Distance: FACP to Last ANN-BUS Module | | | | |
|---|-----------|-----------|-------------|------------|
| Total Worst Case Current Draw (amps) | 22 Gauge | 18 Gauge | 16 Gauge | 14 Gauge |
| 0.100 | 1,852 ft. | 4,688 ft. | * 6,000 ft. | *6,000 ft. |
| 0.200 | 926 ft. | 2,344 ft. | 3,731 ft. | 5,906 ft. |
| 0.300 | 617 ft. | 1,563 ft. | 2,488 ft. | 3,937 ft. |
| 0.400 | 463 ft. | 1,172 ft. | 1,866 ft. | 2,953 ft. |
| 0.500 | 370 ft. | 938 ft. | 1,493 ft. | 2,362 ft. |
| 0.600 | 309 ft. | 781 ft. | 1,244 ft. | 1,969 ft. |
| 0.700 | 265 ft. | 670 ft. | 1,066 ft. | 1,687 ft. |
| 0.800 | 231 ft. | 586 ft. | 933 ft. | 1,476 ft. |
| 0.900 | 206 ft. | 521 ft. | 829 ft. | 1,312 ft. |
| 1.000 (max.) | 185 ft. | 469 ft. | 746 ft. | 1,181 ft. |

WIRING CONFIGURATION

The following figure illustrates the wiring between the FACP and ANN-BUS devices.



FACP Wiring to ANN-BUS Device

ORDERING OPTIONS:

ANN-80: Red, 80 character LCD Annunciator.

ANN-80-W: White, 80 character LCD Annunciator.

FireLite® Alarms is a registered trademark of Honeywell International Inc. LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company. ©2008 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.



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



Made in the U.S.A.

For more information, contact FireLite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105. www.firelite.com



PS Series Batteries

Section: Power Supplies/Accessories

GENERAL

Power-Sonic **PS Series** batteries provide secondary power for the whole series of **Fire-Lite** fire alarm control panels.



MH14328 (S)

FEATURES

- Provide secondary power for control panels.
- Gelled electrolyte.
- Sealed and maintenance-free.
- Overcharge protected.
- Extended shelf life.
- Easy handling with leakproof construction.
- Ruggedly constructed, high-impact ABS plastic case.
- Long service life.
- Compact design.

CAPACITY

Battery capacity, expressed in ampere-hours (AH), is the product of a discharge current and the length of time that the current is discharged. Batteries are rated according to their performance during 20 hours of discharge at a constant current.

The rated capacity of a battery is determined by subjecting it to a constant discharge current for 20 hours at 68°F (20°C). After 20 hours the voltage across the terminals is measured. The discharge current which causes a reading of 1.72 volts per cell (5.16 V on a 6 V battery and 10.32 V on a 12 V battery) is called the rated current. This current multiplied by 20 is the rated capacity of the battery.

APPLICATIONS

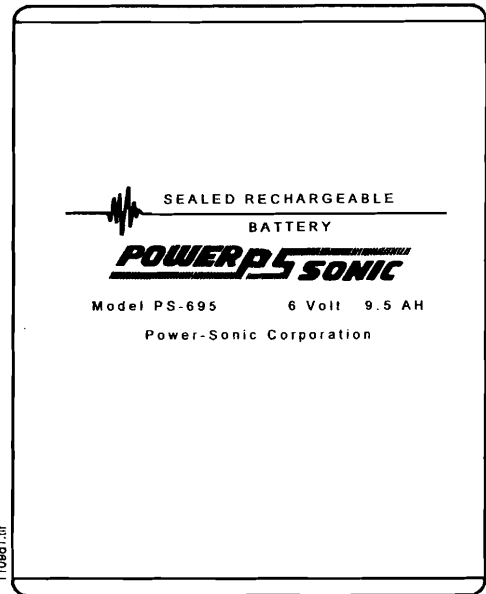
Use the PS Series batteries to provide backup power for control panels. Select batteries based on current requirements for your system and the capacity of its charger. These batteries can be used over a temperature range of -76°F to +140°F (-60°C to +60°C).

CONSTRUCTION

The sealed construction of the Power-Sonic battery allows trouble-free, safe operation in any position. There is no need to add electrolyte, as gases generated during overcharge are recombined in a unique "Oxygen Cycle." The battery is sealed, leakproof, and maintenance-free. The case is made of ABS, a high-impact plastic resin (acrylonitrile butadiene styrene copolymer) with high resistance to chemicals and flammability.

INSTALLATION

All panels have space reserved for batteries. See the appropriate panel installation manual for battery size restrictions. Typical inter-connection diagrams are shown in the literature accompanying each control panel.



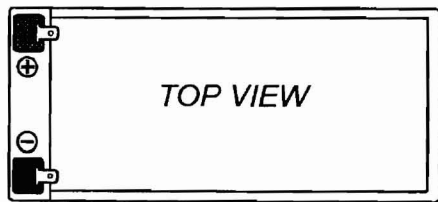
The PS-695 Battery

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact **Fire-Lite**. Phone: (203) 484-7161 FAX: (203) 484-7118



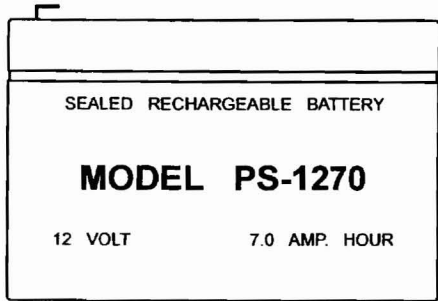
FIRE-LITE® ALARMS One Fire-Lite Place, Northford, Connecticut 06472

ISO-9001
Engineering and Manufacturing
Quality System Certified to
International Standard ISO-9001

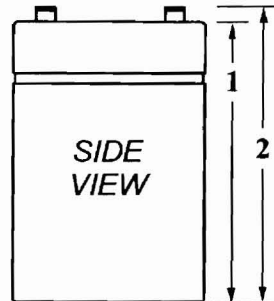


HEIGHT 1 BELOW
3.70 ± 0.08 inches
(94 ± 2 mm)

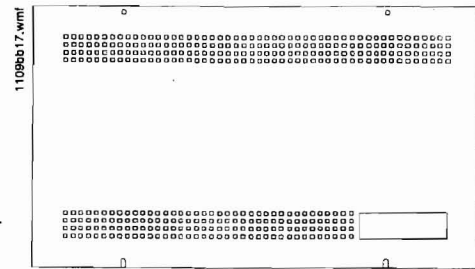
HEIGHT 2 BELOW
3.86 ± 0.08 inches
(96 ± 2 mm)



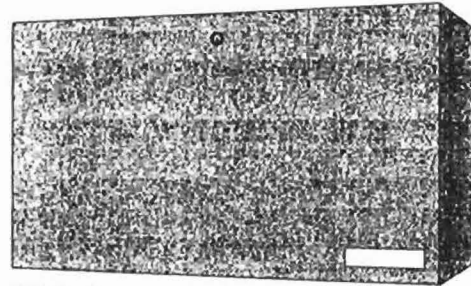
5.94 ± 0.04 inches
(151 ± 1 mm)



2.56 ± 0.04 inches
(65 ± 1 mm)



BB-17F: Optional Battery Backbox
14-1/2" W x 8-1/4" H x 4-3/4" D
(mm: 368.3 W x 209.55 H x 120.65 D)
For remote mounting of two 12-volt
PS-12180 batteries.



BB-55F: Optional Battery Backbox
See CHG-120F catalog sheet for details.

1109dim1.tif

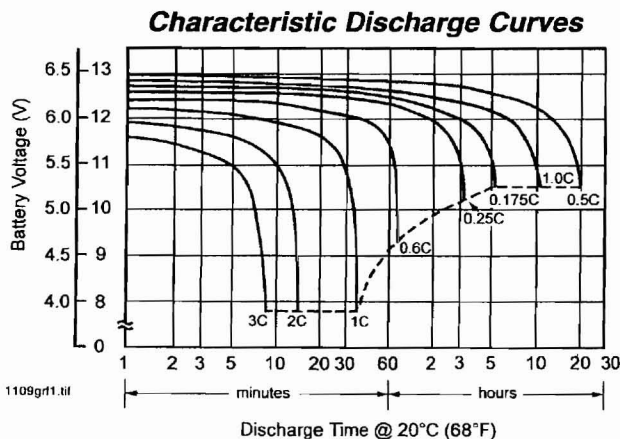
6040bb55.wmf

ENGINEERING SPECIFICATIONS

The fire control panel shall be equipped with secondary power provided by gelled-electrolyte batteries. The batteries shall be maintenance-free and shall be capable of powering the system in a manner and for a length of time determined by the governing regulations and the authority having jurisdiction.

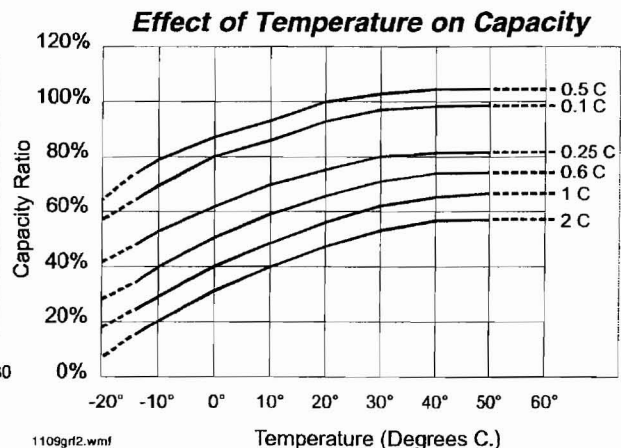
| MODEL | Nominal Voltage V | Nominal Capacity @ 20 hr. rate A.H. | Discharge Current @ 20 hr. rate mA | DIMENSIONS | | | | | | | | | |
|-----------|-------------------|-------------------------------------|------------------------------------|------------|-----|-------|-----|--------|-----|----------------------|-----|--------|------|
| | | | | Width | | Depth | | Height | | Height over terminal | | Weight | |
| | | | | in. | mm. | in. | mm. | in. | mm. | in. | mm. | lbs. | kg. |
| PS-695 | 6 | 9.5 | 475 | 4.26 | 108 | 2.75 | 70 | 5.54 | 141 | 5.54 | 141 | 4.9 | 2.2 |
| PS-1250 | 12 | 5.0 | 250 | 3.54 | 90 | 2.76 | 70 | 4.02 | 102 | 4.21 | 107 | 4.1 | 1.9 |
| PS-1270 | 12 | 7.0 | 325 | 5.94 | 151 | 2.56 | 65 | 3.70 | 94 | 3.86 | 98 | 5.7 | 2.6 |
| PS-12120 | 12 | 12 | 600 | 5.94 | 151 | 3.86 | 98 | 3.70 | 94 | 3.86 | 98 | 8.8 | 4.0 |
| PS-12180 | 12 | 18 | 875 | 7.13 | 181 | 2.99 | 76 | 6.57 | 167 | 6.57 | 167 | 12.8 | 5.8 |
| PS-12250 | 12 | 25 | 1300 | 6.89 | 175 | 6.54 | 166 | 4.92 | 125 | 4.92 | 125 | 18.7 | 8.5 |
| PS-12600 | 12 | 60 | 3000 | 10.25 | 260 | 6.60 | 168 | 8.20 | 208 | 9.45 | 240 | 39.7 | 18.0 |
| PS-121000 | 12 | 100 | 5000 | 12.00 | 305 | 6.60 | 168 | 8.20 | 208 | 9.45 | 240 | 65.7 | 29.8 |

5097011.tbi



1109gr11.tif

Discharge Time @ 20°C (68°F)



1109gr12.wmf

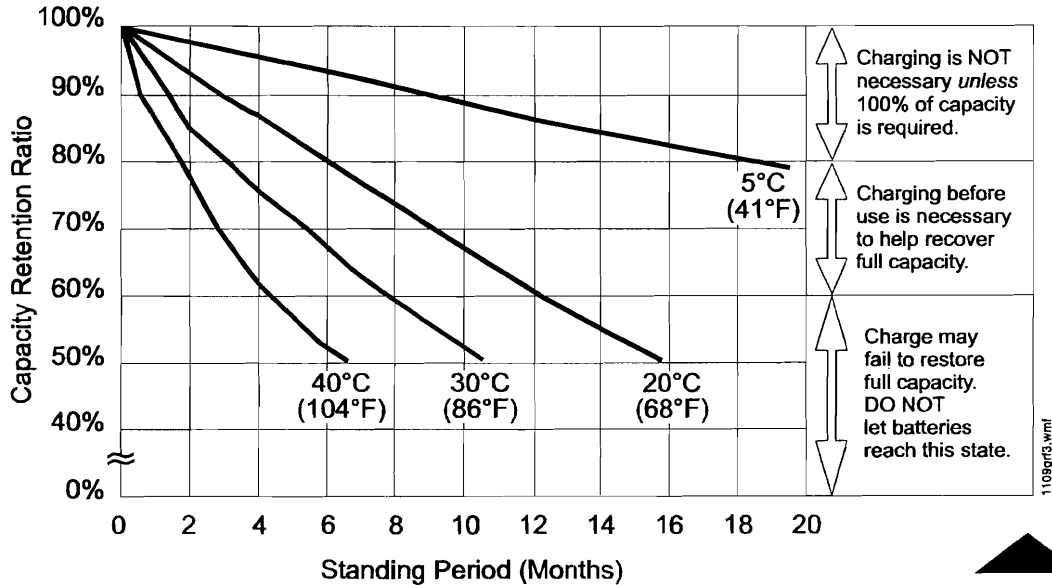
Temperature (Degrees C.)

PS-121000 RECHARGEABLE BATTERY: APPLICATIONS AND CHARGING

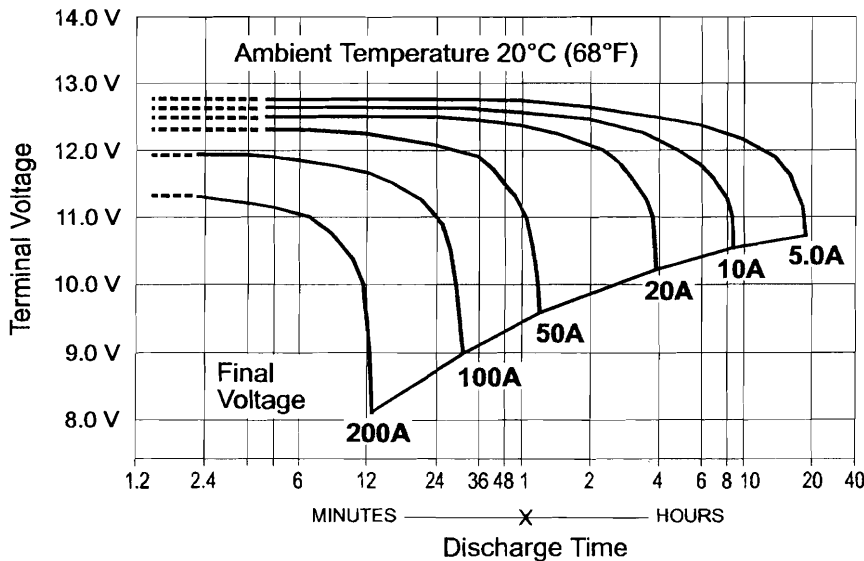
CYCLE APPLICATIONS: Limit initial current to 20A. Charge until battery voltage (under charge) reaches 14.40 to 14.70 volts at 68°F (20°C). Hold at 14.40 to 14.70 volts until current drops to approximately 1000 mA. Battery is fully charged under these conditions, and charger should either be disconnected or switched to "float" voltage.

"FLOAT" OR "STAND-BY" SERVICE: Hold battery across constant voltage source or 13.50 to 13.80 volts continuously. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged position.

NOTE: Due to the self-discharge characteristics of this type of battery, it is imperative that the battery be charged after six to nine months of storage, otherwise permanent loss of capacity might result from sulfation.



**PS-121000
Shelf-Life
and Storage**



**PS-121000
Discharge
Characteristics**



www.firelite.com

July 14, 2004

DF-52384 • E-163

SD355(A)/SD355T(A) Addressable Photoelectric Smoke Detectors

Section: Addressable Devices

GENERAL

The Fire-Lite Alarms SD355 and SD355T 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 Fire-Lite's MS-9200, MS-9200UD, and MS-9600 Addressable Fire Alarm Control Panels (FACPs). The SD355T 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 RA400Z).

FEATURES

SLC loop:

- Two-wire loop connection.
- Unit uses base for wiring; detector head plugs-in.

Addressing:

- Addressable by device.
- Direct Decade 01 – 99 (MS-9200, MS-9200UD) and 01 – 159 (MS-9600) entry of address.

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:

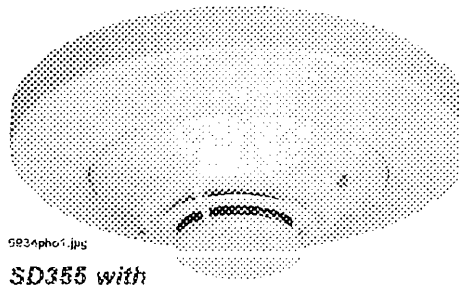
- Withstands air velocities up to 1,500 feet-per-minute (7.6 m/sec.) without triggering a false alarm.
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level.
- Visible LED "blinks" when the unit is addressed (communicating with the fire panel) and latches on in alarm.

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).

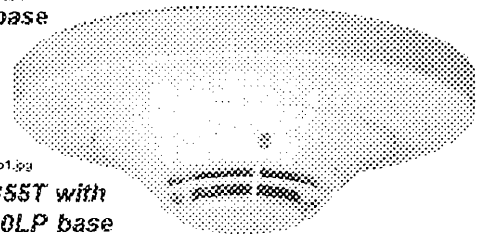


California
State Fire
Marshal
7272-0075.194



5934ph01.jpg

SD355 with
B350LP base



5935ph01.jpg

SD355T with
B350LP base

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 RA400Z).

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.

Fire-Lite® Alarms is a Honeywell company.

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

For more information, contact Fire-Lite Alarms, One Fire-Lite Place, Northford, Connecticut 06472. Phone: (800) 627-3473, Toll-Free FAX: (877) 599-4105.



CONSTRUCTION

These detectors are constructed of off-white LEXAN®. SD355(T) plug-in, low-profile smoke detectors are designed to commercial standards and offer an attractive appearance.

LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

INSTALLATION

SD350(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 only.

OPERATION

Each SD355(T) uses one of 99 possible addresses on the MS-9200 and MS-9200UD Signaling Line Circuit (SLC), or up to 318 (159 on each loop) on the MS-9600 SLC. It responds to regular polls from the system and reports its type and status.

The SD355(T) 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 1,500 feet-per-minute (7.6 m/sec.) without sending an alarm level signal. Because of its unipolar chamber, the SD355(T) is approximately two times more responsive than most photoelectric sensors. This makes it a more stable detector.

DETECTOR SENSITIVITY TEST

Each detector can have their sensitivity tested (required per NFPA 72, Chapter 7 on inspection, Testing and Maintenance) when installed/connected to an MS-9200, MS-9200UD, or MS-9600 addressable fire alarm control panel. The results of the sensitivity test can be printed off the MS-9200, MS-9200UD, or MS-9600 for record keeping.

SPECIFICATIONS

Voltage range: 15 – 32 VDC (peak).

Standby current: 300 µA @ 24 VDC.

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

Air velocity: 1,500 ft./min. (7.6 m/sec.) maximum.

Diameter: 6.1" (15.5 cm) installed in B350LP base.

Height: 2.1" (5.33 cm) installed in B350LP base.

Weight: 3.6 oz. (102 g).

Operating temperature range: for SD355: 0°C to 49°C (32°F to 120°F) SD350; for SD355T: 0°C to 38°C (32°F to 100°F).

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

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

PRODUCT LINE INFORMATION

NOTE: "A" suffix indicates UL-Listed model.

- SD355** Addressable photoelectric detector (B350LP base included).
- SD355A** Same as SD355 with UL Listing (B350LFA base included).
- SD355T** Same as SD355 but with *thermal* element (B350LP base included).
- SD355TA** Same as SD355T with UL Listing (B350LFA base included).
- RA400Z(A)** Remote LED. Mounts to a single-gang box.
- B350LP(A)** Plug-in detector base (included). **Dimensions:** 6.1" (15.5 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plastic 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(A)** Plug-in System Sensor *relay* detector base. **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plastic 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(A)** Intelligent isolator base, isolator SLC from shorts on the loop.
- B501BH(A)** Plug-in System Sensor *sounder* detector base. **Diameter:** 6.0" (15.24 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plastic ring. Mounting box has a minimum depth of 1.5" (3.81 cm).
- B501BHT(A)** Same as B501BH(A), but includes temporal sounder.

Accessories:

- RA400Z(A)** Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. For use with B501(A) and B350LP(A) bases only.
- SMK400** Surface mounting kit provides for entry of surface wiring conduit. For use with B501(A) base only.
- RMK400** Recessed mounting kit. For use with B501(A) base only.
- M02-04-01** Test magnet.
- XR-2** Detector removal tool. Allows installation and/or removal of detector heads from bases in high ceiling applications.
- XP-4** Extension pole for XR-2. Comes in three 5-ft. (1.524 m) sections.



www.firelite.com

July 14, 2004

DF-52013 • E-500

BG-12LX Addressable Manual Pull Station

Section: Addressable Devices

Patented, U.S. Patent No. D428,351; 6,380,846
U.S. Patent Pending: 09/686,286

GENERAL

The Fire-Lite Alarms BG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface (mounted inside) for Fire-Lite's addressable MS-9200, MS-9200UD, and MS-9600 fire alarm control panels. Because the BG-12LX is addressable, the control panel can display the exact location of the activated manual pull station. This leads fire service personnel quickly to the location of the alarm.

FEATURES

- Aesthetically pleasing, highly visible, dual-action design.
- Meets ADA 5 lb. maximum pull force.
- Easily operated (dual-action).
- Attractive shape and textured finish.
- Mounts, semi-flush, to a standard single-gang (2.125" [5.3975 cm] minimum depth), double-gang, or 4" (10.16 cm) square electrical box.
- When the handle latches in down position, the word "ACTIVATED" appears at the top of the handle in bright yellow to clearly indicate the station has been operated.
- Key/lock reset; needs only a 1/4-turn to lock/unlock.
- Includes Braille text on station handle.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Optional trim ring (BG-TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Maintenance personnel can open station (for inspection and testing) without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes red in normal operation and latches on steady red when in alarm.

CONSTRUCTION

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

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.

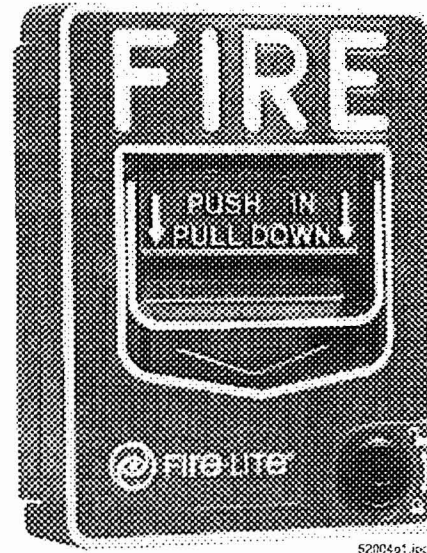
LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.



California
State Fire
Marshal
7150-0075:184



MEA
67-02-E



BG-12LX

Manual stations connect with two wires to one of the control panel SLC loops. Each manual station, on command from the control panel, sends data to the panel representing the state of the pull station switch. Two rotary decimal switches allow address settings (01-99).

PRODUCT LINE INFORMATION

- BG-12LX** Dual-action addressable pull station, includes key lock/reset feature.
- SB-10** Surface backbox, indoor/outdoor.
- SB-10** Surface backbox.
- BG-TR** Optional trim ring.

Fire-Lite® Alarms is a Honeywell company.

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

For more information, contact Fire-Lite Alarms, One Fire-Lite Place, Northford, Connecticut 06472
Phone: (800) 627-3473, Toll-Free FAX: (877) 699-4105.



INSTALLATION

The BG-12LX can be semi-flush mounted into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or surface mounted to the Model SB-1/0 or SB-10 surface backbox. If the BG-12LX is semi-flush mounted, then the optional trim ring (BG-TR) may be used. The BG-TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

ELECTRICAL SPECIFICATIONS

Normal operating voltage: 24 VDC.

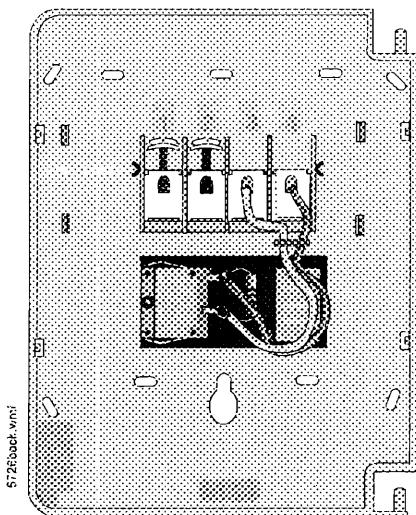
Maximum SLC loop voltage: 28.0 VDC.

Maximum SLC loop current: 230 μ A.

ARCHITECTURAL/ ENGINEERING SPECIFICATIONS

Manual Fire Alarm Stations shall be non-code, 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-1/0 or SB-10; 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.

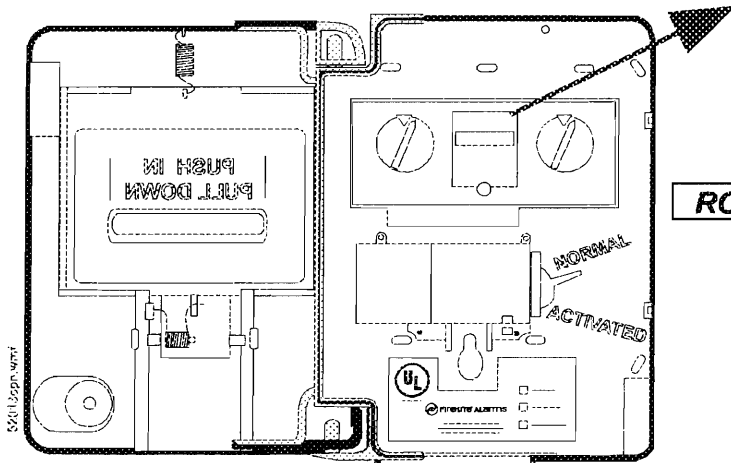
Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches.



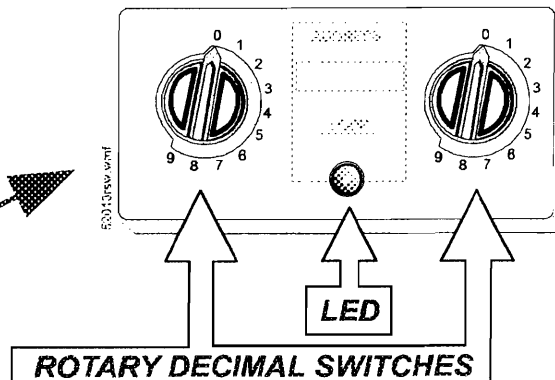
TERMINAL CONNECTIONS

- 1 SLC (-)
- 2 SLC (+)

Back of station without door.



Cover open to show easy access to the addressable interface module, rotary switch, and UL label.





www.firelite.com

July 14, 2004

DF-52121 • E-325

MMF-300(A) Series/MDF-300 Addressable Monitor Modules

Section: Addressable Devices

GENERAL

Four different monitor modules are available for Fire-Lite Alarm's MS-9200, MS-9200UD and MS-9600 intelligent fire alarm control panels to suit a variety of applications. Monitor modules are used to 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 (MMF-302).

MMF-300 (Replaces M300) — The MMF-300 Monitor Module is a standard-sized module (typically mounts to a 4" [101.6 mm] square box) that supervises either a Class A (Style D) or Class B (Style B) circuit of dry-contact input devices.

MMF-301 (Replaces M301) — The MMF-301 is a Miniature Monitor Module (a mere 1.3" (33.02 mm) H x 2.75" (69.85 mm) W x 0.5" (12.70 mm) D) used to supervise a Class B (Style B) circuit. Its compact design allows the MMF-301 to be mounted in a single-gang box behind the device it is monitoring.

MMF-302 (Replaces M302) — The MMF-302 Interface Module is a standard-sized module used to monitor and supervise compatible two-wire, 24 volt, smoke detectors on a Class A (Style D) or Class B (Style B) circuit.

MDF-300 (New) — The MDF-300 Dual Monitor Module is a standard-sized module (typically mounts to a 4" [101.6 mm] square box) that supervises two Class B (Style B) circuits of dry-contact input devices.

MMF-300 MONITOR MODULE

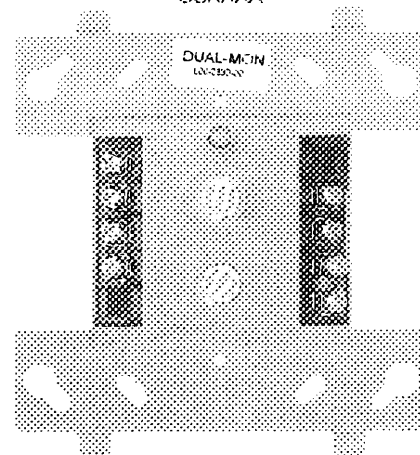
- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct Decode 01 – 99 (MS-9200 and MS-9200UD) and 01-159 (MS-9600) entry of address.
- LED flashes red during normal operation and latches on steady to indicate alarm.

The **MMF-300 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 Class A or Class B fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The MMF-300 can be used to replace M300 modules in existing systems.

MMF-300 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 D) Initiating



California
State Fire
Marshal
7300-0075:185



MDF-300

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. Maximum IDC resistance is 1,500 ohms.

MMF-300 Operation — Each MMF-300 uses one of 99 (MS-9200 and MS-9200UD) or 159 (MS-9600) 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).

MMF-300 Specifications

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Average operating current: 400 µA (LED flashing).

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

Fire-Lite® Alarms is a Honeywell company.

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

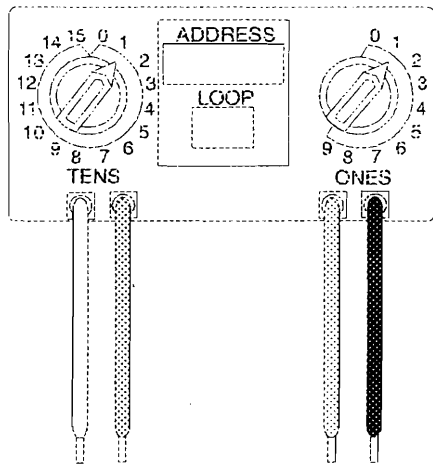
For more information, contact Fire-Lite Alarms, One Fire-Lite Place, Northford, Connecticut 06472. Phone: (800) 627-3473, Toll-Free FAX: (877) 699-4105.



MMF-301 MINI MONITOR MODULE

- Built-in type identification automatically identifies this device as a monitor module to the MS-9200, MS-9200UD or MS-9600.
- Powered directly by two-wire SLC Loop. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address (01-99 for MS-9200/MS-9200UD, 01-159 for MS-9600).

The **MMF-301 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 MMF-301 is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices. The MMF-301 can be used to replace M301 module in existing systems.



MMF-301 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.

MMF-301 Operation — Each MMF-301 uses one of 159 available module addresses on an SLC loop MS-9600. It uses one of 99 on a MS-9200 or MS-9200UD. 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).

MMF-301 Specifications

- Nominal operating voltage:** 15 to 32 VDC.
- Average operating current:** 375 μ A maximum.
- 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" (33.02 mm) high x 2.75" (69.85 mm) wide x 0.5" (12.70 mm) deep
- Wire length:** 6" (152.4 mm) minimum.

MMF-302 INTERFACE MODULE

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source (resettable).
- High noise (EMF/RFI) immunity
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address (01-99 for MS-9200/MS-9200UD, 01-159 for MS-9600).
- LED flashes during normal operation.
- LED latches steady to indicate alarm on command from control panel.

The **MMF-302 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 IJL compatible with the module.

MMF-302 Applications — Use the MMF-302 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.

MMF-302 Operation — Each MMF-302 uses one of 159 available module addresses on a MS-9600 SLC loop. It uses one of 99 on a MS-9200 or MS-9200UD. 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)

MMF-302 Specifications

- Nominal operating voltage:** 15 to 32 VDC.
- Maximum current draw:** 5.1 mA (LED on).
- Average operating current:** 270 μ A (LED flashing).
- EOL resistance:** 3.9K ohms.
- External supply voltage (between Terminals T3 and T4):** DC voltage: 15 to 28 volts power limited. **Ripple voltage:** 0.1 Vrms maximum. **Current:** 90 mA per module maximum. Requires regulated, resettable 24 VDC power.
- Temperature range:** 32°F to 120°F (0°C to 49°C).
- Humidity range:** 10% to 93% noncondensing.
- Dimensions:** 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

MMF-300 DUAL MONITOR MODULE

- Built-in type identification automatically identifies this device as two monitor modules to the control panel.
- Powered directly by the two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address (01 -- 159 on the MS-9600, 01-99 for MS-9200/MS-9200UD).
- LED flashes red during normal operation and latches on steady red to indicate alarm.

The MDF-300 Dual 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 two independent two-wire fault-tolerant Initiating Device Circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open-contact fire alarm and supervisory devices, or either normally open or normally closed devices for non-fire applications.

MDF-300 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) Initiating Device Circuit. The 47K ohm End-of-Line Resistors (provided) terminate the Style B circuit. Maximum IDC resistance is 1,500 ohms.

MDF-300 Operation - Each MDF-300 uses two of 99 (MS-9200 or MS-9200UD) or 159 (MS-9600) 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).

MDF-300 Specifications

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Average operating current: 750 µA (LED flashing).

EOL resistance: 47K ohms.

Maximum IDC wire resistance: 1,500 Ohms.

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

Humidity range: 10% to 90% noncondensing.

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

Accessories: SMB500 electrical box.

INSTALLATION

MMF-300, MMF-302 and MDF-300 modules mount directly to a standard 4" (101.6 mm) square, 2.125" (53.975 mm) 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 MMF-301 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.

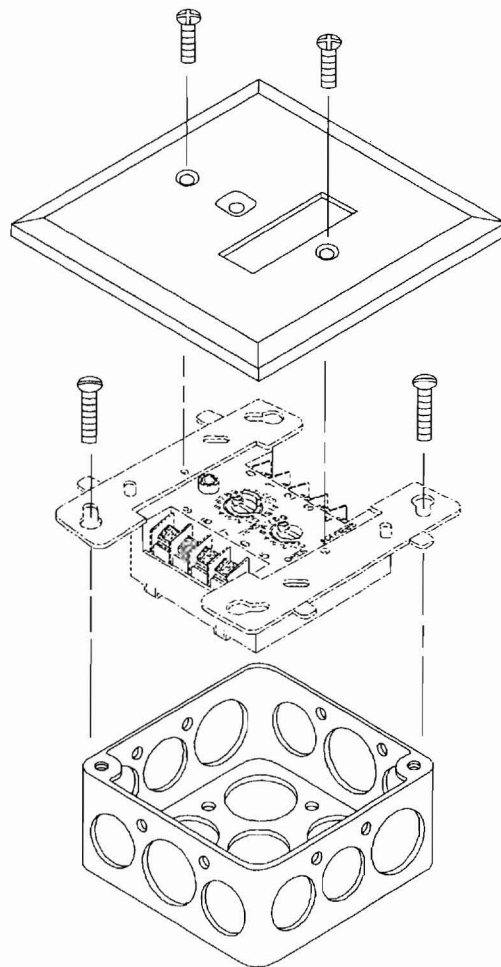
ARCHITECTS'/ENGINEERS' SPECIFICATIONS

Specifications of these and all Fire-Lite Alarms products are available from Fire-Lite Alarms.

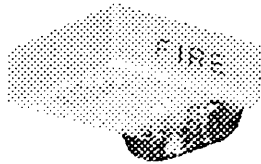
PRODUCT LINE INFORMATION

- MMF-300 Monitor Module.
- MMF-300(A) Monitor Module (Canada).
- MMF-301 Mini Monitor Module.
- MMF-301(A) Mini Monitor Module (Canada).
- MMF-302 Two-Wire Detector Monitor Module.
- MMF-302(A) Two-Wire Detector Monitor Module (Canada).
- MDF-300 Dual Monitor Module.
- SMB500 Optional Surface-Mount Backbox.

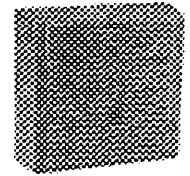
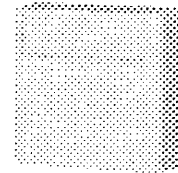
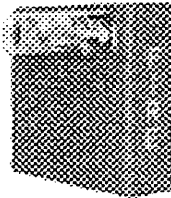
MOUNTING DIAGRAM for standard-sized modules



Series AS Audible Strobe Appliances and Series AH Audibles



SERIES AS



SERIES AH

Description

The Wheelock patented 2-wire Series AS Audible Strobe Appliances and Series AH Audibles offer more features with low current draw.

Strobe options for wall mount models include 1575cd or the Wheelock patented MCW multi-candela wall strobes with field selectable candela settings of 15/30/75/110cd, or the high intensity MCWH strobe with field selectable 135/185cd.

Ceiling mount models incorporate Wheelock's patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

The audible provides a selectable choice of either a continuous horn or temporal pattern (Code 3) when constant voltage from a Fire Alarm Panel (FACP) is applied. Each tone has 3 dBA settings to choose from.

When used with the Wheelock Series SM or DSM Sync Module or Wheelock PS-24-8MC Power Supplies with Patented Sync Protocol, synchronization of the continuous horn tone provides the temporal (code 3) tone (mandated by NFPA 72) simultaneously for all audible appliances. This ensures a distinct temporal (code 3) pattern when 2 or more audibles are within hearing distance. If not synchronized the temporal sound could overlap and not be distinctive. At the same time the strobes will be synchronized. This provides the ability to comply with ADA guidelines concerning photosensitive epilepsy and the NFPA standards when installing 2 or more visual appliances within the field of view all of this plus the ability to silence the audible is achieved by using only 2 wire.

Features

- Approvals include: UL Standard 1971, UL Standard 464 New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM), and Chicago (BFP). See approvals by model in Specifications and Ordering Information
- ADA/NFPA/UFC/ANSI Compliant
- Wall mount models are available with Field Selectable Candela Settings of 15/30/75/110cd or 135/185cd (Multi-Candela models) or 1575cd (single candela model)
- Ceiling mount models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd (multi-candela ceiling models)
- Selectable Continuous Horn or Temporal (Code 3).
- 3 Selectable dBA settings (99, 95 and 90 dBA) in both tones
- Patented 2-Wire Audible Strobe Appliance.
- Patented Universal Mounting Plate
- Weatherproof models are available for outdoor use
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage Range" using filtered DC or unfiltered FWR input voltage
- The strobes can be synchronized using Wheelock's sync modules or power supplies with built in sync protocol
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires

For Weatherproof Series AS, See Datasheet S9004



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

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

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- **"Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".**

| Model Number | Input Voltage VDC | Regulated Voltage Range VDC/FWR | Strobe Candela (cd) |
|--------------|-------------------|---------------------------------|---------------------|
| AS-24MCW | 24 | 16.0 - 33.0 | 15/30/75/110 |
| AS-24MCCH | 24 | 16.0 - 33.0 | 115/177 |
| AS-241575W | 24 | 16.0 - 33.0 | 15 (75 on Axis) |
| AS-121575W | 12 | 8.0 - 17.5 | 15 (75 on Axis) |
| AS-24MCC | 24 | 16.0 - 33.0 | 15/30/75/95 |
| AS-24MCWH | 24 | 16.0 - 33.0 | 135/185 |
| ASWP-2475W | 24 | 16.0 - 33.0 | 75 @ -31°F |

| Description | Volume | Reverberant dBA Per UL 464 @ 10 ft. | Anechoic dBA @ 10 ft. |
|-----------------|--------|-------------------------------------|-----------------------|
| Continuous Horn | High | 91 | 99 |
| | Medium | 88 | 95 |
| | Low | 83 | 90 |
| Code 3 Horn | High | 87 | 99 |
| | Medium | 84 | 95 |
| | Low | 79 | 90 |

Table 3: Average RMS Current

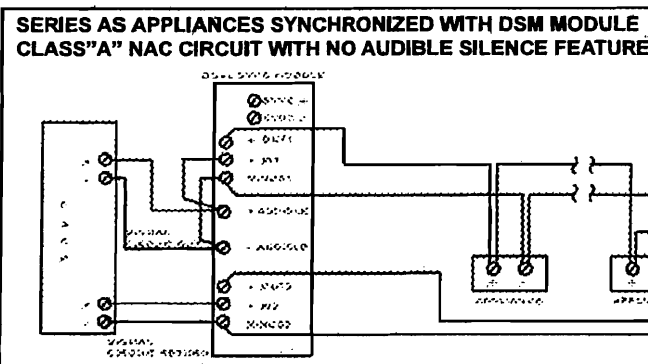
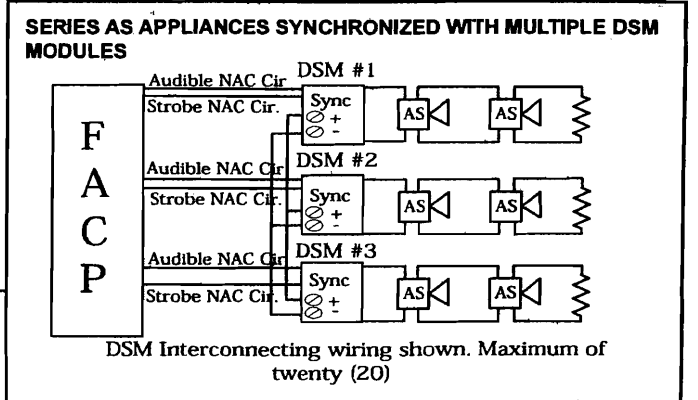
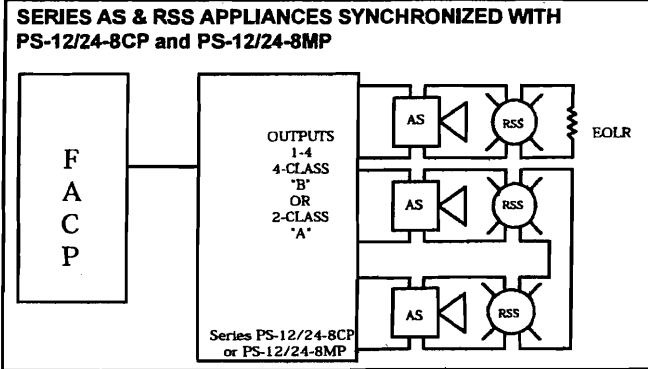
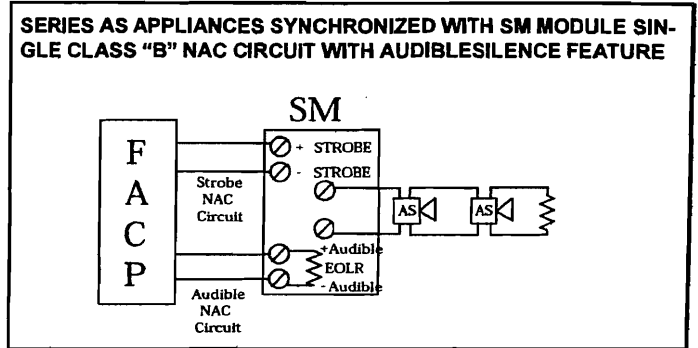
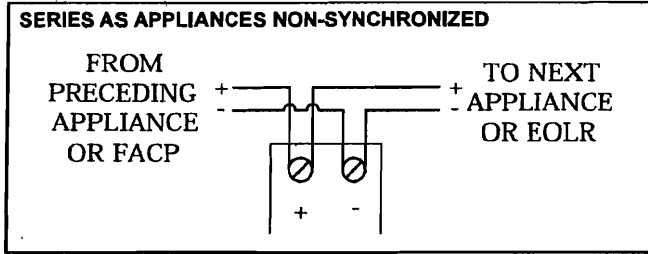
| 24 VDC Models | | Audible | Wall Mount Audible Strobe Models | | | | | | Ceiling Mount Audible Strobe Models | | | | | | |
|---------------|---------|--------------|----------------------------------|--------------|--------------|--------------|--------------|--------------|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | AH-24 | AS-241575W | AS-24MCW | | | AS-24MCWH | | AS-24MCC | | | AS-24MCCH | | | |
| | | | 1575cd | 15cd | 30cd | 75cd | 110cd | 135cd | 185cd | 15cd | 30cd | 75cd | 95cd | 115cd | 177cd |
| High (99) dBA | 24 vdc | 0.062 | 0.100 | 0.080 | 0.102 | 0.150 | 0.194 | 0.250 | 0.320 | 0.088 | 0.114 | 0.165 | 0.205 | 0.250 | 0.320 |
| | UL max* | 0.080 | 0.121 | 0.088 | 0.125 | 0.200 | 0.267 | 0.355 | 0.480 | 0.095 | 0.138 | 0.221 | 0.285 | 0.355 | 0.480 |
| Med (95) dBA | 24 vdc | 0.033 | 0.080 | 0.060 | 0.084 | 0.132 | 0.173 | 0.230 | 0.305 | 0.066 | 0.092 | 0.145 | 0.186 | 0.230 | 0.305 |
| | UL max* | 0.043 | 0.107 | 0.074 | 0.110 | 0.190 | 0.253 | 0.340 | 0.465 | 0.080 | 0.122 | 0.201 | 0.269 | 0.340 | 0.465 |
| Low (90) dBA | 24 vdc | 0.017 | 0.072 | 0.052 | 0.076 | 0.121 | 0.158 | 0.220 | 0.295 | 0.056 | 0.082 | 0.132 | 0.173 | 0.220 | 0.295 |
| | UL max* | 0.021 | 0.100 | 0.068 | 0.105 | 0.182 | 0.245 | 0.335 | 0.460 | 0.074 | 0.113 | 0.198 | 0.263 | 0.335 | 0.460 |

| 12 VDC Models | | Audible | Wall Mount Audible Strobe |
|---------------|---------|---------|---------------------------|
| | | AH-12 | AS-121575W |
| High (99) dBA | 12 vdc | 0.163 | 0.260 |
| | UL max* | 0.192 | 0.320 |
| Med (95) dBA | 12 vdc | 0.076 | 0.195 |
| | UL max* | 0.108 | 0.275 |
| Low (90) dBA | 12 vdc | 0.039 | 0.175 |
| | UL max* | 0.058 | 0.265 |

| Voltage | High dBA Setting (99) dBA | Medium dBA Setting (95) dBA | Low dBA Setting (90) dBA |
|----------|---------------------------|-----------------------------|--------------------------|
| 24.0 VDC | 0.128 | 0.105 | 0.098 |
| UL Max* | 0.168 | 0.155 | 0.150 |

* 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 maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions.

Wiring Diagrams*



* For detail using SM or DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83123 for SM and P83177 for DSM. For wiring information on the power supplies refer to Installation Instructions P84662 for PS-24-8MC.

Specifications and Ordering Information

| Model Number | Order Code | Strobe Candela | Non-Sync | Sync w/SM, DSM or PS-24-8MC | 24 VDC | 12 VDC | Wall Mount | Ceiling Mount | Mounting Options*** | Agency Approvals | | | | |
|-----------------|------------|-----------------|----------|-----------------------------|--------|--------|------------|---------------|--------------------------|------------------|-----|------|----|-----|
| | | | | | | | | | | UL | MEA | CSFM | FM | BFP |
| AS-24MCW-FR | 9024 | 15/30/75/110 | X | X | X | - | X | - | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AS-24MCW-FW | 9025 | 15/30/75/110 | X | X | X | - | X | - | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AS-24MCWH-FR | 3468 | 135/185 | X | X | X | - | X | - | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | * |
| AS-24MCWH-FW | 3469 | 135/185 | X | X | X | - | X | - | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | * |
| AS-241575W-FR | 7405 | 15 (75 on Axis) | X | X | X | - | X | - | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AS-121575W-FR | 7410 | 15 (75 on Axis) | X | X | - | X | X | - | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AS-24MCC-FR | 3161 | 15/30/75/95 | X | X | X | - | - | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | * |
| AS-24MCC-FW | 3162 | 15/30/75/95 | X | X | X | - | - | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | * |
| AS-24MCCH-FW | 3467 | 115/177 | X | X | X | - | - | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | * |
| ASWP-2475W-FR** | 9012 | 75 @ -31°F | X | X | X | - | X | - | I (see Data Sheet S9004) | X | X | X | X | X |
| AH-24-R | 7892 | - | X | X | X | - | X | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AH-24-W | 7893 | - | X | X | X | - | X | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AH-12-R | 7891 | - | X | X | - | X | X | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AH-12-W | 7894 | - | X | X | - | X | X | X | A,B,D,E,F,G,H,J,N,O,R,X | X | X | X | X | X |
| AH-24WP-R** | 7416 | - | X | X | X | - | X | X | K | X | X | X | | X |
| AH-12WP-R** | 7415 | - | X | X | - | X | X | X | K | X | X | X | | X |

**For Weatherproof Series AS/AH specifications see data sheet S9004.

***Refer to Data Sheet S7000 for Mounting Options.

Note: Models are available in either Red or White. Contact Customer Service for Order Code and Delivery.

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

*PENDING

Architects and Engineers Specifications

The notification appliances shall be Wheelock Series AS Audible Strobe appliances and Series AH Audible appliances or approved equals. The Series AS Audible shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series AH Audible shall be UL Listed under Standard 464 (Fire Protective Signaling). Both shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

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

The 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 AS shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110 or 135/185 candela for wall mount and 15/30/75/95 or 115/177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's SM, DSM Sync Modules or Wheelock PS-24-8MC Power Supplies with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash-rate. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock synchronization.

The Series AS Audible Strobe and Series AH Audible shall incorporate a Patented Universal Mounting Plate that shall allow mounting to a single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided.

All notification appliances shall be backward compatible.



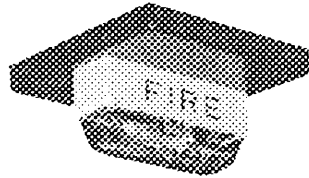
273 Branchport Avenue
Ring Branch, NJ 07740
Phone: (800) 631-2148
Fax: (732) 222-2588
www.cooperwheelock.com



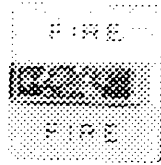
WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY
Made in USA

S8100 AS/AH 06/06

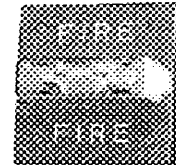
Series RSS and RSSP Strobes and Strobe Plates



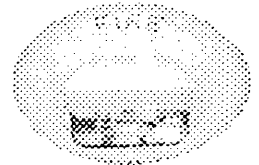
Series RSS



Series RSS



Series RSSWP



RSS Round

Description

The Wheelock patented Series RSS Strobe Appliances and Series RSSP Strobe Plates have lower current draw while maintaining outstanding performance, reliability and cost effectiveness. These versatile appliances will satisfy virtually all requirements for indoor, wall or ceiling mount applications.

Strobe options for wall mount models include 1575 or the Wheelock Patented MCW multi-candela strobe with field selectable candela settings of 15/30/75/110cd or the high intensity MCWH strobe with field selectable 135/185cd. Ceiling mount models include the patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

All models may be synchronized using the Wheelock SM, DSM Sync Modules or the PS-24-8MC Power Supplies with the Wheelock Patented Sync Protocol. Synchronized strobes can eliminate possible restrictions on the number of strobes in the field of view. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy as well as meeting the requirements of NFPA 72.

The Wheelock Series RSS Strobes employ a Patented Integral Strobe Mounting Plate that can be mounted to a single gang, double gang, 4" square, 100mm European backboxes or the SHBB surface backbox. If the flush backbox has side or top space between it and the finished wall, the NATP (Notification Appliance Trimplate) may be used. It provides an additional .65" of trim for the Appliance. An attractive cover plate is provided for a clean, finished appearance on all models.

The Series RSSP Multi-Candela Strobe Plates are a cost effective way to retrofit required wall strobe appliances to bells, horns, chimes, multitones or speakers and easily mounts to standard 4" backboxes or for surface mount use with the Wheelock SBL2 surface backbox.

Features

- Approvals include: UL Standard 1971, New York City (MEA), California State Fire Marshal (CSFM), Factory Mutual (FM), and Chicago (BFP) See approvals by model in Specifications and Ordering Information
- ADA/NFPA/UFC/ANSI compliant. Meets OSHA 29 Part 1910.165
- Wall mount Multi-Candela models are available with Field Selectable Candela Settings of 15/30/ 75/110cd or 135/185cd. Single Candela models are available in 1575cd
- Ceiling mount Multi-Candela models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd. (Round or Square)
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage" using filtered (DC) or unfiltered VRMS input voltage
- Synchronize using the Wheelock sync modules or power supplies with built-in sync protocol
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wire

For Weatherproof Series RSS See Datasheet S9004



S5391



151-92-E



7125-0785-141
7300-0785-154



APPROVED

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

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

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

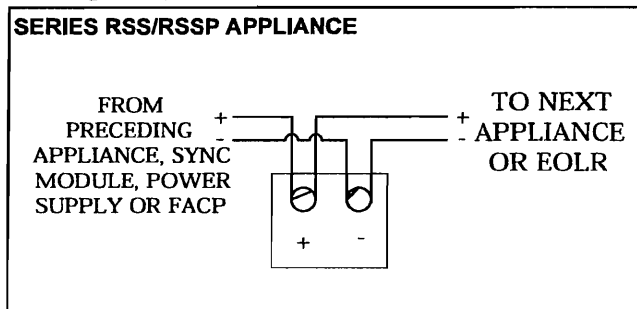
Table 1: Average RMS Current*

| RSS/RSSP 24VDC Models | RSS/RSSP - Wall Mount | | | | | | | RSS - Ceiling Mount | | | | | |
|-----------------------|-----------------------|--|-------|-------|-------|--------|-------|---------------------|-------|-------|--------|-------|-------|
| | 241575W | 24MCW | | | | 24MCWH | | 24MCC | | | 24MCCH | | |
| | 1575cd | 15cd | 30cd | 75cd | 110cd | 135cd | 185cd | 15cd | 30cd | 75cd | 95cd | 115cd | 177cd |
| 24 vdc | 0.060 | 0.041 | 0.063 | 0.109 | 0.140 | 0.195 | 0.270 | 0.045 | 0.070 | 0.119 | 0.159 | 0.195 | 0.270 |
| UL max* | 0.090 | 0.060 | 0.092 | 0.165 | 0.220 | 0.300 | 0.420 | 0.065 | 0.105 | 0.189 | 0.249 | 0.300 | 0.420 |
| RSS/RSSP 24VDC Models | RSS/RSSP 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 maximum listed voltage (33v for 24v units). For unfiltered FWR ratings, see installation instructions. | | | | | | | | | | | |
| | 121575W | | | | | | | | | | | | |
| 12 vdc | 0.152 | | | | | | | | | | | | |
| UL max* | 0.255 | | | | | | | | | | | | |

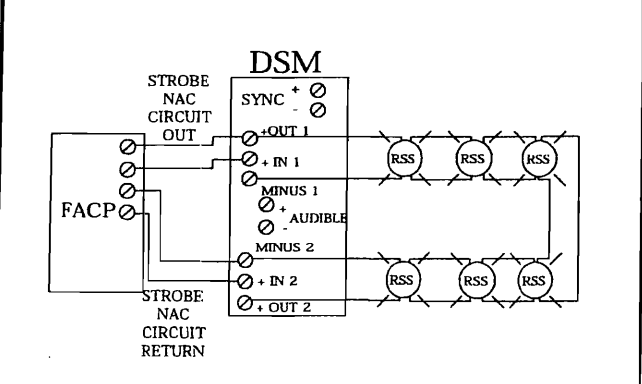
Table 2: Audibles/Speakers for RSSP Strobe Plate

| Product | Series |
|----------------------|-------------------------|
| Multitone Appliances | AMT, MT |
| Horns | AH, NH, HS |
| Motor Bells | MB-G6/G10 |
| Speakers | ET-1010/1080, E70, ET70 |
| Chimes | CH70 |

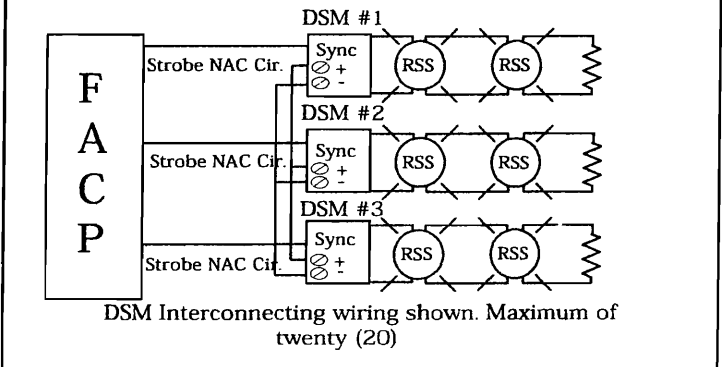
Wiring Diagrams *

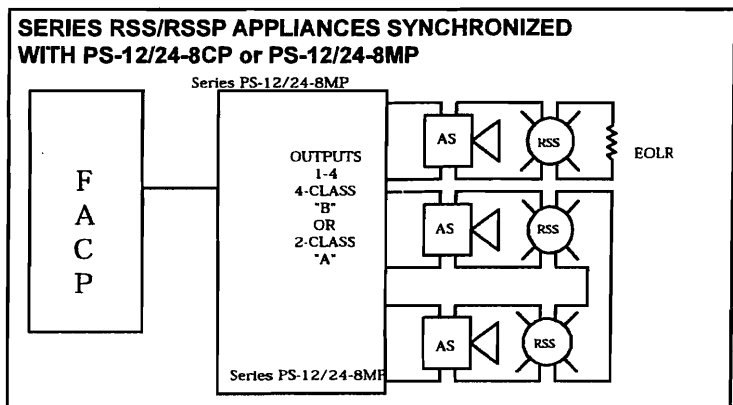
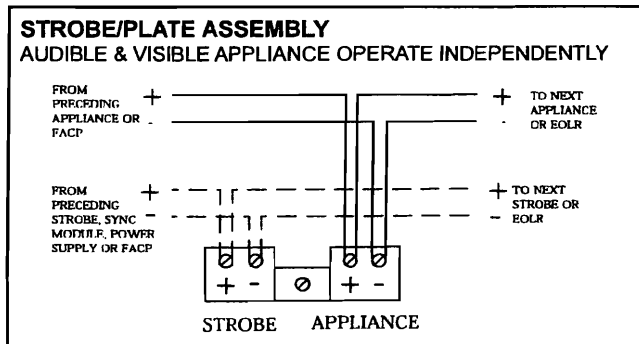
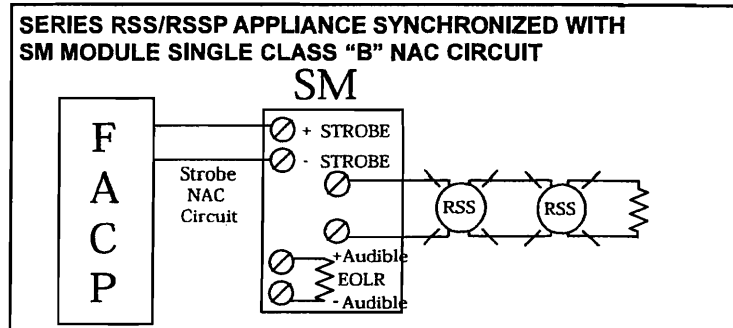
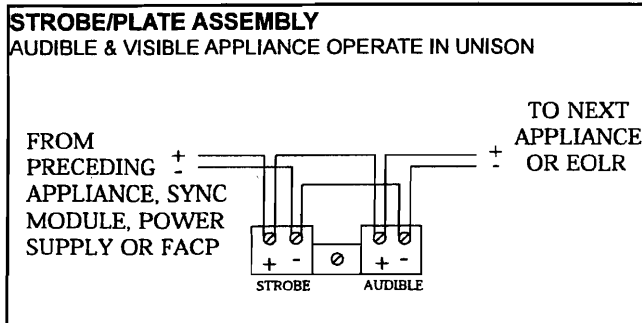


SERIES RSS/RSSP APPLIANCES SYNCHRONIZED WITH DSM MODULE SINGLE CLASS "A" NAC CIRCUIT



SERIES RSS/RSSP APPLIANCES SYNCHRONIZED WITH MULTIPLE DSM MODULES





* For detail using SM or DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83123 for SM and P83177 for DSM. For wiring information on the power supplies refer to Installation Instructions P84515 for PS-12/24-8CP and P84333 for PS-12/24-8MP.

Specifications and Ordering Information

| Model | Order Code | Wall Mount | Ceiling Mount | Non-Sync | Strobe Candela | 24 VDC | 12 VDC | Color RED | Color WHITE | Mounting Options*** | Square or Round | Agency Approvals | | | | |
|------------------|------------|------------|---------------|----------|------------------------|--------|--------|-----------|-------------|-----------------------|-----------------|------------------|-----|------|----|-----|
| | | | | | | | | | | | | UL | MEA | CSFM | FM | BFP |
| RSS-24MCW-FR | 940 | X | - | X | 15/30/75/110 | X | - | X | - | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | X |
| RSS-24MCW-FW | 9401 | X | - | X | 15/30/75/110 | X | - | - | X | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | X |
| RSS-241575W-FR | 7471 | X | - | X | 15 (75 on Axis) | X | - | X | - | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | X |
| RSS-241575W-FW | 7788 | X | - | X | 15 (75 on Axis) | X | - | - | X | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | X |
| RSS-121575W-FR | 7476 | X | - | X | 15 (75 on Axis) | - | X | X | - | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | X |
| RSS-121575W-FW | 7468 | X | - | X | 15 (75 on Axis) | - | X | - | X | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | X |
| RSS-24MCC-FW | 3158 | - | X | X | 15/30/75/95 | X | - | - | X | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | * |
| RSS-24MCC-FR | 3157 | - | X | X | 15/30/75/95 | X | - | X | - | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | * |
| RSS-24MCCR-FW | 3160 | - | X | X | 15/30/75/95 | X | - | - | X | B,D,E,F,G,H,J,N,O,R,X | Round | X | X | X | X | * |
| RSS-24MCCH-FW | 3461 | - | X | X | 115/177 | X | - | - | X | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | * |
| RSS-24MCCHR-FW | 3463 | - | X | X | 115/177 | X | - | - | X | B,D,E,F,G,H,J,N,O,R,X | Round | X | X | X | X | * |
| RSS-24MCWH-FR | 3465 | X | | X | 135/185 | X | | X | | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | * |
| RSSWP-2475W-FR** | 9013 | X | - | X | 180@ 77°F 75@ -31°F | X | X | X | - | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | * |
| RSSWP-2475W-FW** | 3034 | X | - | X | 180@ 77°F 75@ -31°F | X | X | - | X | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | X | * |
| RSSP-121575W-FR | 7798 | X | - | X | 15 (75 on Axis) | - | X | X | - | D,E,Z | Square | X | X | X | X | X |
| RSSP-24MCW-FR | 9402 | X | - | X | 15/30/75/110 | X | - | X | - | D,E,Z | Square | X | X | X | X | X |
| RSSP-241575W-FR | 7793 | X | - | X | 15 (75 on Axis) | - | - | X | - | D,E,Z | Square | X | X | X | X | X |
| RSSP-24MCWH-FR | 9482 | X | | X | 135/185 | X | | X | | B,D,E,F,G,H,J,N,O,R,X | Square | X | X | X | * | * |

All models sync with Wheelock SM, DSM or PS-12/24-8CP or PS-12/24-8MP.

*PENDING

Models are available in either Red or White. Call Customer Service for Order Code & Delivery.

**For Weatherproof Series RSS Strobe specifications see data sheet S9004.

***Refer to data sheet S7000 for mounting options.

Architects and Engineers Specifications

The visual notification appliances shall be Wheelock Series RSS Strobe Appliances or approved equals. The Series RSS shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The strobe shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. The strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP). When Strobe Plates are to be installed, they shall be the Wheelock Series RSSP Strobe Plate and shall have the same electronic circuitry as the Wheelock Series RSS.

The Series RSS Strobe shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mount and 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on axis is required (e.g. ADA compliance).

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

The Series RSS Strobe Appliances shall incorporate a Patented, Integral Strobe Mounting Plate that shall allow mounting to single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided. An attaching cover plate shall be provided to give the Appliance an attractive appearance. The Appliance shall not have any mounting holes or screw heads visible when the installation is completed.

The Series RSSP Multi-Candela or single candela Strobe Plate shall mount to either a standard 4 inch square backbox for flush mounting, or the Wheelock SBL2 backbox for surface mounting.

All notification appliances shall be backward compatible.

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

 **COOPER** Wheelock

273 Branchport Avenue
Long Branch, NJ 07740
Phone: (800) 631-2148
Fax: (732) 222-2588
www.cooperwheelock.com



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY
Made in USA

S0410 RSS/RSSP 06/06



Underwriters Laboratories Inc.®

Northbrook, IL San Jose, CA
Melville, NY

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

Applicant ID No: 108225-001
Service Center No 1
Expires: 31-MAR-2010

CERTIFICATE OF COMPLIANCE

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

Listed Service From: **CHAMPAIGN, IL**

Alarm Service Company: (108225-001)

**FE MORAN INC ALARM & MONITORING
SERVICES
2202 FOX DR
CHAMPAIGN IL 61820**

Service Center: (108225-001)

**FE MORAN INC ALARM & MONITORING
SERVICES
2202 FOX DR
CHAMPAIGN IL 61820**

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

File - Vol No. CCN Listing Category

S8943 - 1 UUFX [Signal and Fire Alarm Equipment and Services] (Protective Signaling Services) Central Station

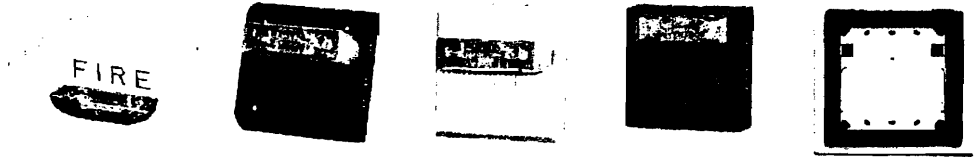
*****THIS CERTIFICATE EXPIRES ON 31-MAR-2010 *****

"LOOK FOR THE UL ALARM SYSTEM CERTIFICATE"

Engineering Manager
01-APR-2009



Weatherproof Appliances - Series AH Audibles, AS Audible Strobes, MT Multitone Strobes, RSS Strobes and ET70 Speaker Strobes and Weatherproof Mounting Accessories



Description:

Designed for life safety, performance and reliability, Cooper Wheelock's cost effective weatherproof notification appliances include:

| | |
|-------------------------|------------------|
| Weatherproof Appliances | Series |
| Strobes | RSSWP |
| Horn Strobes | ASWP |
| Horns | AH-24WP, AH-12WP |
| Multitone Horn Strobes | MTWP |
| Multitone Horns | MT |
| Speaker Strobes | ET70WP |
| Speakers | ET-1010 |

All strobe models are UL dual listed - meeting both UL1638 and UL1971 requirements. As dual listed appliances, these weatherproof strobes, horn strobes and speaker strobes are listed for outdoor applications under UL 1638 as well as under UL 1971, the Standard for Safety Signaling Devices for Hearing Impaired. With an extended temperature range of -31°F to 150°F (-40°C to 66°C), Wheelock weatherproof appliances meet or exceed UL outdoor test requirements for rain, humidity and corrosion resistance while providing multiple strobe intensity options, including the highest strobe ratings available for area coverage per NFPA 72 strobe spacing tables (up to 185 candela for wall mounting and 177 candela for ceiling mounting).

To enable weatherproof mounting, Cooper-Wheelock provides the industry's widest choice of mounting options for surface or unique semi-flush installation. Models are available for surface mounting to Wheelock weatherproof backboxes on walls or ceilings. The optional WP-KIT allows the weatherproof backboxes (IOB, WPBB or WPSBB) to be mounted to a recessed electrical box for concealed conduit installation. For semi-flush installation, the WPA and WFPA kits allow a customer to mount the weatherproof appliances to a recessed electrical box without the need for an external weatherproof backbox. See the Backboxes, Plates and Gaskets Table on page three of this document for a summarization of these mounting options and the required accessories.

When used in conjunction with Wheelock PS-24-8MC Power Supplies or SM/DSM Sync Modules, the Wheelock weatherproof appliances can be synchronized to meet NFPA 72 synchronization requirements. The horn output of horn strobes can be independently controlled on 2-wire circuits using the Wheelock patented sync protocol. MTWP horn strobe models are 4-wire appliances; the strobes can be synchronized while the audible can be connected to a coded fire alarm system or can be set to produce any of eight selectable tones.

Features:

- Approvals include: UL Standards 1971, 1638, 464 and 1480 California State Fire Marshal (CSFM) and New York City (MEA), Factory Mutual (FM) and Chicago (BFP) . See agency approvals by model number on page two of this document
- Compliance with the following requirements: NFPA, UFC, ANSI 117.1, OSHA Part 29, 1910.165, ADA
- Weatherproof with extended temperature range of -40°F to 150°F (-40°C to 66°C)*
- Dual Listed strobe models (UL 1638 and UL 1971)
- Industry's highest strobe candela options
- Synchronization capability using Series SM, DSM Synchron Modules (MTWP and MT-12/24 audible is non-sync)
- Models with field selectable tone, dBA and candela settings
- Wall or ceiling mounting options
- Surface of semi-flush mounting
- IN/OUT wiring termination accepting two #12-18 AWG wires at each terminal

*The series RSSWP, ASWP, MTWP and ET70WP have UL approval down to -40°F. The AH-24WP, MT-12/24 and the ET-1010 have been ULC tested and approved to -40°F, but not submitted to UL. The AH-12WP has UL/ULC approval to -31°F.



E5946
S5391
S2652




151-92-E



7125-0785:131 (ASWP)
7125-0785:146 (ET70WP)
7125-0785:156 (MTWP)
7300-0785:154 (RSSWP)



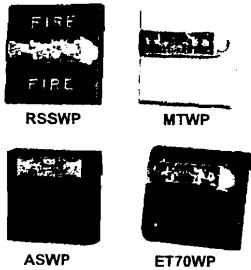
NOTE: All CAUTIONS and WARNINGS are identified by the symbol . All warnings are printed in bold capital letters.

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

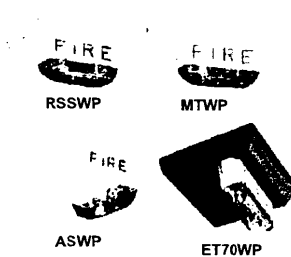
General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their UL Listed Regulated Voltage Range.
- All candela ratings represent minimum effective Strobe intensity based on UL Standards 1971 and 1638 as indicated in candela ratings table.

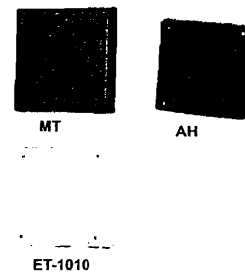
Wall Mount



Ceiling Mount



Wall or Ceiling Mount



| Strobe | Order Code |
|--------------------------|------------|
| RSSWP-2475W-FR Red | 9013 |
| RSSWP-2475W-FW White | 3034 |
| RSSWP-24MCWH-FR Red | 5161 |
| RSSWP-24MCWH-FW White | 5165 |
| Audible Strobe | |
| ASWP-2475W-FR Red | 9012 |
| ASWP-24MCHW-FR Red | 5137 |
| ASWP-24MCWH-FW White | 5140 |
| Multi-tone Strobe | |
| MTWP-2475W-FR Red | 8420 |
| MTWP-2475W-FW White | 3112 |
| MTWP-24MCWH-FR Red | 5132 |
| MTWP-24MCWH-FW White | 5134 |
| Speaker Strobe | |
| ET70WP-2475W-FR Red | 9077 |
| ET70WP-2475W-FW White | 3179 |
| ET70WP-24185W-FR Red | 4885 |
| ET70WP-24185W-FW White | 4891 |

| Strobe | Order Code |
|--------------------------|------------|
| RSSWP-2475C-FR Red | 4338 |
| RSSWP-2475C-FW White | 4446 |
| RSSWP-24MCCH-FR Red | 5167 |
| RSSWP-24MCCH-FW White | 5187 |
| Audible Strobe | |
| ASWP-2475C-FR Red | 4251 |
| ASWP-2475C-FW White | 4502 |
| ASWP-24MCCH-FR Red | 5149 |
| ASWP-24MCCH-FW White | 5157 |
| Multi-tone Strobe | |
| MTWP-2475C-FR Red | 4457 |
| MTWP-2475C-FW White | 4478 |
| MTWP-24MCCH-FR Red | 5102 |
| MTWP-24MCCH-FW White | 5122 |
| Speaker Strobe | |
| ET70WP-2475C-FR Red | 4452 |
| ET70WP-2475C-FW White | 4454 |
| ET70WP-24177C-FR Red | 4845 |
| ET70WP-24177C-FW White | 4859 |

| Audible | Order Code |
|-----------------|------------|
| AH-24WP-R Red | 7416 |
| AH-12WP-R Red | 7415 |
| Horn | |
| MT-12/24-R Red | 5023 |
| Speaker | |
| ET-1010-R Red | 3135 |
| ET-1010-W White | 3137 |

| UL Max. Current | AH | |
|-----------------|--------|--------|
| | 24 VDC | 12 VDC |
| High (99) dBA | 0.080 | 0.192 |
| Med (95) dBA | 0.043 | 0.108 |
| Low (90) dBA | 0.021 | 0.058 |

| UL Reverberant dBA @ 10 Feet | | | | | | | |
|------------------------------|-----|-----|-----|----|----|----|----|
| Watts | 1/8 | 1/4 | 1/2 | 1 | 2 | 4 | 8 |
| ET-1010 | 77 | 80 | 83 | 86 | 87 | 92 | 94 |
| ET70WP | 78 | 81 | 84 | 87 | 90 | 93 | 95 |

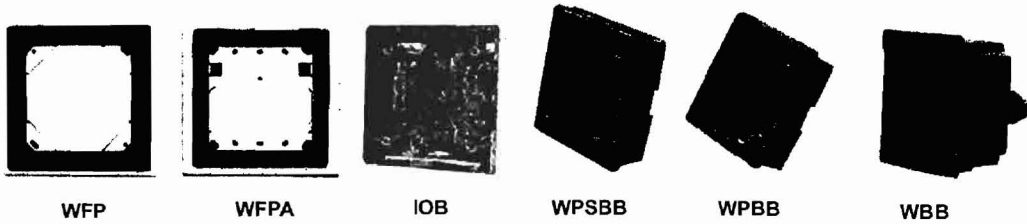
| Series | Candela Ratings | | | | | | |
|--------|-----------------|----------------|-----------------|---|--------------------------|-------|-------|
| | UL 1971 | UL 1638 @ 77°F | UL 1638 @ -40°F | RSS, ET70WP and MTWP UL Max Current (Strobe Only) | ASWP | | |
| | | | | | High | Med | Low |
| 2475 | 30** | 180 | 75 | 0.138 | 0.168 | 0.155 | 0.150 |
| MCWH | 135 | 135 | 56 | 0.300 | 0.355 | 0.340 | 0.335 |
| | 185 | 185 | 77 | 0.420 | 0.480 | 0.465 | 0.460 |
| MCCH | 115 | 115 | 47 | 0.300 | 0.355 | 0.340 | 0.335 |
| | 177 | 177 | 73 | 0.420 | 0.480 | 0.465 | 0.460 |
| 24185 | 185 | 185 | 77 | 0.420 | **Wall mount rating only | | |
| 24177 | 177 | 177 | 73 | 0.420 | | | |

| Model Number | Agency Approvals | | | | |
|-------------------------|------------------|-----|------|----|-----|
| Strobe | UL | MEA | CSFM | FM | BFP |
| RSSWP-2475 | X | X | X | X | * |
| RSSWP-24MCWH | X | * | * | * | * |
| RSSWP-24MCCH | X | * | * | * | * |
| Audible Strobe | | | | | |
| ASWP-2475 | X | X | X | X | X |
| ASWP-MCWH | X | * | * | * | * |
| ASWP-MCCH | X | * | * | * | * |
| Multitone Strobe | | | | | |
| MTWP-2475 | X | X | X | X | * |
| MTWP-MCWH | X | * | * | * | * |
| MTWP-MCCH | X | * | * | * | * |
| Horns/Audibles | | | | | |
| AH-24WP | X | X | X | - | X |
| AH-12WP | X | X | X | - | X |
| MT-12/24 | X | X | X | X | X |
| Speaker Strobe | | | | | |
| ET70WP-2475 | X | X | X | * | * |
| ET70WP-185 | X | * | * | * | * |
| ET70WP-177 | X | * | * | * | * |

| UL Max. Current (Audible) | MTWP/MT 24 VDC | | MT 12 VDC | |
|---------------------------|----------------|-------|-----------|-------|
| dBA | HI | STD | HI | STD |
| Horn | 0.108 | 0.044 | 0.177 | 0.034 |
| Bell | 0.053 | 0.024 | 0.095 | 0.020 |
| March Time | 0.104 | 0.038 | 0.142 | 0.034 |
| 3 Horn | 0.091 | 0.035 | 0.142 | 0.034 |
| 3 Tone | 0.075 | 0.035 | 0.105 | 0.021 |
| Slow Whoop | 0.098 | 0.037 | 0.142 | 0.035 |
| Siren | 0.104 | 0.036 | 0.152 | 0.030 |
| Hi/Lo | 0.057 | 0.025 | 0.114 | 0.026 |

*Pending

Mounting Accessories

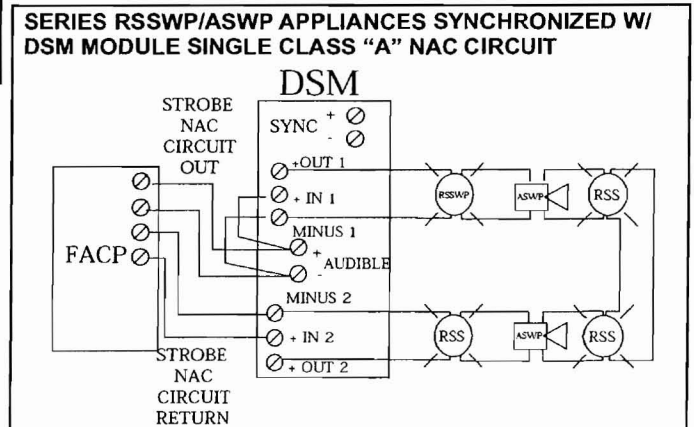
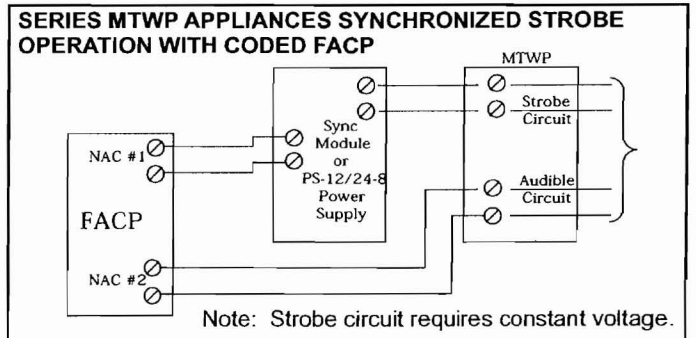
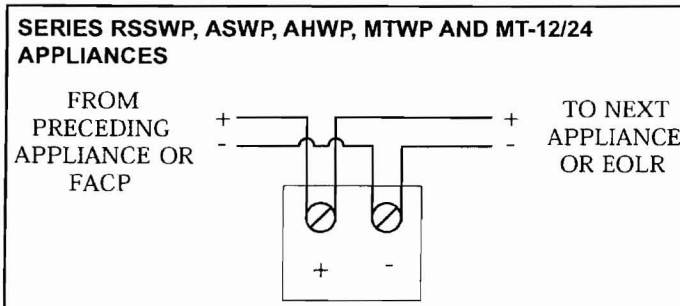
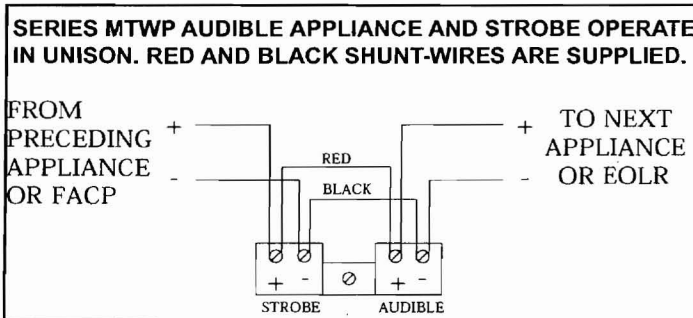


| Gasket Kit | | Order Code |
|--------------|-------|------------|
| WP-KIT | | 4486 |
| Flush Plates | | |
| WFPA-R | Red | 4698 |
| WFPA-W | White | 4701 |
| WFP-R | Red | 4696 |
| WFP-W | White | 4697 |
| Backboxes | | |
| IOB-R | Red | 5046 |
| IOB-W | White | 5047 |
| WPSBB-R | Red | 9751 |
| WPSBB-W | White | 3033 |
| WPBB-R | Red | 9014 |
| WPBB-W | White | 4692 |
| WBB-R | Red | 2959 |
| WBB-W | White | 2960 |

Mounting Options:

| | Backboxes, Plates, Gasket Kits | | |
|-----------------------------|--------------------------------|-------------------|-------------|
| | Surface Mount | | Flush Mount |
| | Exposed Conduit | Concealed Conduit | |
| RSSWP Strobes | WPSBB | WPSBB + WP-KIT | WFP |
| ET70WP Speaker Strobes | IOB | IOB + WP-KIT | WFP |
| ASWP Horn Strobes | WPBB | WPBB + WP-KIT | WFPA |
| AHWP Horns | WBB | - | WFP |
| ET-1010 Speakers | WBB | - | WFP |
| MTWP Multitone Horn Strobes | IOB | IOB + WP-KIT | WFP |
| Multitone Horn | IOB | IOB + WP-KIT | WFP |

Wiring Diagrams



Note: Models are available in Red or White. Contact Customer Service for Order Code and Delivery.

#Refer to Data Sheet S7000 for Mounting Options

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

ARCHITECTS AND ENGINEERS SPECIFICATIONS

General

Weatherproof notification appliances shall be UL listed for outdoor use. Weatherproof Strobe appliances shall be listed under UL Standard 1638 (Standard for Visual Signaling Appliances) for Indoor/Outdoor use and UL Standard 1971 (Standard for Safety Signaling Devices for Hearing Impaired). The appliances shall be available for optional wall mounting or ceiling mounting to weatherproof backboxes using either exposed conduit or concealed conduit, or semi-flush mounting to a recessed electrical box in walls or ceilings using Wheelock mounting accessories.

Weatherproof Strobes

Weatherproof Strobe appliances shall produce a minimum flash rate of 60 flashes per minute over the UL Regulated Voltage Range of 16 to 33 VDC and shall incorporate a Xenon flashtube. The weatherproof strobes shall be available with UL 1971 candela ratings up to 185 cd for wall mounting and 177 cd for ceiling mounting. UL 1638 candela ratings up to 180 cd at 77°F shall be available. The strobes shall operate over an extended temperature range of -40°F to 150°F (-40°C to 66°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Weatherproof Audibles and Audible/Strobe Combinations Weatherproof horns and multitone audibles shall be listed for Indoor/Outdoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. T□

Multitone audibles shall be able to produce 8 distinct tones selectable by dip switch and shall have at least 2 sound level settings. Multitone Audible/Strobe combinations shall have independent inputs for the audible and strobe. The strobes shall be able to be synchronized. The audibles shall be able to be coded when operated on a separate NAC.

Weatherproof Speakers and Speaker/Strobes

Weatherproof speakers and speaker/strobes shall be listed for Indoor/Outdoor use under UL Standard 1480. All speakers shall provide field selectable taps for 1/8W to 8W operation for either 25 VRMS or 70 VRMS audio systems and shall incorporate a sealed back construction for extra protection and improved audibility. Speakers without strobes shall be Wheelock Series ET-1010. They shall be listed to produce up to 94 dBA and shall incorporate a vandal resistant grille design. Speaker with strobes shall be Wheelock Series ET70WP. They shall be available for surface or semi-flush mounting to walls or ceilings and shall be listed to produce up to 93 dBA.

Synchronization Modules

When synchronization of strobes or temporal code-3 audibles is required, the appliances shall be compatible with the Wheelock Series SM and DSM Sync Modules or the Wheelock PS-24-8MC Power Supply with built-in, patented sync protocol. The strobes and audibles shall not drift out of synchronization at any time during operation.

Series ASWP audibles and strobes shall be able to be synchronized on a 2-wire circuit with the ability to silence the audible if required. The strobes on Series MT multitone audible/strobe appliances shall be able to be synchronized and shall be able to be operated on a separate circuit from the audibles while the audible circuit is connected to a coded or continuous NAC.

Weatherproof Mounting Accessories

Weatherproof mounting options shall include surface mounting or semi-flush mounting to walls or ceilings. Surface mounted appliances shall mount to Wheelock IOB, WBB, WPBB or WPSBB weatherproof backboxes using either exposed conduit or concealed conduit. For concealed conduit the weatherproof backbox shall be mounted to a recessed electrical box with Wheelock's WP-KIT to provide a weatherproof seal for the electrical box. Semi-flush mounted appliances shall mount to a recessed electrical box using Wheelock WFP or WFPA flush plates to provide a weatherproof seal between the electrical box and the appliance.



73 Branchport Avenue
g Branch, NJ 07740
one: (800) 631-2148
Fax: (732) 222-2588
www.cooperwheelock.com



WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY
Made in USA

S9004 WP 10/06

UL Listed

7744/7788

AES IntelliNet
CORPORATION | For Alarm Monitoring

NEW!

RF Subscriber Unit

UL Fire, AA Burglary and NFPA-72 Compliant

UL Listed

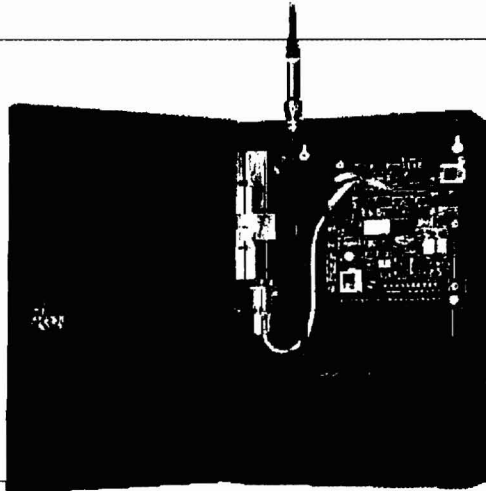
UL Listed Central Station

Remote Station

864 Ed. 9, 827, 1610, 365, 681

CSFM

NFPA
RF Section 8.6.3.5



- Options for Full Data for Fire and Burglary
- Available in 7744 & 7788 Zone Configurations
- Built-in Power Supply and Battery Charger
- Local Annunciation Options on Board

Advanced Wireless Alarm Monitoring

The 7744/7788 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 7744/7788 supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses wire and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7744/7788 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 fire and burglary data.

Available Configurations

7744 – 4 reversing polarity inputs plus 4 programmable EOL inputs

7788 – Programmable EOL inputs with 8 zones

Available Options

FireTap 7770
IntelliTap 7067
NEMA 4 Enclosure
High Gain Antenna
Additional Back Up Battery
Available in Burglary Beige or Fire Red



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

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

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
- Reversing voltage (7744 only) 12 or 24 VDC

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

Low Battery Reporting

22.5-minute test cycle

AC Status

Reports to central station after approximately 60 minutes without AC power, reports power restored after approximately 60 minutes of restored power. programmable from 60 to 180 minutes

Antenna Cut (local reporting)

Form 'C' Contact 1 AMP

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

- 7788 RF subscriber unit with 8 EOL inputs
- 7744 RF subscriber unit with 4 EOL inputs and 4 reverse polarity inputs
- 7770 - FireTap
- 7067 - IntelliTap
- NEMA 4 Enclosure

Please specify when ordering

Available configurations

- 7788, 8 EOL inputs
- 7744, 4 EOL inputs w/4 reverse polarity inputs

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)

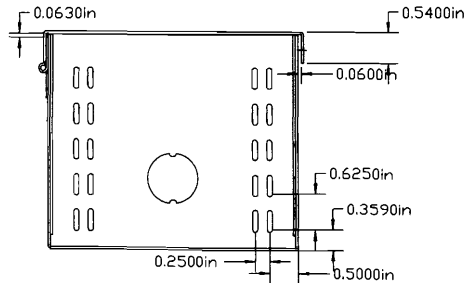
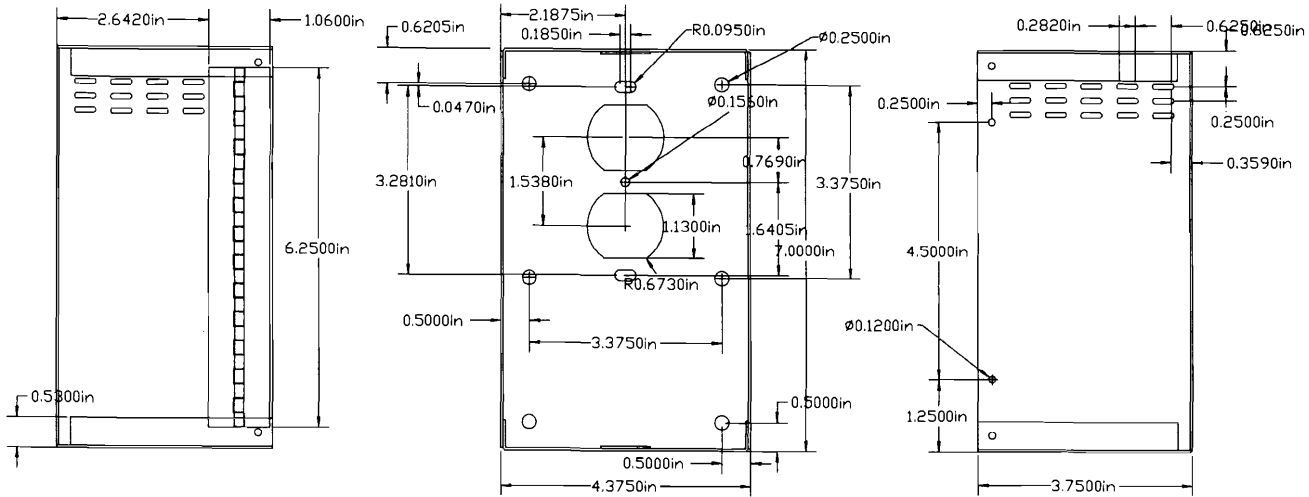
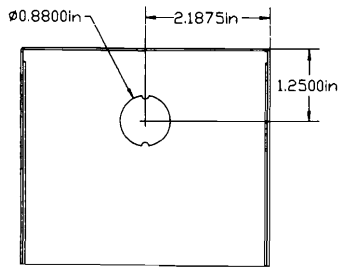
AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA

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

Web www.aes-intellinet.com

Copyright 2008 AES Corporation
AES-IntelliNet is a registered trademark of AES Corporation

7744/7788/02/08



AES Corporation
 Part Number: 30-1640-ENCL
 Revision Level: Rev 1
 Date modified: Feb 13, 2007
 Edited by: Stan Watts

Reason for Edit: Add two holes.
 Align those plus two others with cover
 holes on a standard 4x4 raised electrical
 box.

MS-9200UDLS Battery Calculation

Note 1: You can edit all current draws and are fully responsible for verifying these calculations.

Note 2: You only need to make entries in the yellow cells

Regulated Load in Standby

| Device Type | Number of Devices | | Current (Amps) | = | Total Current (Amps) |
|----------------------------------|-------------------|---|----------------|---|----------------------|
| Main Circuit Board | 1 | x | 0.255000 | = | 0.255000 |
| ACM-8RF | 0 | x | 0.030000 | = | |
| ACM-16ATF | 0 | x | 0.040000 | = | |
| ACM-32AF | 0 | x | 0.040000 | = | |
| AEM-16ATF | 0 | x | 0.002000 | = | |
| AEM-32AF | 0 | x | 0.002000 | = | |
| AFM-16ATF | 0 | x | 0.040000 | = | |
| AFM-32AF | 0 | x | 0.040000 | = | |
| AFM-16AF | 0 | x | 0.025000 | = | |
| UDACT-F | 1 | x | 0.040000 | = | 0.040000 |
| LDM-32F | 0 | x | 0.040000 | = | |
| LDM-E32F | 0 | x | 0.002000 | = | |
| LCD-80F | 1 | x | 0.025000 | = | 0.025000 |
| 4XTMF | 0 | x | 0.005000 | = | |
| 4-Wire Smoke Detectors | 0 | x | 0.000000 | = | |
| Power Supervision Relays | 0 | x | 0.025000 | = | |
| Addressable Devices | | | | | |
| BEAM355 and BEAM355S | 0 | x | 0.002000 | = | |
| BEAM 1224 | 0 | x | 0.017000 | = | |
| CP355 | 0 | x | 0.000300 | = | |
| SD355 | 1 | x | 0.000300 | = | 0.000300 |
| SD355T | 0 | x | 0.000300 | = | |
| AD355 | 0 | x | 0.000300 | = | |
| H355 | 0 | x | 0.000300 | = | |
| H355R | 0 | x | 0.000300 | = | |
| H355HT | 0 | x | 0.000300 | = | |
| D350P | 0 | x | 0.000300 | = | |
| D350RP | 0 | x | 0.000300 | = | |
| MMF-300 | 6 | x | 0.000400 | = | 0.002400 |
| MMF-300-10 | 0 | x | 0.003500 | = | |
| MDF-300 | 1 | x | 0.000750 | = | 0.000750 |
| MMF-301 | 0 | x | 0.000375 | = | |
| MMF-302 | 0 | x | 0.000270 | = | |
| MMF-302-6 | 0 | x | 0.002000 | = | |
| BG-12LX | 3 | x | 0.000230 | = | 0.000690 |
| CMF-300 | 0 | x | 0.000390 | = | |
| CMF-300-6 | 0 | x | 0.002250 | = | |
| CRF-300 | 0 | x | 0.000270 | = | |
| CRF-300-6 | 0 | x | 0.001450 | = | |
| I300 | 0 | x | 0.000400 | = | |
| B501BH & B501BHT (see note 3) | 0 | x | 0.001000 | = | |
| B224RB Relay Base | 0 | x | 0.000500 | = | |
| B224BI Isolator Base | 0 | x | 0.000450 | = | |
| Current Draw from TB3 (nonalarm) | | | 0.000000 | | |
| Total Standby Load | | | | | 0.324140 |

Notes:

- 1) Refer to the Device Compatibility Document for standby current
- 2) Must use compatible listed Power Supervision Relay
- 3) Maximum alarm current for each sounder base is 0.015 amps which must be supplied by aux. 24VDC source.
- 4) Current limitations of TB3 and TB4 circuits is 2.5 amps per NAC output and 0.5 amps per aux. power output
- 5) Total current draw listed cannot exceed 6.0 amps

Note 1: You can edit all current draws and are fully responsible for verifying these calculations.

Note 2: You only need to make entries in the yellow cells

Regulated Load in ALARM

| Device Type | Number of Devices | | Current (Amps) | | Total Current (Amps) |
|--|-------------------|---|----------------|---|----------------------|
| Main Circuit Board | 1 | x | 0.325000 | = | 0.325000 |
| ACM-8RF | 0 | x | 0.158000 | = | |
| ACM-16ATF | 0 | x | 0.056000 | = | |
| ACM-32AF | 0 | x | 0.056000 | = | |
| AEM-16ATF | 0 | x | 0.018000 | = | |
| AEM-32AF | 0 | x | 0.018000 | = | |
| AFM-16ATF | 0 | x | 0.056000 | = | |
| AFM-32AF | 0 | x | 0.056000 | = | |
| AFM-16AF | 0 | x | 0.065000 | = | |
| UDACT-F | 1 | x | 0.075000 | = | 0.075000 |
| LDM-32F | 0 | x | 0.056000 | = | |
| LDM-E32F | 0 | x | 0.018000 | = | |
| LCD-80F | 1 | x | 0.064000 | = | 0.064000 |
| 4XTMF | 0 | x | 0.011000 | = | |
| 4-Wire Smoke Detectors | 0 | x | 0.000000 | = | |
| Power Supervision Relays | 0 | x | 0.000000 | = | |
| ALL Addressable Devices - Maximum draw | 1 | x | 0.400000 | = | 0.400000 |
| NAC #1 | 1 | x | 1.692000 | = | 1.692000 |
| NAC #2 | 1 | x | 1.299000 | = | 1.299000 |
| NAC #3 | 1 | x | 0.168000 | = | 0.168000 |
| NAC #4 | 0 | x | 0.000000 | = | |
| Current Draw from TB3 (nonalarm) | | | 0.000000 | = | |
| Total Alarm Load | | | | | 4.023000 |

Notes:

- 1) Current limitations for NAC circuits TB3 & TB 4 is 2.5 amps per circuit
- 2) ACM 8RF current based on all eight relays activated on a single module
- 3) Annunciator current based on all LED's lit
- 4) LDM-32F current with all LED's on
- 5) MMF 302 current limited to 90mA in alarm
- 6) Total alarm current cannot exceed 6.0 amps

MS-9200UDLS Battery Calculation

Note 1: You can edit all current draws and are **fully responsible for verifying these calculations.**

Note 2: You only need to make entries in the **yellow** cells

Calculation in Total Sheet

Use the total standby and alarm load currents calculated in tables A-2A and A-2B for the following battery calculations

| | | | Required Standby Time in Hours (24 or 60 Hrs.) | | |
|------------------------------------|----------|---|---|---|-----------------|
| Standby Load Current (Amps) | 0.324140 | x | 24 | = | 7.779 AH |
| | | | Required Alarm Time in Hours (15 minutes = 0.25) | | |
| Alarm Load Current (Amps) | 4.023000 | x | 0.084 | = | 0.338 AH |
| Total Current Load | | | | | 8.117 AH |
| Multiply by the Derating Factor | | | 1.2 | = | x 1.20 |
| Total Ampere Hours Required | | | | | 9.741 AH |

Battery Check

The MS 9200UDLS can charge this size battery

The batteries can be stored in the cabinet

Current Draw Check

NAC#1 current is within the limitations of the circuit.

NAC#2 current is within the limitations of the circuit.

NAC#3 current is within the limitations of the circuit.

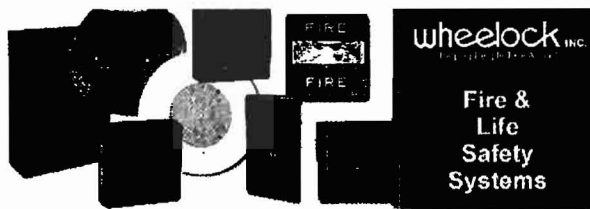
NAC#4 current is within the limitations of the circuit.

MS 9200UDLS **without XRM-24** transformer

****THE XRM-24 IS NEEDED TO SUPPLY THE REQUIRED OUTPUT CURRENT**

MS 9200UDLS **with XRM-24** transformer

The required output current is within the panel's limitations



NAC Tool Design Report

Design Name: Design 1
 File Name Voltage Drop FC-A.wlk
 9/17/2009 See disclaimer below *

Design Thresholds: Voltage: 15 % of Panel / Booster Voltage
 Current: 90 % of Circuit Size
 Power: 85% of Amplifier Wattage

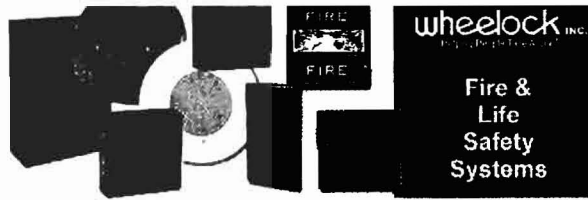
PANEL: MS-9200UDLS

| Panel / Booster | Panel Voltage | Circuit Name | Length (feet) | AWG | Wiring Class | Circuit Type | Circuit Size | Amplifier (Watts) |
|-----------------|---------------|--------------|---------------|-----|--------------|----------------|--------------|-------------------|
| MS-9200UDLS | 24VDC | Circuit A | 273.00 | 14 | Class B | Audible/Visual | 3.00 A | |

| Model Number | Order Code | Candela | dBA @ 10Ft | Distance (feet) | Actual Current | Voltage Drop | Applied Voltage | Settings | Mounting Options |
|-----------------|------------|---------|------------|-----------------|----------------|--------------|-----------------|----------|-----------------------|
| AS-24MCC-FR [1] | 123161 | 95cd | 90-99 | 41.00 | 0.285 A | 0.443 V | 19.957 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| AS-24MCC-FR [2] | 123161 | 95cd | 90-99 | 45.00 | 0.285 A | 0.404 V | 19.553 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| S-24MCC-FR [3] | 123161 | 95cd | 90-99 | 45.00 | 0.285 A | 0.322 V | 19.231 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| AS-24MCC-FR [4] | 123161 | 95cd | 90-99 | 45.00 | 0.285 A | 0.240 V | 18.991 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| AS-24MCC-FR [5] | 123161 | 95cd | 90-99 | 45.00 | 0.285 A | 0.158 V | 18.833 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| AS-24MCW-FR [6] | 129024 | 110cd | 90-99 | 52.00 | 0.267 A | 0.089 V | 18.744 V | Hi | A,B,D,F,G,J |
| Circuit Totals: | | | | 273.00 | 1.692 A | 1.656 V | | | |
| Voltage Drop: | | 6.90 % | | | | | | | |

| Panel / Booster | Panel Voltage | Circuit Name | Length (feet) | AWG | Wiring Class | Circuit Type | Circuit Size | Amplifier (Watts) |
|-----------------|---------------|--------------|---------------|-----|--------------|----------------|--------------|-------------------|
| MS-9200UDLS | 24VDC | Circuit B | 244.00 | 14 | Class B | Audible/Visual | 3.00 A | |

| Model Number | Order Code | Candela | dBA @ 10Ft | Distance (feet) | Actual Current | Voltage Drop | Applied Voltage | Settings | Mounting Options |
|------------------|------------|---------|------------|-----------------|----------------|--------------|-----------------|----------|-----------------------|
| AS-24MCC-FR [1] | 123161 | 30cd | 90-99 | 23.00 | 0.138 A | 0.191 V | 20.209 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| AS-24MCW-FR [2] | 129024 | 110cd | 90-99 | 39.00 | 0.267 A | 0.289 V | 19.921 V | Hi | A,B,D,F,G,J |
| AS-24MCC-FR [3] | 123161 | 75cd | 90-99 | 33.00 | 0.221 A | 0.188 V | 19.732 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| RSS-24MCW-FR [4] | 129400 | 15cd | | 32.00 | 0.060 A | 0.137 V | 19.595 V | | B,D,E,F,G,J,N |
| S-24MCW-FR [5] | 129024 | 15cd | 90-99 | 8.00 | 0.088 A | 0.031 V | 19.564 V | Hi | A,B,D,F,G,J |
| S-24MCW-FR [6] | 129400 | 15cd | | 15.00 | 0.060 A | 0.050 V | 19.513 V | | B,D,E,F,G,J,N |
| RSS-24MCW-FR [7] | 129400 | 15cd | | 19.00 | 0.060 A | 0.056 V | 19.457 V | | B,D,E,F,G,J,N |



NAC Tool Design Report

Design Name: Design 1
 File Name
 9/17/2009 See disclaimer below *

Page 2 of 2

| | | | | | | | | | |
|--------------------------|----------|---------------------------------|-------|--------|---------|---------|----------|----|-----------------------|
| Design Thresholds: | Voltage: | 15 % of Panel / Booster Voltage | | | | | | | |
| | Current: | 90 % of Circuit Size | | | | | | | |
| | Power: | 85% of Amplifier Wattage | | | | | | | |
| <u>AS-24MCC-FR [8]</u> | 123161 | 95cd | 90-99 | 38.00 | 0.285 A | 0.098 V | 19.359 V | Hi | A,B,D,E,F,G,H,J,R,S,X |
| <u>RSS-24MCW-FR [9]</u> | 129400 | 15cd | | 30.00 | 0.060 A | 0.023 V | 19.336 V | | B,D,E,F,G,J,N |
| <u>RSS-24MCW-FR [10]</u> | 129400 | 15cd | | 7.00 | 0.060 A | 0.003 V | 19.333 V | | B,D,E,F,G,J,N |
| Circuit Totals: | | | | 244.00 | 1.299 A | 1.067 V | | | |
| Voltage Drop: | 4.45 % | | | | | | | | |

| <u>Panel / Booster</u> | <u>Panel Voltage</u> | <u>Circuit Name</u> | <u>Length (feet)</u> | <u>AWG</u> | <u>Wiring Class</u> | <u>Circuit Type</u> | <u>Circuit Size</u> | <u>Amplifier (Watts)</u> |
|------------------------|----------------------|---------------------|----------------------|------------|---------------------|---------------------|---------------------|--------------------------|
| MS-9200UDLS | 24VDC | Circuit C | 10.00 | 14 | Class B | Audible/Visual | 3.00 A | |

| <u>Model Number</u> | <u>Order Code</u> | <u>Candela</u> | <u>dBa @ 10Ft</u> | <u>Distance (feet)</u> | <u>Actual Current</u> | <u>Voltage Drop</u> | <u>Applied Voltage</u> | <u>Settings</u> | <u>Mounting Options</u> |
|-------------------------|-------------------|----------------|-------------------|------------------------|-----------------------|---------------------|------------------------|-----------------|-------------------------|
| <u>SWP-2475W-FR [4]</u> | 109012 | 75 | 90-99 | 10.00 | 0.168 A | 0.011 V | 20.389 V | Hi | WPBB |
| Circuit Totals: | | | | 10.00 | 0.168 A | 0.011 V | | | |
| Voltage Drop: | 0.04 % | | | | | | | | |

* This document provides information on an as-is basis to assist users and their technical advisors in selecting elements for notification circuits and/or facility communication systems. Wheelock Inc. does not hold itself out as providing design or engineering services. Users of this program are solely responsible for their own selection and use of products based on values supplied by users, and Wheelock Inc. shall have no liability therefor. ALL WARRANTIES INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.