

CITY OF PORTLAND

BUILDING DEPARTMENT

Please Read Application And Notes, If Any, Attached

PERMIT

Permit Number: 090933

PERMIT ISSUED
SEP 10 2009
CITY OF PORTLAND

This is to certify that RETAILERS REALTY TRUST Electrical Unlimited
has permission to install a Fire Alarm System

AT 832 STEVENS AVE CP 293 D012001

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

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

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

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

OTHER REQUIRED APPROVALS

Fire Dept. [Signature] 202

Health Dept. _____

Appeal Board _____

Other _____
Department Name

[Signature]
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: 09-0933	Issue Date:	CBL: 293 D012001
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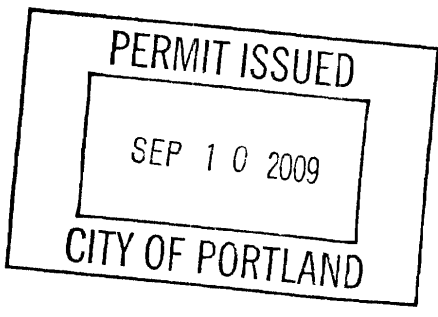
Location of Construction: 832 STEVENS AVE	Owner Name: RETAILERS REALTY TRUST	Owner Address: PO BOX 620626	Phone:
Business Name:	Contractor Name: Electrical Services Unlimited	Contractor Address: 138 Overlook Road Westminster	Phone 9788741660
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	Zone: B-2

Past Use: Commercial -Aubuchon Hardware - Connected w/ permit # 20094404 & 090690	Proposed Use: Commercial -Aubuchon Hardware - install a Fire Alarm System	Permit Fee: \$70.00	Cost of Work: \$4,500.00	CEO District: 5
		FIRE DEPT: w/ conditions 8/31/09 <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: <u>U</u> Type: <u>Alarm System</u>	

Proposed Project Description: install a Fire Alarm System	Signature: <i>[Signature]</i> PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)	Signature: <i>[Signature]</i>
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied		
Signature:		Date:

Permit Taken By: Ldobson	Date Applied For: 08/28/2009	Zoning Approval
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1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..	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>8/28/09</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>
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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

BUILDING PERMIT INSPECTION PROCEDURES

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

to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

A Pre-construction Meeting will take place upon receipt of your building permit.

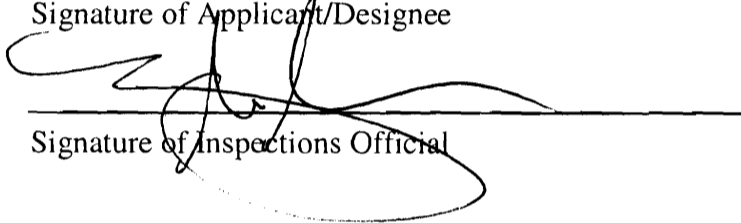
 X **A final inspection is required by the Fire Department upon completion.**

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection.

If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

CERIFICATE OF OCCUPANICES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED.

Signature of Applicant/Designee



Date

9/10/09

Signature of Inspections Official

Date

Mailed

CBL: 293 D012001

Building Permit #: 09-0933

City of Portland, Maine - Building or Use Permit

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

Permit No: 09-0933	Date Applied For: 08/28/2009	CBL: 293 D012001
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Location of Construction: 832 STEVENS AVE	Owner Name: RETAILERS REALTY TRUST	Owner Address: PO BOX 620626	Phone:
Business Name:	Contractor Name: Electrical Services Unlimited	Contractor Address: 138 Overlook Road Westminster	Phone (978) 874-1660
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	

Proposed Use: Commercial -Aubuchon Hardware - install a Fire Alarm System	Proposed Project Description: install a Fire Alarm System
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Dept: Zoning	Status: Approved	Reviewer: Marge Schmuckal	Approval Date: 08/28/2009
Note:			Ok to Issue: <input checked="" type="checkbox"/>
Dept: Building	Status: Approved with Conditions	Reviewer: Tammy Munson	Approval Date: 09/10/2009
Note:			Ok to Issue: <input checked="" type="checkbox"/>
1) The authorizes the installation of the alarm system only. No construction activity is allowed.			
Dept: Fire	Status: Approved with Conditions	Reviewer: Ben Wallace Jr.	Approval Date: 08/31/2009
Note:			Ok to Issue: <input checked="" type="checkbox"/>
1) Sprinkler system shall be supervised.			
2) Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.			
3) Fire alarm system requires a Masterbox connection per city ordinance. Masterbox design and installation shall be as approved be City Electrical Division. A supervised municipal disconnect is required for city masterbox connections.			
4) The fire alarm system shall comply with NFPA 72 and Fire Department Technical Standard. A compliance letter is required.			
5) Installation of a Fire Alarm system requires a Knox Box to be installed per city crdinance			
6) System acceptance and commissioning must be co-ordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.			
7) All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP and keyed alike, labeled "FIRE ALARM RECORDS".			



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: 832 Stevens Ave. CBL: 293-D 012 001

Exact location: (within structure) Entire

Type of occupancy(s) (NFPA & ICC): Class B Mercantile

Building owner: Retailer's Realty Trust

System Designer: _____

Designer phone: _____ E-mail: _____

Installing contractor: Electrical Services Unlimited License No: MC60019398

Contractor phone: 978-874-1660 E-mail: Kevin ES. U. @ AOL.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: N/A 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: \$ 4,500.⁰⁰
 PERMIT FEE: \$ 45.⁰⁰
 (\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

AUG 28 2009

Please submit all of the information outlined on the checklist 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: [Signature] Date: 8/28/09

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.

APR 28 2007

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- 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.

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.

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.

August
Twenty-seventh
2009

Captain Keith Gautreau
Fire Prevention Officer
Portland Fire Dept.
Portland, ME

RE: Interior Renovations for Retailer's Realty Trust- 832 Stevens Avenue, Portland, ME

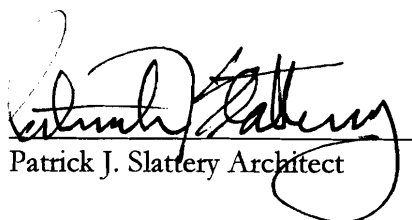
FIRE ALARM SYSTEM PROJECT AFFIDAVIT

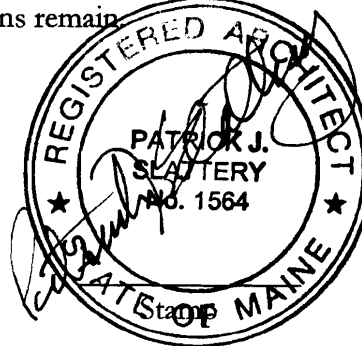
Dear Sir:

Please be advised that I have met this date, regarding the above building, with Mr. Dennis Boucher, the Owner's representative for the above renovation project and I have reviewed the plans, wiring diagrams and data sheets related to the completed installation of a new Fire Alarm Notification System as installed by Electrical Services Unlimited at the above address. This was done in accordance with the requirements of applicable codes including the Life Safety Code, and all other pertinent laws, and applicable regulations and I have determined that its construction meets or exceeds the requirements set forth. I am herein providing certification of the layout plan and details to reflect the as-built conditions and have stamped the drawing this date.

I have also attached a profile of my qualifications as a Architect licensed by the State of Maine as well as listing my other registrations and national certification. I herein approve the work in place.

Please accept this letter as the required affidavit of certification and feel free to contact me at your convenience, if other questions remain.


Patrick J. Slattery Architect



8/27/2009
Date

Patrick J. Slattery Architect

139 Leominster Road

Lunenburg, Massachusetts 01462-2053

Telephone: (978) 582-4310

Fax Phone: (978) 582-9678

email: pjslattery@aol.com

QUALIFICATIONS:

- 30+ years as an independent architectural firm
- 45+ total years of architectural experience
- Complete design management and CAD capabilities
- High quality, innovative, cost effective design history

EXPERIENCE:

PRINCIPAL - PATRICK J. SLATTERY ARCHITECT

1/78 TO PRESENT

An independent architectural practice with a diversified outlook and an emphasis on quality design, cost control and sound planning.

REPRESENTATIVE PROJECTS:

A&E Distributors, Inc. – Sterling, MA --- New Building
Norm Wagner Automotive – Lancaster, MA --- New Building
Rollstone Bank & Trust Operations Center – Fitchburg, MA --- Renovated Building

EDUCATION:

BOSTON ARCHITECTURAL CENTER - BOSTON, MASSACHUSETTS 1965 - 1967
HARVARD GRADUATE SCHOOL OF DESIGN - CAMBRIDGE, MASSACHUSETTS
Land Use and Development Law - 1979
Microcomputers In Architecture - 1982
Building Regulations & Codes - 1988
Museum Design & Planning - 1995
PRATT INSTITUTE – NEW YORK CITY, NEW YORK
Designing Museums & Cultural Institutions - 2006
Historic Preservation – Methods & Techniques – 2007
Green Design vs. Historic Preservation - 2009
CONTINUING EDUCATION COURSES – NCARB – 2000 - 2009

CERTIFICATIONS:

NATIONAL COUNCIL OF ARCHITECTURAL REGISTRATION BOARDS

National Certification - 1978

INDIVIDUAL STATE ARCHITECTURAL REGISTRATIONS

Connecticut	- 1971	Vermont	- 1989
Massachusetts	- 1978	New York	- 2002
New Hampshire	- 1979	Rhode Island	- 2005
Maine	- 1988		

HERITAGE PRESERVATION

Certified as Architectural Assessor –1993 – CAP Assessments for 6 museums completed

NEW BEDFORD WHALING MUSEUM

Appointed Advisory Curator of Architecture – 2002



LISTING SERVICE

LISTING No. 7165-0075:200 Page 1 of 1

CATEGORY: Control Unit (Non High-Rise)

LISTEE: Fire-Lite Alarms, Inc., One Fire-Lite Place, Northford, CT 06472-1653
Contact: Brian Reynolds *(203) 484-7161 FAX (203) 484-7309

DESIGN: Model MS-2 and MS-4 fire alarm control units. Model MS-2 suitable for local, central station and proprietary (protected premises). Model MS-4 suitable for non-coded; local, remote station, auxiliary, proprietary (protected premises) and central station (protected premises) when used with appropriate option modules and additional separate listed equipment; automatic, manual, waterflow and sprinkler supervisory service. Refer to listee's data sheet for detailed product description and operational considerations. System components:

MS-2, -4	Control Unit
411, 411UD, 411UDAC	DACT
4XTMF	Transmission Module
CAC-4	Converter Module

RATING: 120 VAC, 24 VDC

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

MARKING: Listee's name, model number, electrical rating and UL label.

APPROVAL: Listed as fire alarm control panel for use with separately listed compatible initiating and indicating devices. This control unit can generate a distinctive three-pulse Temporal Pattern Fire Alarm Evacuation Signal (for total evacuation) in accordance with NFPA 72, 2002. Refer to manufacturer's Installation Manual for details.

This control unit meets the requirements of UL-864, 9th Edition Standards.

NOTE: For *Fire Alarm Verification* feature (delay of fire alarm signal), the maximum Retard/Reset/Restart period shall not exceed 30 seconds

*Rev. 05-06-05



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other suitable information sources.

Date Issued: **JUNE 16, 2009**

Listing Expires June 30, 2010

Authorized By: **FRANCIS MATEO, Program Coordinator**
Fire Engineering Division

**UNIU.S711
Boxes, Non-coded**[Page Bottom](#)**Boxes, Non-coded**[See General Information for Boxes, Non-coded](#)**FIRE-LITE ALARMS**

S711

1 FIRE-LITE PL
NORTHFORD, CT 06472 USA

Types AR-10F, ARA-10, BG-8, -8SP, -10, -10A, -10L, -10LA, -10N, -10P, -10SP, -10T, -11, HR10, -10A, HRA-10; Model BG-10WP is intended for outdoor use.

Types BGX-10, -10L. For use with Listed Notifier AM2020 control unit.

Type BGID. For use with Listed MS4812 control unit.

Type BG-10LX. For use with Listed MS-9200 control unit.

Models BG-12, -12L, -12LA, -12LR, -12LRA, -12LSP, -12LW, -12LWP, -12LX, -12NC, -12PS, -12S, -12SP, -12W, -12WP, SB-6, -10, SBA-10, -12LPS, -12LPSP .

Model BG-12LXSP.

Models BG-12LAO, -12LAOB, -12LO, -12LOB, -12LW, -12LWP, -12W, -12WP are for outdoor use when used with a back box as specified in the installation Instructions.

Models UT-PS1, UT-PS2.

Back boxes, Models BG-12SL, WP-10.

Accessory - clip for BG-10 Series boxes, Part No. 43345.

[Last Updated](#) on 2007-07-13

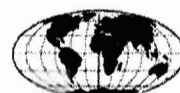
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An independent organization working for a safer world with integrity, precision and knowledge.



MS-2(E)

2-Zone Fire Alarm Control Panels

 **FIRE·LITE·ALARMS**
by Honeywell

Conventional

General

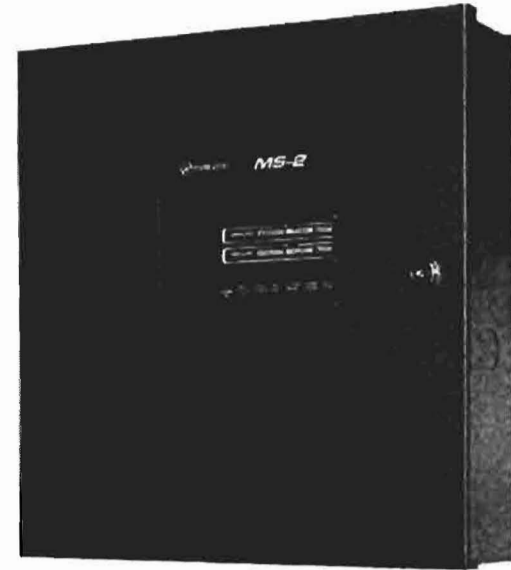
The Fire•Lite MS-2 and MS-2E Fire Alarm Control Panels (FACPs) bring the latest in microprocessor technology to conventional fire controls. The MS-2 is compatible with the *i3™* smoke detectors from System Sensor with drift compensation, maintenance alert, and freeze warning. Automatic synchronization of audio/visual devices with three selections for manufacturer protocol. The Notification Appliance Circuit (NAC) protocol can silence audible devices while strobes continue to flash, using a single pair of wires.

The MS-2 is compatible with conventional input devices such as two- and four-wire smoke detectors, pull stations, waterflow devices, tamper switches and other normally-open contact devices. Refer to the *Fire•Lite Device Compatibility Document* no. 15384 for a complete list of compatible devices.

Note: Unless indicated otherwise, the term "MS-2" refers to both MS-2 and MS-2E models.

Features

- Two Style B (Class B) Initiating Device Circuits (IDCs).
- One Style Y (Class B) NAC.
- 24 VDC.
- ***i3™* Technology features:**
 - Drift compensation automatically adjusts detector sensitivity and increases resistance to false alarms caused by dust accumulation.
 - Maintenance Alert LEDs (per zone) warn of excessive dirt accumulation, preventing false alarms (meets NFPA 72 requirements).
 - Detector sensitivity is automatically measured by the detector, which automatically adjusts its sensitivity back to the factory settings when it becomes more sensitive due to contaminants settling in the chamber.
 - Wireless handheld sensitivity meter eliminates the need for voltmeters, magnets, and a physical connection to the detector. The reader displays sensitivity in terms of percent per foot obscuration and provides text status indication.
 - Supervisory LED (per zone) provides warning if a detector senses temperature approaching freezing.
 - Special test protocol and LED indication allows quick test of all detectors without need for a ladder.
- **NAC synchronization features:**
 - Synchronization of standard ANSI audible signals as required by NFPA 72.
 - Synchronization of ADA compliant strobes per NFPA 72.
 - Selectable for System Sensor, Wheelock, and Gentex protocols.
 - Selective Silence for manual silence of horns while strobes continue to flash on the same NAC.
 - Alarm verification selectable for each zone.
 - Disable switches provided per zone.
- **NAC programmable for:**
 - Silence Inhibit
 - Auto Silence
 - Strobe Synchronization
 - Selective Silence (horn-strobe mute)
- Temporal or Steady signal
- Silenceable or Nonsilenceable
- Silent or audible Walk Test operation mode commanded from the front keypad, with automatic return-to-normal after one hour of inactivity.
- Each zone may be programmed for supervisory or fire; each zone has separate red and yellow LEDs.
- Disable switches provided for each zone.
- Form-C Alarm and Trouble relays.
- 3.0 amps total usable current.
- Piezo sounder for alarm, trouble, supervisory and maintenance.
- **Control buttons:**
 - ACK (Acknowledge)
 - Alarm Silence
 - Reset
 - Walk Test
 - Zone Enable/Disable (one per zone)
- **LED indicators:**
 - Fire Alarm (one per zone)
 - Supervisory (one per zone)
 - Trouble (one per zone)
 - Maintenance (one per zone)
 - AC Power
 - NAC Disable
 - Zone Disable
 - NAC Fault
 - System Trouble



MS2.wmf.jpg

- Power Trouble
- Walk Test
- Alarm Silence
- Earth Fault (on circuit board)
- Battery Fault (on circuit board)
- Charger Fault (on circuit board)
- Optional dress panel.

Operation

Activation of a compatible smoke detector or any normally-open fire alarm initiating device activates audible and visual signaling devices, illuminates an indicating LED, sounds the piezo sounder at the FACP, activates the FACP alarm relay and operates an optional module used to notify a remote station or initiate an auxiliary control function.

Specifications

AC POWER — TB8

- MS-2: 120 VAC, 50/60 Hz, 2.3 A.
- MS-2E: 240 VAC, 50 Hz, 1.15 A.
- Wire Size: Minimum 14 AWG (2.0 mm²) with 600 V insulation.

BATTERY (SEALED LEAD-ACID ONLY) — J8

- **Maximum charging circuit:** normal flat charge 27.6 VDC @ 0.8 A.
- **Maximum battery charger capacity:** 18.0 AH battery (two 7.0 AH batteries can be housed in the FACP cabinet. Larger batteries require a separate battery box such as the Fire•Lite BB-17F).

INITIATING DEVICE CIRCUIT — TB3

- Alarm zones 1 & 2.
- Power-limited circuitry.
- Operation: all zones Style B (Class B).
- Normal operating voltage: nominal 20 VDC.
- Alarm current: 15 mA minimum.
- Short-circuit current: 40 mA maximum.
- Maximum loop resistance: 100 ohms.
- End-of-line resistor: 4.7K ohm, ½ watt (P/N 71252).
- Standby current: 4 mA.
- Compatible devices: refer to the *Fire•Lite Device Compatibility Document* no. 15384 for a complete list of compatible devices.

NOTIFICATION APPLIANCE CIRCUIT — TB2

- One NAC.
- Power-limited circuitry.
- Normal operating voltage: nominal 24 VDC.
- Maximum signalling current: 2.5 A total with standard transformer.
- End-of-line resistor: 4.7K ohm, ½ watt (P/N 71252).
- Compatible devices: refer to the *Fire•Lite Device Compatibility Document* no. 15384 for a complete list of compatible devices.

FORM-C RELAYS

- Trouble Relay TB5 (fail-safe).

- Alarm Relay TB6.
- Relay contact ratings: 2.0 A @ 30 VAC (resistive).

AUXILIARY OUTPUT: RESETTABLE POWER — TB1

- Operating voltage: nominal 24 VDC.
- Maximum available current: 500 mA — appropriate for powering four-wire smoke detectors (*see notes*).
- Power-limited circuitry.

Notes: 1) Refer to the *Fire•Lite Device Compatibility Document* no. 15384 for a complete list of compatible devices.

2) Total current for resettable power and one NAC must not exceed 3.0 A for MS-2.

CABINET DIMENSIONS

Door: 15.342" (38.97 cm) high x 14.667" (37.28 cm) wide x 0.375" (0.95 cm) deep.

Backbox: 15.0" (38.10 cm) high x 14.5" (36.83 cm) wide x 3.0" (7.62 cm) deep.

BACKBOX MOUNTING

The cabinet can be surface mounted. The door is removable during installation by opening and lifting it off the hinges. The cabinet mounts using two key slots at the top of the backbox and two additional 0.25" diameter holes at the bottom.

Listings and Approvals

- **UL Listed:** S624.
- **MEA:** 297-01-E.
- **CSFM:** 7165-0075:200.

Ordering Information

MS-2: Two-zone conventional FACP. 120 VAC, 50/60 Hz, 2.3 A.

MS-2E: Same as above with 240 VAC, 50 Hz, 1.15 A operation.

BB-17F: Battery box, required to house two batteries greater than 7 AH to a maximum of 18 AH.

DP-MS2: Optional dress panel.

MS-2RB: MS-2E replacement board.

TR-1-R: Optional trim ring for semi-flush mounting.

4XTMF: Transmitter Module provides a supervised output for a local energy municipal box transmitter in addition to alarm and trouble reverse polarity.

A 4-zone version of this panel is also available. See DF-52266.

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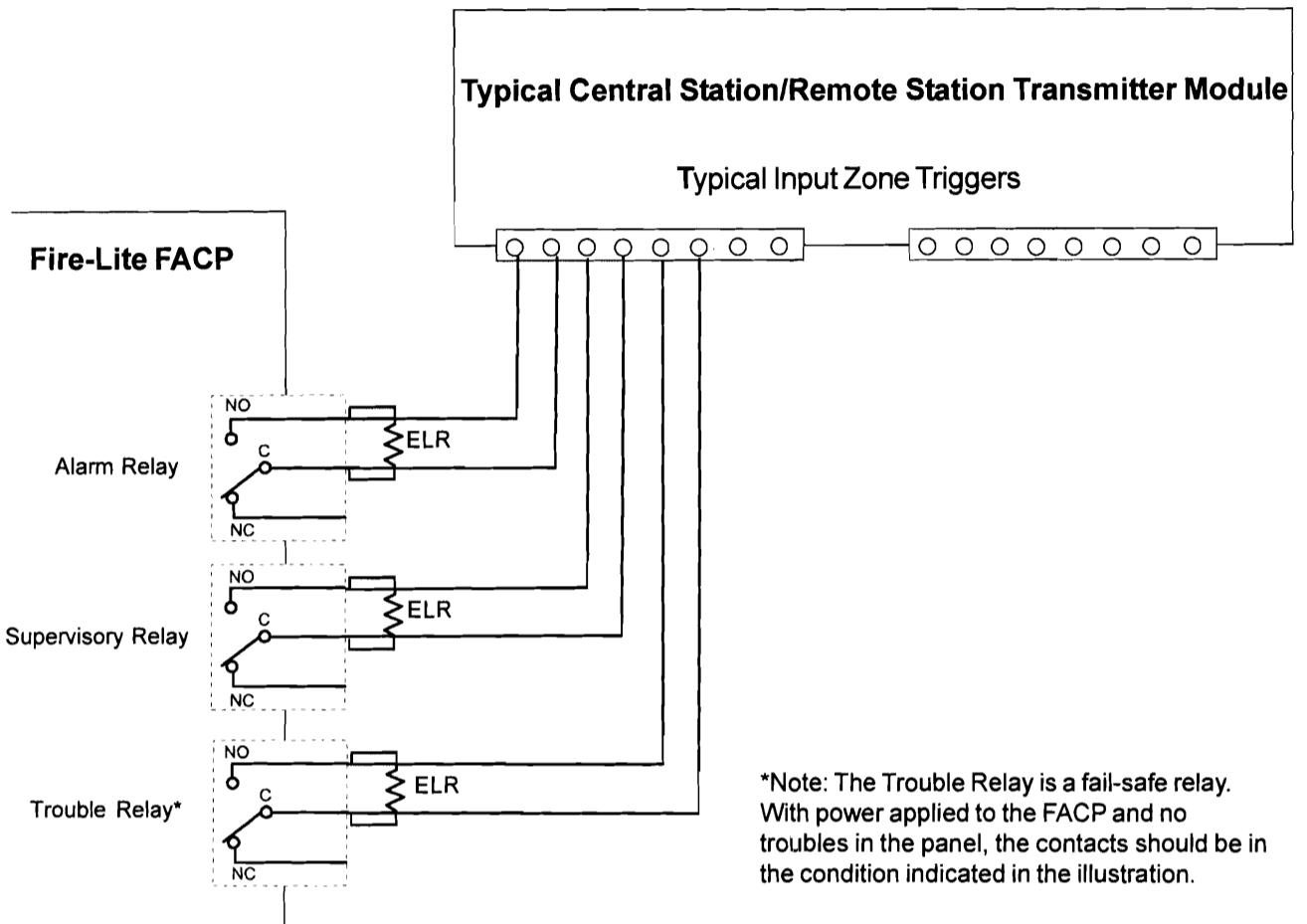


This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.



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

This Product Installation Document outlines the connection of a UL-864 Listed Central Station/Remote Station Transmitter to Fire-Lite Fire Alarm Control Panel dry contacts. The FACP contacts must be supervised by the Central Station/Remote Station Transmitter module using End-of-Line Resistors (ELRs) with a value determined by the Transmitter manufacturer. Power is also provided by the Central Station/Remote Station Transmitter manufacturer. Refer to the Central Station/Remote Station Transmitter manufacturer's manual for details.



For detailed information on specific Fire-Lite FACP's refer to the appropriate panel manual as listed below:

- MS-9200UD Manual P/N: 51906
- MS-9200UDLS Manual P/N: 52750
- MS-9600 Manual P/N: 51335
- MS-9050UD Manual P/N: 52413
- MS-4 Manual P/N: 51512
- MS-5210UD Manual P/N: 50193 (requires use of optional NAC-REM module for supervisory relay)

Keltron 95M3158 TTM-RPS

1. Terminals 7 and 8: Remote station alarm/trouble inputs.
2. Terminals 9 and 10: Sprinkler supervisory input.

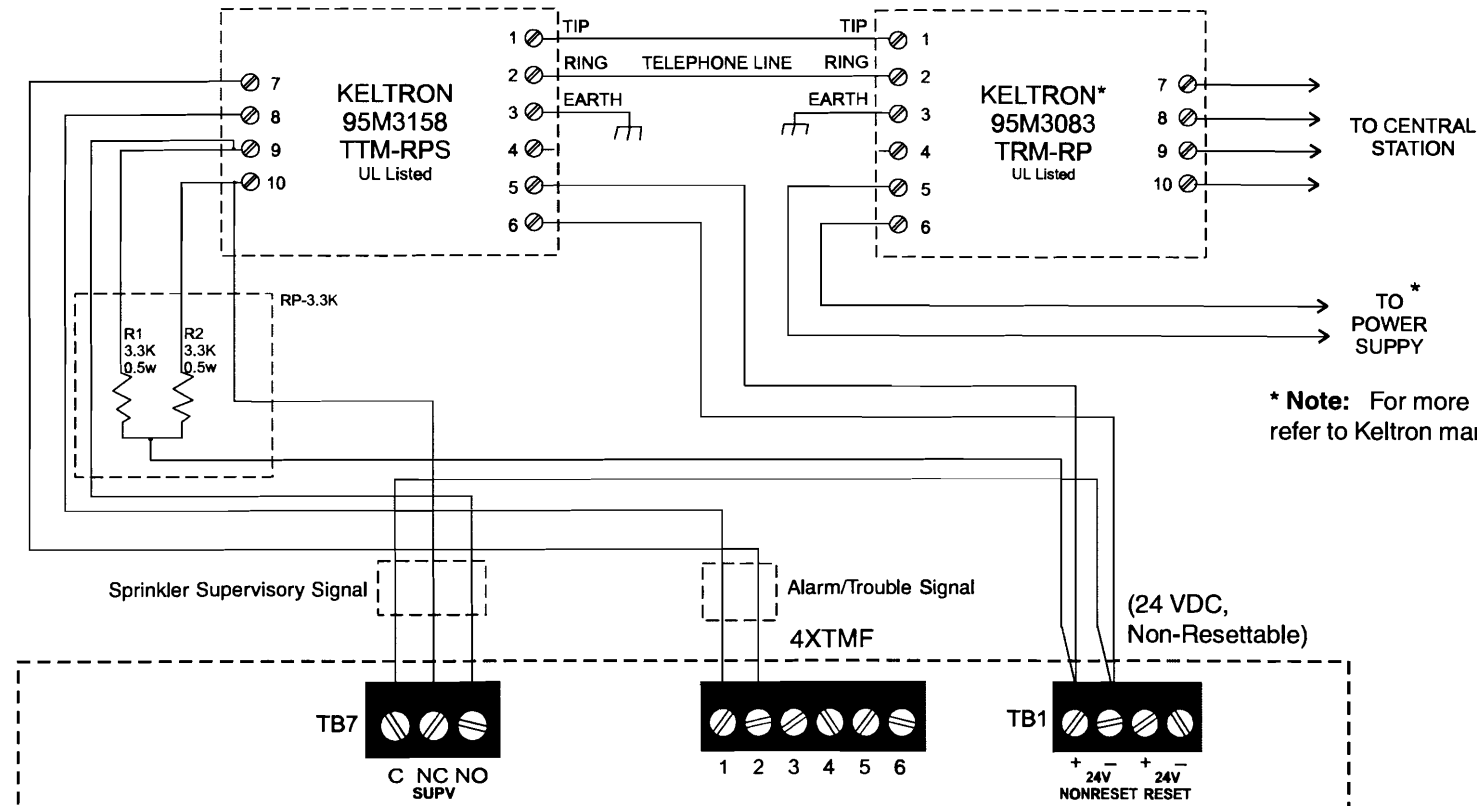
**MS-4
with Keltron RCVR/XMTR
Wiring Diagram**

51681 Revision A
May 31, 2001

ECN 01-249

CAUTION!

For reasons of wiring diagram clarity, terminal designations of Keltron modules are not shown in actual order. Follow Keltron manual and module markings for exact terminal locations to prevent severe module damage!



* Note: For more information, refer to Keltron manual.

MS-4 Control Panel

Refer to MS-4 Manual Document #51512 for detailed information on terminal locations.

Note: Cut TBL jumper on 4XTMF module to send alarm/trouble signal from the same pair of terminals.



MS-2/MS-4 Conventional Fire Alarm Systems

Advanced systems ideal for
small facilities

Sophisticated Performance At Very Low Cost

The Fire-Lite MS-2 and MS-4 Fire Alarm Control Panels bring the latest in microprocessor technology to conventional fire controls. Both panels are compatible with the new I3 smoke detectors from System Sensor, provide such advanced features as drift compensation, maintenance alert, and freeze warning - features normally found in more expensive addressable systems. The Notification Appliance Circuit (NAC) protocol includes the ability to silence audible devices while strobes continue to flash, using only a single pair of wires, as well as automatic synchronization for three manufacturer's protocols of audio/visual devices. The panels are also compatible with conventional input devices such as two- and four-wire smoke detectors, pull stations, waterflow devices, tamper switches and other normally open contact devices.

High Performance with I3 Technology

When coupled with the Fire-Lite MS-2 and MS-4 Fire Alarm Control Panels, I3 devices provide additional detection technology. I3 detectors automatically adjust their sensitivity settings based on dust accumulation in their chamber, resulting in an increased resistance to false alarms. A special maintenance alert LED on each zone will warn of excessive dirt accumulation preventing false alarms - a quick way to test each detector without need for a ladder. In addition, a special supervisory LED warns if a detector is approaching freezing temperatures. This is especially useful when panels are placed in a warehouse facility where such low temperatures may be found. A special wireless handheld sensitivity meter eliminates the need for voltmeters, magnets and physical connections to the detectors to determine sensitivity settings. The meter displays sensitivity in terms of percent per foot obscuration and provides status of detector sensitivity in clear English text.

Flexible Programmable Output Control

The MS-2 and MS-4 panels provide built-in NAC synchronization for zone and zone NAC output devices for both audible and visual. All zone output strobes. To accommodate applications, strobe synchronization is provided for System Sensor, Whetlock and context sounding protocols, and is compatible with existing devices. Both panels contain a 24-hour silent alarm where horns can be manually silenced while strobes continue to flash on.

Fire-LITE® Alarms
MS-2 Basic System Connections

Color Legend
 (text) Installation Information
 ——— Operating Power
 ——— Initiating Device Circuit

DC Power Outputs (24 VDC)
 Supervise with a power supervision relay A77-716B

Resettable Power - 24 VDC (500mA)
 filtered, power-limited to smoke detectors (IDC).

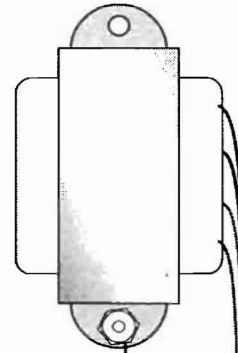
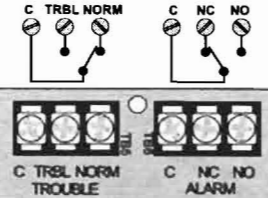
Notification Appliance Circuit
 Style Y (Class B)
 2.5 amps max.

Initiating Device Circuits
 Style B (Class B)
 See "Waterflow/Supervisory" and "4-Wire Smoke Detector"

Warning: Load all initiating circuits. (P/N: 71245)



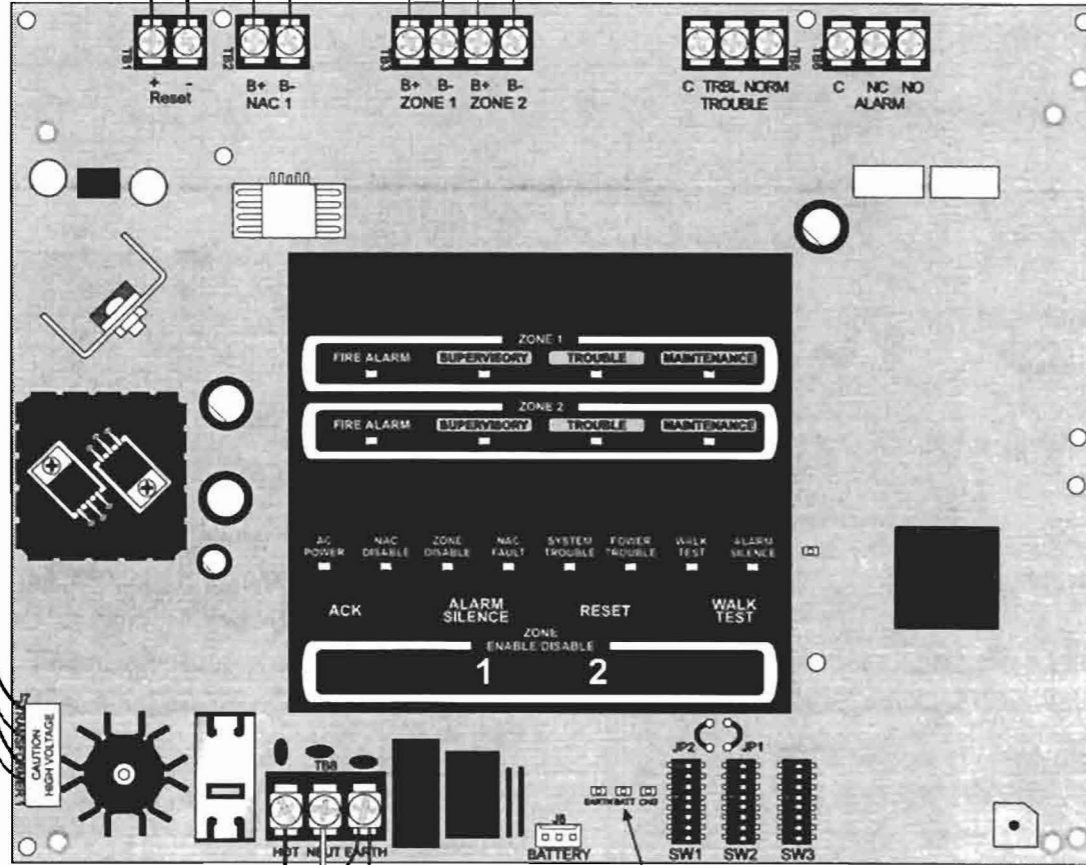
Form-C Relays
 Resistive Contact Rating: 2.0 amps @ 30 VAC



CAUTION! HIGH VOLTAGE

AC Power
 120 VAC, 50/60 Hz, 2.3 Amps

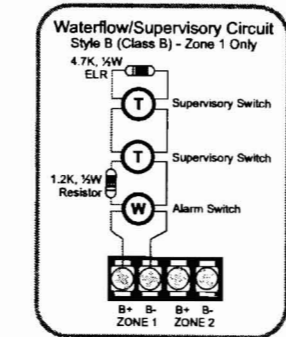
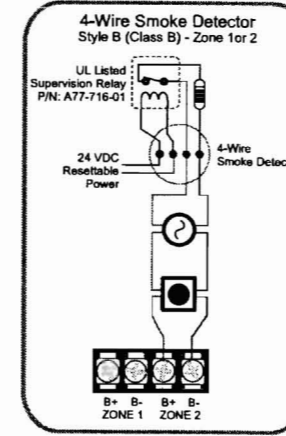
HOT
 NEUTRAL
 GROUND



J8 - Battery Connection 7 AH - 18 AH

Fault LEDs

DIP Switches
 For Programming of the Control Panel refer to Instruction Manual



A	A, M, WF	NC#	MS-5UD-3 (1), MS-5UD-3E (1), MS-5UD-7 (1), MS-5UD-7C (1), MS-5UD-7E (1), MS-10UD-3 (1), MS-10UD-3E (1), MS-10UD-7 (1), MS-10UD-7C (1), MS-10UD-7E (1)
RS (Protected premises unit)	A, M, SS, WF	NC+, DAC, Rev. Pol. #	MS-5UD-3 (1), MS-5UD-3E (1), MS-5UD-7 (1), MS-5UD-7C (1), MS-5UD-7E (1), MS-10UD-3 (1), MS-10UD-3E (1), MS-10UD-7 (1), MS-10UD-7C (1), MS-10UD-7E (1)
CS (Protected premises unit)	A, M, SS, WF	DAC	MS-5UD-3 (1), MS-5UD-3E (1), MS-5UD-7 (1), MS-5UD-7C (1), MS-5UD-7E (1), MS-10UD-3 (1), MS-10UD-3E (1), MS-10UD-7 (1), MS-10UD-7C (1), MS-10UD-7E (1)
P (Protected premises unit)	A, M, SS, WF	C+	MS-5UD-3 (1), MS-5UD-3E (1), MS-5UD-7 (1), MS-5UD-7C (1), MS-5UD-7E (1), MS-10UD-3 (1), MS-10UD-3E (1), MS-10UD-7 (1), MS-10UD-7C (1), MS-10UD-7E (1)
L (2)	A, M, SS, WF	M, NC	MRP-2001, MRP-2001E, MRP-2002, MRP-2002E
A	A, M, WF	NC#	MRP-2001, MRP-2001E, MRP-2002, MRP-2002E
RS (Protected premises unit)	A, M, SS, WF	NC+, DAC+, Rev Pol#	MRP-2001, MRP-2001E, MRP-2002, MRP-2002E
P (Protected premises unit)	A, M, SS, WF	C+, DAC+	MRP-2001, MRP-2001E, MRP-2002, MRP-2002E
CS (Protected premises unit)	A, M, SS, WF	DAC+	MRP-2001, MRP-2001E, MRP-2002, MRP-2002E

Model Noti-Fire 911AC digital alarm communicator Transmitter kit suitable for central station (NFPA71) and remote station (NFPA72C) signaling application. It provides automatic fire alarm, manual fire alarm, sprinkler supervisory and water-flow alarm services. The Noti-Fire 911AC kit consists of unit Noti-Fire 911A module.

Sub-assembly - class A conversion module: Models CAC-4X and CAC-5X (1). Intended for use with compatible control units as described in the individual control unit installation manual.

Sub-assembly - power supply module: Models (1) FLPS-3 and FLPS-7. Intended for use with compatible control units as described in the individual control unit installation manual.

+ Must be employed with additional specific Listed device(s) as indicated in installation instructions and wiring diagrams to provide indicated type signaling.

Requires separately Listed Model 4XTMF transmitter module.

(1) These models are complementary Listed to FSZI and QVAX.

(2) These models are complementary Listed to SYZV.

Last Updated on 2007-07-13

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**UOJZ.S624
Control Units, System**

Page Bottom

Control Units, System

See General Information for Control Units, System

FIRE-LITE ALARMS
1 FIRE-LITE PL
NORTHFORD, CT 06472 USA

S624

Type	Type Service	Type Signaling	Model
L	A, M, SS, WF	C, NC	Sensiscan 1000
L, CS (Protected Premises Unit)	A, M, SS, WF	NC, DAC	MS4812
A, CS, RS (Protected Premises Unit)	A, M, WF	NC	Sensiscan 2000, Sensiscan 2000E
P (Protected+ Premises Unit)	A, M, WF	NC	Sensiscan 2000, Sensiscan 2000E
L	A, M, SS, WF	C, M, NC	Sensiscan 2000, Sensiscan 2000E
CS (Protected+ Premises Unit)	A, M, WF	DAC	Sensiscan 2000, Sensiscan 2000E
CS, RS (Protected Premises Unit)	A, M, WF, SS	DAC+	Sensiscan 2000, Sensiscan 2000E
RS (Protected Premises Unit)	A, M, WF, SS	C+	Sensiscan 2000, Sensiscan 2000E
A, LS ,RS	A, M, WF	NC	C10
A, L, LS, RS	A, M, WF	NC	C106, C10-24
L, RS (Protected Premises Unit)	A, M, WF	NC	MP-12, MP-12E, MP-24, MP-24E
L, CS (Protected Premises Unit)	A, M, WF, SS	NC, DAC	MS4824
L (2)	A, M, WF, SS	NC, M	Sensiscan 200
A	A, M, WF	NC	Sensiscan 200
RS (Protected Premises Unit)	A, M, WF	NC	Sensiscan 200
P (Protected)	A, M, WF	NC	Sensiscan 200
CS (Protected Premises Unit)	A, M, WF	NC	Sensiscan 200
L	A, M, WF, SS	NC	MS-4412B, MS-4424, MS-4424B, MS-4424BE, MS-4424E
A	A, M, WF	NC	MS-4412B, MS-4424, MS-4424B, MS-4424BE, MS-4424E

RS (Protected premises unit)	A, M, WF, SS	C+	MS-4412B, -4424, -4424B,
		Rev. Pol.	MS-4424BE, MS-4424E
RS (Protected premises unit)	A, M, WF	DAC+	MS-4412B, MS-4424, MS-4424B,
			MS-4424BE, MS-4424E
P (Protected premises unit)	A, M, WF	NC+	MS-4412B, -4424, -4424B,
			MS-4424BE, MS-4424E
CS (Protected premises unit)	A, M, WF	DAC+	MS-4412B, MS-4424, MS-4424B,
			MS-4424BE, MS-4424E
CS, RS (Protected premises unit)	A, M, WF, SS	DAC	MS-5012
L	A, M, WF, SS	NC	MS-5012
L	A, M, WF, SS	NC, M	MS-5024, MS-5024UD, MS-5024UDE
RS, CS (Protected premises unit)	A, M, WF, SS	DAC	MS-5024, MS-5024E, -5024UD
			MS-5024UDE
L	A, M, WF, SS	NC, M	MS-5210UD, MS-5210UDE
RS, CS (Protected premises unit)	A, M, WF, SS	DAC	MS-5210UD, MS-5210UDE
L	A, M, WF, SS	M, NC	AMS-9200, AMS-9200E,
			MS-9200UD, MS-9200UDE, MS-9200UDLS, MS-9200UDLSE,
			MS-9200, MS-9200E, MS-9600,
			-9600E, MS-2, MS-4, MS-2E, MS-4E
Auxiliary	A, M, WF	NC	AMS-9200, AMS-9200E,
			MS-9200UD, MS-9200UDE, MS-9200UDLS, MS-9200UDLSE,
			MS-9200, MS-9200E, MS-9600,
			MS-9600E
Auxiliary	A, M, WF	NC+	MS-4, MS-4E
Auxiliary	A, M, WF	NC+	MS-2, MS-2E
RS (Protected Premises Unit)	A, M, WF, SS	C+	AMS-9200, AMS-9200E,
		Rev. Pol.	MS-9200, MS-9200E, MS-4, MS-4E
			MS-9200UD, MS-9200UDE, MS-9200UDLS, MS-9200UDLSE,
			MS-9600, MS-9600E
RS (Protected Premises Unit)	A, M, WF, SS	DAC+	AMS-9200, AMS-9200E,
			MS-9200UD, MS-9200UDE, MS-9200UDLS, MS-9200UDLSE,
			MS-9200, MS-9200E,
			MS-9600, MS-9600E
P (Protected Premises Unit)	A, M, WF, SS	C+	AMS-9200, AMS-9200E,

			MS-9200UD, MS-9200UDE, MS-9200UDLS, MS-9200UDLSE,
			MS-9200, MS-9200E, MS-9600,
			MS-9600E, MS-2, MS-4, MS-2E, MS-4E
CS (Protected Premises Unit)	A, M, WF, SS	DAC+	AMS-9200, AMS-9200E,
			MS-9200UD, MS-9200UDE, MS-9200UDLS, MS-9200UDLSE,
			MS-9200, MS-9200E, MS-9600,
			MS-9600E, MS-4, MS-4E
CS (Protected Premises Unit)	A, M, WF, SS		MS-2, MS-2E,
L	A, M, WF, SS	NC	MRP-4424, MRP-4424E
A	A, M, WF	NC	MRP-4424, MRP-4424E
RS (Protected Premises Unit)	A, M, WF	NC	MRP-4424, MRP-4424E
RS (Protected Premises Unit)	A, M, WF	DAC+	MRP-4424, MRP-4424E
P (Protected Premises Unit)	A, M, WF	NC+	MRP-4424, MRP-4424E
CS (Protected premises unit)	A, M, WF	DAC+	MRP-4424, MRP-4424E
RS (Protected Premises Unit),	A, M, WF, SS	DAC	Notl-Fire 9IIC
CS (Protected Premises Unit)			
Local	A, M, WF, SS	NC	MS-2410B, MS-2410BE
Auxiliary	A, M, WF	NC	MS-2410B, MS-2410BE
Remote Station (PPU)	A, M, WF, SS	DAC	MS-2410B, MS-2410BE
Remote Station (PPU)	A, M, WF, SS	RP	MS-2410B.-2410BE
RS (Protected Premises Unit)	A, M, WF, SS	DAC	411UDAC
CS (Protected Premises Unit)			
RS (Protected Premises Unit)	A, M, WF, SS	DAC	++DACT-UD [sub-assembly]
CS (Protected Premises Unit)			
L	A, M, SS, WF	C, M, NC	MS-9050UD
A	A, M, WF	NC+	MS-9050UD
RS (Protected Premises Unit)	A, M, SS, WF	NC+, DAC, Rev. Pol.+	MS-9050UD
P (Protected Premises Unit)	A, M, SS, WF	C+	MS-9050UD
CS (Protected Premises Unit)	A, M, SS, WF	DAC	MS-9050UD
L	A, M, SS, WF	M, NC	MS-5UD-3 (1), MS-5UD-3E (1), MS-5UD-7 (1), MS-5UD-7C (1), MS-5UD-7E (1), MS-10UD-3 (1), MS-10UD-3E (1), MS-10UD-7 (1), MS-10UD-7C (1), MS-10UD-7E (1)

SpectrAlert® Advance

Selectable Output Notification Appliances

 **FIRE-LITE ALARMS**
by Honeywell

Audio/Visual Devices

General

System Sensor® SpectrAlert® Advance selectable-output horns, strobes and horn/strobes are rich with features guaranteed to cut installation times and maximize profits. The SpectrAlert Advance series of notification appliances is designed to simplify your installations, with features such as: plug-in designs, instant feedback messages to ensure correct installation of individual devices, and eleven field-selectable candela settings for wall and ceiling strobes and horn/strobes.

More specifically, when installing Advance products, first attach a universal mounting plate to a four-inch square, four-inch octagon, or double-gang junction box. The two-wire mounting plate attaches to a single-gang junction box.

Then, connect the notification appliance circuit wiring to the SEMS terminals on the mounting plate.

Finally, attach the horn, strobe, or horn/strobe to the mounting plate by inserting the product's tabs in the mounting plate's grooves. The device will rotate into position, locking the product's pins into the mounting plate's terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

SpectrAlert Advance products allow you to choose:

- 12 or 24 volts.
- At 24 volts, 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, or 185 candela by way of a rear-mounted slide switch and front viewing window.
- Horn tones and volume by way of a rotary switch.
- The SpectrAlert Advance series includes outdoor notification appliances. Outdoor strobes and horn/strobes (two-wire and four-wire) are available for wall or ceiling. Outdoor horns are available for wall only. All System Sensor outdoor products are rated between -40°F and 151°F (-40°C and 66°C) in wet or dry applications.

Models available:

- Indoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Indoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.

Features

- Plug-in design.
- Same mounting plate for wall- and ceiling-mount units.
- Shorting spring on mounting plate for continuity check before installation.
- Captive mounting screw.
- Tamper-resistance capability.
- Field-selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.
- Automatic selection of 12 or 24 volt operation at 15 and 15/75 candela.
- Outdoor wall and ceiling products.
- Outdoor products rated from -40°F and 151°F (-40°C and 66°C).

7087pho1.jpg



Indoor Ceiling Horn/Strobe

7087pho2.jpg



Outdoor Ceiling Strobe

7087pho3.jpg



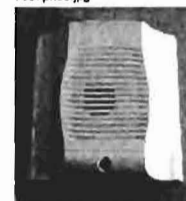
Indoor Wall Horn/Strobe

7087pho4.jpg



Indoor Ceiling Strobe

7087pho5.jpg



Indoor Wall Horn

7087pho6.jpg



Outdoor Wall Strobe

- Minimal intrusion into the backbox.
- Horn rated at 88+ dbA at 16 volts.
- Rotary switch for tone selection.
- Three horn volume settings.
- Electrically compatible with existing SpectrAlert products.

Engineering Specifications

SpectrAlert Advance horns, strobes, and horn/strobes shall mount to a standard 4.0" x 4.0" x 1.5" (10.16 x 10.16 x 3.81 cm) backbox, 4.0" (10.16 cm) octagonal backbox, or a double-gang backbox. Two-wire products shall also mount to a single-gang 2.0" x 4.0" x 1.875" (5.08 x 10.16 x 4.763 cm) backbox. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync-Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync-Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32°F and 120°F (0°C and 49°C) from a regulated DC, or full-wave-rectified, unfiltered power supply. Strobes and horn/strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

STROBE

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

HORN/STROBE COMBINATION

The horn/strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn/strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a Temporal 3 pattern and a Non-Temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

OUTDOOR PRODUCTS

SpectrAlert Advance outdoor horns, strobes and horn/strobes shall be listed for outdoor use by UL and shall operate between -40°F and 151°F (-40°C and 66°C). The products shall be listed for use with a System Sensor outdoor/weatherproof backbox with half-inch and three-fourths-inch conduit entries.

SYNCHRONIZATION MODULE

The module shall be a System Sensor Sync-Circuit _____ listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at Temporal 3. Also, while operating the strobes, the module shall silence the horns on horn/strobe models over a single pair of wires. The module shall mount to a 4.688" x 4.688" x 2.125" (11.906 x 11.906 x 5.398 cm) backbox. The module shall also control two Style Y (class B) circuits or one Style Z (Class A) circuit. The module shall synchronize multiple zones. Daisy-chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Operating Specifications

- **Standard operating temperature:** 32°F to 120°F (0°C to 49°C).
- **K Series operating temperature:** -40°F to 151°F (-40°C to 66°C).
- **Humidity range:** 10% to 93% non-condensing (indoor products).
- **Strobe flash rate:** 1 flash per second.
- **Nominal voltage:** regulated 12 VDC/FWR or regulated 24 VDC/FWR. **NOTE:** Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.
- **Operating voltage range:** 8 V to 17.5 V (12 V nominal); or 16 V to 33 V (24 V nominal). **NOTE:** P, S, PC, and SC products will operate at 12 V nominal only for 15 cd and 15/75 cd.
- **Input terminal wire gauge:** 12 to 18 AWG (3.31 to 0.821 mm²).
- **Ceiling-mount dimensions (including lens):** 6.8" diameter x 2.5" deep (17.3 cm diameter x 6.4 cm deep).
- **Wall-mount dimensions (including lens):** 5.6" H x 4.7" W x 2.5" D (14.2 cm H x 11.9 cm W x 6.4 cm D).
- **Horn dimensions:** 5.6" H x 4.7" W x 1.3" D (14.2 cm H x 11.9 cm W x 3.3 cm D).

Agency Listings and Approvals

The listings and approvals below apply to SpectrAlert Advance Selectable Output Notification Devices. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** file **S4011** (HR, HW, P2, P4, PC2, PC4 models); file **S5512** (models SCR, SCRH, SCWH, SCWH, SR, SRH, SW, SWH); file **S3593** (SCRHK, SCRK, SRHK, SRK).
- **ULC Listed:** file **CS1099** (HRA, HRKA); file **CS1089** (typically "A" models, with exception of outdoor strobes). See Canadian data sheet for listings and specifications.
- **FM approved.**
- **MEA approved:** file **452-05-E**.
- **CSFM approved:** file **7125-1653:186** (SCR, SCRH, SCWH, SCWH, SR, SRH, SW, SWH); file **7125-1653:188** (P2, P4, PC2, PC4 models); file **7135-1653:189** (HR, HRK, HW); file **7300-1653:187** (SCRHK, SCRK, SRHK, SRK).

Strobe Current Draw, UL Maximum (mA RMS)

Candela	8 – 17.5 V		16 – 33 V		
	DC	FWR	DC	FWR	
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	N/A	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
High Candela Range	115	NA	NA	210	205
	135	NA	NA	228	207
	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

Horn Current Draw, UL Maximum (mA RMS)

Sound Pattern	dB	8 – 17.5 V		16 – 33 V	
		DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-temporal	High	57	56	69	75
Non-temporal	Medium	42	50	60	69
Non-temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

Horn and Horn/Strobe Rotary Switch Setting

Setting	Repetition Rate	dB Level
1	Temporal horn	High
2	Temporal horn	Medium
3	Temporal horn	Low
4	Normal horn	High
5	Normal horn	Medium
6	Normal horn	Low
7*	Externally coded	High
8*	Externally coded	Medium
9*	Externally coded	Low

*NOTE: Settings 7, 8, and 9 are not available on 2-wire horn/strobe.

Horn and Horn/Strobe Output (dBA)

Switch Position	Sound Pattern	dB	8 – 17.5 V		16 – 33 V	
			DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84
2	Temporal	Medium	74	74	80	80
3	Temporal	Low	71	73	76	76
4	Non-temporal	High	82	82	88	88
5	Non-temporal	Medium	78	78	85	85
6	Non-temporal	Low	75	75	81	81
7*	Coded	High	82	82	88	88
8*	Coded	Medium	78	78	85	85
9*	Coded	Low	75	75	81	81

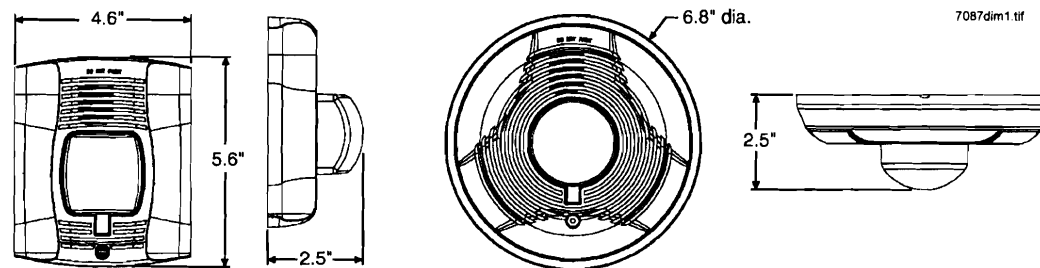
*NOTE: Settings 7, 8, and 9 are not available on 2-wire horn/strobe.

Two-Wire Horn/Strobe, STANDARD Candela Range (15 – 115 cd), UL Maximum Current Draw (mA RMS)

Input, Sound Pattern, dB Level	8 – 17.5 V		16 – 33 V						
	15	15/75	15	15/75	30	75	95	110	115
DC Input, Temporal, High	137	147	79	90	107	176	194	212	218
DC Input, Temporal, Medium	132	144	69	80	97	157	182	201	210
DC Input, Temporal, Low	132	143	66	77	93	154	179	198	207
DC Input, Non-temporal, High	141	152	91	100	116	176	201	221	229
DC Input, Non-temporal, Medium	133	145	75	85	102	163	187	207	216
DC Input, Non-temporal, Low	131	144	68	79	96	156	182	201	210
FWR Input, Temporal, High	136	155	88	97	112	168	190	210	218
FWR Input, Temporal, Medium	129	152	78	88	103	160	184	202	206
FWR Input, Temporal, Low	129	151	76	86	101	160	184	194	201
FWR Input, Non-temporal, High	142	161	103	112	126	181	203	221	229
FWR Input, Non-temporal, Medium	134	155	85	95	110	166	189	208	216
FWR Input, Non-temporal, Low	132	154	80	90	105	161	184	202	211

Two-Wire Horn/Strobe, HIGH Candela Range (135 – 185 cd), UL Maximum Current Draw (mA RMS)

DC Input	16 – 33 V				FWR Input	16 – 33 V			
	135	150	177	185		135	150	177	185
DC, Temporal, High	245	259	290	297	FWR, Temporal, High	215	231	258	265
DC, Temporal, Medium	235	253	288	297	FWR, Temporal, Medium	209	224	250	258
DC, Temporal, Low	232	251	282	292	FWR, Temporal, Low	207	221	248	256
DC, Non-temporal, High	255	270	303	309	FWR, Non-temporal, High	233	248	275	281
DC, Non-temporal, Medium	242	259	293	299	FWR, Non-temporal, Medium	219	232	262	267
DC, Non-temporal, Low	238	254	291	295	FWR, Non-temporal, Low	214	229	256	262



Ordering Information

Model	Description*	Model	Description
WALL HORN/STROBES		CEILING HORN/STROBES	
P2R	2-wire horn/strobe, standard cd, red.	PC2R	2-wire horn/strobe, standard cd, red.
P2RH	2-wire horn/strobe, high cd, red.	PC2RH	2-wire horn/strobe, high cd, red.
P2RK	2-wire horn/strobe, standard cd, red, outdoor.**	PC2RK	2-wire horn/strobe, standard cd, red, outdoor.
P2RHK	2-wire horn/strobe, high cd, red, outdoor.	PC2RHK	2-wire horn/strobe, high cd, red, outdoor.
P2W	2-wire horn/strobe, standard cd, white.	PC2W	2-wire horn/strobe, standard cd, white.
P2WH	2-wire horn/strobe, high cd, white.	PC2WH	2-wire horn/strobe, high cd, white.
P4R	4-wire horn/strobe, standard cd, red.	PC4R	4-wire horn/strobe, standard cd, red.
P4RH	4-wire horn/strobe, high cd, red.	PC4RH	4-wire horn/strobe, high cd, red.
P4RK	4-wire horn/strobe, standard cd, red, outdoor.	PC4RK	4-wire horn/strobe, standard cd, red, outdoor.
P4RHK	4-wire horn/strobe, high cd, red, outdoor.	PC4RHK	4-wire horn/strobe, high cd, red, outdoor.
P4W	4-wire horn/strobe, standard cd, white.	PC4W	4-wire horn/strobe, standard cd, white.
P4WH	4-wire horn/strobe, high cd, white.	PC4WH	4-wire horn/strobe, high cd, white.
WALL STROBES		CEILING STROBES	
SR	Strobe, standard cd, red.	SCR	Strobe, standard cd, red.
SRH	Strobe, high cd, red.	SCRH	Strobe, high cd, red.
SRK	Strobe, standard cd, red, outdoor.	SCRK	Strobe, standard cd, red, outdoor.
SRHK	Strobe, high cd, red, outdoor.	SCRHK	Strobe, high cd, red, outdoor.
SW	Strobe, standard cd, white.	SCW	Strobe, standard cd, white.
SWH	Strobe, high cd, white.	SCWH	Strobe, high cd, white.
ACCESSORIES		HORNS	
BBS-2	Backbox skirt, wall, red.	HR	Horn, red.
BBSW-2	Backbox skirt, wall, white.	HRK	Horn, red, outdoor.
BBSC-2	Backbox skirt, ceiling, red.	HW	Horn, white.
BBSCW-2	Backbox skirt, ceiling, white.	ACCESSORIES, continued	
SA-WBB	Weatherproof backbox, wall.	MP-2W-20BP	2-wire indoor mounting plates, pkg of 20.
SA-WBBC	Weatherproof backbox, ceiling. <i>cont'd at right</i>	MPK-2W-20BP	2-wire outdoor mounting plates, pkg of 20.
<p>NOTE: **High cd" refers to strobes that include 135, 150, 177, and 185 candela settings. "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. **All outdoor models ("K" suffix) include weatherproof backbox.</p>			

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

BG-12 Series

Manual Fire Alarm Pull Stations

 **FIRE-LITE Alarms**
by Honeywell

Conventional Initiating Devices

General

The Fire-Lite **BG-12 Series** is a cost-effective, feature-packed series of non-coded manual fire alarm pull stations. It was designed to meet multiple applications with the installer and end-user in mind. The BG-12 Series features a variety of models including single- and dual-action versions.

The BG-12 Series provides Fire-Lite Alarm Control Panels (FACPs), as well as other manufacturers' controls, with a manual alarm initiating input signal. Its innovative design, durable construction, and multiple mounting options make the BG-12 Series simple to install, maintain, and operate.

Features

- Aesthetically pleasing, highly visible design and color.
- Attractive contoured shape and light textured finish.
- Meets ADA 5 lb. maximum pull-force.
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Easily operated (single- or dual-action), yet designed to prevent false alarms when bumped, shaken, or jarred.
- PUSH IN/PULL DOWN handle latches in the down position to clearly indicate the station has been operated.
- The word "ACTIVATED" appears on top of the handle in bright yellow, further indicating operation of the station.
- Operation handle features white arrows showing basic operation direction for non-English-speaking persons.
- Braille text included on finger-hold area of operation handle and across top of handle.
- Multiple hex- and key-lock models available.
- U.S. patented hex-lock needs only a quarter-turn to lock/unlock.
- Station can be opened for inspection and maintenance without initiating an alarm.
- Product ID label viewable by simply opening the cover; label is made of a durable long-life material.
- The words "NORMAL" and "ACTIVATED" are molded into the plastic adjacent to the alarm switch (located inside).
- Four-position terminal strip molded into backplate.
- Terminal strip includes Phillips combination-head captive 8/32 screws for easy connection to Initiating Device Circuit (IDC).
- Terminal screws backed-out at factory and shipped ready to accept field wiring (up to 12 AWG/3.1 mm²).
- Terminal numbers are molded into the backplate, eliminating the need for labels.
- Switch contacts are normally open.
- Can be surface-mounted (with **SB-10** or **SB-10**) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Backplate is large enough to overlap a single-gang backbox cutout by 1/2" (1.27 cm).
- Optional trim ring (**BG12TR**).
- Spanish versions (*FUEGO*) available (**BG-12LSP**, **BG-12LPSP**).
- Designed to replace the Fire-Lite legacy **BG-10 Series**.
- Models packaged in attractive, clear plastic (PVC), clam-shell-style, Point-of-Purchase packages. Packaging includes a cutaway dust/paint cover in shape of pull station.



Construction

- Cover, backplate and operation handle are all molded of durable polycarbonate material.
- Cover features white lettering and trim.
- Red color matches System Sensor's popular SpectrAlert® Advance horn/strobe series.

Operation

The BG-12 manual pull stations provide a textured finger-hold area that includes Braille text. In addition to PUSH IN and PULL DOWN text, there are arrows indicating how to operate the station, provided for non-English-speaking people.

Pushing in and then pulling down on the handle activates the normally-open alarm switch. Once latched in the down position, the word "ACTIVATED" appears at the top in bright yellow, with a portion of the handle protruding at the bottom as a visible flag. Resetting the station is simple: insert the key, twist one quarter-turn, then open the station's front cover, causing the spring-loaded operation handle to return to its original position. The alarm switch can then be reset to its normal (non-alarm) position manually (by hand) or by closing the station's front cover, which automatically resets the switch.

Specifications

PHYSICAL SPECIFICATIONS:

	pull station	SB-I/O	SB-10
Height	5.5 inches (13.97 cm)	5.601 inches (14.23 cm)	5.5 inches (13.97 cm)
Width	4.121 inches (10.47 cm)	4.222 inches (10.72 cm)	4.121 inches (10.47 cm)
Depth	1.39 inches (3.53 cm)	1.439 inches (3.66 cm)	1.375 inches (3.49 cm)

52004dim.tbl

ELECTRICAL SPECIFICATIONS:

Switch contact ratings: gold-plated; rating 0.25 A @ 30 VAC or VDC.

ENGINEERING/ARCHITECTURAL SPECIFICATIONS

Manual Fire Alarm Stations shall be non-code, with a key- or hex-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 or hex. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red colored LEXAN (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word **FIRE** shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

NOTE: *The words "FIRE/FUEGO" on the BG-12LSP shall appear on the front of the station in white letters, approximately 3/4" (1.905 cm) high.



Agency Listings and Approvals

The listings and approvals below apply to the BG-12 Series pull stations. 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.

- **C(UL)US:** S711
- **FM Approved**
- **CSFM:** 7150-0075:184
- **MEA:** 67-02-E
- **Patented:** U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

Product Line Information

BG-12S: Single-action pull station with pigtail connections, hex lock.

BG-12SL: Same as BG-12 with key lock.

BG-12: Dual-action pull station with SPST N/O switch, screw terminal connections, **hex lock**.

BG-12L: Same as BG-12 with key lock.

BG-12LSP: Same as BG-12L with English/Spanish (**FIRE/FUEGO**) labeling.

BG-12LOB: Same as BG-12L with "outdoor use" listing. Includes outdoor listed backbox, and sealing gasket.

BG-12LO: Same as BG-12L with "outdoor use" listing. Does not include backbox.

BG-12LA: Same as BG-12L with auxiliary contacts.

BG-12LPS: Dual-action pull station with pre-signal option.

BG-12LPSP: Same as BG-12LPS with English/Spanish (**FIRE/FUEGO**) labeling.

SB-10: Surface-mount backbox, metal.

SB-I/O: Surface-mount backbox, plastic. (Included with BG-12LOB.)

BG12TR: Optional trim ring for semi-flush mounting.

17003: Keys, set of two. (Included with key-lock pull stations.)

17007: Hex lock, 9/64". (Included with hex-lock pull stations.)

NOTE: For addressable BG-12LX models, see data sheet DF-52013.

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www.firelite.com



Dual Action BG-12L

BG-12 Series Manual Pull Stations

Document: 50964 Revision: B ECN: 98-461 08/04/99

Description

The BG-12 Series Pull Stations are non-coded manual pull stations which provide a Fire Alarm Control Panel (FACP) with a single alarm initiating input signal. The BG-12 series includes both single-action and dual-action models equipped with either a hex or key lock / reset. A single-action pull station is activated by a single pull-down of the alarm handle. The dual-action versions require pushing in the handle, then pulling the handle down for activation. The BG-12 series manual pull stations are UL listed and meet the ADA requirement of a 5-lb. maximum pull force to activate. Operating instructions are molded into the handle along with Braille text. Molded terminal numbers can be found adjacent to the wiring terminals.

BG-12 Series Models available:

- **BG-12S** – Single action with 'pigtail' connections and a hex lock reset. Pigtail wires are provided for connection to the FACP Initiating Device Circuit (IDC).
- **BG-12** – Dual action model with screw terminal connections and a hex lock reset.
- **BG-12L** – Same as BG-12 except with a key lock reset.
- **BG-12LSP** – Same as BG-12L except with both English and Spanish operating instructions.

Switch Contact Rating

All switch contacts are rated for 0.25 A at 30 volts (AC or DC).

Installation

Surface mount the BG-12 pull station to a SB-10 surface backbox. Semi-flush mount the BG-12 to a standard single gang, double-gang, or 4-inch (10.16cm) square electrical box. Mount the optional Trim Ring (BG-TR) if necessary when semi-flush mounting the unit.

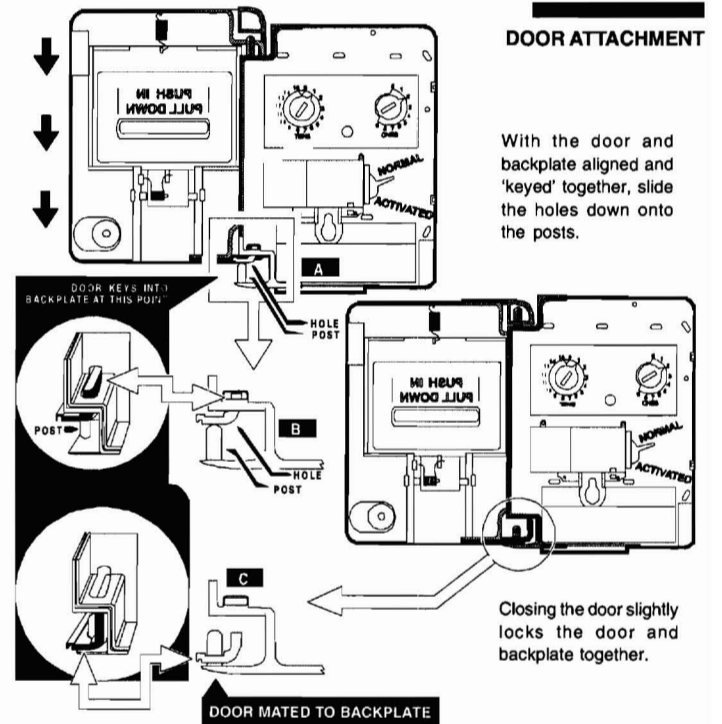
The word 'ACTIVATED' is displayed



on the pull station's pulled-down handle

If, during mounting of the pull station, the door becomes detached, complete the following steps to reattach the door to the backplate. The door cannot be connected to the pull station if the unit is mounted to the backbox.

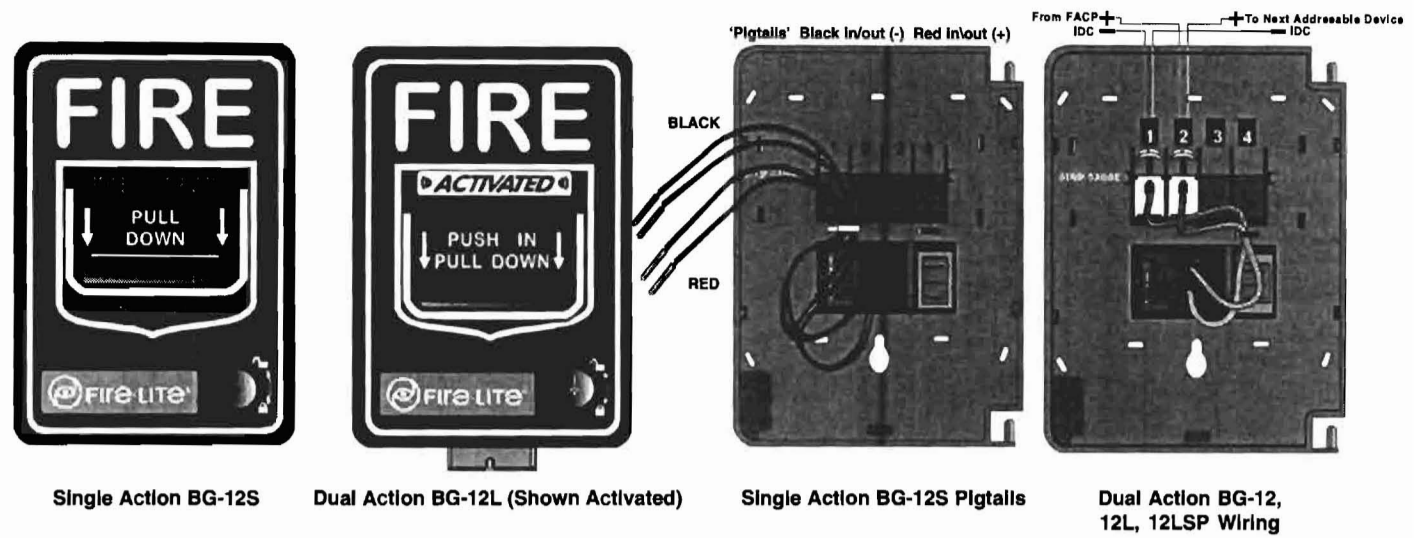
1. Position the door and backplate side by side in the full open position. (i.e. 180-degrees with respect to each other.)
2. With the backplate position fixed, move the door behind the backplate, as shown in the illustration below, part A.
3. Align the hinge posts and holes by bringing the door up to meet the backplate, paying particular attention to the 'keying' that occurs when the door's post hole is aligned to the backplate's hinge post. Refer to the illustration, part B.
4. With the two pieces aligned and 'keyed' together, slide the holes down onto the posts. Refer to the illustration, part C.
5. Holding the backplate, close the door slightly to lock the door and backplate together.



DOOR ATTACHMENT

With the door and backplate aligned and 'keyed' together, slide the holes down onto the posts.

Closing the door slightly locks the door and backplate together.



WARNING! Do not loop wiring under any terminals. Break wire run to maintain IDC supervision.

Wiring Instructions for the BG-12, BG-12L and BG-12LSP

- 1) If semi-flush mounting, proceed to step 4.
- 2) Mount the backbox *before* wiring to the pull station.
- 3) Before mounting the station, pull all necessary wiring through the backbox and optional BG-TR.
- 4) Remove the correct amount of wire insulation. The pull station backplate is molded with a strip gauge to measure the amount of insulation to be removed.
- 5) Connect the wiring from the fire alarm control panel's IDC, or any previous device on the IDC, to terminals 1 and 2 on the pull stations terminal strip. Connect the next device on the IDC or End-of-Line Resistor (ELR) to terminals 1 and 2.
- 6) Maintain consistent polarity with all connections throughout the IDC.

Wiring Instructions for the BG-12S

Follow instructions 1 through 3 above, and then proceed with steps 4 and 5 following:

- 4) Connect the field wiring from the FACP's IDC or the previous device on the IDC, to the pull station's pigtailed. Connect the positive (+) IDC wire to a red pigtail, and the negative (-) IDC wire to a black pigtail. Next, connect the positive (+) wire going to the next device or an ELR to the remaining red positive (+) pigtail. Connect the negative (-) wire going to the next device or an ELR to the remaining black negative (-) pigtail.
- 5) Maintain consistent polarity with all connections throughout the IDC.

Operation

To activate a single-action pull station, simply pull-down the handle. To activate dual-action stations, push-in, then pull-down the handle. The word 'ACTIVATED' appears after the handle is pulled down. The pull station remains in the activated position until reset.

1) To reset the **BG-12S** and **BG-12** hex lock pull stations, work the supplied 9/64-inch hex wrench into the lock until firmly seated and turn counterclockwise 1/4-turn.

To reset the **BG-12L** and **BG-12LSP** key lock stations, insert the key and turn counterclockwise 1/4-turn.

2) Open the door until the handle returns to the 'NORMAL' position.

3) Close and lock the door. Closing the door automatically resets the switch to the 'NORMAL' position.

Note – Opening the pull station door will not activate or deactivate the alarm switch.



WARNING

Install the pull station in accordance with the supplied instructions, applicable NFPA standards, national and local Fire and Electrical codes and the requirements of the Authority Having Jurisdiction (AHJ). Conduct regular testing of the devices using the appropriate NFPA standards. Failure to follow these directions may result in failure of the device to report an alarm condition. Fire Lite is not responsible for devices that have been improperly installed, tested or maintained.

For ADA compliance, if the clear floor space only allows forward approach to an object, the maximum forward reach height allowed is 48-inches (121.92cm). If the clear floor space allows parallel approach by a person in a wheelchair, the maximum side reach height allowed is 54-inches (137.16cm).



Selectable Output Horns, Strobes, and Horn/Strobes

SpectrAlert® Advance selectable-output horns, strobes, and horn/strobes are rich with features guaranteed to cut installation times and maximize profits.



SPECTRAlert
ADVANCE
From System Sensor

Features

- Electrically compatible with existing SpectrAlert products
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Plug-in design
- Field selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185
- Same mounting plate for wall- and ceiling-mount units
- Shorting spring on mounting plate for continuity check before installation
- Tamper resistant construction
- Outdoor wall and ceiling products rated from -40°F to 151°F
- Design allows minimal intrusion into the back box
- Horn rated at 88+ dbA at 16 volts
- Rotary switch for horn tone and three volume selections
- Outdoor products UL listed to UL 1638 (strobe) and UL 464 (horn) outdoor requirements
- Outdoor products NEMA 4X rated
- Compatible with MDL sync module

The SpectrAlert Advance series of notification appliances is designed to simplify installations, with features such as plug in designs, instant feedback messages to ensure correct installation of individual devices, and 11 field-selectable candela settings for wall and ceiling strobes and horn/strobes.

When installing Advance products, first attach a universal mounting plate to a four-inch square, four-inch octagon or double-gang junction box. The two-wire mounting plate attaches to a single-gang junction box.

Next, connect the notification appliance circuit wiring to the SEMS terminals on the mounting plate.

Finally, attach the horn, strobe or horn/strobe to the mounting plate by inserting the product's tabs in the mounting plate's grooves. The device will rotate into position, locking the product's pins into the mounting plate's terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

The SpectrAlert Advance series includes outdoor notification appliances. Outdoor strobes and horn/strobes (two wire and four wire) are available for wall or ceiling. Outdoor horns are available for wall only. All System Sensor outdoor products are rated between minus 40 degrees Fahrenheit and 151 degrees Fahrenheit in wet or dry applications.

Agency Listings



7125-1653.186 (indoor strobes)
7300-1653.187 (outdoor strobes)
7125-1653.188 (horn/strobes,
chime/strobes)
7135-1653.189 (horns, chimes)

SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance horns, strobes and horn/strobes shall mount to a standard 4 × 4 × 1½-inch back box, 4-inch octagon back box or double-gang back box. Two-wire products shall also mount to a single-gang 2 × 4 × 1½-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync-Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync-Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC, or full-wave rectified, unfiltered power supply. Strobes and horn/strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

Strobe

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

Horn/Strobe Combination

The horn/strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn/strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three-pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

Outdoor Products

SpectrAlert Advance outdoor horns, strobes and horn/strobes shall be listed for outdoor use by UL and shall operate between minus 40 degrees and 151 degrees Fahrenheit. The products shall be listed for use with a System Sensor outdoor/weatherproof back box with half inch and three-fourths inch conduit entries.

Synchronization Module

The module shall be a System Sensor Sync-Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn/strobe models over a single pair of wires. The module shall mount to a 4½ × 4½ × 2½-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/Electrical Specifications

Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
K Series Operating Temperature	-40°F to 151°F (-40°C to 66°C)
Humidity Range	10 to 93% non-condensing (indoor products)
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12DC/FWR or regulated 24DC/FWR ¹
Operating Voltage Range ²	8 to 17.5V (12V nominal) or 16 to 33V (24 nominal)
Input terminal wire gauge	12 to 18 AWG
Ceiling mount dimensions (including lens)	6.8" diameter × 2.5" high (173 mm diameter × 64 mm high)
Wall mount dimensions (including lens)	5.6L × 4.7W × 2.5D (142 mm L × 119 mm W × 64 mm D)
Horn dimensions	5.6L × 4.7W × 1.3D (142 mm L × 119 mm W × 33 mm D)
Wall-mount back box skirt dimensions (BBS-2, BBSW-2)	5.9L × 5.0W × 2.2D (151 mm L × 128 mm W × 56 mm D)
Ceiling-mount back box skirt dimensions (BBSC-2, BBSCW-2)	7.1" diameter × 2.25" high (180 mm diameter × 57 mm high)
Wall-mount weatherproof back box dimensions (SA-WBB)	5.7L × 5.1W × 2.0D (145 mm L × 130 mm W × 51 mm D)
Ceiling-mount weatherproof back box dimensions (SA-WBBC)	7.1" diameter × 2.0" high (180 mm diameter × 51 mm high)
Wall-mount trim ring dimensions (TR-HS, TRW-HS)	5.7L × 4.812W × 0.35D (146 mm L × 122 mm W × 9 mm D)
Ceiling-mount trim ring dimensions (TRC-HS, TRCW-HS)	6.9" diameter × 0.35 high (176 mm diameter × 9 mm high)

Notes:

1. Full Wave Rectified (FWR) voltage is a non-regulated, time varying power source that is used on some power supply and panel outputs.
2. P, S, PC, and SC products will operate at 12V nominal only for 15 and 15/75 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

	Candela	8-17.5 Volts		16-33 Volts	
		DC	FWR	DC	FWR
Standard	15*	123	128	66	71
Candela Range	15/75*	142	148	77	81
	30*	NA	NA	94	96
	75*	NA	NA	158	153
	95*	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205
High	135	NA	NA	228	207
Candela Range	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

UL Max. Horn Current Draw (mA RMS)

	Sound Pattern	dB	8-17.5 Volts		16-33 Volts	
			DC	FWR	DC	FWR
	Temporal	High	57	55	69	75
	Temporal	Medium	44	49	58	69
	Temporal	Low	38	44	44	48
	Non-temporal	High	57	56	69	75
	Non-temporal	Medium	42	50	60	69
	Non-temporal	Low	41	44	50	50
	Coded	High	57	55	69	75
	Coded	Medium	44	51	56	69
	Coded	Low	40	46	52	50

UL Max. Current Draw (mA RMS), 2-wire Horn/Strobe, Standard Candela Range (15-115 cd)

	8-17.5 Volts		16-33 Volts		30	75	95	110	115
	DC Input	15	15/75	15					
Temporal High	137	147	79	90	107	176	194	212	218
Temporal Medium	132	144	69	80	97	157	182	201	210
Temporal Low	132	143	66	77	93	154	179	198	207
Non-temporal High	141	152	91	100	116	176	201	221	229
Non-temporal Medium	133	145	75	85	102	163	187	207	216
Non-temporal Low	131	144	68	79	96	156	182	201	210
FWR Input									
Temporal High	136	155	88	97	112	168	190	210	218
Temporal Medium	129	152	78	88	103	160	184	202	206
Temporal Low	129	151	76	86	101	160	184	194	201
Non-temporal High	142	161	103	112	126	181	203	221	229
Non-temporal Medium	134	155	85	95	110	166	189	208	216
Non-temporal Low	132	154	80	90	105	161	184	202	211

UL Max. Current Draw (mA RMS), 2-wire Horn/Strobe, High Candela Range (135-185 cd)

	16-33 Volts				FWR Input	16-33 Volts			
	135	150	177	185		135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-temporal High	255	270	303	309	Non-temporal High	233	248	275	281
Non-temporal Medium	242	259	293	299	Non-temporal Medium	219	232	262	267
Non-temporal Low	238	254	291	295	Non-temporal Low	214	229	256	262

Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

Strobe Output (cd)	
Listed Candela	Candela rating at -40°F
15	Do not use below 32°F
15/75	
30	
75	
95	
110	
115	115
135	135
150	150
177	177
185	185

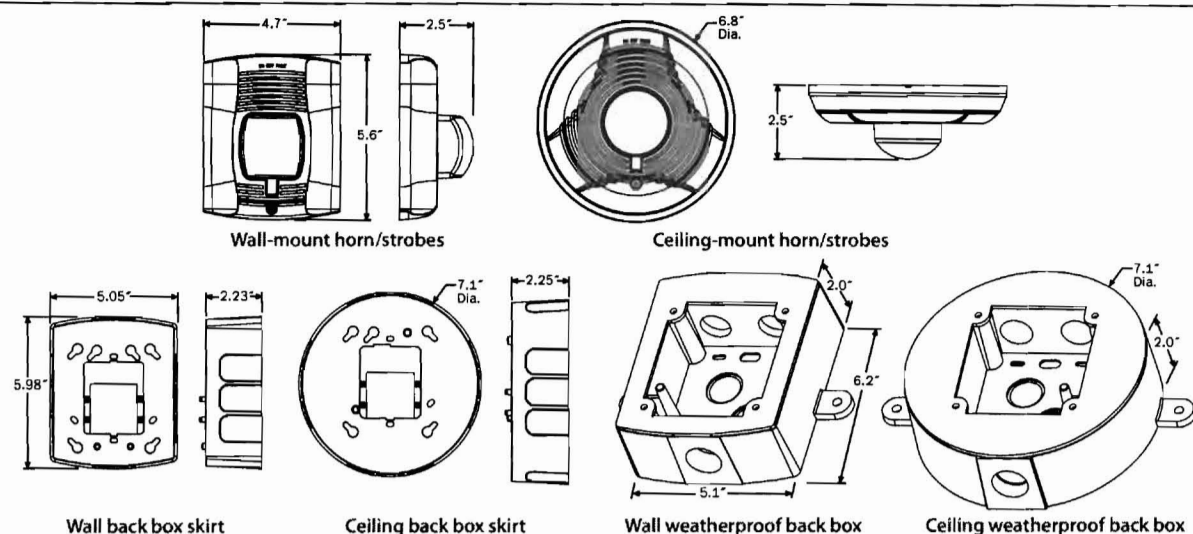
Horn Tones and Sound Output Data

Horn and Horn/Strobe Output (dBA)

Switch Position	Sound Pattern	dB	8-17.5 Volts		16-33 Volts		24 Volt Nominal			
			DC	FWR	DC	FWR	Reverberant		Anechoic	
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	89
4	Non-temporal	High	82	82	88	88	93	92	100	100
5	Non-temporal	Medium	78	78	85	85	90	90	98	98
6	Non-temporal	Low	75	75	81	81	88	84	96	92
7 [†]	Coded	High	82	82	88	88	93	92	101	101
8 [†]	Coded	Medium	78	78	85	85	90	90	97	98
9 [†]	Coded	Low	75	75	81	81	88	85	96	92

[†]Settings 7, 8, and 9 are not available on 2-wire horn/strobe.

SpectrAlert Advance Dimensions



SpectrAlert Advance Ordering Information

Model	Description
Wall Horn/Strobes	
P2R*†	2-wire Horn/Strobe, Standard cd, Red
P2RH*†	2-wire Horn/Strobe, High cd, Red
P2RK*‡	2-wire Horn/Strobe, Standard cd, Red, Outdoor
P2RHK*‡	2-wire Horn/Strobe, High cd, Red, Outdoor
P2W*†	2-wire Horn/Strobe, Standard cd, White
P2WH*†	2-wire Horn/Strobe, High cd, White
P4R*†	4-wire Horn/Strobe, Standard cd, Red
P4RH*†	4-wire Horn/Strobe, High cd, Red
P4RK*‡	4-wire Horn/Strobe, Standard cd, Red, Outdoor
P4RHK*‡	4-wire Horn/Strobe, High cd, Red, Outdoor
P4W*†	4-wire Horn/Strobe, Standard cd, White
P4WH*†	4-wire Horn/Strobe, High cd, White
Wall Strobes	
SR*†	Strobe, Standard cd, Red
SRH*†	Strobe, High cd, Red
SRK*‡	Strobe, Standard cd, Red, Outdoor
SRHK*‡	Strobe, High cd, Red, Outdoor
SW*†	Strobe, Standard cd, White
SWH*†	Strobe, High cd, White
Ceiling Horn/Strobes	
PC2R*†	2-wire Horn/Strobe, Standard cd, Red
PC2RH*†	2-wire Horn/Strobe, High cd, Red
PC2RK*‡	2-wire Horn/Strobe, Standard cd, Red, Outdoor
PC2RHK*‡	2-wire Horn/Strobe, High cd, Red, Outdoor
PC2W*†	2-wire Horn/Strobe, Standard cd, White
PC2WH*†	2-wire Horn/Strobe, High cd, White
PC4R*†	4-wire Horn/Strobe, Standard cd, Red
PC4RH*†	4-wire Horn/Strobe, High cd, Red
PC4RK*‡	4-wire Horn/Strobe, Standard cd, Red, Outdoor
PC4RHK*‡	4-wire Horn/Strobe, High cd, Red, Outdoor

Model	Description
Ceiling Horn/Strobes (cont'd.)	
PC4W*†	4-wire Horn/Strobe, Standard cd, White
PC4WH*†	4-wire Horn/Strobe, High cd, White
Ceiling Strobes	
SCR*†	Strobe, Standard cd, Red
SCRH*†	Strobe, High cd, Red
SCRK*‡	Strobe, Standard cd, Red, Outdoor
SCRHK*‡	Strobe, High cd, Red, Outdoor
SCW*†	Strobe, Standard cd, White
SCWH*†	Strobe, High cd, White
Horns	
HR	Horn, Red
HRK*‡	Horn, Red, Outdoor
HW	Horn, White
Accessories	
BBS-2	Back Box Skirt, Wall, Red
BBSW-2	Back Box Skirt, Wall, White
BBSC-2	Back Box Skirt, Ceiling, Red
BBSCW-2	Back Box Skirt, Ceiling, White
TR-HS	Trim Ring, Wall, Red
TRW-HS	Trim Ring, Wall, White
TRC-HS	Trim Ring, Ceiling, Red
TRCW-HS	Trim Ring, Ceiling, White

Notes:
 * Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P.
 † Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP.
 ‡ "Standard cd," refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd," refers to strobes that include 135, 150, 177, and 185 candela settings.
 All outdoor units ending in "K" include a weatherproof back box.
 † Add "-R" to model number for weatherproof replacement device (no back box included).



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 A05-0395-005 - 8/08 - #2018



Architects and Engineering Specification

SpectrAlert Advance Horn Strobe

The horn strobe appliance shall be System Sensor model number _____. The horn strobe shall be listed to UL 1971 and UL 464 and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three-pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

The horn strobe shall mount to a standard 4 x 4 x 1½-inch back box, 4-inch octagon back box, double-gang back box or for two wire products a single-gang 2 x 4 x 17/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate.

When used with the Sync•Circuit™ Module accessory, the horn strobe shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. The horn strobe shall operate between 32 and 120 degrees Fahrenheit from a regulated DC, or full-wave rectified, unfiltered power supply.

The horn strobe shall be plug-in and shall have the ability to check wiring continuity via a shorting spring on the universal mounting plate. The shorting spring shall also provide tamper resistance via an open circuit if the device is removed.

All notification appliances shall be backward compatible.



Architects and Engineering Specification

SpectrAlert Advance Strobe

The strobe appliance shall be System Sensor model number _____. Shall mount to a standard 4 x 4 x 1½-inch back box, 4-inch octagon back box, double-gang back box or a single-gang 2 x 4 x 17/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate.

When used with the Sync•Circuit™ Module accessory, the strobe shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Shall operate between 32 and 120 degrees Fahrenheit from a regulated DC, or full-wave rectified, unfiltered power supply.

The strobe shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185. Shall be listed to UL 1971 and shall be approved for fire protective service. The strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

Strobe shall be plug-in and shall have the ability to check wiring continuity via a shorting spring on the universal mounting plate. The shorting spring shall also provide tamper resistance via an open circuit if the device is removed.

All notification appliances shall be backward compatible.

5/27/2009
5/27/2009



Architects and Engineering Specification

SpectrAlert Advance Outdoor Horn Strobe

The outdoor horn strobe appliance shall be System Sensor model number _____ outdoor "K" series. The horn strobe shall be listed to UL 1638, UL 464, NEMA 4X and shall be approved for fire protective service. The horn strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a temporal three-pattern and a non-temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

Outdoor horn strobes shall be listed for outdoor use by UL and shall operate between minus 40 degrees and 151degrees Fahrenheit. The products shall be listed for use with a System Sensor outdoor/weatherproof back box with half inch and three-fourths inch conduit entries supplied with the device.

A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate.

When used with the Sync•Circuit™ Module accessory, the horn strobe shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts from a regulated DC, or full-wave rectified, unfiltered power supply.

The horn strobe shall be plug-in and shall have the ability to check wiring continuity via a shorting spring on the universal mounting plate. The shorting spring shall also provide tamper resistance via an open circuit if the device is removed.

All notification appliances shall be backward compatible.

8/26/2009

MS 2 / MS 4 Battery Calculation Chart

Since the current draws listed here can be edited, the user is fully responsible for verifying these calculations.

Entries only to be made in the Yellow cell locations

Regulated Load in Standby					
Device Type	Qty		X	[Current Draw]	= Total
Main Circuit Board					
MS 2 (1 MAX)			X	0.080	= 0.000
MS 4 (1 MAX)			X	0.085	= 0.000
CAC-4 (1 MAX)			X	0.001	= 0.000
4XTMF (1 MAX)			X	0.005	= 0.000
4XZMF (1 MAX)			X	0.004	= 0.000
4XLMF/RZA-4XF (1 PAIR MAX)			X	0.004	= 0.000
(note 3) 2 wire Detector Heads			X		= 0.000
(note 4) 4 wire Detector Heads			X		= 0.000
(note 5) Power Supervision Relays			X		= 0.000
(note 6) NAC #1					
NAC#2					
(note 7) Current Draw from TB1 (non-alarm)			X		= 0.000
Total Regulated Standby Load					= 0.000

Entries only to be made in the Yellow cell locations

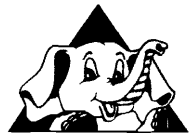
Regulated Load in Alarm					
Device Type	Qty	X	[Current Draw]	=	Total
Main Circuit Board					
(note 1) MS 2 (1 MAX)	0	X	0.112	=	0.000
(note 1) MS 4 (1 MAX)	0	X	0.175	=	0.000
CAC-4 (1 MAX)	0	X	0.001	=	0.000
(note 2) 4XTMF (1 MAX)	0	X	0.011	=	0.000
4XZMF (1 MAX)	0	X	0.008	=	0.000
4XLMF/RZA-4XF (1 PAIR MAX)	0	X	0.019	=	0.000
(note 3) 2 wire Detector Heads	0	X		=	0.000
(note 4) 4 wire Detector Heads	0	X		=	0.000
(note 5) Power Supervision Relays	0	X		=	0.000
(note 6) NAC #1		X		=	0.000
NAC#2		X		=	0.000
(note 7) Current Draw from TB1 (non-alarm)		X		=	0.000
Total Regulated Alarm Load				=	0.000

Total Secondary Power Requirements at 24 DC			
Total Regulated Standby Load	0.000	X	Required Standby Time (24 or 60 hours) = 0.00 AH
Total Regulated Alarm Load	0.000	X	Required Alarm Time for 5 min enter .084, for 10 mins, enter 0.168 = 0.000 AH
Sum of Standby and Alarm Ampere Hours			0.000 AH
Multiply by the Derating Factor		X	1.200 AH
Battery Size/Total Amperes Required			0.000 AH

Battery Check	The panel is capable of charging the selected batteries. You can house your batteries in the fire panel.
----------------------	---

Current Draw Check	Total System Current (Alarm + Standby)	0.000
If using the MS-2, your total current output is:		Within the current limitations of the panel
If using the MS-4 without optional transformer, your total current output is:		Within the current limitations of the panel
If using the MS-4 WITH the optional transformer, your total current output is:		Within the current limitations of the panel

Footnotes	
Note 1	The current shown represents one zone on the main circuit board in alarm.
Note 2	If using the Reverse Polarity Alarm output, add 0.005 amps; if using the Reverse Polarity Trouble output add another 0.005 amps.
Note 3	Refer to the Device Compatibility Document for standby and alarm current.
Note 4	Refer to the Device Compatibility Document for standby and alarm current.
Note 5	Must use compatible listed Power Supervision Relay.
Note 6	Current limitations of Terminal TB2 circuits is 2.50 amps per NAC (MS 4 requires optional transformer for max current of 5 amps.)
Note 7	The total standby current must include both the resettable (TB1 Terminals 3&4) and non-resettable for MS-4 only (TB1 Terminals 1&2 power. Caution must be taken to ensure that current drawn from these outputs during alarm does not exceed maximum ratings specified. Current Limitations of TB1, Terminals 1&2 = 0.500 amps, filtered 24 VDC +/- 5%, 120 Hz ripple @ 10mVRMS, non-resettable power and TB1 Terminals 3&4 = 0.500 amps, filtered 24VDC +/- 5%, 120Hz ripple @10mVRMS, resettable power.
Note 8	Total current draw for the MS-2 or MS-4(without optional transformer cannot exceed 3.0 amps. Total current draw for the MS-4 with standard, and optional transformer cannot exceed 6.0 amps.



AUBUCHON HARDWARE

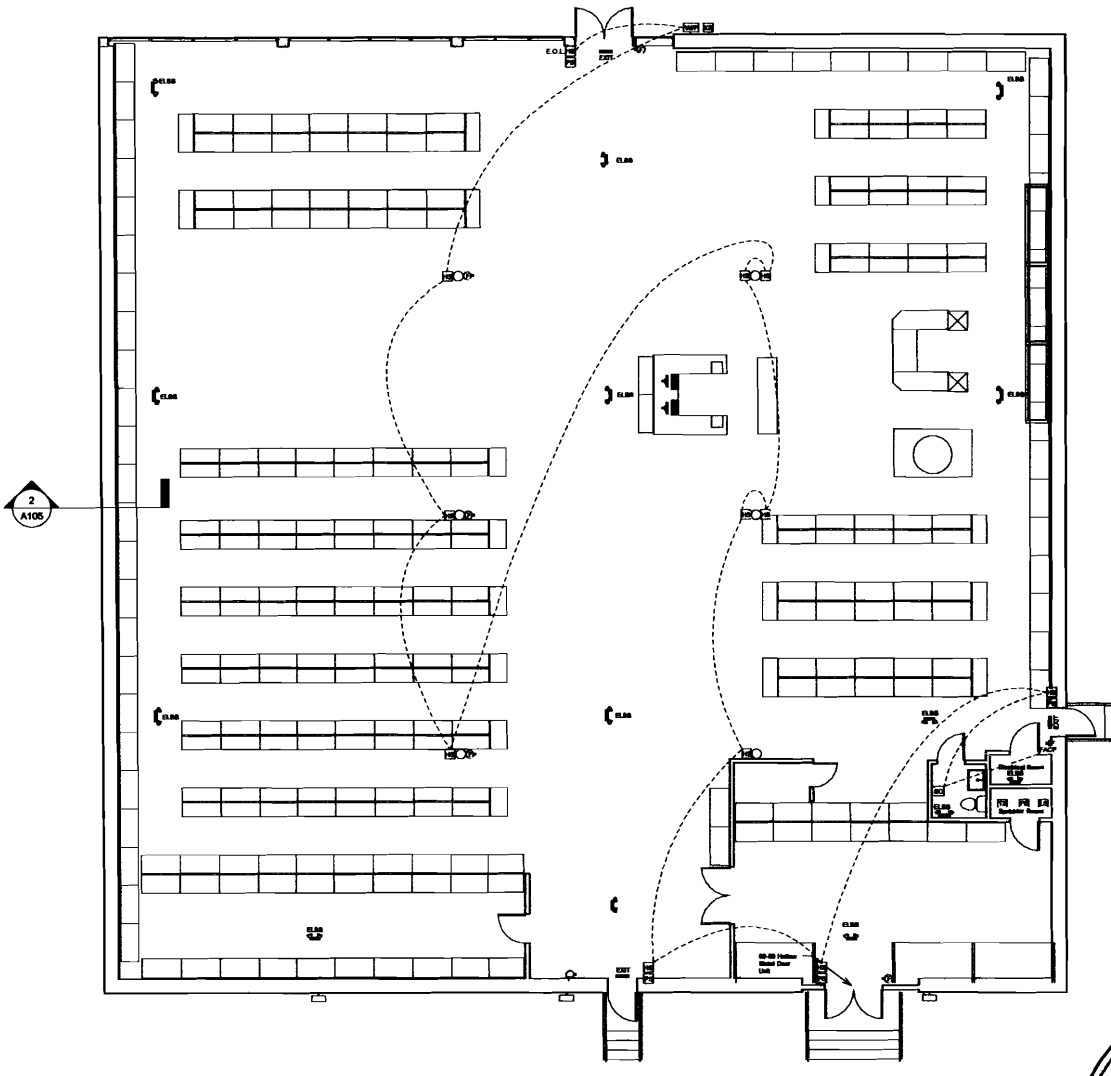
Life Safety Legend	
	Illuminated exit sign and battery backup
	Emergency lighting unit with battery backup
	Fire extinguisher

② Life Safety
1/2" = 1'-0"

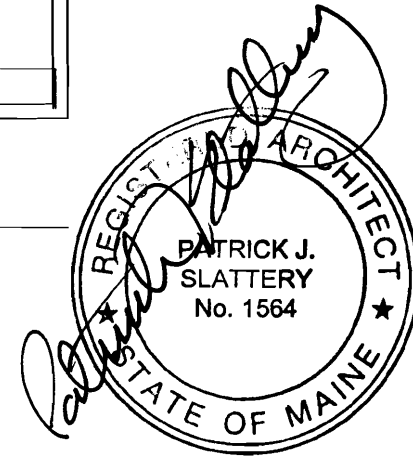
Building Is Fully Sprinkled

Fire Alarm Legend	
FACP	Fire Alarm Control Panel
HS	Horn Strobe
W/P	Weatherproof Horn Strobe
SO	Strobe Only
PS	Pull Station
FS	Flow Switch
TS	Tamper Switch
LS	Low Pressure Switch
KB	Knox Box

○ Fire Alarm
1/4" = 1'-0"



① Life Safety Plan
1/8" = 1'-0"



No.	Description	Date

Aubuchon Hardware
Portland, ME
Life Safety Plan

Project number	
Date	8/27/09
Drawn by	KTB
Checked by	DRB
Version No.	
	A103
Scale	As indicated

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