

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BU **PERMIT** ION

Permit Number: 090600

Please Read Application And Notes, If Any, Attached

This is to certify that CITY OF PORTLAND / B.H. Millen Inc.
has permission to Install Fire Alarm System, Panel Location in Basement
AT 5 MONUMENT WAY CBL 27 A012001

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

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

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

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

OTHER REQUIRED APPROVALS

Fire Dept. CAPT. R. [Signature]

Health Dept. _____

Appeal Board _____

Other _____

Department Name _____

PERMIT ISSUED

JUN 26 2009

CITY OF PORTLAND

[Signature] 6/24/09
Director - Building & Inspection Services

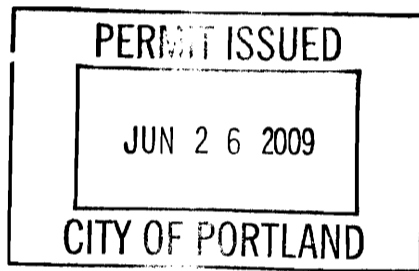
PENALTY FOR REMOVING THIS CARD

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

Permit No: 09-0600	Issue Date: <i>6/26/09</i>	CBL: 027 A012001
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Location of Construction: 5 MONUMENT WAY	Owner Name: CITY OF PORTLAND	Owner Address: 389 CONGRESS ST	Phone: 207-879-1877
Business Name:	Contractor Name: B.H.Milliken Inc.	Contractor Address: Portland	Phone: 2078791877
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	Zone: <i>B-3</i>
Past Use: Municipal - Portland Public Library	Proposed Use: Municipal - Portland Public Library - Install Fire Alarm System. Panel Location in the Basement	Permit Fee: \$400.00	Cost of Work: \$38,000.00
Proposed Project Description: Install Fire Alarm System. Panel Location in the Basement		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <i>* See Conditions</i>	INSPECTION: Use Group: <i>A-3</i> Type: <i>2B</i> <i>IBC-2003</i> <i>NFPA-72</i>
		Signature: <i>(K6)</i>	Signature: <i>EL</i>
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)			
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied			
		Signature:	Date:

Permit Taken By: lmd	Date Applied For: 06/10/2009	Zoning Approval		
1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..	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>6/10/09</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 type="checkbox"/> Not in District or Landmark <input checked="" 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:	



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

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

 6-26-09
Date

Signature of Inspections Official

Date

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

Permit No: 09-0600	Date Applied For: 06/10/2009	CBL: 027 A012001
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Business Name:	Contractor Name: B.H.Milliken Inc.	Contractor Address: Portland	Phone: (207) 879-1877
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	

Proposed Use: Municipal - Portland Public Library - Install Fire Alarm System. Panel Location in the Basement	Proposed Project Description: Install Fire Alarm System. Panel Location in the Basement
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Dept: Zoning	Status: Approved	Reviewer: Marge Schmuckal	Approval Date: 06/11/2009	Note:	Ok to Issue: <input checked="" type="checkbox"/>
Dept: Building	Status: Approved with Conditions	Reviewer: Chris Hanson	Approval Date: 06/26/2009	Note:	Ok to Issue: <input checked="" type="checkbox"/>
1) Fire Alarm systems shall be installed per Sec. 907 of the IBC 2003 2) Equipment must be installed in compliance per the manufacturer's specifications 3) All penetrations through rated assemblies must be protected by an approved firestop system installed in accordance with ASTM 814 or UL 1479, per IBC 2003 Section 712.					
Dept: Fire	Status: Approved with Conditions	Reviewer: Capt Keith Gautreau	Approval Date: 06/19/2009	Note:	Ok to Issue: <input checked="" type="checkbox"/>
1) Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance 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 by City Electrical Division. 4) The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required. 5) The fire alarm system shall comply with NFPA 72 and Fire Department Technical Standard. A compliance letter is required. 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".					

Comments:
 6/11/2009-lmd: PDF of entire Fire Alarm system is included with the original building plans under permit #09-0141



Fire Alarm Permit

JUN 10 2009

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: 5 Monument Sq. CBL: _____

Exact location: (within structure) Panel 15 in basement

Type of occupancy(s) (NFPA & ICC): Library

Building owner: Portland Public Library

System Designer: Allied Engineering Stephen Markiewicz

Designer phone: 221-2260 Ext. 113 E-mail: Smarkiewicz@Allied-eng.com

Installing contractor: B.H. Milliken Inc. License No: _____

Contractor phone: 8791877 E-mail: bhm@bhmilliken.com

This is a new application: YES NO

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

The following documents have been provided with this application:

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

COST OF WORK: <u>38,000.00</u>
PERMIT FEE: <u>400.00</u>
<small>(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)</small>

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: Bruce H. Milliken Date: 6/10/09

SECTION 267210 – DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fire-alarm control unit.
2. Manual fire-alarm boxes.
3. System smoke detectors.
4. Heat detectors.
5. Notification appliances.
6. Magnetic door holders.
7. Remote annunciator.
8. Addressable interface device.
9. Radio alarm transmitter.

1.3 DEFINITIONS

- A. LED: Light-emitting diode.
- B. NICET: National Institute for Certification in Engineering Technologies.

1.4 SYSTEM DESCRIPTION

- A. Noncoded addressable system, with automatic sensitivity control of certain smoke detectors and multiplexed signal transmission, dedicated to fire-alarm service only.

1.5 SUBMITTALS

A. General Submittal Requirements:

1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.
2. Shop Drawings shall be prepared by persons with the following qualifications:
 - a. Trained and certified by manufacturer in fire-alarm system design.
 - b. NICET-certified fire-alarm technician.
 - c. Licensed or certified by authorities having jurisdiction.

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- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
 - 2. Include voltage drop calculations for notification appliance circuits.
 - 3. Include battery-size calculations.
 - 4. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
 - 5. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale and coordinating installation of duct smoke detectors and access to them. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations.
 - 6. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.
- D. Delegated-Design Submittal: For smoke and heat detectors indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Drawings showing the location of each smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of the detector.
 - 2. Design Calculations: Calculate requirements for selecting the spacing and sensitivity of detection, complying with NFPA 72.
- E. Qualification Data: For qualified Installer.
- F. Field quality-control reports.
- G. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data" and include the following:
 - 1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
 - 2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
 - 3. Record copy of site-specific software.
 - 4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:
 - a. Frequency of testing of installed components.
 - b. Frequency of inspection of installed components.
 - c. Requirements and recommendations related to results of maintenance.
 - d. Manufacturer's user training manuals.
 - 5. Manufacturer's required maintenance related to system warranty requirements.
 - 6. Abbreviated operating instructions for mounting at fire-alarm control unit.

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7. Copy of NFPA 25.

H. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On magnetic media or compact disk, complete with data files.
3. Device address list.
4. Printout of software application.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.
- B. Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm technician.
- C. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer. Components shall be compatible with, and operate as, an extension of existing system.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- E. NFPA Certification: Obtain certification according to NFPA 72 by a UL-listed alarm company.

1.7 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning with Substantial Completion, provide software support for 2 years.
- C. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within 2 years from date of Substantial Completion. Upgrading software shall include operating system. Upgrade shall include new or revised licenses for use of software.
 1. Provide 30 days' notice to Owner to allow scheduling and access to system and to allow Owner to upgrade computer equipment if necessary.

1.8 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Lamps for Remote Indicating Lamp Units: Quantity equal to 5 percent of amount installed, but no fewer than 1 unit.
 2. Lamps for Strobe Units: Quantity equal to 5 percent of amount installed, but no fewer than 1 unit.

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3. Smoke Detectors, Fire Detectors: Quantity equal to 5 percent of amount of each type installed, but no fewer than 1 unit of each type.
4. Detector Bases: Quantity equal to 2 percent of amount of each type installed, but no fewer than 1 unit of each type.
5. Keys and Tools: One extra set for access to locked and tamperproofed components.
6. Audible and Visual Notification Appliances: 1 of each type installed.
7. Fuses: 2 of each type installed in the system.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:

1. Faraday; Siemens Building Technologies, Inc.
2. Federal Signal Corporation.
3. Fire Control Instruments, Inc.; a Honeywell company.
4. Gamewell; a Honeywell company.
5. GE Infrastructure; a unit of General Electric Company.
6. Gentex Corporation.
7. NOTIFIER; a Honeywell company.
8. Siemens Building Technologies, Inc.; Fire Safety Division.
9. Silent Knight; a Honeywell company.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

A. Fire-alarm signal initiation shall be by one or more of the following devices:

1. Manual stations.
2. Heat detectors.
3. Smoke detectors.
4. Duct smoke detectors.
5. Verified automatic alarm operation of smoke detectors.
6. Automatic sprinkler system water flow.
7. Heat detectors in elevator shaft and pit.
8. Fire-extinguishing system operation.

B. Fire-alarm signal shall initiate the following actions:

1. Continuously operate alarm notification appliances.
2. Identify alarm at fire-alarm control unit and remote annunciators.
3. Transmit an alarm signal to the remote alarm receiving station.
4. Unlock electric door locks in designated egress paths.
5. Release fire and smoke doors held open by magnetic door holders.
6. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
7. Activate stairwell and elevator-shaft pressurization systems.
8. Close smoke dampers in air ducts of designated air-conditioning duct systems.
9. Recall elevators to primary or alternate recall floors.

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10. Activate emergency shutoffs for gas and fuel supplies.
 11. Record events in the system memory.
- C. Supervisory signal initiation shall be by one or more of the following devices and actions:
1. Valve supervisory switch.
 2. Low-air-pressure switch of a dry-pipe sprinkler system.
 3. Elevator shunt-trip supervision.
- D. System trouble signal initiation shall be by one or more of the following devices and actions:
1. Open circuits, shorts, and grounds in designated circuits.
 2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
 3. Loss of primary power at fire-alarm control unit.
 4. Ground or a single break in fire-alarm control unit internal circuits.
 5. Abnormal ac voltage at fire-alarm control unit.
 6. Break in standby battery circuitry.
 7. Failure of battery charging.
 8. Abnormal position of any switch at fire-alarm control unit or annunciator.
 9. Low-air-pressure switch operation on a dry-pipe or preaction sprinkler system.
- E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control unit.

2.3 FIRE-ALARM CONTROL UNIT

- A. General Requirements for Fire-Alarm Control Unit:
1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
 - a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.
 - b. Include a real-time clock for time annotation of events on the event recorder and printer.
 2. Addressable initiation devices that communicate device identity and status.
 - a. Smoke sensors shall additionally communicate sensitivity setting and allow for adjustment of sensitivity at fire-alarm control unit.
 - b. Temperature sensors shall additionally test for and communicate the sensitivity range of the device.
 3. Addressable control circuits for operation of mechanical equipment.
- B. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

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1. Annunciator and Display: Liquid-crystal type, 2 line(s) of 40 characters, minimum.
 2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.
- C. Smoke-Alarm Verification:
1. Initiate audible and visible indication of an "alarm-verification" signal at fire-alarm control unit.
 2. Activate an NRTL-listed and -approved "alarm-verification" sequence at fire-alarm control unit and detector.
 3. Sound general alarm if the alarm is verified.
 4. Cancel fire-alarm control unit indication and system reset if the alarm is not verified.
- D. Elevator Recall:
1. Smoke detectors at the following locations shall initiate automatic elevator recall.
 - a. Elevator lobby detectors except the lobby detector on the designated floor.
 - b. Smoke detector in elevator machine room.
 - c. Smoke detectors in elevator hoistway.
 2. Elevator lobby detectors located on the designated recall floors shall be programmed to move the cars to the alternate recall floor.
 3. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
 - a. Water-flow switch associated with the sprinkler in the elevator pit may have a delay to allow elevators to move to the designated floor.
- E. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke barrier walls shall be connected to fire-alarm system.
- F. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory.
- G. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.
- H. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.
1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
- I. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
- J. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe

appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

2.4 MANUAL FIRE-ALARM BOXES

- A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be metal and finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. Where surface mounted, provide manufacturer's surface back box.
1. Double-action mechanism requiring two actions to initiate an alarm, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
 2. Station Reset: Key- or wrench-operated switch.
 3. Weatherproof Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.

2.5 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:

1. Comply with UL 268; operating at 24-V dc, nominal.
2. Detectors shall be two-wire type.
3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
6. Integral Visual-Indicating Light: LED type indicating detector has operated.
7. Remote Control: Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control unit.
 - a. Rate-of-rise temperature characteristic shall be selectable at fire-alarm control unit for 15 or 20 deg F (8 or 11 deg C) per minute.
 - b. Fixed-temperature sensing shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 or 155 deg F (57 or 68 deg C).
 - c. Provide multiple levels of detection sensitivity for each sensor.

B. Photoelectric Smoke Detectors:

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.

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- c. Present average value.
 - d. Present sensitivity selected.
 - c. Sensor range (normal, dirty, etc.).
- C. Duct Smoke Detectors: Photoelectric type complying with UL 268A.
- 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
 - 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.
 - c. Present average value.
 - d. Present sensitivity selected.
 - e. Sensor range (normal, dirty, etc.).
 - 3. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.
 - 4. Each sensor shall have multiple levels of detection sensitivity.
 - 5. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
 - 6. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.
 - 7. Provide remote test/alarm indicating station for each duct smoke detector. Test function shall be activated by test magnet or key switch.

2.6 HEAT DETECTORS

- A. General Requirements for Heat Detectors: Comply with UL 521.
- B. Heat Detector, Combination Type: Actuated by either a fixed temperature of 135 deg F (57 deg C) or a rate of rise that exceeds 15 deg F (8 deg C) per minute unless otherwise indicated.
 - 1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
 - 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

2.7 NOTIFICATION APPLIANCES

- A. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections.
 - 1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
- B. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn, using the coded signal prescribed in UL 464 test protocol.

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- C. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.
 - 1. Rated Light Output:
 - a. 15/30/75/110 cd, selectable in the field.
 - 2. Mounting: Wall mounted unless otherwise indicated.
 - 3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
 - 4. Flashing shall be in a temporal pattern, synchronized with other units.
 - 5. Strobe Leads: Factory connected to screw terminals.
 - 6. Mounting Faceplate: Factory finished, red

2.8 MAGNETIC DOOR HOLDERS

- A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching doorplate.
 - 1. Electromagnet: Requires no more than 3 W to develop 25-lbf (111-N) holding force.
 - 2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
 - 3. Rating: 24-V ac or dc.
 - 4. Rating: 120-V ac.
- B. Material and Finish: Match door hardware.

2.9 REMOTE ANNUNCIATOR

- A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.
 - 1. Mounting: flush cabinet, NEMA 250, Type 1.
- B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

2.10 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.
- B. Integral Relay: Capable of providing a direct signal.

2.11 RADIO ALARM TRANSMITTER

- A. Transmitter shall comply with NFPA 1221 and shall be listed and labeled by an NRTL.

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- B. Comply with 47 CFR 90.
- C. Description: Manufacturer's standard commercial product; factory assembled, wired, tested, and ready for installation and operation.
 - 1. Packaging: A single, modular, NEMA 250, Type 4 metal enclosure with a tamper-resistant flush tumbler lock.
 - 2. Signal Transmission Mode and Frequency: VHF or UHF 2-W power output, coordinated with operating characteristics of the established remote alarm receiving station designated by Owner.
 - 3. Normal Power Input: 120-V ac.
 - 4. Secondary Power: Integral-sealed, rechargeable, 12-V battery and charger. Comply with NFPA 72 requirements for battery capacity; submit calculations.
 - 5. Antenna: Omnidirectional, coaxial half-wave, dipole type with driving point impedance matched to transmitter and antenna cable output impedance. Wind-load strength of antenna and mounting hardware and supports shall withstand 100 mph (160 km/h) with a gust factor of 1.3 without failure.
 - 6. Antenna Cable: Coaxial cable with impedance matched to the transmitter output impedance.
 - 7. Antenna-Cable Connectors: Weatherproof.
 - 8. Alarm Interface Devices: Circuit boards, modules, and other auxiliary devices, integral to the transmitter, matching fire-alarm and other system outputs to message-generating inputs of the transmitter that produce required message transmissions.
- D. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control unit or from its own internal sensors or controls and shall automatically transmit signal along with a unique code that identifies the transmitting station to the remote alarm receiving station. Transmitted messages shall correspond to standard designations for fire-reporting system to which the signal is being transmitted and shall include separately designated messages in response to the following events or conditions:
 - 1. Transmitter Low-Battery Condition: Sent when battery voltage is below 85 percent of rated value.
 - 2. System Test Message: Initiated manually by a test switch within the transmitter cabinet, or automatically at an optionally preselected time, once every 24 hours, with transmission time controlled by a programmed timing device integral to transmitter controls.
 - 3. Transmitter Trouble Message: Actuated by failure, in excess of one-minute duration, of the transmitter normal power source, derangement of the wiring of the transmitter, or any alarm input interface circuit or device connected to it.
 - 4. Local Fire-Alarm-System Trouble Message: Initiated by events or conditions that cause a trouble signal to be indicated on the building system.
 - 5. Local Fire-Alarm-System Alarm Message: Actuated when the building system goes into an alarm state. Identifies device that initiated the alarm.
- E. Local Fire-Alarm-System Supervisory-Alarm Message: Actuated when the building alarm system indicates a supervisory alarm.

2.12 DEVICE GUARDS

- A. Description: Welded wire mesh of size and shape for the manual station, smoke detector, gong, or other device requiring protection.

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1. Factory fabricated and furnished by manufacturer of device.
2. Finish: Paint of color to match the protected device.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72 for installation of fire-alarm equipment.
- B. Install wall-mounted equipment, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.
 1. Comply with requirements for seismic-restraint devices specified in Division 16 Section "Vibration and Seismic Controls for Electrical Systems."
- C. Smoke- or Heat-Detector Spacing:
 1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
 2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector spacing.
 3. Smooth ceiling spacing shall not exceed 30 feet (9 m).
 4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas shall be determined according to Appendix A in NFPA 72.
 5. HVAC: Locate detectors not closer than 3 feet (1 m) from air-supply diffuser or return-air opening.
 6. Lighting Fixtures: Locate detectors not closer than 12 inches (300 mm) from any part of a lighting fixture.
- D. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct.
- E. Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location.
- F. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm causes the alarm in all smoke alarms to sound.
- G. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
- H. Audible Alarm-Indicating Devices: Install not less than 6 inches (150 mm) below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.
- I. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches (150 mm) below the ceiling.
- J. Device Location-Indicating Lights: Locate in public space near the device they monitor.

PORTLAND PUBLIC LIBRARY RENOVATION

- K. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.
- L. Annunciator: Install with top of panel not more than 72 inches (1830 mm) above the finished floor.

3.2 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Division 8 Section "Door Hardware." Connect hardware and devices to fire-alarm system.
 - 1. Verify that hardware and devices are NRTL listed for use with fire-alarm system in this Section before making connections.
- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 3 feet (1 m) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
 - 1. Smoke dampers in air ducts of designated air-conditioning duct systems.
 - 2. Alarm-initiating connection to elevator recall system and components.
 - 3. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
 - 4. Supervisory connections at valve supervisory switches.
 - 5. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
 - 6. Supervisory connections at elevator shunt trip breaker.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 16 Section "Electrical Identification."
- B. Install framed instructions in a location visible from fire-alarm control unit.

3.4 GROUNDING

- A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

3.5 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed by the local fire department.
- B. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

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C. Tests and Inspections:

1. Visual Inspection: Conduct visual inspection prior to testing.
 - a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
 - b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
4. Test visible appliances for the public operating mode according to manufacturer's written instructions.
5. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.

D. Fire-alarm system will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

F. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

G. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.6 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system.

END OF SECTION 267210



FIRE ALARM SYSTEMS
&
INTEGRATED SECURITY SOLUTIONS

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MPC-6000 Intelligent Fire Alarm Panel

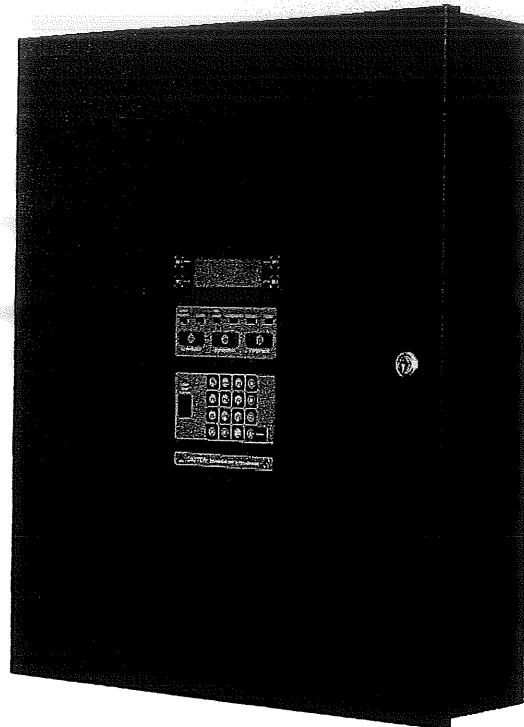
Features

- One intelligent Signaling Line Circuit
- SLC loop supports up to 252 addressable Inputs AND signal/relay outputs (504 inputs/outputs total)
- Addressable devices are polarity insensitive
- Devices operate on standard wire-no twist or shield required
- FireSmart Application Specific fire detection
- 4 Class B/2 Class A notification appliance circuits
- Up to 6A NAC Power
- Built in strobe synchronization protocol
- 80 Character backlit LCD display
- Optional Peer-to-Peer networking using MPC-Net
- One man walk test (Silent or Audible)
- Auto Program Feature
- UP to 16 remote LCD Displays with control capabilities
- Programmable from front keypad, or Windows based PC programming software
- Maintenance and technician level passwords
- Optional internal DACT
- 2000 event history log
- Made in the USA, ISO 9001 quality crafted
-  UL 864, MEA & CSFM Listed and FM Approved

Description

The MPC-6000 is an advanced modular fire alarm panel. It features analog/addressable detection, programming, and memory capability. Its base configuration includes one analog/addressable loop, with four notification appliance output circuits.

Operating controls and indicators are mounted behind a locked cabinet door and an 80-character LCD display provides specific indications for addressable devices, while LEDs indicate general panel status.



MPC-6000

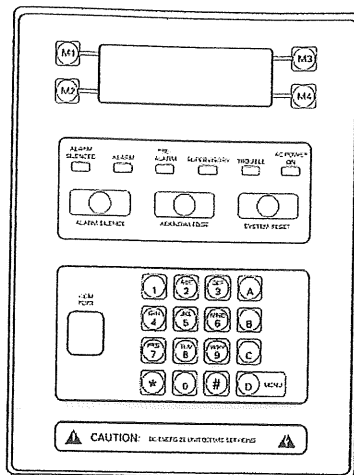
Hardware Configuration

The main termination board mounts in the rear of the panel. The main power supply is physically contiguous with the main termination board. The MPC-6000 main termination board provides the interface for external system connections, the SLC loop interface PCB, four NAC circuits, remote signaling circuits and indicating interfaces.

The front Display Board mounts on a hinged front plate, which is located behind a locked cabinet door. Displays for any number of zones are handled through this board.

All normal operation is controlled from the front of the panel via membrane switches. Displays are provided by an 80-character, alphanumeric, backlit LCD display and by discrete LED indicators for major panel functions.

The 80-character LCD display is used to display event data, including alarms and troubles, supervisory identification of zone or device, and presentation of history. The menus are controlled by a set of four membrane switches commanding the control processor. A back light is included to assure visibility in low light, but to conserve power, it is only activated during a reported event.



Minimum Control Unit Configuration

- A. Intelligent Signaling Line Circuit – The main termination board has addressable loop interface circuitry supporting one SLC loop. Devices are polarity insensitive and can operate on untwisted, unshielded wire.
- B. Notification Appliance Circuits – The base panel has four independent NACs. Each circuit can be selected to give continuous output, one of eight sounding patterns. NACs are style Z or Y capable, without additional modules.
- C. Dry Contacts – Four programmable form “C” dry relay contacts are provided.
- D. Remote Annunciation – The MPC-6000 panel will drive up to 16 annunciators and 8 remote processors on an RS-485 communication line.
- E. Power Supply – A 7A, 24V nominal power supply provides all operating power to the panel for both standby and alarm conditions.

Auxiliary Devices

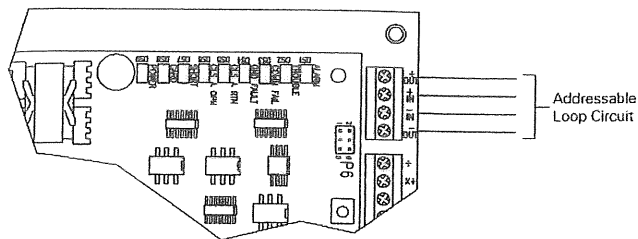
- A. Remote LCD Annunciator (RDC-2) – The remote LCD annunciator consists of a backlit 80 character, alphanumeric display, 4 menu buttons, 4 dedicated buttons for operator interaction, 6 LED indicators, and a security key switch.
- B. Serial Annunciator (SLU-2) – Consists of one remote processor and one annunciator driver board capable of providing 16 supervised outputs for LEDs or incandescent lamps. Expansion to drive 512 LEDs or lamps is via additional processor boards and annunciator drive boards (SLE-16).
- C. Serial Relay Unit (SRU-2) – Consists of remote processor and relay board which provides 8 relays with form “C” dry contacts rated at 1 amp. Expansion to 192 relays is via additional remote processor boards and relay boards (SLE-8).

Optional Control Unit Configuration

- A. MPC-DACT – The MPC-DACT provides a dual line digital alarm communications transmitter. It's parameters are set via the control unit programming sequence.

The MPC-DACT is compatible with the following formats: SIA DCS 8, SIA DCS 20, Ademco Contact ID, 3/1 1400 Hz., 3/1 2300 Hz.,

Wiring, Main Termination Board

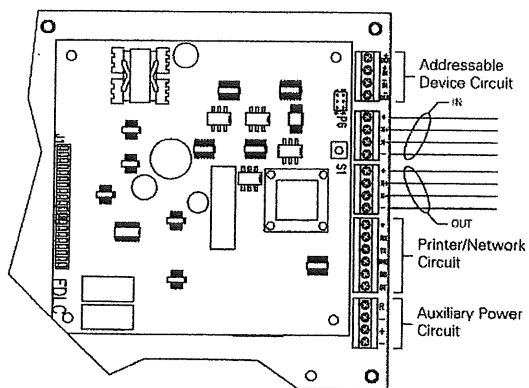
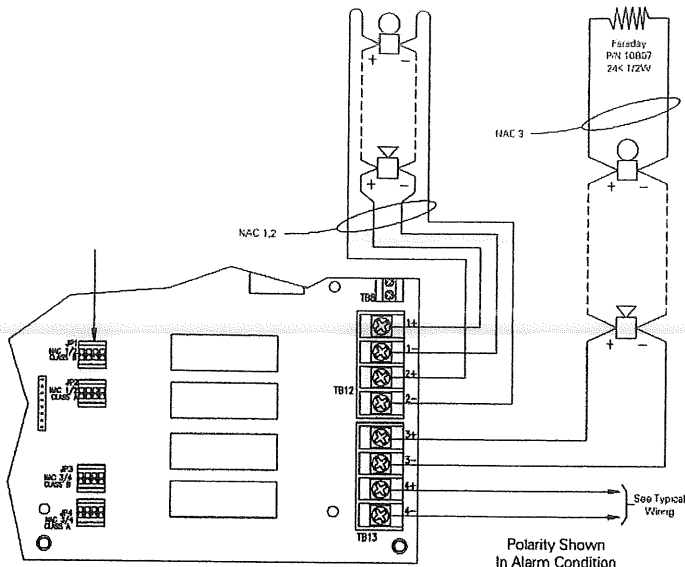


Addressable Device Circuit
 Style 4 or 6 Operation
 24VDC nominal
 Wire Resistance-50 ohms max
 (see Line Resistance Graph)
 Supervised, Power Limited
 See Owner's Manual for Compatible Devices

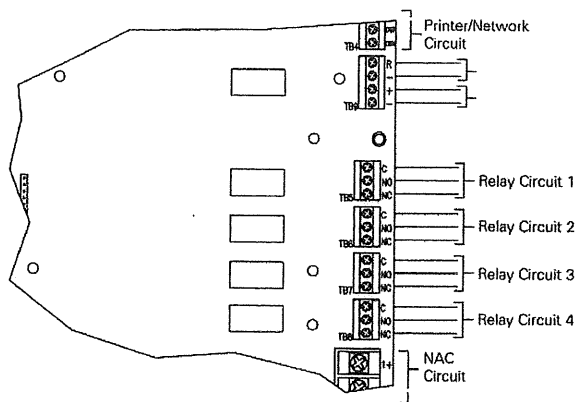
NAC Rating:
 Alarm Voltage: 24V FW nominal
 Max. Alarm Current: 1.5A/NAC circuit
 Max. Ripple: 16VAC
 Max. Wire Voltage Drop: 1.0VDC
 Max. Standby Current: 1.0mA
NOTE:
 The maximum total current for the MPC-6000 NACs is 3.0A and 6.0A with the optional additional Transformer PIN NPE-1

Typical Notification Appliance Circuit
 Style Z, Class A
 Supervised, Power Limited
 See Owners Manual for Compatible Devices

Typical Notification Appliance Circuit
 Style Y, Class B
 Supervised, Power Limited
 See Owners Manual for Compatible Devices



Serial Interface Circuit,
 (-, -) 24VDC nominal, 0.4 max
 (X+, X-) RS-485 levels
 Wire Type-Twisted Pair For Data
 Wire Resistance-11 ohms/line (4000' max)
 Supervised, Power Limited,
 See Owner's Manual for
 Compatible Devices.



Auxiliary Power Outputs
 0.4A max. @24VDC nominal
 Unsupervised, Power Limited
 Maximum current of all auxiliary outputs
 circuits, Serial Interface Circuit and
 option boards is: 0.5A for the 6000
 1.0 A for the 7000

Status Relay Contacts
 (Shown in normal standby condition)
 1A 28VDC max Resistive For Power
 Limited Source, Unsupervised

General Specifications

Environmental

Operating temperature: 32-120°F (0-49°C)
 Relative Humidity - 85% @ 86°F

Primary Supply

Primary input voltage -
 120 Vac (50/60 Hz.), 240 Vac (50/60 Hz.)
 Maximum primary input current -
 1.3 amp @ 120 Vac

Secondary and Trouble Power Supply

24 volt lead-acid battery with 7 AH-38 AH capacity

Auxiliary Power Outputs

Current - 0.5 amp resettable/non-resettable
 power outputs

Status System Relays

4 relays rated @ 1 amp, 28 Vdc resistive

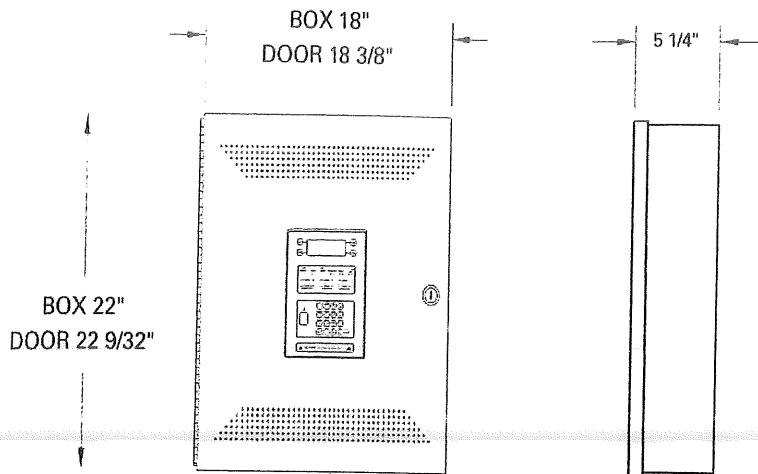
NAC Circuits

Rating per NAC circuit, 1.5A ea., 6 max.

Battery

Base cabinet will accommodate a 10 A battery
 set. Larger batteries will require separate enclosure

Dimensions



Ordering Information

Model	Description	Part No.
MPC-6000	MPC-6000 Single Loop Addressable Fire Alarm Panel, Red	599-049304FA
MPC-6000B	MPC-6000 Single Loop Addressable Fire Alarm Panel, Black	599-049303FA
Options		
RDC-2	Remote Annunciator	500-648980FA
NPE-1	Transformer to expand NAC power	500-649120FA
SRU-2	RS-485 Relay Card	500-649308FA
SRE-8	8 Relay Extender	500-649337FA
SLU-2	RS-485 LED Driver Card (16 Outputs)	500-649307FA
SLE-16	16 LED Driver Extender	500-649339FA
FAE-21	ACC. Enclosure for RS-485 Devices	500-401403014FA
MPC-DACT	Dialer for MPC-6000 and MPC-7000	500-649330FA
CT-1K	CityTie Module for MPC-6000 and MPC-7000	500-649336FA
SFTK-6R	Semi-Flush Trim for MPC-6000, Red	500-648955FA
SFTK-6B	Semi-Flush Trim for MPC-6000, Black	500-648954FA

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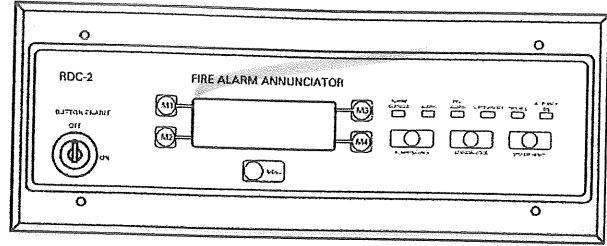
Siemens Building Technologies, Inc.
 8 Fernwood Road • Florham Park, NJ 07932
 Tel: (973) 593-2600 • Fax: (973) 593-6670
 Web: www.faradayfirealarms.com

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Model RDC-2 Remote 80 Character LCD Annunciator

Features

- 80 character, alphanumeric backlit display
- Mounts to 6 gang or 12411 surface box
- Contains four (4) menu buttons, four (4) dedicated buttons for operator interaction, six (6) LED indicators and a security key switch
- UL listed, standard 864



RDC-2 Annunciator

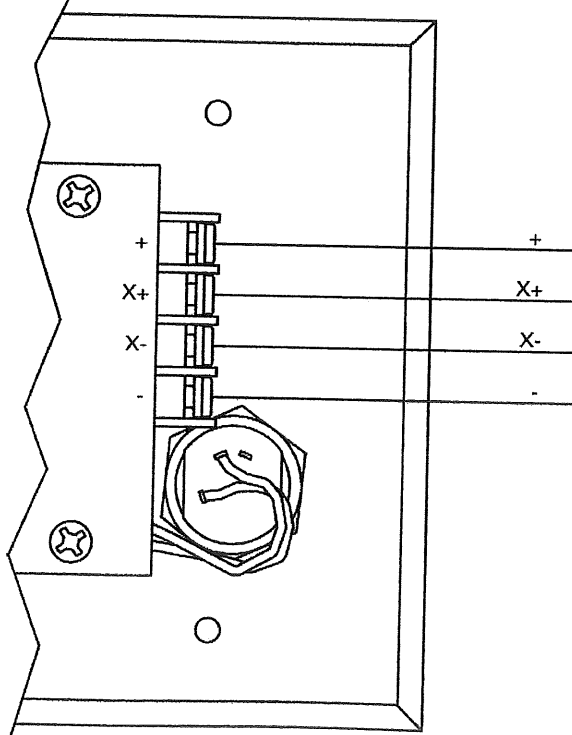
Description

The RDC-2 remote LCD annunciator is an optional accessory for the MPC-6000 and MPC-7000 Fire Alarm Control Panels from Faraday. It provides a 80 character LCD display along with the system status LEDs. The button enable keyswitch allows system reset, trouble silence/acknowledge, alarm silence and menu access. The lamp test operation is also enabled by the keyswitch, but the function is

limited to the annunciator. The annunciator mounts to a horizontally mounted 6-gang box, 2" deep minimum. The Faraday part number 12411 Surface Backbox may be used for surface mounting.

Up to 16 annunciators may be addressed by the communications circuit.

Typical Wiring



Cable for power (+ & -) and Twisted pair Cable for data (X+ & X-) from panel or previous remote and to next remote or 120 ohm termination resistor on the last remote.

General Specifications

Environmental

Operating Temperature:

32-120°F (0-49°C)

Relative Humidity: 85% @ 86°F

Power Consumption

Alarm: .025 Amp

Standby: .020 Amp

Transmission Format

Multiplexed, supervised style "W", power limited

Display

80 character, alphanumeric, backlit

Wiring

(2) pair, no. 18 awg. min., 4000 ft. max.,
daisy chained, no t-taps

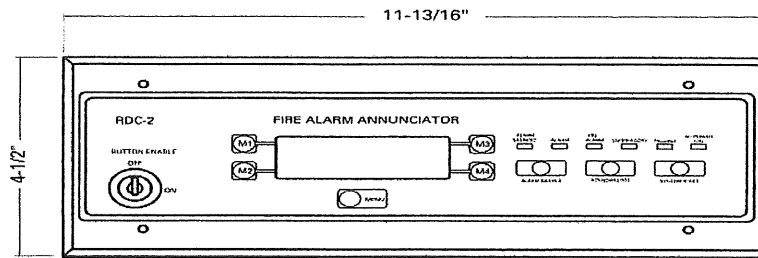
Mounting

6 gang box (supplied by others)

Shipping Weight

2 lbs. approx.

Dimensions



Ordering Information

Model	Description	Part No.
RDC-2	Remote 80 character LCD annunciator	500-648980FA
Options		
12411014	Surface mount back box	500-699639FA


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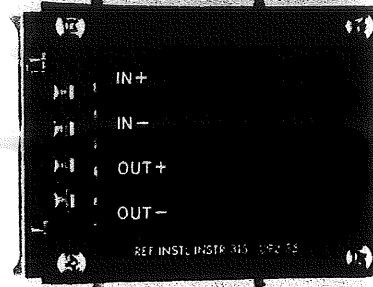
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8709 Line Isolator Module for Use With MPC-6000 & 7000 Control Panels

Features

- Short Circuit Isolation
- Used on MPC-6000 & 7000 Intelligent Device Circuits
- Increased Fault Tolerance
- Style 4 or Style 6
- Up to 12 Per Loop
- Requires no Programming
- Does Not Occupy a Device Address
- Mounts in Either 4" Square, 2 1/8" Deep or a 3 1/2" Deep Double Gang Electrical Box
- Local LED Indicator
- Cover Plate Included
-  Listed, NYMEA and CSFM Submitted



Description

The 8709 loop isolator module provides short circuit protection on MPC-6000 & 7000 intelligent device circuits (FDLC). When a short is detected by the 8709, it isolates the affected segment of the circuit, allowing the remaining devices to continue operation. The 8709 is self-restoring, automatically reconnecting to circuit segment when the fault is removed.

The 8709 also includes a yellow LED which illuminates to indicate that the device has been activated. The 8709 mounts in either a 4" square, 2 1/8" deep or a 3 1/2" deep double gang electrical box and is supplied with a cover plate with an opening for the LED.


It can be wired in either a Style 4 or Style 6 configuration.

The 8709 does not occupy a device address on the intelligent device circuit and requires no programming. Up to twelve 8709s may be installed on each loop.

Ordering Information

Model	Description	Part No.
8709	Line Isolator Module	500-033170FA

Models 8710, 8712, 8713 (FireSmart™) X1 Series Detectors**Features****Intelligent Detectors for use with MPC 6000 and 7000 Control Panels**

- Three models available Photo (8710), Photo-Thermal (8713) and 135°F Thermal, fixed and rate of rise (8712)
- High-Speed, Fault-Tolerant Communication
- Multi-color status L.E.D (green, amber, red)
- Field cleanable photo chamber
- Electronic addressing with field programmer model 8720
- Mounts in standard 8853 Series Base
- Low Profile Design
- Optional fully programmable relay base, audible base and duct housing
- Two Wire Operation
-  UL Listed, CSFM, NYMEA and FM Approved

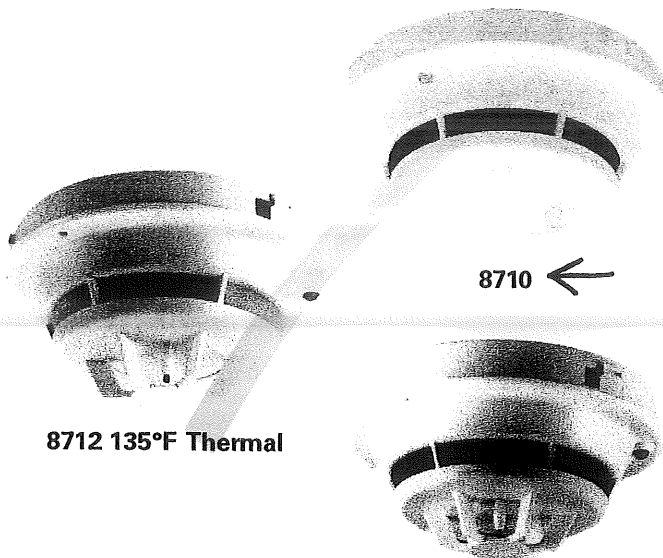
Introduction

The 8710 and 8713 intelligent photoelectric smoke detectors provide reliable smoke detection to meet today's critical life safety and property protection needs. The FireSmart series of detectors provide an extremely high degree of resistance to RFI, EMI and humidity. The FireSmart series detector utilizes a microprocessor with "on-board" EEPROM supporting the detectors sophisticated programming, error checking and self-diagnostic capabilities.

The 8710 is an intelligent smoke detector, the 8713 is a smoke detector with thermal assist, and the 8712 is a heat detector. The thermal sensors respond at 135°F. These devices are designed for use with the MPC-6000 and 7000 control panels and use the 8853 detector base.

Description

The 8710, 8712 and 8713 are two-wire, plug-in detectors that are compatible with the MPC-6000 and 7000 control panels. Each 8710 and 8713 have a dust resistant, field cleanable photo chamber and microprocessor based electronics. The 8712 and 8713 utilize a state-of-the-art thermistor for heat sensing. All detectors have low profile, high-temperature plastic covers for maximum protection of components and use surface mount electronic components for increased reliability. Every smoke detector is shipped with a red protective dust cover.

**8713 Photo Thermal**

Smoke detectors utilize an infrared light emitting diode (IRLED) and a light sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern. The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the chamber, light emitted from the IRLED is scattered by the smoke particles and is received by the photodiode.

When an alarm condition occurs, the detector "latches" in alarm and informed the control panel of its status. The detector is reset upon command from the control panel. The control panel also sets the detector's sensitivity.

Every time the control panel polls the detector, the multi-color LED will flash green to indicate that it has passed the internal self test and has communicated its status to the control panel. If the detector does not pass the self test, is dirty beyond the limits of its environmental compensation, or is in "trouble" in any way, the LED flashes amber and informs the panel of its status, allowing for easy identification of which detector is in trouble. When in alarm, the detector LED flashes red.

Detectors are assigned their address using the 8720 Field Programmer/Tester, which electronically stores address information in the detectors non-volatile memory. The 8720 can also be used for device testing and diagnostics.

The FireSmart series detectors can be on the same circuit as other 8700 series initiating devices such as manual stations, TRI Monitoring/Relay Modules, etc. Detectors are mounted in the standard 8853 or 8716 Relay Base, 8715 Audible Base, or 8840/8717 Duct Housing. Use the standard 8727C or 8727W (red) Remote Lamps when remote annunciation is required.

Smoke detectors are field cleanable per the instructions included on the installation sheet provided with the product. X1 series detectors are UL listed for operation within the standard UL specified temperature range of 32 to 100 degrees F (0 to 38 degrees C).

Application Data

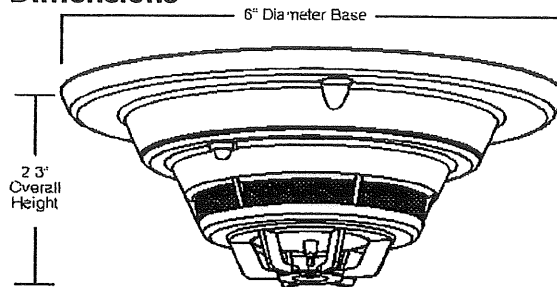
Installation of X1 series detectors require detector bases 8853, 8715, 8716, or 8840.

The 8710 and 8713 detectors can be applied within a maximum 30-foot center spacing (900 square foot area) as referenced in NFPA 72. This applications guideline is based on ideal conditions; specifically, smooth ceiling surfaces, minimal air movement and no physical obstructions between potential fire sources and the detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joints or beamed

ceilings may also affect safe spacing limitations of detectors. Should any questions arise regarding detector placement, observe NFPA 72 guidelines. Locating in close proximity to "noisy" electronic light ballasts or other sources of high level EMI or RFI should be avoided.

Good fire protection system engineering and common sense dictate how and when fire detection devices are installed and used. Contact your local Faraday authorized sales outlet whenever you need assistance applying these devices. Be sure to follow NFPA guidelines, the UL approved installation instructions provided with the product and local codes, as with any other fire protection equipment.

Dimensions



Technical Specifications

Operating Temperature

+32°F (0°C) to 100°F (38°C) per UL 269/268A

Humidity

0-93% Relative Humidity Non-Condensing

Current Draw

1 mA in alarm or stand-by mode

Ordering Information


Model	Description	Part No.
8710	Photoelectric Detector	500-034800FA
8713	Photo-Thermal Detector (FireSmart™)	500-033290FA
8712	135°F Fixed Thermal Detector	500-033380FA
8715	Audible Base	500-033210FA
8853	Detector Base	500-094151FA
8840	Air Duct Housing	500-095656FA
8717	Air Duct Housing with Relay	500-033280FA
8716	Relay Base	500-033220FA
8727W	Remote Lamp (red) for 4" octagon box	500-033310FA
8727C	Remote Lamp (red) for single gang box	500-033230FA
8720	Field Programmer	500-033260FA
8846	Detector base lock (Pkg. of 50)	500-695350FA



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Models 8710, 8712, 8713 (FireSmart™) X1 Series Detectors**Features****Intelligent Detectors for use with MPC 6000 and 7000 Control Panels**

- Three models available Photo (8710), Photo-Thermal (8713) and 135°F Thermal, fixed and rate of rise (8712)
- High-Speed, Fault-Tolerant Communication
- Multi-color status L.E.D (green, amber, red)
- Field cleanable photo chamber
- Electronic addressing with field programmer model 8720
- Mounts in standard 8853 Series Base
- Low Profile Design
- Optional fully programmable relay base, audible base and duct housing
- Two Wire Operation
-  UL Listed, CSFM, NYMEA and FM Approved

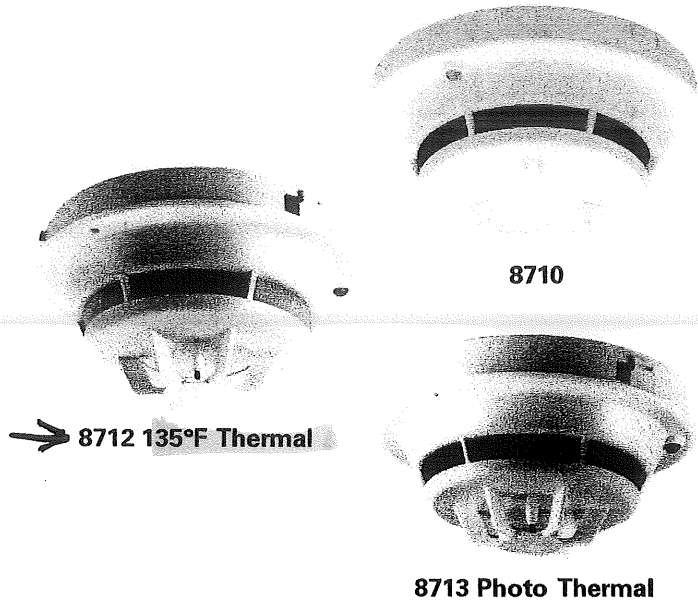
Introduction

The 8710 and 8713 intelligent photoelectric smoke detectors provide reliable smoke detection to meet today's critical life safety and property protection needs. The FireSmart series of detectors provide an extremely high degree of resistance to RFI, EMI and humidity. The FireSmart series detector utilizes a microprocessor with "on-board" EEPROM supporting the detectors sophisticated programming, error checking and self-diagnostic capabilities.

The 8710 is an intelligent smoke detector, the 8713 is a smoke detector with thermal assist, and the 8712 is a heat detector. The thermal sensors respond at 135°F. These devices are designed for use with the MPC-6000 and 7000 control panels and use the 8853 detector base.

Description

The 8710, 8712 and 8713 are two-wire, plug-in detectors that are compatible with the MPC-6000 and 7000 control panels. Each 8710 and 8713 have a dust resistant, field cleanable photo chamber and micro-processor based electronics. The 8712 and 8713 utilize a state-of-the-art thermistor for heat sensing. All detectors have low profile, high-temperature plastic covers for maximum protection of components and use surface mount electronic components for increased reliability. Every smoke detector is shipped with a red protective dust cover.



Smoke detectors utilize an infrared light emitting diode (IRLED) and a light sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern. The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the chamber, light emitted from the IRLED is scattered by the smoke particles and is received by the photodiode.

When an alarm condition occurs, the detector "latches" in alarm and informed the control panel of its status. The detector is reset upon command from the control panel. The control panel also sets the detector's sensitivity.

Every time the control panel polls the detector, the multi-color LED will flash green to indicate that it has passed the internal self test and has communicated its status to the control panel. If the detector does not pass the self test, is dirty beyond the limits of its environmental compensation, or is in "trouble" in any way, the LED flashes amber and informs the panel of its status, allowing for easy identification of which detector is in trouble. When in alarm, the detector LED flashes red.

Detectors are assigned their address using the 8720 Field Programmer/Tester, which electronically stores address information in the detectors non-volatile memory. The 8720 can also be used for device testing and diagnostics.

The FireSmart series detectors can be on the same circuit as other 8700 series initiating devices such as manual stations, TRI Monitoring/Relay Modules, etc. Detectors are mounted in the standard 8853 or 8716 Relay Base, 8715 Audible Base, or 8840/8717 Duct Housing. Use the standard 8727C or 8727W (red) Remote Lamps when remote annunciation is required.

Smoke detectors are field cleanable per the instructions included on the installation sheet provided with the product. X1 series detectors are UL listed for operation within the standard UL specified temperature range of 32 to 100 degrees F (0 to 38 degrees C).

Application Data

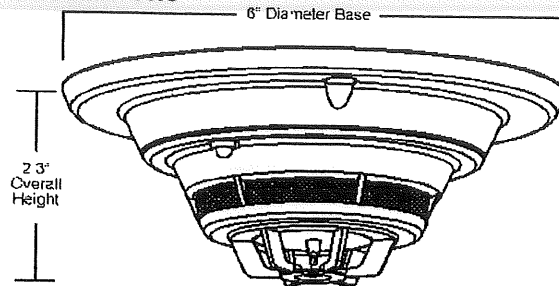
Installation of X1 series detectors require detector bases 8853, 8715, 8716, or 8840.

The 8710 and 8713 detectors can be applied within a maximum 30-foot center spacing (900 square foot area) as referenced in NFPA 72. This applications guideline is based on ideal conditions; specifically, smooth ceiling surfaces, minimal air movement and no physical obstructions between potential fire sources and the detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joints or beamed

ceilings may also affect safe spacing limitations of detectors. Should any questions arise regarding detector placement, observe NFPA 72 guidelines. Locating in close proximity to "noisy" electronic light ballasts or other sources of high level EMI or RFI should be avoided.

Good fire protection system engineering and common sense dictate how and when fire detection devices are installed and used. Contact your local Faraday authorized sales outlet whenever you need assistance applying these devices. Be sure to follow NFPA guidelines, the UL approved installation instructions provided with the product and local codes, as with any other fire protection equipment.

Dimensions



Technical Specifications

Operating Temperature

+32°F (0°C) to 100°F (38°C) per UL 269/268A

Humidity

0-93% Relative Humidity Non-Condensing

Current Draw

1 mA in alarm or stand-by mode

Ordering Information


Model	Description	Part No.
8710	Photoelectric Detector	500-034800FA
8713	Photo-Thermal Detector (FireSmart™)	500-033290FA
8712	135°F Fixed Thermal Detector	500-033380FA
8715	Audible Base	500-033210FA
8853	Detector Base	500-094151FA
8840	Air Duct Housing	500-095656FA
8717	Air Duct Housing with Relay	500-033280FA
8716	Relay Base	500-033220FA
8727W	Remote Lamp (red) for 4" octagon box	500-033310FA
8727C	Remote Lamp (red) for single gang box	500-033230FA
8720	Field Programmer	500-033260FA
8846	Detector base lock (Pkg. of 50)	500-695350FA



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- Field cleanable photo chamber
- Electronic addressing with field programmer model 8720
- Mounts in standard 8853 Series Base
- Low Profile Design
- Optional fully programmable relay base, audible base and duct housing
- Two Wire Operation
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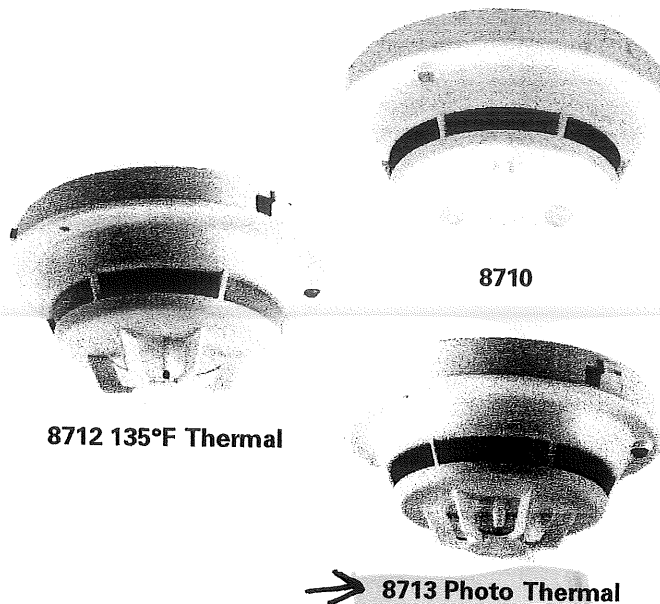
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The 8710 is an intelligent smoke detector, the 8713 is a smoke detector with thermal assist, and the 8712 is a heat detector. The thermal sensors respond at 135°F. These devices are designed for use with the MPC-6000 and 7000 control panels and use the 8853 detector base.

Description

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Detectors are assigned their address using the 8720 Field Programmer/Tester, which electronically stores address information in the detectors non-volatile memory. The 8720 can also be used for device testing and diagnostics.

The FireSmart series detectors can be on the same circuit as other 8700 series initiating devices such as manual stations, TRI Monitoring/Relay Modules, etc. Detectors are mounted in the standard 8853 or 8716 Relay Base, 8715 Audible Base, or 8840/8717 Duct Housing. Use the standard 8727C or 8727W (red) Remote Lamps when remote annunciation is required.

Smoke detectors are field cleanable per the instructions included on the installation sheet provided with the product. X1 series detectors are UL listed for operation within the standard UL specified temperature range of 32 to 100 degrees F (0 to 38 degrees C).

Application Data

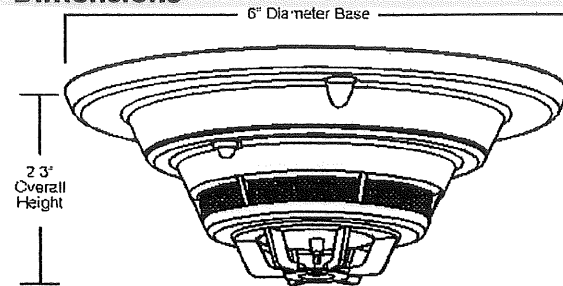
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Dimensions



Technical Specifications

Operating Temperature

+32°F (0°C) to 100°F (38°C) per UL 269/268A

Humidity

0-93% Relative Humidity Non-Condensing

Current Draw

1 mA in alarm or stand-by mode

Ordering Information


Model	Description	Part No.
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8713	Photo-Thermal Detector (FireSmart™)	500-033290FA
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8720	Field Programmer	500-033260FA
8846	Detector base lock (Pkg. of 50)	500-695350FA

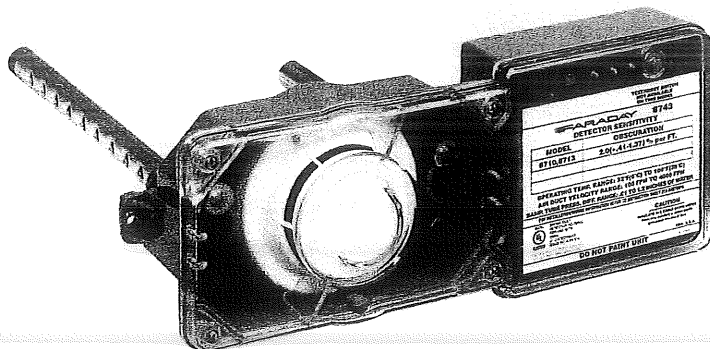


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8741, 8742 and 8743 Air Duct Housings**Features**

- 8710, 8713 AND 8854B Detectors
- Relay Model Available
- Alarm LED Visible from Front
- Designed for Air Velocity Range 100 to 4000 fpm
- Clear Housing Cover Quick Identification of Detector Type
- Cover removable with only four captive screws
-  UL Listed, CSFM Approved

**Introduction**

FARADAY air duct detector housings are designed to be used with 8700 Series and 8854B detectors. Designed for installation directly to heating, ventilating and air conditioning duct systems, they comply with National Fire Protection Association Standard No. 90A. When equipped with photoelectric detectors, these units will signal the presence of hazardous quantities of products of combustion or smoke being carried through the duct system. Air duct detectors are not intended to be substituted for open area detection.

8742 and 8743 air duct housings are equipped with relays. These relays are utilized to operate any supplementary equipment when smoke or particles of combustion are detected.

With MPC-6000 or 7000 control panels, up to 252 detectors per circuit having relays may be used.

Detection

These air duct housings are uniquely designed to use the photoelectric detector.

Detector sensitivity may be viewed from the multi-color LED on the detector or preferably may be printed by command on an optional printer from the control panel. The multi-color LED on the detector flashes green to indicate the detector has passed its self test and is within its proper sensitivity

range. Yellow indicates either a "Trouble" condition or an "Out of Sensitivity" condition. Red indicates alarm.

The detector unit employs a cross-sectional sampling principle of operation. Inlet sampling tubes are available in four lengths (see table on reverse side). Outlet sampling tubes are one common length. A continuous cross-sectional sample of air moving through the duct is taken. This averages the effects of laminar flow, stratification or skin effect phenomena occurring in the duct that could prevent combustion product or smoke (especially in large ducts) from reaching a spot type detector.

In addition, the unique design of the sampling chamber insures uniform sensitivity in air velocities, ranging from a low of 100 feet per minute to as high as 4000 feet per minute.

The inlet sampling tube length is determined by the width of the air duct being protected. The inlet tube nearest to, but greater than the duct width, should be used (see table). The inlet tube can then be trimmed at the job site to the exact width of the duct. The outlet sampling tube for all ducts, irrespective of width, has a fixed length of approximately 5 inches and is supplied with the air duct housing.

These housings are UL listed and CSFM Approved (3240-0065:191) NYMEA and FM are pending.

Duct Width	Sampling Tube Model No.	Technical Data	
6" to 1.0'	ST-10	Temperature Range	32°F (0°C)-100°F (38°C)
1.0' to 3.0'	ST-25	Altitude Range	No Altitude Limitations
3.0' to 5.0'	ST-50	Relative Humidity	10-85% (non-condensing/non-freezing)
5.0' to 10.0'	ST-100	Air Duct Velocity Range	100-4000 Ft/Min.
Greater than 9'9" (292.5cm)	Consult Faraday Technical Support	Sampling Tube Pressure	Greater than 9.01 amps
ST-50 and ST-100 tubes require support.		Range of Differences	less than 1.2 inches of water column

Product Includes

- One Short Return (outlet) Tube
- One Stopper
- Two #12 x 3/4" Sheet Metal Screws
- Mounting Template

Note: Detector and sampling tube to be Purchased separately.

Sampling Tube Selection Table

Maintenance of the detector is easily accomplished by the removal of the duct housing sampling chamber cover. The detector, which plugs into the housing, is easily removed for cleaning by a trained technician.

All that is necessary for the installation of the air duct detector is the cutting of three small holes for the sampling tube installation (template included) and the drilling of four holes for mounting the air duct housing. The unit is then easily mounted in place and connection made to the existing wires or terminals if optional accessories are utilized.

ST-50 and ST-100 require support. ST-100 is shipped in two five foot pieces with a coupling for field assembly.

Note to Architect:

When building codes regulate the location of detectors within ventilating systems, make sure that the number and locations of detectors is in accordance with the code regulations.

Ordering Information


Model	Description	Part No.
8741	Air duct housing 8854, 8710 or 8713	500-649706FA
8742	Conventional air duct housing w/relay for 8854 detector	500-649707FA
8743	Air Duct Housing w/relay for 8700 and 8713 detector	500-649708FA
8713	Intelligent FireSmart™ Detector	500-033290FA
8710	Photo Detector	500-034800FA
8854B	Conventional Photoelectric Smoke Detector	500-094150FA
ST-10	Sample Tube, for ducts 6" to 1.0'	500-649710
ST-25	Sample Tube for ducts 1.0' to 3.0'	500-649711
ST-50	Sample Tube for ducts 3.0' to 5.0'	500-649712
ST-100	Sample Tube for ducts 5.0' to 10.0' Sampling tubes greater than 10' Consult Faraday	500-649713



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8700-S AND 8700-D SERIES INTELLIGENT MANUAL FIRE ALARM BOXES FOR MPC-6000 AND MPC-7000 CONTROL PANELS**Features**

- Durable Design
- Shock and Vibration Resistant
- Pull Down Lever Remains Down Until Reset
- Custom Microcomputer Chip Technology
- Dynamic Supervision
- Polarity Insensitive with SureWire™ Technology
- Reset with Allen Key
- No Break Rods Necessary
- Two Wire Operation
- Surface or Semiflush Installation
- Electronic Address Programming is Easier and More Dependable
- Single and Double Action Models Available
-  Listed, CFSM and NYMEA Approved

Introduction

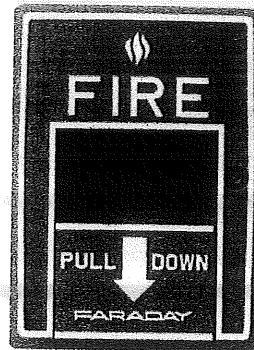
8700-S and 8700-D intelligent manual fire alarm boxes provide the markets' most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each 8700 manual fire alarm box incorporates custom microcomputer chip. The microcomputer chip technology, and its sophisticated bi-directional communication capabilities with the control panel, achieves the state of an "Intelligent Initiating Device."

Description

The 8700-S and 8700-D are constructed of durable molded polycarbonate material which is matte finished in red with raised white lettering. The housing accommodates a "pull-down" lever which, when operated, locks in position indicating the manual fire alarm box has been activated. The pull down lever remains down and locked until the manual fire alarm box is reset. The manual fire alarm box is reset only by opening the hinged housing cover with an allen key and then closing and locking the cover.

The 8700-S and 8700-D manual fire alarm boxes operate with MPC-6000 & 7000 control panels.

The manual fire alarm box's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.



8700-S
Single-Action Station



8700-D
Double-Action Station



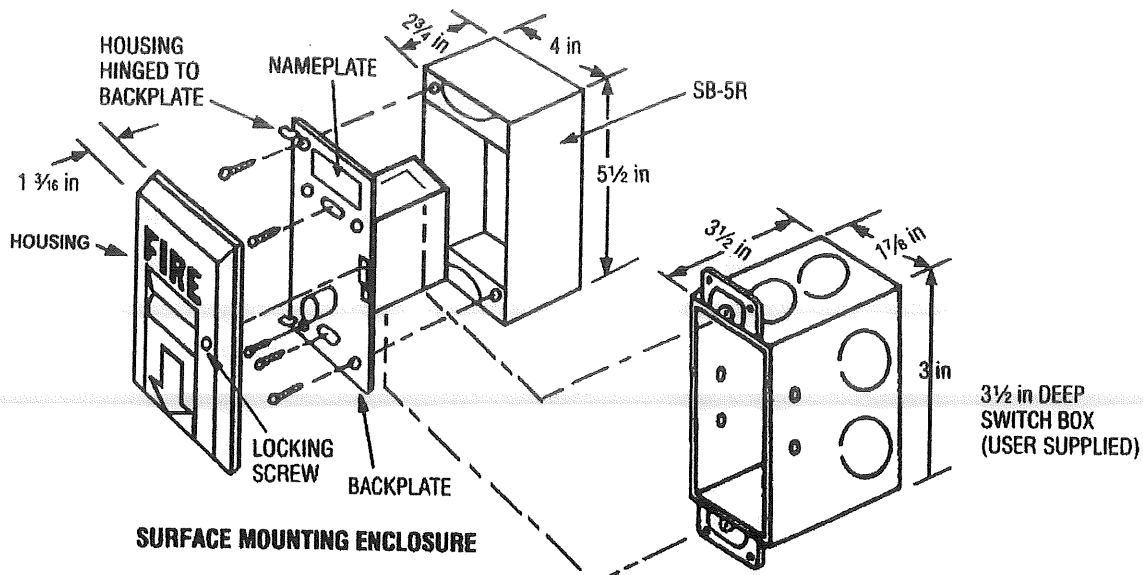
Faraday's innovative technology also allows all 8700 Series Intelligent manual fire alarm boxes to be programmed by using the Model 8720 Programmer/Tester. The Programmer/Tester is a compact, portable, menu driven accessory which makes programming and testing a manual fire alarm box device faster, easier and more dependable than previous methods. The 8720 eliminates the need for the device's mechanical addressing mechanisms, such as program jumpers, dipswitches or rotary dials because the 8720 electronically sets the manual fire alarm box's address into its microcomputer chip, nonvolatile memory. Vibration, corrosion and other conditions which deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The 8700-S and 8700-D are fitted with screw terminals for connection to an addressable circuit. They can be either surface or semiflush mounted.

The 8700 Series manual fire alarm boxes derive their power, communicate information and receive commands over a single pair of wires.

The 8700 Series is compatible on the same circuit with all 8700 detectors, interfaces or addressable conventional zone modules.

Mounting Data



Electrical Ratings

Current Draw (Active or Standby): 1mA

Ordering Information

Model	Description	Shipping Lbs.	Weight kg.	Part No.
8700-S	Addressable Manual Fire Alarm Box Single Action	2.0	.90	500-033200FA
8700-D	Addressable Manual Fire Alarm Box, Double Action	2.5	1.13	500-033400FA
SB-SR	Surface Mounting Box	1.5	.68	310-019860FA
LTP	Reset Tool Package (Contains 2 tools)	.5	.23	500-620490FA

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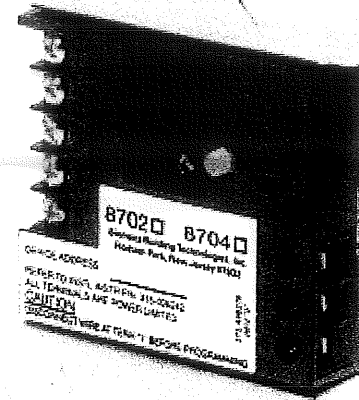
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Monitoring Modules for MPC-6000 & 7000 Control Panels

Features

Intelligent Interface Modules for 8702, 8703 and 8704

- Interfaces and Supervises Normally Open Contacts
- Integral SPDT Relay (up to 4 amps) on 8704 Model
- Dual Input on 8703 Model using a single address
- Polarity Insensitive Technology
- Multi-color L.E.D. indicates status (green, amber, red)
- Easy front access to programming port and wiring terminals
- Mounts 4 inch square 2 1/4 deep box, or double gang box
- Dynamic Supervision
- Comes with 5x5 inch faceplate
- Two wire operation
- 8720 Device Program/Test Unit programs and Verifies Device's Address and Tests Devices functionality
- Electronic Address Programming is Easy and Dependable
-  Listed, CFSM, NYMEA Approved



Introduction

The 8702, 8703 and 8704 Intelligent interface modules are designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 Control Panels.

The X1 Series Intelligent interface modules provide the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each X1 Series interface module incorporates a microcomputer chip. The X1 Series microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel, achieve the state of an "Intelligence Device."

Description

The X1 Series intelligent interface modules are available in three models. The 8702 and 8704 are designed to monitor a normally open dry contact. The interface module reports the contact's status to the control panel. The 8702 model can only monitor and report the status of the contact, while the 8704 incorporates an addressable Form C relay. The

8704 relay and contact device input are controlled at the same address. For the control panel system, the relay and input contact can be controlled as a separate function. The relay is typically used where control or shunting of external equipment is required.

The 8703 is a dual input module and is designed to supervise and monitor two sets of dry contacts. The Dual Input Module only requires one address but responds independently to each input. The 8703 is ideal for monitoring a water flow switch and its respective valve tamper switch.

The module has a multi-color Light Emitting Diode that flashes green when operating normally, amber if unit is in trouble condition, and red to indicate a change of state. The 8704 red L.E.D. indicates a change of state in the relay.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

FARADAY innovative technology allows all X1 Series intelligent interface modules to be programmed by using the 8720 Device Programming/ Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because the 8720 electronically sets the address into the interface's micro-computer chip nonvolatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The X1 Series modules are fitted with screw terminals for connection to an addressable circuit.

The X1 Series modules are fully compatible on the same circuit with intelligent detectors, addressable manual stations or other addressable intelligent modules.

All X1 Series intelligent interface modules are UL listed.

Environmental operating conditions for all 8700 Series modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Mounting Data

Addressable Interface Model 8702, 8703, 8704 mounts directly into a 4 inch square 2 ¼ deep box or a double gang box (user supplied). A 5 inch square off-white faceplate is included with each module.

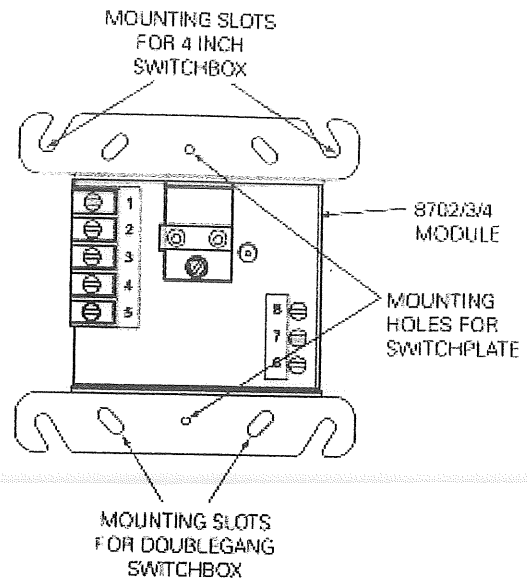


Figure A
Mounting the 8702/3/4

Electrical Ratings

Current Draw (Active or Standby):
1mA

8704 Relay Ratings

Resistive:
4A, 125 VAC
4A, 30 VDC

Inductive:
3.5A, 120 VAC (0.6P.F.)
3.0A, 30 VDC (0.6P.F.)
2.0A, 120 VAC (0.4P.F.)
2.0A, 120 VAC (0.35P.F.)
2.0A, 30 VDC (0.35P.F.)

Ordering Information

Model	Description	Shipping Weight		Part No.
		Lb.	Kg.	
8702	Single Input	7 oz.	2	500-033370FA
8703	Dual Input	7 oz.	2	500-033360FA
8704	Single Input w/Relay	7 oz.	2	500-033300FA

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Monitoring Modules for MPC-6000 & 7000 Control Panels

Features

Intelligent Interface Modules for 8702, 8703 and 8704

- Interfaces and Supervises Normally Open Contacts
- Integral SPDT Relay (up to 4 amps) on 8704 Model
- Dual Input on 8703 Model using a single address
- Polarity Insensitive Technology
- Multi-color L.E.D. indicates status (green, amber, red)
- Easy front access to programming port and wiring terminals
- Mounts 4 inch square 2 ¼ deep box, or double gang box
- Dynamic Supervision
- Comes with 5x5 inch faceplate
- Two wire operation
- 8720 Device Program/Test Unit programs and Verifies Device's Address and Tests Devices functionality
- Electronic Address Programming is Easy and Dependable
-  Listed, CFSM, NYMEA Approved

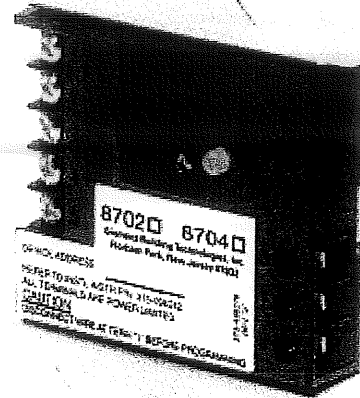
Introduction

The 8702, 8703 and 8704 Intelligent interface modules are designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 Control Panels.

The X1 Series Intelligent interface modules provide the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each X1 Series interface module incorporates a microcomputer chip. The X1 Series microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel, achieve the state of an "Intelligence Device."

Description

The X1 Series intelligent interface modules are available in three models. The 8702 and 8704 are designed to monitor a normally open dry contact. The interface module reports the contact's status to the control panel. The 8702 model can only monitor and report the status of the contact, while the 8704 incorporates an addressable Form C relay. The



8704 relay and contact device input are controlled at the same address. For the control panel system, the relay and input contact can be controlled as a separate function. The relay is typically used where control or shunting of external equipment is required.

The 8703 is a dual input module and is designed to supervise and monitor two sets of dry contacts. The Dual Input Module only requires one address but responds independently to each input. The 8703 is ideal for monitoring a water flow switch and its respective valve tamper switch.

The module has a multi-color Light Emitting Diode that flashes green when operating normally, amber if unit is in trouble condition, and red to indicate a change of state. The 8704 red L.E.D. indicates a change of state in the relay.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

FARADAY innovative technology allows all X1 Series intelligent interface modules to be programmed by using the 8720 Device Programming/Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because the 8720 electronically sets the address into the interface's micro-computer chip nonvolatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The X1 Series modules are fitted with screw terminals for connection to an addressable circuit.

The X1 Series modules are fully compatible on the same circuit with intelligent detectors, addressable manual stations or other addressable intelligent modules.

All X1 Series intelligent interface modules are UL listed.

Environmental operating conditions for all 8700 Series modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Mounting Data

Addressable Interface Model 8702, 8703, 8704 mounts directly into a 4 inch square 2 ¼ deep box or a double gang box (user supplied). A 5 inch square off-white faceplate is included with each module.

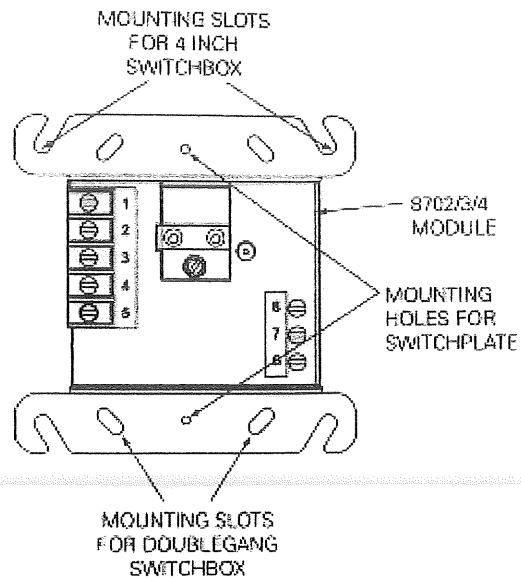


Figure A
Mounting the 8702/3/4

Electrical Ratings

Current Draw (Active or Standby):
1mA

8704 Relay Ratings

Resistive:
4A, 125 VAC
4A, 30 VDC

Inductive:
3.5A, 120 VAC (0.6P.F.)
3.0A, 30 VDC (0.6P.F.)
2.0A, 120 VAC (0.4P.F.)
2.0A, 120 VAC (0.35P.F.)
2.0A, 30 VDC (0.35P.F.)

Ordering Information

Model	Description	Shipping Weight		Part No.
		Lb.	Kg.	
8702	Single Input	7 oz.	2	500-033370FA
8703	Dual Input	7 oz.	2	500-033360FA
8704	Single Input w/Relay	7 oz.	2	500-033300FA




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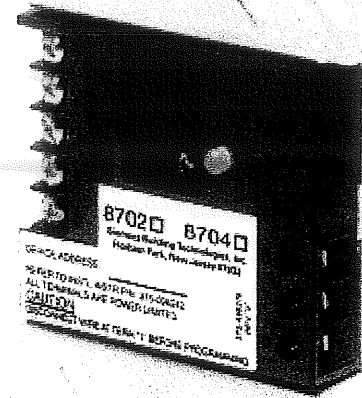
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Monitoring Modules for MPC-6000 & 7000 Control Panels

Features

Intelligent Interface Modules for 8702, 8703 and 8704

- Interfaces and Supervises Normally Open Contacts
- Integral SPDT Relay (up to 4 amps) on 8704 Model
- Dual Input on 8703 Model using a single address
- Polarity Insensitive Technology
- Multi-color L.E.D. indicates status (green, amber, red)
- Easy front access to programming port and wiring terminals
- Mounts 4 inch square 2 ¼ deep box, or double gang box
- Dynamic Supervision
- Comes with 5x5 inch faceplate
- Two wire operation
- 8720 Device Program/Test Unit programs and Verifies Device's Address and Tests Devices functionality
- Electronic Address Programming is Easy and Dependable
-  Listed, CFSM, NYMEA Approved



Introduction

The 8702, 8703 and 8704 Intelligent interface modules are designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 Control Panels.

The X1 Series Intelligent interface modules provide the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each X1 Series interface module incorporates a microcomputer chip. The X1 Series microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel, achieve the state of an "Intelligence Device."

Description

The X1 Series intelligent interface modules are available in three models. The 8702 and 8704 are designed to monitor a normally open dry contact. The interface module reports the contact's status to the control panel. The 8702 model can only monitor and report the status of the contact, while the 8704 incorporates an addressable Form C relay. The

8704 relay and contact device input are controlled at the same address. For the control panel system, the relay and input contact can be controlled as a separate function. The relay is typically used where control or shunting of external equipment is required.

The 8703 is a dual input module and is designed to supervise and monitor two sets of dry contacts. The Dual Input Module only requires one address but responds independently to each input. The 8703 is ideal for monitoring a water flow switch and its respective valve tamper switch.

The module has a multi-color Light Emitting Diode that flashes green when operating normally, amber if unit is in trouble condition, and red to indicate a change of state. The 8704 red L.E.D. indicates a change of state in the relay.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

FARADAY innovative technology allows all X1 Series intelligent interface modules to be programmed by using the 8720 Device Programming/ Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because the 8720 electronically sets the address into the interface's micro-computer chip nonvolatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The X1 Series modules are fitted with screw terminals for connection to an addressable circuit.

The X1 Series modules are fully compatible on the same circuit with intelligent detectors, addressable manual stations or other addressable intelligent modules.

All X1 Series intelligent interface modules are UL listed.

Environmental operating conditions for all 8700 Series modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Mounting Data

Addressable Interface Model 8702, 8703, 8704 mounts directly into a 4 inch square 2 ¼ deep box or a double gang box (user supplied). A 5 inch square off-white faceplate is included with each module.

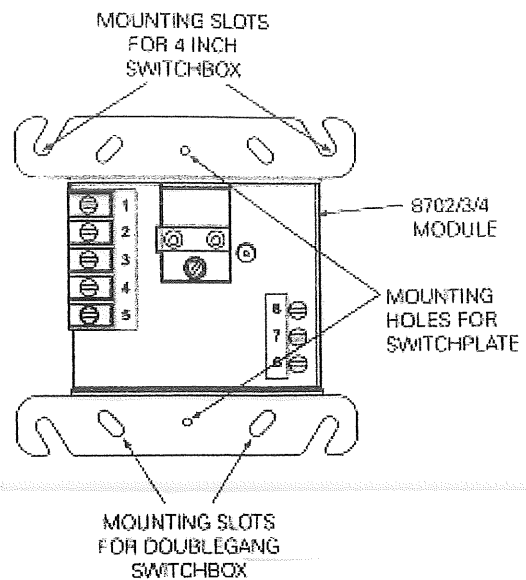


Figure A
Mounting the 8702/3/4

Electrical Ratings

Current Draw (Active or Standby):
1mA

8704 Relay Ratings

Resistive:
4A, 125 VAC
4A, 30 VDC

Inductive:
3.5A, 120 VAC (0.6P.F.)
3.0A, 30 VDC (0.6P.F.)
2.0A, 120 VAC (0.4P.F.)
2.0A, 120 VAC (0.35P.F.)
2.0A, 30 VDC (0.35P.F.)

Ordering Information

Model	Description	Shipping Weight		Part No.
		Lb.	Kg.	
8702	Single Input	7 oz.	2	500-033370FA
8703	Dual Input	7 oz.	2	500-033360FA
8704	Single Input w/Relay	7 oz.	2	500-033300FA



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8701 Intelligent Monitoring Module

Features

Intelligent Interface Modules for use with MPC-6000 & 7000 Control Panels

- Interfaces and Supervises Normally Open Contacts
- Compact Size Allows Mounting in Single Gang Box Behind Equipment
- Polarity Insensitive Technology
- Innovative Technology Supports Comprehensive System and Interface Communication
- Dynamic Supervision
- Two Wire Operation
- 8720 Device Program/Test Unit Electronically Programs and Verifies Device's Address and Tests Device's Functionality
-  Listed, CSFM and NYMEA Approved

Introduction

The FARADAY 8701 Intelligent interface module is designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 initiating circuit.

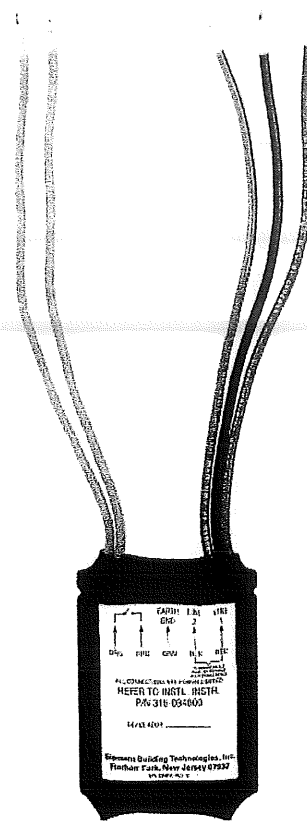
The 8701 Intelligent interface module provides the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each 8701 interface module incorporates microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel.

Description

The 8701 is designed to monitor a normally open dry contact and reports the contact's status to the control panel.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

FARADAY innovative technology allows all 8701 intelligent interface modules to be programmed by



using the 8720 Device Program/Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because it electronically sets the 8701 interface's address into the interface's microcomputer chip non-volatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern. This 8701 is connected to the program/tester with the programming cable provided with the tester. This programming cable utilizes two (2) alligator clip connectors to attach to the 8701.

The 8701 Series has five leads, one for grounding, which are wired to the system with user supplied wire nuts.

The 8701 is fully compatible on the same circuit with detectors, addressable manual stations or any addressable intelligent modules.

All 8701 intelligent interface modules have been UL and ULC Listed.

Environmental operating conditions for all 8701 modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Ordering Information

Model	Description	Shipping oz.	Weight kg.	Part No.
8701	Single Input	3.5	.1	500-034000FA

Electrical Ratings

Current Draw (Active or Standby): 1mA



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Z Strobes, Horns, Horn/Strobes

Features

- UL listed. ULC, CSFM, and FM pending.
- ADA/NFPA compliant
- EZ Mount design, with separate base plate, provides ability to pre-wire the base and test the circuit wiring before the walls are covered
- The base plate is protected by a disposable cover and the appliances can quickly snap onto the base after the walls are painted.
- EZ Mount Universal Mounting Plate (ZBB) – uses single plate for ceiling and wall mount installations
- Wall Mount models feature field selectable candela settings of 15/30/75/110cd and 135/185cd
- Ceiling Mount models feature field selectable candela settings of 15/30/75/95cd and 115/177cd
- Strobes can be synchronized using the Siemens 5406B sync modules, MPC-6000 panel, MPC-7000 panel, or RSE-300 power supply with built-in sync protocol
- "Special Applications" listed with Siemens panels
- Strobes produce 1 flash per second
- Selectable Continuous Horn or Temporal (Code-3) Tones with selectable 90 or 95 dBA setting (ZH model)

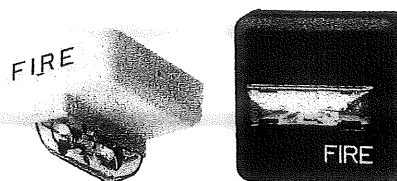
Description

The Siemens Series Z notification appliances feature an easy snap on base that is designed to simplify the installation and testing of horns, strobes, and horn/strobes. The separate Series Z snap on base can be pre-wired so circuit wiring can be fully tested before the appliance is installed and before the walls are covered. Once all surrounding work is complete, the appliance can be simply installed by snapping it on the base. Shorting contacts in the base, which provide continuity for circuit testing, are permanently opened when the appliance is installed so any subsequent removal of the appliance will indicate a trouble condition on that circuit at the control panel when circuit supervision is enabled. The same base is used for all Series Z horns, strobes and horn/strobes to provide consistent installation and easy replacement of appliances if required. A locking screw is also included for the appliance to provide extra secure installation.

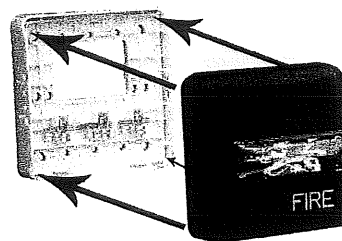
The Siemens Series Z appliances incorporate the same dependable circuitry and high efficiency optics that are used in Siemens ST strobes, NS horn/strobes and NH horns and have the same high performance ratings. The Series Z appliances are "Special Applications" listed with Siemens panels.



Series ZH



Series ZR



ZR AND ZH Mounting

Engineering Specifications

General

Audible/visual notification appliances shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. These appliances shall be listed under UL Standard 1971, (Standard for Safety Signaling Devices for Hearing Impaired) and UL Standard 464 (Fire Protective Signaling). The appliances shall use a universal backplate that shall allow mounting to a single-gang, double-gang, 4-inch square, 4" octal, or a 3-1/2" octal backbox. Two wire appliance wiring shall be capable of directly connecting to the mounting back plate. Continuity checking of the entire NAC circuit prior to attaching any audible/visual notification appliances shall be allowed. A dust cover shall fit and protect the mounting plate. The dust cover shall be easily removed when the appliance is installed over the backplate. Removal of an appliance shall result in a trouble condition by the Fire Alarm Control Panel (FACP).

Strobes

Strobe appliances shall produce a minimum flash rate of 60 flashes per minute (1 flash per second) over the Regulated Input Voltage Range and shall incorporate a

Xenon flashtube enclosed in a rugged Lexan® lens. The strobes shall be available with two or four field selectable settings in one unit and shall be rated, per UL 1971, for up to 185 cd for wall mounting and 177 cd for ceiling mounting. The strobes shall operate over an extended temperature range of 32°F to 120°F (0°C to 49°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Audibles and Audible/Strobe Combinations

Horns and horn/strobes shall be listed for Indoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. The horns shall have at least 2 sound level settings of 90 and 95 dBA.

Synchronization Modules

When synchronization of strobes or temporal Code-3 audibles is required, the appliances shall be synchronized using the Siemens 5406B sync modules, MPC-6000 panels, MPC-7000 panels, or RSE-300 power supplies with built-in sync protocol. The strobes shall not drift out of synchronization at any time during operation. Au-

dibles and strobes shall be able to be synchronized on a 2-wire circuit with the capability to silence the audible if required. If the sync module or power supply fails to operate (i.e., contacts remain closed), the strobes shall revert to a non-synchronized flash rate. All notification appliances shall be listed for "Special Applications".

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Input Voltage Range".
- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series ZH Strobe products are listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series ZH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).

Technical Information

For complete technical information, please consult the relevant installation sheets as well as the Siemens Compatibility Guide.

Ordering Information / Mounting Requirements / Approvals

Model Number	Order Code	Mounting Options#	Agency Approvals			
			UL	ULC	CSFM	FM
ZH-MC-R	500-636161	B, D, E, F	X	#	#	#
ZH-MC-W	500-636162	B, D, E, F	X	#	#	#
ZH-HMC-R	500-636163	B, D, E, F	X	#	#	#
ZH-HMC-W	500-636164	B, D, E, F	X	#	#	#
ZH-R	500-636159	B, D, E, F	X	#	#	#
ZH-W	500-636160	B, D, E, F	X	#	#	#
ZH-MC-CR	500-636165	B, D, E, F	X	#	#	#
ZH-MC-CW	500-636166	B, D, E, F	X	#	#	#
ZH-HMC-CR	500-636167	B, D, E, F	X	#	#	#
ZH-HMC-CW	500-636168	B, D, E, F	X	#	#	#
ZR-MC-R	500-636169	B, D, E, F	X	#	#	#
ZR-MC-W	500-636170	B, D, E, F	X	#	#	#
ZR-HMC-R	500-636171	B, D, E, F	X	#	#	#
ZR-HMC-W	500-636172	B, D, E, F	X	#	#	#
ZR-MC-CW	500-636174	B, D, E, F	X	#	#	#
ZR-MC-CR	500-636173	B, D, E, F	X	#	#	#
ZR-HMC-CR	500-636175	B, D, E, F	X	#	#	#
ZRS-HMC-CW	500-636176	B, D, E, F	X	#	#	#
ZBB-R	500-636193	Accessory - Includes base, dust cover, mounting screws and installation sheet				
ZBB-W	500-636194	Accessory - Includes base, dust cover, mounting screws and installation sheet				

X = listed/approved # = pending * = Refer to Data Sheet #9675 for mounting options.

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

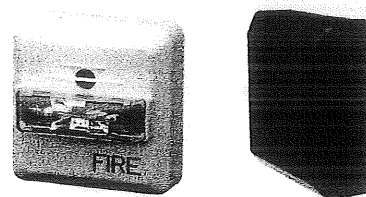


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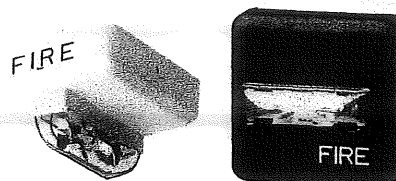
Z Strobes, Horns, Horn/Strobes

Features

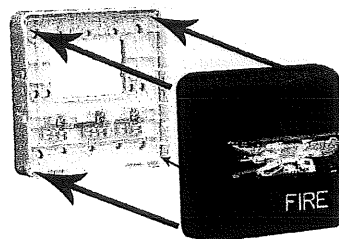
- UL listed. ULC, CSFM, and FM pending.
- ADA/NFPA compliant
- EZ Mount design, with separate base plate, provides ability to pre-wire the base and test the circuit wiring before the walls are covered
- The base plate is protected by a disposable cover and the appliances can quickly snap onto the base after the walls are painted.
- EZ Mount Universal Mounting Plate (ZBB) – uses single plate for ceiling and wall mount installations
- Wall Mount models feature field selectable candela settings of 15/30/75/110cd and 135/185cd
- Ceiling Mount models feature field selectable candela settings of 15/30/75/95cd and 115/177cd
- Strobes can be synchronized using the Siemens 5406B sync modules, MPC-6000 panel, MPC-7000 panel, or RSE-300 power supply with built-in sync protocol
- "Special Applications" listed with Siemens panels
- Strobes produce 1 flash per second
- Selectable Continuous Horn or Temporal (Code-3) Tones with selectable 90 or 95 dBA setting (ZH model)



→ Series ZH



Series ZR



ZR AND ZH Mounting

Description

The Siemens Series Z notification appliances feature an easy snap on base that is designed to simplify the installation and testing of horns, strobes, and horn/strobes. The separate Series Z snap on base can be pre-wired so circuit wiring can be fully tested before the appliance is installed and before the walls are covered. Once all surrounding work is complete, the appliance can be simply installed by snapping it on the base. Shorting contacts in the base, which provide continuity for circuit testing, are permanently opened when the appliance is installed so any subsequent removal of the appliance will indicate a trouble condition on that circuit at the control panel when circuit supervision is enabled. The same base is used for all Series Z horns, strobes and horn/strobes to provide consistent installation and easy replacement of appliances if required. A locking screw is also included for the appliance to provide extra secure installation.

The Siemens Series Z appliances incorporate the same dependable circuitry and high efficiency optics that are used in Siemens ST strobes, NS horn/strobes and NH horns and have the same high performance ratings. The Series Z appliances are "Special Applications" listed with Siemens panels.

Engineering Specifications

General

Audible/visual notification appliances shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. These appliances shall be listed under UL Standard 1971, (Standard for Safety Signaling Devices for Hearing Impaired) and UL Standard 464 (Fire Protective Signaling). The appliances shall use a universal backplate that shall allow mounting to a single-gang, double-gang, 4-inch square, 4" octal, or a 3-1/2" octal backbox. Two wire appliance wiring shall be capable of directly connecting to the mounting back plate. Continuity checking of the entire NAC circuit prior to attaching any audible/visual notification appliances shall be allowed. A dust cover shall fit and protect the mounting plate. The dust cover shall be easily removed when the appliance is installed over the backplate. Removal of an appliance shall result in a trouble condition by the Fire Alarm Control Panel (FACP).

Strobes

Strobe appliances shall produce a minimum flash rate of 60 flashes per minute (1 flash per second) over the Regulated Input Voltage Range and shall incorporate a

Xenon flashtube enclosed in a rugged Lexan® lens. The strobes shall be available with two or four field selectable settings in one unit and shall be rated, per UL 1971, for up to 185 cd for wall mounting and 177 cd for ceiling mounting. The strobes shall operate over an extended temperature range of 32°F to 120°F (0°C to 49°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Audibles and Audible/Strobe Combinations

Horns and horn/strobes shall be listed for Indoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. The horns shall have at least 2 sound level settings of 90 and 95 dBA.

Synchronization Modules

When synchronization of strobes or temporal Code-3 audibles is required, the appliances shall be synchronized using the Siemens 5406B sync modules, MPC-6000 panels, MPC-7000 panels, or RSE-300 power supplies with built-in sync protocol. The strobes shall not drift out of synchronization at any time during operation. Au-

dibles and strobes shall be able to be synchronized on a 2-wire circuit with the capability to silence the audible if required. If the sync module or power supply fails to operate (i.e., contacts remain closed), the strobes shall revert to a non-synchronized flash rate. All notification appliances shall be listed for "Special Applications".

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Input Voltage Range".
- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series ZH Strobe products are listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series ZH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).

Technical Information

For complete technical information, please consult the relevant installation sheets as well as the Siemens Compatibility Guide.

Ordering Information / Mounting Requirements / Approvals

Model Number	Order Code	Mounting Options#	Agency Approvals			
			UL	ULC	CSFM	FM
ZH-MC-R	500-636161	B, D, E, F	X	#	#	#
ZH-MC-W	500-636162	B, D, E, F	X	#	#	#
ZH-HMC-R	500-636163	B, D, E, F	X	#	#	#
ZH-HMC-W	500-636164	B, D, E, F	X	#	#	#
ZH-R	500-636159	B, D, E, F	X	#	#	#
ZH-W	500-636160	B, D, E, F	X	#	#	#
ZH-MC-CR	500-636165	B, D, E, F	X	#	#	#
ZH-MC-CW	500-636166	B, D, E, F	X	#	#	#
ZH-HMC-CR	500-636167	B, D, E, F	X	#	#	#
ZH-HMC-CW	500-636168	B, D, E, F	X	#	#	#
ZR-MC-R	500-636169	B, D, E, F	X	#	#	#
ZR-MC-W	500-636170	B, D, E, F	X	#	#	#
ZR-HMC-R	500-636171	B, D, E, F	X	#	#	#
ZR-HMC-W	500-636172	B, D, E, F	X	#	#	#
ZR-MC-CW	500-636174	B, D, E, F	X	#	#	#
ZR-MC-CR	500-636173	B, D, E, F	X	#	#	#
ZR-HMC-CR	500-636175	B, D, E, F	X	#	#	#
ZRS-HMC-CW	500-636176	B, D, E, F	X	#	#	#
ZBB-R	500-636193	Accessory - Includes base, dust cover, mounting screws and installation sheet				
ZBB-W	500-636194	Accessory - Includes base, dust cover, mounting screws and installation sheet				

X = listed/approved # = pending * = Refer to Data Sheet #9675 for mounting options.

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



Siemens Building Technologies, Inc.
 8 Fernwood Road • Florham Park, NJ 07932
 Tel: (973) 593-2600 • Fax: (973) 593-6670
 Web: www.faradayfirealarms.com

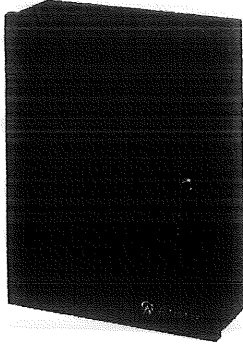


Altronix®

AL642ULADA, AL842ULADA, AL1042ULADA NAC Power Extenders

Rev. AL642/842/1042ULADA - A05I

Overview



The AL642ULADA, AL842ULADA and AL1042ULADA are extremely cost effective voltage regulated remote NAC Power Extenders. They may be connected to any 12 or 24 volt Fire Alarm Control Panel (FACP). Primary applications include Notification Appliance Circuit (NAC) expansion (supports ADA requirements) and will provide auxiliary power to support system accessories.

AL642ULADA

- 24VDC or 12VDC rated @ 6.5 amp max.
- Four (4) Class A or four (4) Class B outputs.

AL842ULADA

- 24VDC or 12VDC rated @ 8 amp max.
- Four (4) Class A or four (4) Class B outputs.

AL1042ULADA

- 24VDC rated @ 10 amp max.
- Four (4) Class A or four (4) Class B outputs.

Specifications

- Two (2) Class A or two (2) Class B FACP inputs.
- Two (2) NC dry contact trigger inputs.
- Four (4) Class A or four (4) Class B indicating circuits.
- Two (2) Class B outputs may be paralleled for more power on an indicating circuit.
- One (1) Aux. Power Output @ 1 amp supply current (w/battery back up).
- One (1) Aux. Power Output @ 1 amp supply current (w/o battery back up).
- Signal Circuit Trouble Memory - facilitates quickly locating intermittent system trouble and eliminates costly and unnecessary service calls. LEDs indicate a prior fault (short, open, ground) has occurred on one or more signaling circuit outputs.
- 2-wire Horn/Strobe Sync mode allows audible notification appliances (Horns) to be silenced while visual notification appliances (Strobes) continue to operate.
- Horn/Strobe sync protocols include: Gentex®, System Sensor®, Faraday, Amseco.
- Temporal Code 3 Mode.
- Steady Mode.
- Input to Output Follower Mode (maintains synchronization of notification appliance circuits).
- March Time.
- Compatible with 24VDC or 12VDC fire panels.
- Ground fault detection.
- Input 115VAC.
- AC fail supervision (form "C" contacts).
- Low battery supervision (form "C" contacts).
- Battery presence supervision (form "C" contacts).
- Power supply, logic board, red enclosure, cam lock, transformer & battery leads.
- Enclosure:
 - Combination knockouts re 1/2" and 3/4"
 - Accommodates up to two (2) 12VDC/12AH batteries.
- Product weight:
 - AL642ULADA: 17.5 lbs.
 - AL842ULADA: 19.8 lbs.
 - AL1042ULADA: 12.8 lbs.
- Shipping weight:
 - AL642ULADA: 19.8 lbs.
 - AL842ULADA: 22.1 lbs.
 - AL1042ULADA: 15.1 lbs.

Agency Approvals



UL Listed Control Units and Accessories for Fire Alarm Systems (UL 864),
UL Listed Standard for Safety for Fire Protective Signaling Systems (UL 1481).



California State Fire Marshal Approved.



Factory Mutual Approved.



NYC Department of Buildings Approved.

UL Listed

7744/7788

AES IntelliNet

CORPORATION | For Alarm Monitoring

NEW!

RF Subscriber Unit

UL Fire, AA Burglary and NFPA-72 Compliant

UL Listed

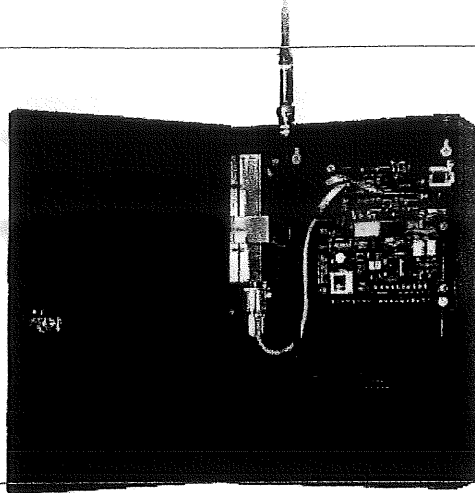
UL Listed Central Station

Remote Station

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

CSFM

NFPA
RF Section 8.6.3.5



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

Advanced Wireless Alarm Monitoring

The 7744/7788 smart subscriber unit links an alarm panel to an alarm monitoring central station. This 2-way transceiver and repeater in one is housed in a full size locking steel cabinet for superior performance. The 7744/7788 supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses wire and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7744/7788 the first choice for all wireless alarm communication needs.

Full Data for Fire and Burglary

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

Available Configurations

7744 – 4 reversing polarity inputs plus 4 programmable EOL inputs

➔ **7788** – Programmable EOL inputs with 8 zones

Available Options

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



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

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

RF Subscriber Unit

Technical Specifications

Radio

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

Standard Output Power

2 watts (requires FCC license)

Power Input

16.5 VAC, 40VA UL listed
Class II transformer required

Voltage

12 VDC nominal

Current

175mA standby; 800mA transmit

Alarm Signal Inputs

- 4 individually programmable Zones: NO/NC/EOL, trouble restore
- RS-232
- Reversing voltage (7744 only) 12 or 24 VDC

Operating Temperature Range

0° to 50°C, 32° to 122°F

Storage Temperature Range

-10° to 60°C, 14° to 140°F

Relative Humidity Range

0-85% RHC non-condensing

Back up Battery

12V, 7 AH

Low Battery Reporting

22.5-minute test cycle

AC Status

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

Antenna Cut (local reporting)

Form 'C' Contact 1 AMP

Size

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

Weight

6.4 lbs, 2.9 Kilograms
(excluding battery)

Colors

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

Available Options

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

Available configurations

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

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



For more information

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

AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

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7744/7788/02/08

MPC-6000

Quantity	Part #	Description	Standby	Alarm	Total standby	Total alarm
1	MPC-6000	Fire Panel	0.190	0.190	0.190	0.190
1	RDC-2	Annunicator	0.020	0.085	0.020	0.085
0	RS-485	Graphic driver	0.005	0.085	0.000	0.000
0	MPC-DACT	Dialer	0.038	0.054	0.000	0.000
	CT-1K	City Tie Module	0.007	0.020	0.000	0.000
	SRU-2	Relay card	0.032	0.192	0.000	0.000
	SRE-8	Relay expander	0.000	0.160	0.000	0.000
	SLU-2	Annunicator card	0.018	0.040	0.000	0.000
	SLE-16	Annunicator card expander	0.005	0.000	0.000	0.000
16	8700-Series	Pull Station	0.001	0.001	0.016	0.016
4	8701	Mini Module	0.001	0.001	0.004	0.004
9	8702	Single input module	0.001	0.001	0.009	0.009
4	8703	Dual Module	0.001	0.001	0.004	0.004
15	8704	Relay module	0.001	0.001	0.015	0.015
	8705	Conventional (34mA aux)	0.001	0.001	0.000	0.000
	8706	NAC module	0.001	0.001	0.000	0.000
2	8709	Isolator module	0.001	0.001	0.002	0.002
15	8710	Smoke	0.001	0.001	0.015	0.015
9	8713	Smoke FireSmart	0.001	0.001	0.009	0.009
1	8712	Heat	0.001	0.001	0.001	0.001
25	8853	Basic base	0.001	0.001	0.025	0.025
	8715	Audible base	0.001	0.001	0.000	0.000
9	8743	Duct Detector	0.001	0.001	0.009	0.009
	8713	Duct smoke	0.001	0.001	0.000	0.000
	8704	Duct relay	0.001	0.001	0.000	0.000
9	8730	Duct Remote	0.001	0.001	0.009	0.009
	8727	Remote light	0.001	0.001	0.000	0.000
			0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000
1		NAC power maximum	0.000	6.000	0.000	6.000
					0.000	0.000
					0.000	0.000
					0.000	0.000
		Miscellaneous			0.000	0.000
TOTAL			0.333	6.844	0.328	6.393

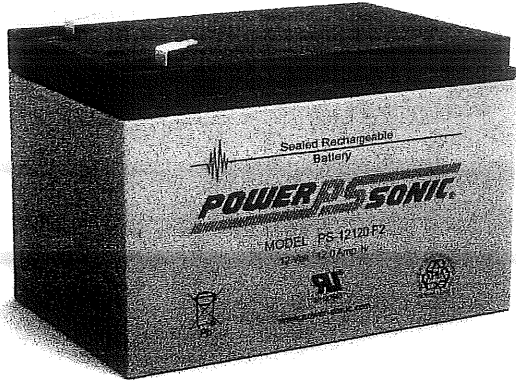
	Hours	Standby current		Total
	24	0.3280		7.872
Minutes		Alarm current		
5	0.08333333	6.3930		0.533
		Battery Capacity		
	20%	8.4048		10.086



PS-12120 12 Volt 12.0 AH

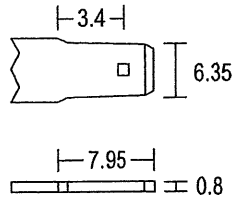
Rechargeable Sealed Lead Acid Battery

We've Got The Power.™

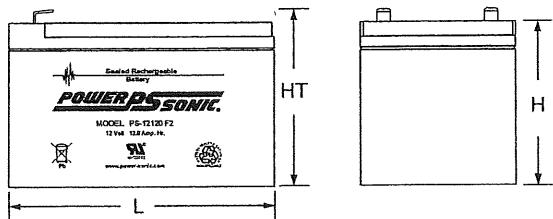
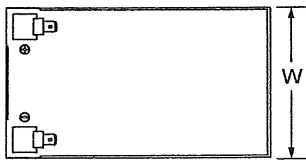


Terminals (mm)

- F2 - Quick disconnect tabs, 0.250" x 0.032"
- Mate with AMP. INC FASTON "250" series



Physical Dimensions: in (mm)



L: 5.95 (151) W: 3.86 (98) H: 3.70 (94) HT: 3.94 (100)

Tolerances are +/- 0.04 in. (+/- 1mm) and +/- 0.08 in. (+/- 2mm) for height dimensions. All data subject to change without notice.

Features

- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, spill proof construction allows safe operation in any position
- Power/volume ratio yielding unrivaled energy density
- Rugged impact resistant ABS case and cover (UL94-HB)
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized under file number MH 20845

Performance Specifications

Nominal Voltage 12 volts (6 cells)

Nominal Capacity

20-hr. (600mA to 10.50 volts)	12.0 AH
10-hr. (1.1A to 10.50 volts)	11.0 AH
5-hr. (2.1A to 10.20 volts)	10.5 AH
1-hr. (7.25A to 9.00 volts)	7.25 AH
15-min. (21.5A to 9.00 volts)	5.38 AH

Approximate Weight 7.92 lbs. (3.59 kg)

Energy Density (20-hr. rate) 1.69 W-h/in³ (103.41 W-h/l)

Specific Energy (20-hr. rate) 18.18 W-h/lb (40.08 W-h/kg)

Internal Resistance (approx.) 20 milliohms

Max Discharge Current (7 Min.) 36.0 amperes

Max Short-Duration Discharge Current (10 Sec.) 120.0 amperes

Shelf Life (% of nominal capacity at 68 °F (20 °C))

1 Month	97%
3 Months	91%
6 Months	83%

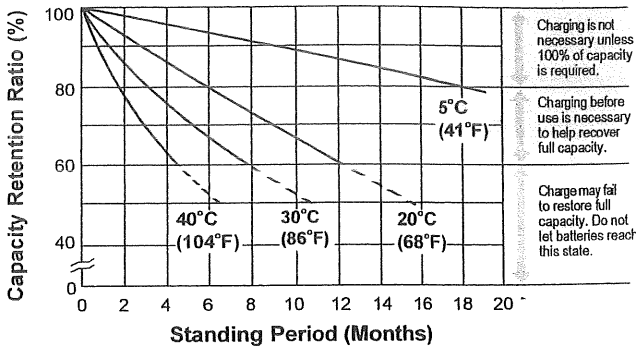
Operating Temperature Range

Charge ..	-4 °F (-20 °C) to 122 °F (50 °C)
Discharge	-40 °F (-40 °C) to 140 °F (60 °C)

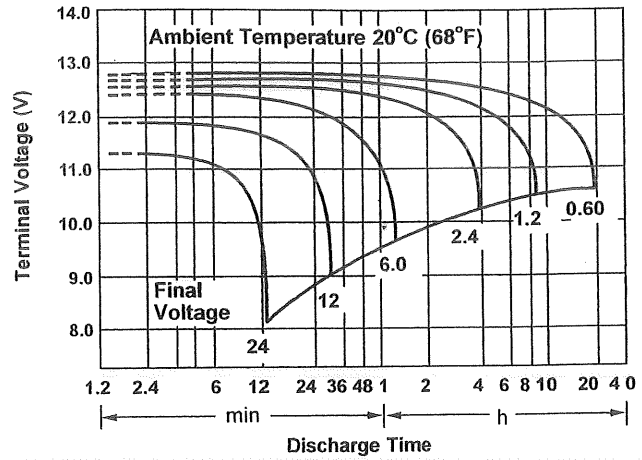
Case ABS Plastic

Power-Sonic Chargers PSC-122000A, 122000A-C

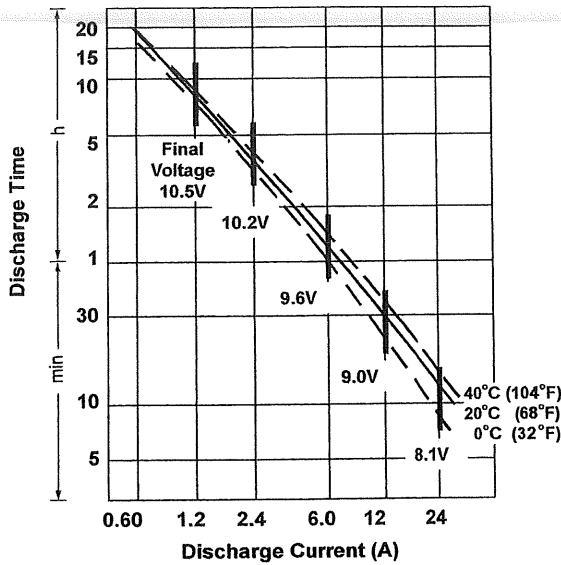
Shelf Life & Storage



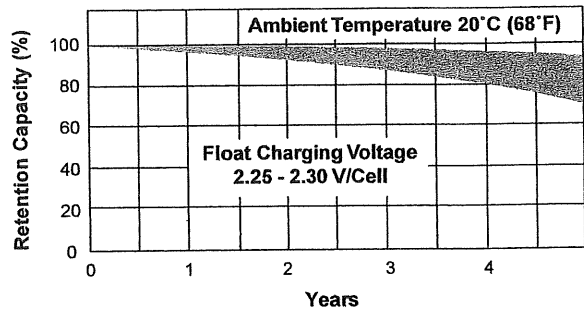
Discharge Characteristics



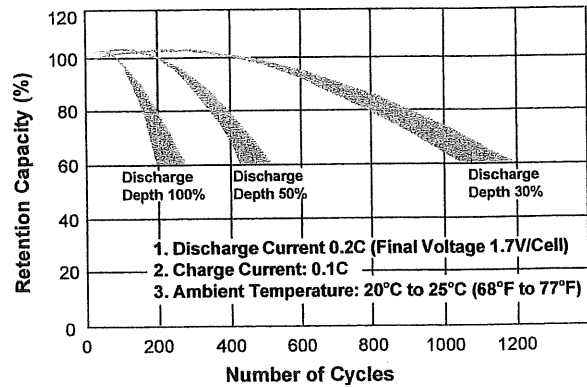
Discharge Time vs. Discharge Current



Life Characteristics in Stand-By Use



Life Characteristics in Cyclic Use



Charging

Cycle Applications: Limit initial current to 3.6A. Charge until battery voltage (under charge) reaches 14.4 to 14.7 volts at 68°F (20°C). Hold at 14.4 to 14.7 volts until current drops to under 120mA. Battery is fully charged under these conditions, and charger should be disconnected or switched to "float" voltage.

"Float" or "Stand-By" Service: Hold battery across constant voltage source of 13.5 to 13.8 volts continuously. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Note: Due to the self-discharge characteristics of this type of battery, it is imperative that they be charged within 6 months of storage, otherwise permanent loss of capacity might occur as a result of sulfation.

Chargers

Power-Sonic offers a wide range of chargers suitable for batteries up to 100AH. Please refer to the Charger Selection Guide in our specification sheets for "C-Series Switch Mode Chargers" and "Transformer Type A and F Series". Please contact our Technical department for advice if you have difficulty in locating suitable models.

Further Information

Please refer to our website www.power-sonic.com for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc..

Contact Information

DOMESTIC SALES

Tel: +1-619-661-2020
Fax: +1-619-661-3650
national-sales@power-sonic.com

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Fax: +1-619-661-3648
customer-service@power-sonic.com

TECHNICAL SUPPORT

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Fax: +1-619-661-3648
support@power-sonic.com

www.power-sonic.com

INTERNATIONAL SALES

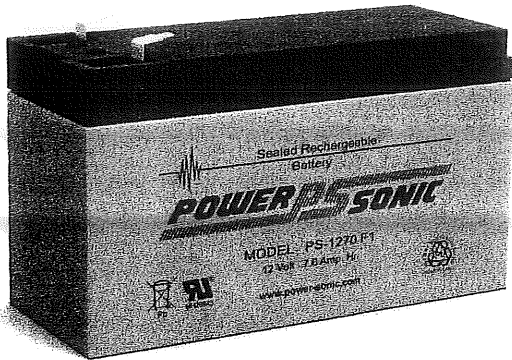
Tel: +1-650-364-5001
Fax: +1-650-366-3662
battery@power-sonic.com

POWER SONIC

PS-1270 12 Volt 7.0 AH

Rechargeable Sealed Lead Acid Battery

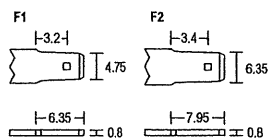
We've Got The Power.™



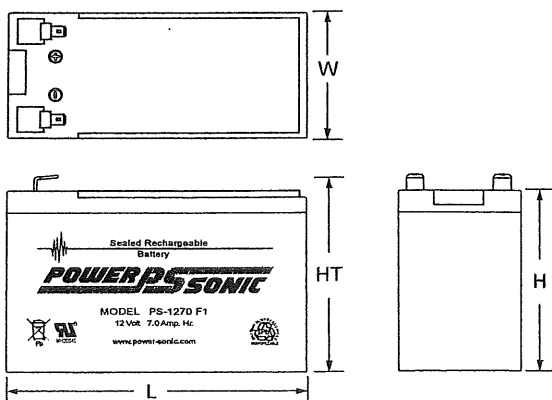
Terminals

(mm)

- F1 - Quick disconnect tabs, 0.187" x 0.032" - Mate with AMP. INC. FASTON "187" series — OR —
- F2 - Quick disconnect tabs, 0.250" x 0.032" - Mate with AMP. INC. FASTON "250" series



Physical Dimensions: in (mm)



L: 5.95 (151) W: 2.56 (65) H: 3.70 (94) HT: 3.86 (98)

Tolerances are +/- 0.04 in. (+/- 1mm) and +/- 0.08 in. (+/- 2mm) for height dimensions. All data subject to change without notice.

Features

- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, spill proof construction allows safe operation in any position
- Power/volume ratio yielding unrivaled energy density
- Rugged impact resistant ABS case and cover (UL94-HB)
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized under file number MH 20845

Performance Specifications

Nominal Voltage 12 volts (6 cells)

Nominal Capacity

20-hr. (350mA to 10.50 volts)	7.00 AH
10-hr. (650mA to 10.50 volts)	6.50 AH
5-hr. (1.2A to 10.20 volts)	6.00 AH
1-hr. (4.5A to 9.00 volts)	4.50 AH
15-min. (14A to 9.00 volts)	3.50 AH

Approximate Weight 4.80 lbs. (2.18 kg)

Energy Density (20-hr. rate) 1.49 W-h/in³ (90.95 W-h/l)

Specific Energy (20-hr. rate) 17.50 W-h/lb (38.58 W-h/kg)

Internal Resistance (approx.) 23 milliohms

Max Discharge Current (7 Min.) 21.0 amperes

Max Short-Duration Discharge Current (10 Sec.) 70.0 amperes

Shelf Life (% of nominal capacity at 68 °F (20 °C))

1 Month	97%
3 Months	91%
6 Months	83%

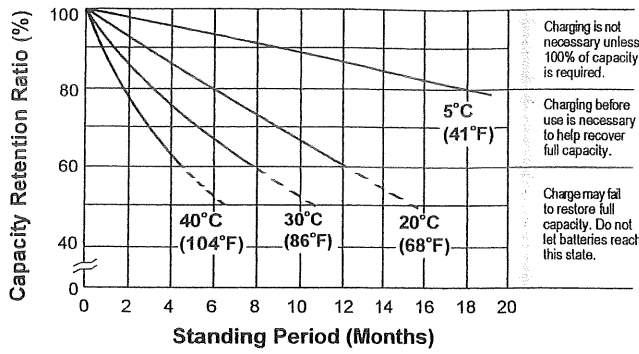
Operating Temperature Range

Charge	-4 °F (-20 °C) to 122 °F (50 °C)
Discharge	-40 °F (-40 °C) to 140 °F (60 °C)

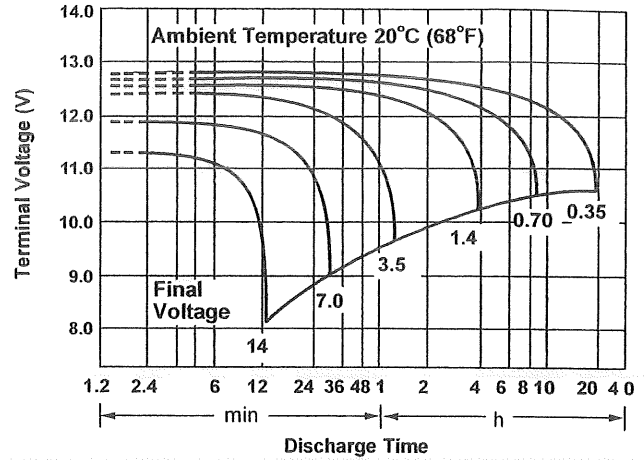
Case ABS Plastic

Power-Sonic Chargers PSC-12800A, 12800A-C

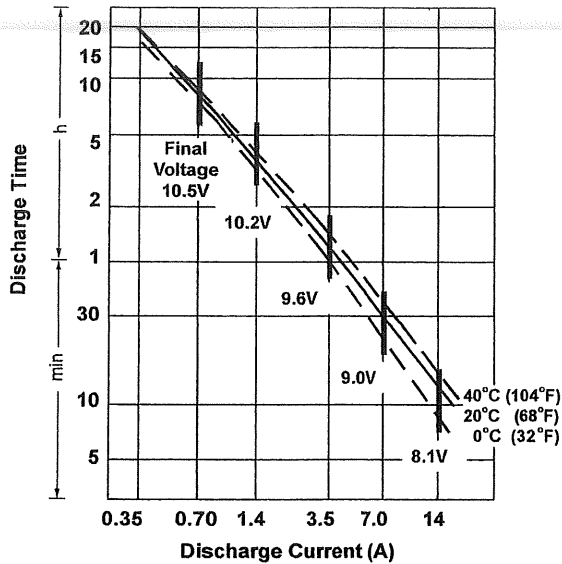
Shelf Life & Storage



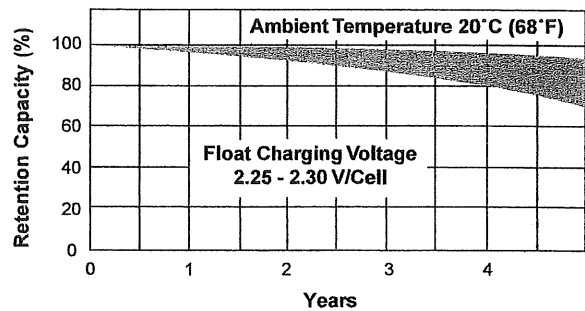
Discharge Characteristics



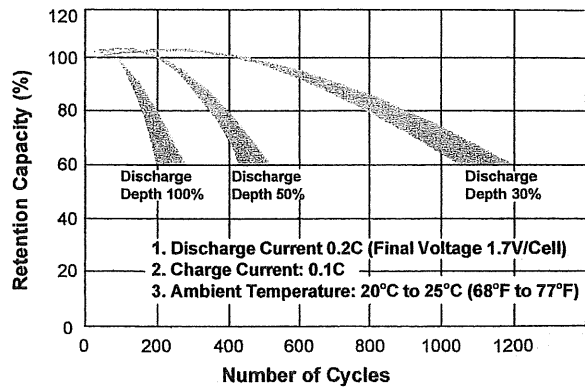
Discharge Time vs. Discharge Current



Life Characteristics in Stand-By Use



Life Characteristics in Cyclic Use



Charging

Cycle Applications: Limit initial current to 2.1A. Charge until battery voltage (under charge) reaches 14.4 to 14.7 volts at 68°F (20°C). Hold at 14.4 to 14.7 volts until current drops to under 70mA. Battery is fully charged under these conditions, and charger should be disconnected or switched to "float" voltage.

"Float" or "Stand-By" Service: Hold battery across constant voltage source of 13.5 to 13.8 volts continuously. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Note: Due to the self-discharge characteristics of this type of battery, it is imperative that they be charged within 6 months of storage, otherwise permanent loss of capacity might occur as a result of sulfation.

Chargers

Power-Sonic offers a wide range of chargers suitable for batteries up to 100AH. Please refer to the Charger Selection Guide in our specification sheets for "C-Series Switch Mode Chargers" and "Transformer Type A and F Series". Please contact our Technical department for advice if you have difficulty in locating suitable models.

Further Information

Please refer to our website www.power-sonic.com for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc..

Contact Information

www.power-sonic.com

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TECHNICAL SUPPORT
Tel: +1-619-661-2020
Fax: +1-619-661-3648
support@power-sonic.com

INTERNATIONAL SALES
Tel: +1-650-364-5001
Fax: +1-650-366-3662
battery@power-sonic.com



To Whom It May Concern:

Please update the submittals to reflect the change to a voice evacuation system which would include:

1. Changing all of the horn/strobes to speaker/strobes part # SE-MC-R (500-636025).
2. Add a voice evacuation panel with the following parts:
 - a. EVAX 100/4Z voice evacuation panel
 - b. EVAX-100E back up amplifier
 - c. EVX-BA100 back up amplifier card
 - d. EVX-CAB-2 cabinet
 - e. EVAX-T17528 Transformer
 - f. Two Batteries 12 volt/7amp/hour

Please note attached cut sheets.

Features:

- Clean Dead-front Construction
- Digitally Recorded Automatic Evacuation Message (Up to 4 Minutes of Message Capacity)
- 100 Watt High Efficiency Digital Amplifier
- 25 or 70 VRMS Field Selectable
- 120 VAC Power Supply and Battery Charger
- Live Microphone Override of Message and Tone
- Analog Addressable Compatible
- High Reliability, No Maintenance, Fully Supervised
- Easy Installation and Operation
- Natural Sound Recordings
- Built in Alarm and Alert Signals
- Up to 4 Minute Message Capacity
- Works with 12VDC or 24VDC Fire Alarm Panels
- Works with Analog/Addressable and Microprocessor based Fire Alarm Panels.
- 3 Minute Message Restart on Microphone Key
- 24 Hour Backup with two 12V 7AHr Batteries
- Made in the USA.

Description:

The EVAX 100 operates with any Fire Alarm Control Panel (FACP), and provides 100 Watts of speaker power..

The EVAX 100 includes all necessary features to provide an effective voice evacuation system. With the addition of zone splitters, remote microphone panels, and expander modules, the EVAX 100 can be custom configured to satisfy the needs of most applications.

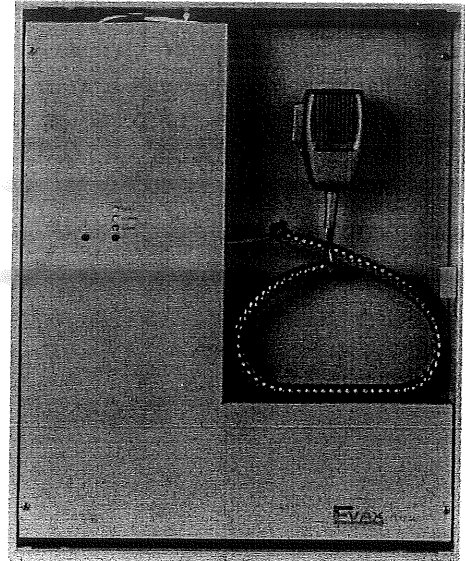
The EVAX 100 has its own power supply and battery charger. Panel must be wired with 120 VAC and standby batteries connected.

A digital message repeater (DMR) is built into the EVAX 100. The selection of alarm tone and automatic message repeats, as well as the 6 Hour delay of the AC power failure reporting feature are all field configurable.

The paging microphone is an integral component. Removal of the microphone from the panel will cause a "Trouble" condition which will be reported locally, as well as through the FACP.

The EVAX 100 is housed in an attractive surface or semi-flush mounted backbox, with a hinged and key locked door.

EVAX 100 Voice Evacuation System



EVAX 100 shown with Keylocked Door Removed

Listings:



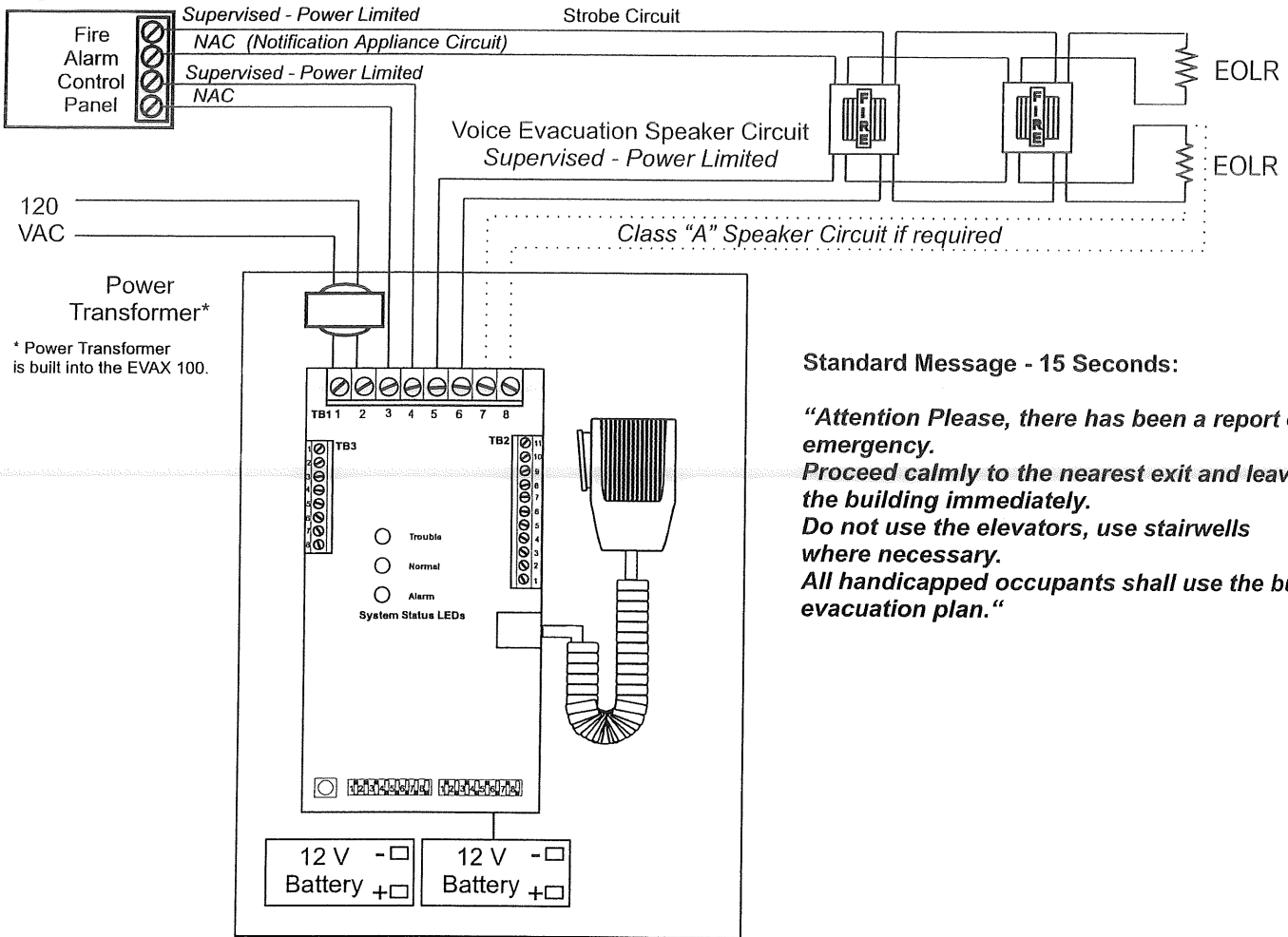
MEA
Pending



Ordering Information:

Description	Model Number
100 W Voice Evacuation System, with: Power Supply / Battery Charger Paging Microphone Digital Message Repeater	EVAX 100
100 W Voice Evacuation System, with: 4 Speaker Zones	EVAX 100/4Z
100 W Voice Evacuation System, with: 8 Speaker Zones	EVAX 100/8Z

Typical Installation:



Standard Message - 15 Seconds:

*"Attention Please, there has been a report of an emergency.
Proceed calmly to the nearest exit and leave the building immediately.
Do not use the elevators, use stairwells where necessary.
All handicapped occupants shall use the building evacuation plan."*

Technical Characteristics:

Primary Power:	120VAC @ 2A
24 VDC Battery Power:	0.180A Standby 2.5A Alarm
Output:	100 Watts @ 25/70 VRMS Tone and Voice
Backbox Dim:	14.5 x 18 x 4" w-h-d
Color:	Charcoal Grey-std Red-optionl

Engineers Specifications:

The voice evacuation system shall be Evax Systems Series EVAX 100 or approved equal.

The voice evacuation system shall provide 100 watts signal power **and** 100 watts voice power, and shall be UL listed. All speaker circuits shall be field selectable for 25 or 70 Vrms operation and shall be power limited.

The voice evacuation system shall be micro-processor based, and shall contain an integral microphone,

Specifications (continued)

100 Watt audio amplifier, tone generator, digital message repeater, 120VAC power supply and battery charger.

The voice evacuation message/signal shall be broadcast until the Fire Alarm Control Panel (FACP) is reset, or until fire emergency personnel interrupt the broadcast with a manual page. On reset system shall automatically return to standby (normal operating) condition.

A secondary message shall be provided which can be triggered by the closure of a contact from either the FACP or from any normally open contact device.

Remote paging microphone(s) will be supported by the system through a supervised circuit. Remote microphone(s) may be mounted up to 5000 feet away from the voice evacuation panel.

Products:

- Remote Serial Interface - EVX-RSI (Message Expander)
- Back Up Amplifier Card - EVX-BA

Remote Serial Interface:

Features:

- Allows use of any N.O. contact to control voice messaging system
- Connects to EVAX25/50/100 via plug-in connector.
- Needs no external power supply.
- Controls message, tones and sequence of operation.
- Allows integration of voice messaging system with ancillary equipment
- Automatic addressing, no DIP switches to set.
- Terminal Block provided for connection or field wires.

The Model Number EV-RSI is designed to facilitate access to the RS-232 input capabilities of the EVAX 25/50/100 Series. Simple contact closures, provided by an auxiliary control, can select one of many custom messages and/or tones available in the voice messaging system.

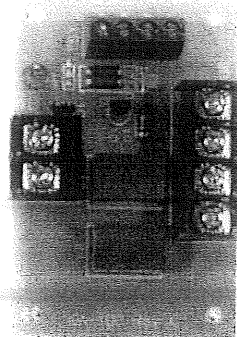
This additional control interface will allow the EVAX 25/50/100 series to operate as a multi-message, complex sequence voice messaging system. Multiple messages and alternate tones can be easily accessed, and special operational sequences can be controlled through the EV-RSI.

The EV-RSI mounts in the voice messaging system backbox, and connects to the EVAX 25/50/100 series using a simple plug-in connector. Each EV-RSI has 8 inputs for the connection of auxiliary normally-open contacts. Multiple EV-RSI units may be connected to provide up to 64 separate control points*.

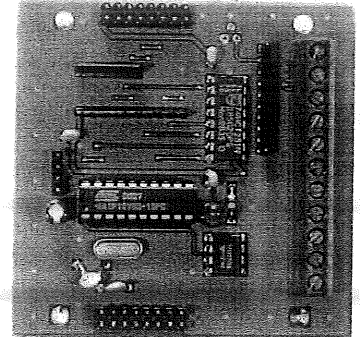
*Number of messages, sequence of operations and number of control points are all affected by the size of the program required. Always consult with the factory with your specific needs.

NOTE: The Model Number EVX-RSI (Remote Serial Interface) is *not* UL Listed for Fire Alarm applications. This product must only be used for non-Fire Alarm Non Life Safety (Industrial Signaling) applications. Fire Signal must override auxiliary messages.

System Accessories



EVX-BA100
Backup Amplifier
Switching Card



EVX-RSI
Remote Serial
Interface

Operation:

Customer provided normally open contacts will cause an individual message or tone to sound.

Message/tones are prioritized by position. Contact 1 on RSI 1 will have highest priority. Contact 8 on the last RSI will be the lowest priority. As long as the contact remains closed, the associated message will sound. If a higher priority message is selected while another is playing, the first will finish its cycle and then the second message will sound.

Momentary contacts will generate a single cycle of the selected message/tone.

An "Active" LED is provided on the EVX-RSI which will illuminate whenever any of the associated switches close.

Up to 8 EVX-RSI modules may be connected to an EVAX 25, EVAX 50 or EVAX 100 Series module.

Ordering Information:

Description	Model Number
Remote Serial Interface - Controls up to 64 Messages via serial data interface with host equipment panel.	EVX-RSI
Backup Amplifier Switching Card - Monitors the primary amp and switches to standby amp upon failure.	EVX-BA100

EVX-BA

Backup Amplifier
Switching Card

Features:

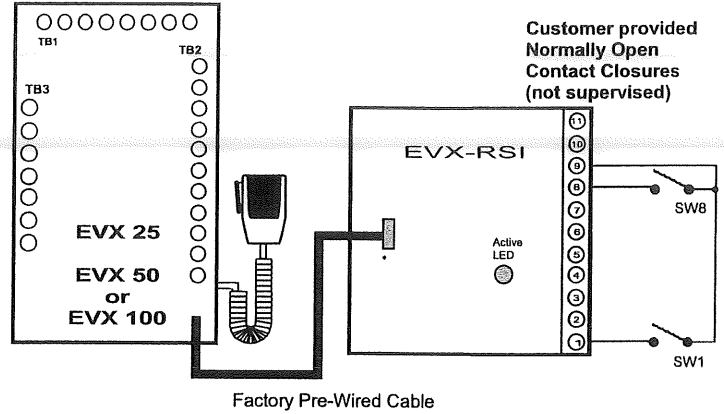
- Automatically monitors primary amplifier and switches to backup amplifier upon failure.
- Supervised through FACP
- One amplifier may backup several primary amplifiers
- Allows for fully redundant voice evacuation systems.

The EVX-BA allows the system designer to incorporate backup audio amplifiers in their design. The EVX-BA continually monitors the primary amplifier, and in the unlikely event that an amplifier failure occurs, senses that failure, and automatically connects a backup amplifier into service.

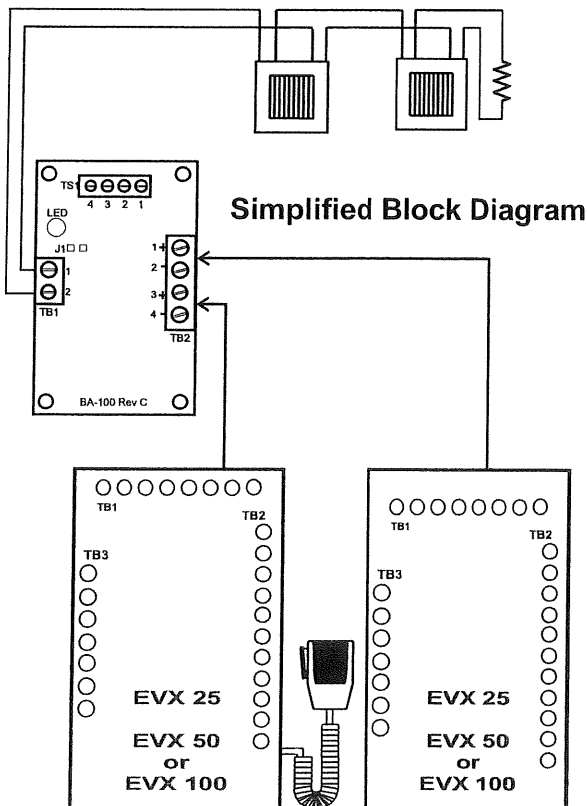
The EVX-BA can be applied to provide one backup amplifier for each primary amplifier, or to provide one backup amplifier to serve as backup for any number of primary amplifiers.

When a fully redundant voice evacuation system is required, the backup amplifier will be configured to include its own microphone and digital message repeater.

Typical Application of the EVX-RSI



Typical Application of the EVX-BA



NOTE: The Model Number EVX-RSI (Remote Serial Interface) is not UL Listed for Fire Alarm applications. This product can only be used for non-Fire Alarm Non Life Safety (Industrial Signaling) applications.

Technical Characteristics:

Model	Input Voltage	Standby	Active
EVX-BA100	24 VDC	0.04 A	0.01 A
EVX-RSI	24 VDC	0.005 A	0.01 A

Specifications are subject to change without notice. Specifications are provided for information only and no responsibility is assumed by Evax Systems, Inc. For their use.

SE Speaker and Speaker Strobes

Features

- UL listed. ULC, CSFM, and FM pending.
- ADA/NFPA/ANSI compliant
- Complies with OSHA 29 Part 1910.165
- Wall mount speaker strobe models with field selectable candela settings of 15/30/75/110cd or 135/185cd
- Ceiling mount strobe models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd
- Field selectable taps for 25 or 70 VRMS operation from 1/8 watt up to 2 watts
- High efficiency design for maximum output at minimum wattage across a frequency range of 400 to 4000 HZ
- Strobes can be synchronized using the Siemens 5406B sync modules, MPC-6000 panel, MPC-7000 panel, or RSE-300 power supply with built-in sync protocol
- Mount to 4" square x 2-1/8" deep backbox with no extension ring required
- Snap on grille cover with no visible mounting screws
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires
- Optional Extender (SPEXT) is for mounting to 4" backboxes with no extension ring.

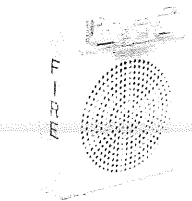
Description

The Siemens Series SE Speakers and Speaker Strobes feature high efficiency sound output, with dual voltage (25/70 VRMS) capability and field selectable taps from 1/8 to 2 watts. They are designed to provide a sleek, aesthetic appearance for emergency voice/alarm communications systems. All Series SE wall mount models mount to standard 4" x 2-1/8" electrical boxes (with no extension ring required) and incorporate a speaker mounting plate for faster installation. The grille cover snaps on so no mounting screws are visible. Attractive surface boxes are also available for surface installations. These SE Multi-Candela ceiling appliances are part of the new family of ceiling mount strobe appliances that will also be available on strobes, horns, and horn/strobes. Optional Extender (SPEXT) is for mounting to 4" backboxes with no extension ring.

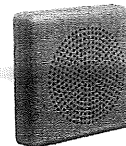
The Series SE Wall Mount Speaker Strobe models use Siemens low current draw strobes for wall mounted applications. Strobe options include MC multi-candela strobes with field selectable candela settings of 15/30/75/110 cd or high intensity HMC strobes with field selectable settings of 135/185 candela.

The Series SE Ceiling Mount Speaker Strobe models are available in Siemens MC-C multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity HMC-C strobe with field selectable settings of 115/177cd.

Series SE Speakers and Speaker Strobes provide high



**SE-MC-W
Speaker Strobe**



**SE-R
Speaker**

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

The low profile ceiling design incorporates a speaker mounting plate for faster and easier installation. Each model has a built-in level adjustment feature and snap-on cover with no visible mounting screws.

The strobe portion of all Series SE Speaker Strobes may be synchronized when used in conjunction with the Siemens 5406B sync modules, MPC-6000 panel, MPC-7000 panel, or RSE-300 power supply with built-in sync protocol. Siemens synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.

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

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

Engineering Specifications

The speaker appliances shall be Siemens Series SE

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

All speakers shall be designed for a field selectable input of either 25 or 70 VRMS, with selectable power taps from 1/8 watt to 2 watts. All wall mount models shall have listed sound output of up to 89 dBA at 10 feet and a listed frequency response of 400 to 4000 Hz. All ceiling mount models shall have listed sound output of up to 87 dB at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall incorporate a sealed back construction. All inputs shall employ terminals that accept #12 to #18 AWG wire sizes. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mounting. Where Multi-Candela Speaker Strobes are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant.

When synchronization is required, the strobe portion of the appliance shall be compatible with the Siemens

5406B sync modules, MPC-6000 panel, MPC-7000 panel, or RSE-300 power supply with built-in sync protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.

The wall mount speaker and speaker strobe appliances shall be designed for indoor flush mounting to 4" x 2-1/8" electrical boxes without need for an extension ring or surface mounting. The ceiling mount speaker strobe appliances shall be designed for indoor flush mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover. The finish of the Series SE speakers and speakers strobes shall be white or red. All notification appliances shall be listed for "Special Applications".

- Strobes are designed to flash at 1 flash per second. Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.

Technical Information

For complete technical information, please consult the relevant installation sheets as well as the Siemens Compatibility Guide.

Mounting Requirements / US Ordering Information / Approvals

Model	Order Code	Wall Mount	Ceiling Mount	Mounting Options*	Agency Approvals			
					UL	ULC	CSFM	FM
SE-R	500-636029	X	-	E,O,P,Q,R,U,Y,AA	X	#	#	#
SE-W	500-636030	X	-	E,O,P,Q,R,U,Y,AA	X	#	#	#
SE-MC-R	500-636025	X	-	E,Q,U,BB	X	#	#	#
SE-MC-W	500-636026	X	-	E,Q,U,BB	X	#	#	#
SE-HMC-R	500-636027	X	-	E,Q,U,BB	X	#	#	#
SE-HMC-W	500-636028	X	-	E,Q,U,BB	X	#	#	#
SE-CR	500-636035	-	X	Q,U	X	#	#	#
SE-CW	500-636036	-	X	Q,U	X	#	#	#
SE-MC-CR	500-636031	-	X	Q,U,V	X	#	#	#
SE-MC-CW	500-636032	-	X	Q,U,V	X	#	#	#
SE-HMC-CW	500-636034	-	X	Q,U,V	X	#	#	#
SE-HMC-CR	500-636033	-	X	Q,U,V	X	#	#	#
SPEXT-R**	500-636116				X	#	#	#
SPEXT-W**	500-636117				X	#	#	#

X = listed/approved
 # = pending
 * = Refer to Data Sheet #9675 for mounting options.
 **SPEXT is an extender ring that mounts behind the speaker to permit mounting to a 4" square x 2 1/8" deep electrical box without need for an extension ring on the box.

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



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Fire Alarm/Control Cable™ Type MC – FPLP

Fully Plenum Rated Technical Specifications

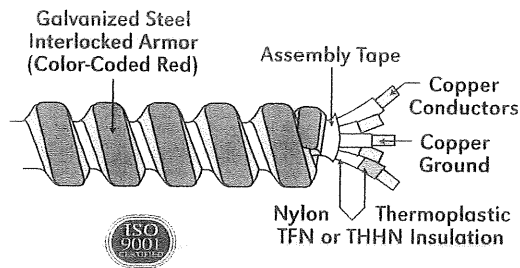


Specification Description

Specification	Fire Alarm/Control Cable
Armor	Galvanized Interlocking Steel Strip (red-striped)
Conductors	Solid Copper
Conductor Insulation	TFN 18 & 16 AWG and/or THHN 14 & 12 AWG
Assembly	Polyester Assembly Tape; Twisted Shielded; Laminated Aluminum/Mylar™ Shield with Tinned Copper drain wire
Maximum Temperature Rating	FPLP: 105°C (dry) MC: 90°C (dry)
Grounding	One or more grounding conductors may be bare or insulated green, see chart below
Neutral Conductor	White
Maximum Voltage Rating	300V (FPLP) 600V (MC)

References & Ratings

- U.L. 66, 83, 1424, 1479, 1569, 1581, File Reference E80042
- NEC 300.22(C), 392, 330, 430.2, 518, 530, 645, 725, 760, 760.71(D)
- Federal Specification A-A-59544 (formerly J-C-30B)
- Cable Tray installations per NEC
- 1, 2 and 3-hour Through-Penetration Fire Wall Rated File R-14929
- NFPA 262 (formerly U.L. 910) Plenum Rated - Type FPLP



For the electrical properties of Red Fire Alarm/Control Cable and twists per foot information, see page 39.

Product Codes, Trade Sizes, Conductors, Packaging & Weights

Product Code	Product Code			Trade Size	Grounding Conductor AWG	Approx. Weight/1000 Feet (lbs.)	Armor Minimum O.D. (inches)
	250' Coil	500' Reel	750' Reel				
Solid TFN							
1801R42-00	1801R45-00	1801R47-00	1801R60-00	18-2 Solid (black, white)	18 bare	115	0.410
1803R42-00	1803R45-00	1803R47-00	1803R60-00	18-4 Solid (black, white, red, blue)	18 bare	130	0.430
1805R42-00	1805R45-00	1805R47-00	1805R60-00	18-6 Solid (black, white, red, blue, yellow, orange)	18 bare	170	0.490
1807R42-00	1807R45-00	1807R47-00	1807R60-00	18-8 Solid (black, white, red, blue, yellow, orange, brown, purple)	18 bare	190	0.510
1810R42-00	1810R45-00	1810R47-00	1810R60-00	16-2 Solid (black, white)	16 bare	130	0.420
1813R42-00	1813R45-00	1813R47-00	1813R60-00	16-4 Solid (black, white, red, blue)	16 bare	155	0.440
1815R42-00	1815R45-00	1815R47-00	1815R60-00	16-6 Solid (black, white, red, blue, yellow, orange)	16 bare	205	0.510
1817R42-00	1817R45-00	1817R47-00	—	16-8 Solid (black, white, red, blue, yellow, orange, brown, purple)	16 bare	230	0.520
Solid THHN							
1834R42-00	1834R45-00	1834R47-00	1834R60-00	14-2 Solid (black, white)	14 (solid green)	175	0.470
1837R42-00	1837R45-00	1837R47-00	1837R60-00	14-4 Solid (black, white, red, blue)	14 (solid green)	230	0.510
1823R42-00	1823R45-00	—	—	14-6 Solid (black, white, red, blue, yellow, orange)	14 (solid green)	250	0.520
1824R42-00	1824R45-00	—	—	14-8 Solid (black, white, red, blue, yellow, orange, brown, purple)	14 (solid green)	325	0.585
1835R42-00	1835R45-00	1835R47-00	1835R60-00	12-2 Solid (black, white)	12 (solid green)	215	0.495
1840R42-00	1840R45-00	—	1840R60-00	12-4 Solid (black, white, red, blue)	12 (solid green)	295	0.565
Twisted Shielded Pairs							
1850R42-00	1850R45-00	1850R47-00	1850R60-00	18-2 Solid (1 pair) (black, white)	18 tinned†	120	0.420
1827R42-00	1827R45-00	1827R47-00	1827R60-00	18-2 Solid (1 pair) (black, red) & 14-2 Solid (1 pair) (black, white)	18 & 14 tinned†	290	0.640
1860R42-00	1860R45-00	1860R47-00	1860R60-00	16-2 Solid (1 pair) (black, white)	16 tinned†	135	0.430
1843R42-00	1843R45-00	1843R47-00	1843R60-00	16-4 Solid (2 pair) (black, white) (red, blue)	2-16 tinned†	160	0.450
1895R42-06	1895R45-06	1895R47-06	1895R60-06	16-2 Solid (1 pair) (black, red)	16 tinned†, & 16 (solid green)	190	0.500
4901R42-00	4901R45-00	4901R47-00	4901R60-00	16-2 Solid (1 pair) (black, white) & 12-2 Solid (1 pair) (black, red)	16 tinned†, & 12 (solid green)	280	0.585
1828R42-00	1828R45-00	1828R47-00	1828R60-00	14-2 Solid (1 pair) (black, white)	16 tinned†, & 14 (solid green)	170	0.470
1881R42-00	1881R45-00	—	—	14-4 Solid (2 pair) (black, red) (blue, white)	2-16 tinned†, & 14 (solid green)	230	0.565
Specialty Colors							
1834R42-05	1834R45-05	1834R47-05	1834R60-05	14-2 Solid (blue, white)	14 (solid green)	175	0.470
1834R42-06	1834R45-06	1834R47-06	1834R60-06	14-2 Solid (black, red)	14 (solid green)	175	0.470
1834R42-23	1834R45-23	1834R47-23	1834R60-23	14-2 Solid (orange, yellow)	14 (solid green)	175	0.470
1834R42-37	1834R45-37	1834R47-37	1834R60-37	14-2 Solid (brown, purple)	14 (solid green)	175	0.470
1834R42-44	1834R45-44	1834R47-44	1834R60-44	14-2 Solid (gray, gray*)	14 (solid green)	175	0.470
1837R42-05	1837R45-05	1837R47-05	1837R60-05	14-4 Solid (blue, blue*, white, white*)	14 (solid green)	230	0.510
1837R42-06	1837R45-06	1837R47-06	1837R60-06	14-4 Solid (black, black*, red, red*)	14 (solid green)	230	0.510

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

* with silver stripe

† Tinned copper drain/grounding conductor.