CITY OF PORTLAND
BUILDING PERMIT

This is to certify that

HAMMOND APARTMENTS LLC /Cunningham Security
Systems

PERMIT ID: 2013-00195

Located at .

56 HAMMOND ST

CBL: 010 G002001

has permission to **install sprinkler supervisory system in building A**

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

| Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise clsoed-in. 48 HOUR NOTICE IS REQUIRED. | A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be procured prior to occupancy. |

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
THERE IS A PENALTY FOR REMOVING THIS CARD

BUILDING PERMIT INSPECTION PROCEDURES
Please call 874-8703 (ONLY)
or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**

- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**

- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

REQUIRED INSPECTIONS:

Final - Fire

Final - Electric

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

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

PERMIT ID: 2013-00195   **Located at:** 56 HAMMOND ST   **CBL:** 010 G002001

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

Permit No:	Date Applied For:	CBL:
2013-00195	01/29/2013	010 G002001

Location of Construction:	Owner Name:	Owner Address:	Phone:
56 HAMMOND ST	HAMMOND APARTMENTS LLC	PO BOX 1398	

Business Name:	Contractor Name:	Contractor Address:	Phone
	Cunningham Security Systems	10 Prince Point Road Yarmouth	(207) 846-3350

Lessee/Buyer's Name	Phone:	Permit Type:
		Fire Alarm System

Proposed Use:	Proposed Project Description:
Same: Three Family Dwelling Unit	install sprinkler supervisory system in building A

Dept:	Zoning	Status: Approved	Reviewer: Marge Schmuckal	Approval Date: 01/31/2013

Note:

Ok to Issue: ☑

Dept:	Fire	Status: Approved w/Conditions	Reviewer:	Approval Date:

Note: installation of sprinkler supervisory system with occupant notification.

Ok to Issue: ☐

1) Notice: The first scheduled final inspection fee is at no charge. Additional inspections shall be billed at $75 for each inspector.

2) All smoke detectors shall be photoelectric.

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

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

5) The fire alarm system shall have a new fire alarm inspection sticker.

6) The installation shall comply with the following:
City of Portland Chapter 10, Fire Prevention and Protection;
NFPA 1, Fire Code (2009 edition), as amended by City Code;
NFPA 101, Life Safety Code (2009 edition), as amended by City Code;
City of Portland Fire Department Rules and Regulations;
NFPA 72, National Fire Alarm and Signaling Code (2010 edition), as amended by Fire Department Rules and Regulations; and
NFPA 70, National Electrical Code (2011 edition) as amended by the State of Maine

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

8) A 4100 series Knox Box is required.

9) A master box connection is not authorized for this building.

10 The fire alarm technician shall be present for the fire inspection. System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

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

12 Fire protection systems 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.

13 Through-penetrations and membrane penetrations in fire walls, fire barrier walls, and fire resistance rated horizontal assemblies shall be protected by firestop systems or devices in conformance with NFPA 101:8.3.5 (ASTM E 814 or ANSI/UL 1479). Providing firestop labels at each firestop system or device and an onsite manual containing the detail for each firestop system or device used for the project will streamline final inspection approvals.

City of Portland, Maine - Building or Use Permit Application

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

Permit No:	Issue Date:	CBL:
2013-00195		010 G002001

Location of Construction:	Owner Name:	Owner Address:	Phone:
56 HAMMOND ST	HAMMOND APARTMENTS LLC	PO BOX 1398 PORTLAND, ME 04104	

Business Name:	Contractor Name:	Contractor Address:	Phone
	Cunningham Security Systems	10 Prince Point Road Yarmouth ME 04096	(207) 846-3350

Lessee/Buyer's Name	Phone:	Permit Type:	Zone:
		Fire Alarm System	R6

Past Use:	Proposed Use:	Permit Fee:	Cost of Work:	CEO District:
Three Family Dwelling Unit (under construction)	Same: Three Family Dwelling Unit	$40.00	$2,000.00	1

FIRE DEPT: ☑ Approved ☐ Denied ☐ N/A

2/27/13

Signature: BJCunball. SB

INSPECTION:
Use Group: Type:

Signature:

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature: Date:

Proposed Project Description:

Building A - Install fire alarm

Permit Taken By:	Date Applied For:
bjs	01/29/2013

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	Zoning Appeal	Historic Preservation
☐ Shoreland	☐ Variance	☑ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☐ Site Plan	☐ Approved	☐ Approved w/Conditions
Maj ☐ Minor ☐ MM ☐	☐ Denied	☐ Denied
ok Date: 1/2/13	Date:	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

Fire Alarm Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: __56 Hammond Street - A__ CBL: __10-G-2-1__

Exact location: (within structure) __Basement__

Type of occupancy(s) (NFPA & ICC): __Multi-family__

Building owner: __Hammond Apartments LLC__

System Designer (point of contact): ~~Must be~~ __Unicad__

Designer phone: __801-264-9002__ E-mail: __wayne@unicad.net__

Installing contractor: __BH Milliken/Cunningham Security__ Certificate of Fitness No: __1004__

Contractor phone: __207-846-3350__ E-mail: __mmajor@cunninghamsecurity.c__

This is a new application: YES ⦿ NO ◯ New AES Master Box: YES ◯ NO ◯
(Include Master Box approval form)

Amendment to an existing permit: YES ◯ NO ◯ Permit no: _____

The following documents shall be provided with this application:

☑ Floor plans   ☑ Scope of Work

☑ Wiring diagram   ☑ 11 ½ x 17s

☑ Annunciator details   ☑ pdf copy (may be e-mailed)

☑ Input/ Output Matrix   ☐ Designer qualifications

☑ Equipment data sheets   ☑ Battery/ voltage drop calcs

☑ Electrical Permit Pulled (check alarm/com)

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

COST OF WORK: __$2,000__

PERMIT FEE: __40.00__
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

RECEIVED

JAN 2 9 2013

Dept. of Building Inspections
City of Portland Maine

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. **Submit all plans in electronic PDF in addition to readable 11 ½ x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.**

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the *City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property*, available at www.portlandmaine.gov/fire .

Applicant signature: _____ Date: __1-23-13__
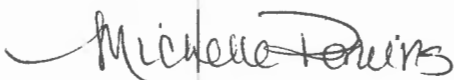
1/23/12

Lieutenant Benjamin Wallace, Jr.
Portland Fire Department
380 Congress Street
Portland Maine 04101

Please find attached a permit application for 56 Hammond Street. There are two newly constructed 3-unit buildings on one lot. We are referring to them as building 1 and building 2, each building will have its own separately monitored sprinkler supervisory and occupant notification system. The system was designed by Unicad, wired by BH Milliken and certified by Cunningham Security Systems.

Thank you,

Michelle Perkins, Operations Manager

MS-9050UD(E)
Fire Alarm Control Panel with DACT

@ **Fire·Lite·Alarms**
by Honeywell

General

The **Fire•Lite MS-9050UD(E)** is a Fire Alarm Control Panel (FACP) and Digital Alarm Communicator/Transmitter (DACT) combined into one circuit board. This compact, intelligent addressable control panel supports up to 50 addressable devices of any type of detectors and modules. With an extensive list of powerful features, the MS-9050UD programs just like Fire•Lite's larger products, yet fits into applications previously served only by conventional panels.

The MS-9050UD's integral DACT transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote and local programming of the control panel using the PK-CD Upload/Download utility. In addition, the control panel may be programmed or interrogated off-site via the public switched telephone network. Any personal computer with Windows™ 95 or greater, and compatible modem with a speed of 14.4 kbps or faster and Fire•Lite Upload/Download software kit PK-CD, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walk-test data, current status and system voltages.

The power supply and all electronics are contained on a single circuit board supported on a new quick install chassis and housed in a metal cabinet. Available accessories include local and remote upload/download software, remote annunciators, and reverse polarity/city box transmitter. (4XTMF)

New options include a UL listed printer, PRN-6F and the new IPDACT Internet Monitoring module. The FireWatch Series internet monitoring modules IPDACT-2 and IPDACT-2UD permit monitoring of alarm signals over the Internet, saving the monthly cost of two telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line.

NOTE: Unless otherwise specified, the term MS-9050UD is used in this data sheet to refer to both the MS-9050UD and the MS-9050UDE FACPs. For MS-9050UDC, refer to DF-60445.

Features

- Listed to UL Standard 864, 9th edition.
- Auto-program (learn mode) reduces installation time. Reports two devices set to the same address.
- On-board DACT.
- Two independently programmable Style Z (Class A) or Style Y (Class B) NAC circuits.
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules.
- Two programmable relays and one fixed trouble relay.
- Built-in Programmer.
- Telephone Line Active LEDs.
- EIA-232 PC interface.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- History file with 500 event capacity.
- Automatic detector sensitivity testing (NFPA 72 compliant).
- Automatic device type-code verification.
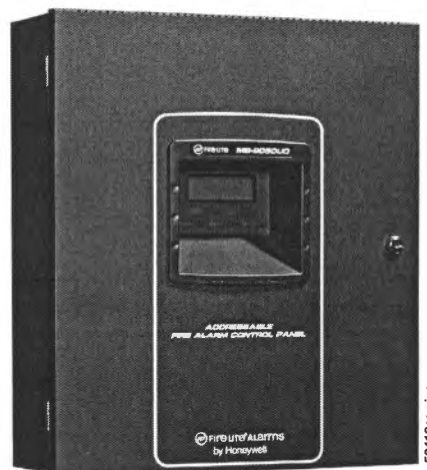
- Point trouble identification.
- Waterflow selection per module point.
- Alarm verification selection per detector point.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- One-person audible or silent walk test with walk-test log and printout.
- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant).
- Up to eight ANN-BUS annunciators
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or remote annunciator.
- Upload/Download (local or remote) of program and data via integral DACT.

SLC COMMUNICATION LOOP

- Single addressable SLC loop which meets NFPA Style 4, 6 and 7 requirements.
- 50 addressable device capacity (any combination of addressable detectors and modules).
- Compatible with Fire•Lite's addressable devices (refer to *SLC Wiring Manual*).

NOTIFICATION APPLIANCE CIRCUITS (NACS)

- Two independently programmable output circuits. Circuits can be configured for the following outputs:
  - **Style Y** (Class B)
  - **Style Z** (Class A)
  - **Door Holder Service** (cannot be used for notification appliances)
  - **Aux Power Source** (cannot be used for notification appliances)
- Silence Inhibit and Autosilence timer options.
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability.
- Selectable strobe synchronization per NAC.
- 2.5 A total power for NACs.

NOTE: Maximum or total 24VDC system power shared between all NAC circuits and the ANN-BUS is 2.7 A.

MS-9050UD
Fire Alarm
Control Panel

SLC Loop

ANN-80

SD355
Photo Detector

Printer
Gateway
ANN-S/PG

AD355
Adapt Detector

Graphic LED Module
ANN-I/O

H355/H355R/H355HT
Heat Detector

Relay Module
ANN-RLY

P2R
Strobe

MDF-300
Dual Monitor Module

P2R
Strobe

Power Supply
FCPS-24FS6
FCPS-24FS8

SD355T
Photo/Thermal

P2R
Strobe

MMF-300
Monitor Module

Multi-Modules
• CRF-300-6 Six-Relay Control Module
• CMF-300-6 Six-Circuit Supervised Control Module
• MMF-302-6 Six-Zone Interface Module
• MMF-300-10 Ten-Input Monitor Module

MMF-302
2-Wire Detector
Monitor Module

D355PL
Duct Detector

Beam Detector
BEAM-335/(S)

BG-12LX Addressable
Manual Pull Station

MS-9050UD

ADDRESSABLE FIRE ALARM CONTROL PANEL

PROGRAMMING AND SOFTWARE

- Autoprogram (learn mode) reduces installation time.
- Custom English labels (per point) may be manually entered or selected from an internal library file.
- Two programmable Form-C relay outputs.
- 20 software zones.
- Continuous fire protection during online programming at the front panel.
- Program Check automatically catches common errors not linked to any zone or input point.
- **OFFLINE PROGRAMMING:** Create the entire program in your office using a Windows®-based software package(order programming kit PK-CD, containing PK-Plus, separately). Upload/download system programming locally.

User interface

LED INDICATORS

- AC Power (green)
- Fire Alarm (red)
- Supervisory (yellow)
- Trouble (yellow)
- Alarm Silenced signals (yellow)

KEYPAD

- 16 key alpha-numeric pad
- Acknowledge/Step
- Alarm Silenced
- Drill (Manual Evacuate)
- Reset (lamp test)

Product Line Information

MS-9050UD(E): Combination DACT/Fire Alarm Control Panel with one SLC loop. Includes main circuit board with display, chassis with transformer, backbox with door, plastic bag containing screws, cables, key, etc., manual. *(For MS-9050UDC, refer to DF-60445.)*

PK-CD: Contains PK-Plus programming software for Windows®-based PC computer (cable not included).

DP-51050: Optional dress panel for the MS-9050UD.

TR-CE: Optional trim ring for semi-flush mounting.

BB-2F: Optional cabinet for one or two modules.

BB-6F: Optional cabinet for up to six modules mounted on CHS-6 chassis.

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

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

CHS-6: Chassis, mounts up to six multi-modules in a BB-6F cabinet.

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

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

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

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

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

IPDACT, IPDACT-2/2UD Internet Monitoring Module: Mounts in bottom of enclosure with optional mounting kit (PN IPBRKT). Connects to primary and secondary DACT telephone output ports for internet communications over customer provided ether-

net internet connection. Requires compatible Teldat Visoralarm Central Station Receiver. Can use DHCP or static IP. *(See data sheet df-52424 for more information.)*

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

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

AC-TRMBLK: AC Terminal Block mounts to a metal bracket, in turn, mounts to the FACP chassis. Use AC-TRMBLK when wire nuts are not allowed for AC connections to the transformer.

OPTIONAL MODULES

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

ANN-SEC: Optional secondary ANN-BUS interface module. *Note: Used only with firmware 3.0 or higher.*

COMPATIBLE ANNUNCIATORS

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

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

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

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

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

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

ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

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

SD355R: Remote test capable addressable photoelectric smoke detector for use with DNR(W) duct detector housing.

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

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

H355HT: Fast-response, low-profile heat detector that activates at 190°F/88°C.

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

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D355PL: InnovairFlex low-flow non-relay duct-detector housing; includes SD355R.

DNR: InnovairFlex low-flow non-relay duct-detector housing. (Order SD355R separately.)

DNRW: InnovairFlex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355R separately.)

MMF-300: Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 4.0" (10.16 cm.) box. Includes plastic cover plate and end-of-line resistor. Module may be configured for either a Style B (Class B) or Style D (Class A) IDC.

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

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

MMF-302A: Similar to MMF-300A. Addressable Monitor Module for one zone of conventional two-wire detectors. Requires resettable 24 VDC power. Refer to the *Device Compatibility Document* for listed compatible devices and quantity limitation.

CMF-300: Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

CRF-300: Addressable relay module containing two isolated sets of Form-C contacts, which operate as a DPDT switch. Mounts directly to a 4.0" (10.16 cm.) box, surface mount using the SMB500.

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

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

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

MMF-300-10: Ten-input monitor module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

MMF-302-6: Six-zone interface module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

CMF-300-6: Six-circuit supervised control module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

CRF-300-6: Six-relay control module (Form-C relays). Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F cabinet.

NOTE: For more information on Compatible Addressable Devices for use with the MS-9050UD, see the following data sheets (document numbers): AD355 (DF-52386), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-52374), CMF/CRF Series (DF-52130), CP355 (DF-52383), H355 Series (DF-52385), I300 (DF-52389), MMF-300 Series/MDF-300 (DF-52121), MMF-300-10 (DF-52347), MMF-302-6 (DF-52356), SD355/SD355T (DF-52384).

ADDRESSABLE DEVICE ACCESSORIES

End-of-Line Resistor Assembly (R-47K and R-3.9K): The 47k ohm assembly supervises the MMF-300, MDF-300, MMF-301, and CMF-300 module circuits. The 3.9k ohm assembly supervises the MMF-302 module circuit. These resistors are included with each module.

Power Supervision Relay: Supervises the power to 4-wire smoke detectors and notification appliances.

Wiring Requirements

While shielded wire is not required, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Refer to the panel manual for wiring details.

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signalling Line Circuits.. 1
- Addressable device capacity 50
- Programmable software zones 20
- Annunciators... 8

Electrical Specifications

AC Power: MS-9050UD 120 VAC, 60 Hz, 3.0 A. MS-9050UDE: 240 VAC, 50 Hz, 1.5 A. Wire size: minimum 14 AWG (2.00 mm2) with 600 V insulation. Nonpower-limited, supervised.

Battery: Two 12 V 18 AH lead-acid batteries. Battery Charger Capacity: 7-18 AH (MS-9050UD cabinet holds maximum of two 18 AH batteries.)

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Terminal Block provides connections for two NACs, Style Y (Class B) or Style Z (Class A). Special Application power. Power-limited, supervised circuitry. Maximum signaling current per circuit: 2.5 A. End-of-Line Resistor: 4.7k ohm, ½ watt (P/N 71252 UL listed) for Style Y (Class B) NAC. Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.72" (1.82 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.25" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/60 – 80°F.

NFPA Standards

The MS-9050UD(E) complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTMF is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **OT, PSDN** (Other Technologies, Packet-switched Data Network)

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9050UD(E) control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S624
- **FM approved**
- **CSFM:** 7165-0075:210
- **MEA:** 442-06-E

NOTE: See DF-60445 for ULC-listed model.

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

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

Made in the U.S.A.

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

ANN-80

80-Character LCD
Serial Annunciator

🔘 Fire·Lite®Alarms
by Honeywell

General

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

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

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

Features

- Listed to UL Standard 864, 9th Edition.
- Backlit 80-character LCD display (20 characters x 4 lines).
- Mimics all display information from the host panel.
- Control switches for System Acknowledge, Signal Silence, Drill, and Reset.
- Control switches can be independently enabled or disabled at the FACP.
- Keyswitch enables/disables control switches and mechanically locks annunciator enclosure
- Keyswitch can be enabled or disabled at the FACP.
- Enclosure supervised for tamper.
- System status LEDs for AC Power, Alarm, Trouble, Supervisory, and Alarm Silence.
- Local sounder can be enabled or disabled at the FACP.
- ANN-80 connects to the ANN-BUS terminal on the FACP and requires minimal panel programming.
- Displays device type identifiers, individual point alarm, trouble, supervisory, zone, and custom alpha labels.
- Time-and date display field.
- Surface mount directly to wall or to single, double, or 4" square electrical box.
- Semi-flush mount to single, double, or 4" square electrical box. Use ANN-SB80KIT for angled view mounting.
- Can be remotely located up to 6,000 feet (1,800 m) from the panel.
- Backlight turns off during AC loss to conserve battery power but will turn back on if an alarm condition occurs.
- May be powered by 24 VDC from the host FACP or by remote power supply (requires 24 VDC).
- Up to eight ANN-80s can be connected on the ANN-BUS.

Controls and Indicators

- AC Power
- Alarm
- Trouble

- Supervisory
- Alarm Silenced

Specifications

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

Agency Listings and Approvals

The listings and approvals below apply to the ANN-80. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S2424
- **FM approved**
- **CSFM:** 7120-0075:211
- **MEA:** 442-06-E

The ANN-BUS

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

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

ANN-BUS DEVICE ADDRESSING

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

WIRE REQUIREMENTS: COMMUNICATIONS CIRCUIT

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

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

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

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

WIRE REQUIREMENTS: POWER CIRCUIT

- 14 to 18 AWG (0.75 - 2.08 mm^2) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop form source to end of circuit.
- All connections are power-limited and supervised.
- A maximum of eight ANN-80 modules may be connected to this circuit.

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

WIRING CONFIGURATION

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

ANN-BUS and power wiring are supervised and power-limited.
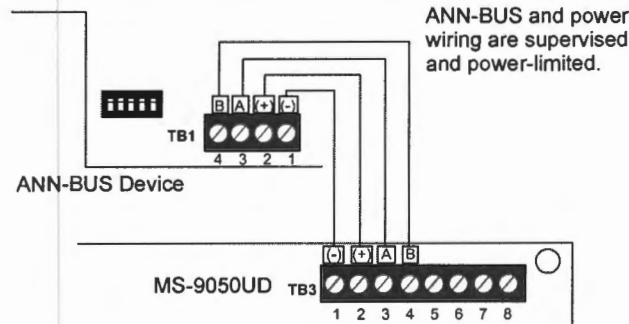
FACP Wiring to ANN-BUS Device

ORDERING OPTIONS:

ANN-80: Red 80 character LCD Annunciator.

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

ANN-SB80KIT-R: Red surface mount backbox with angled wedge.

ANN-SB80KIT-W: White surface mount backbox with angled wedge.

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Made in the U.S.A.

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

SD355(A), SD355T(A), SD355R(A)

Addressable Photoelectric Smoke Detectors

Fire·Lite Alarms
by Honeywell

General

The **SD355(A)** and **SD355T(A)** addressable, low-profile plug-in photoelectric detectors use a state-of-the-art photoelectric sensing chamber with communications to provide open area protection and are used exclusively with Fire•Lite's Addressable Fire Alarm Control Panels (FACPs). The SD355T(A) adds thermal sensors that will alarm at a fixed temperature of 135°F (57°C). Since these detectors are addressable, they will help emergency personnel quickly locate a fire during its early stages, potentially saving precious rescue time while also reducing property damage. Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (P/N **RA100Z(A)**). The **SD355R** is a remote test capable detector for use with D355PL or DNR(W) duct smoke detector housings.

Features

SLC loop:

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

Addressing:

- Addressable by device.
- Direct Decade entry of address: 01 – 99 with MS-9200 series, and 01 – 159 with MS-9600 series.

Architecture:

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

Operation:

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

Mechanicals:

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

Other system features:

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

Options:

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

SD355 with B350LP base

SD355T with B350LP base

Applications

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

Construction

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

Installation

SD355(T) plug-in detectors use a detachable mounting base to simplify installation, service and maintenance. Mount base on box which is at least 1.5 inches (3.81 cm) deep. Suitable boxes include:

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

NOTE: *Because of the inherent supervision provided by the SLC loop, **end-of-line resistors** are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class B) wiring. SD355R mounts in a D355PL or DNR(W) duct detector housing.*

Operation

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

The SD355/T/R addressable photoelectric sensor's unique unipolar chamber responds quickly and uniformly to a broad range of smoke conditions and can withstand wind gusts up to 4,000 feet-per-minute (20 m/sec.) without sending an alarm level signal. Because of its unipolar chamber, the SD355/T/R is approximately two times more responsive than most photoelectric sensors. This makes it a more stable detector.

Detector Sensitivity Test

Each detector can have its sensitivity tested (required per NFPA 72, Chapter 14 on *Inspection, Testing and Maintenance*) when installed/connected to a MS-9200 series or MS-9600 series addressable fire alarm control panel. The results of the sensitivity test can be printed off the MS-9200 series or MS-9600 series for record keeping.

Specification

Voltage range: 15 – 32 VDC (peak).

Standby current: 300 µA @ 24 VDC.

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

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

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

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

Weight: 3.6 oz. (102 g).

Operating temperature range: *for SD355(A):* 0°C to 49°C (32°F to 120°F); *for SD355T(A):* 0°C to 38°C (32°F to 100°F). *SD355R(A):* installed in a DNR(W) -20°C to 70°C (-4°F to 158°F).

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

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

Listings

Listings and approvals below apply to the SD355(A) and SD355T(A) detectors. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed, file S1059.
- ULC Listed, file S1059.
- CSFM approved: file 7272-0075:194.
- MEA approved: file 243-02-E.
- FM approved.

Product Line Information

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

SD355: Adressable photoelectric detector; B350LP base included.

SD355A: Sames as SD355 with ULC Listing (B350LPA base included).

SD355T: Same as SD355 but with *thermal* element; B350LP base included.

SD355TA: Same as SD355T with ULC Listing (B350LPA base included).

SD355R: Remote test capable addressable photoelectric detector for use with a D355PL or DNR(W) duct detector housing.

B350LP(A): Plug-in detector base. Dimensions: 6.1" (15.5 cm). Mounting: 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, 3.5" (8.89 cm) octagonal box, or single-gang box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

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

B224BI(A): Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases *(see DF-52389)*. *Diameter:* 6.2" (15.75 cm). *Mounting:* 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).

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

ACCESSORIES:

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. *For use with B501(A) and B350LP(A) bases only.*

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

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

M02-04-00: Test magnet.

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

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

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

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

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

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

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www.firelite.com

BG-12LX

Addressable Manual Pull Station

@ Fire·Lite®Alarms
by Honeywell

General

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

Features

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

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC loop current:** 230 µA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface back-box. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is
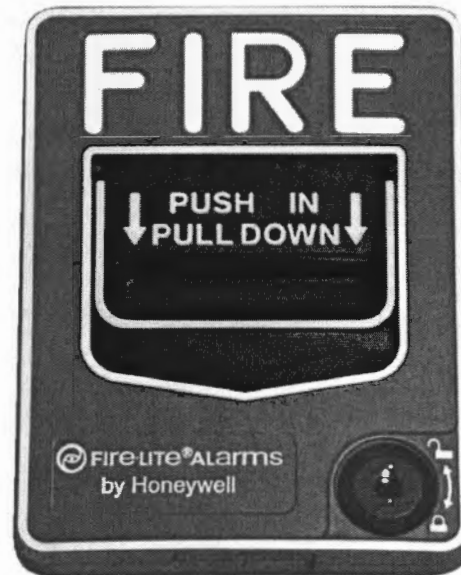
usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 with Breakaway Tab removed for MS-9600 Series, 1 – 99 and MS-9200UDLS, 1 – 50 for MS-9050UD).

Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed within

the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

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

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature.

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17003: Keys, set of two.

Agency Listings and Approvals

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

- **UL Listed:** S711
- **MEA:** 67-02-E
- **CSFM:** 7150-0075:0184
- **FDNY:**
- **FM** Approved

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

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System Sensor

Selectable-Output Horns, Strobes, and Horn Strobes

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

SPECTR**Alert**
ADVANCE
from System Sensor

Features

- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Field-selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and three volume selections
- Universal mounting plate for wall and ceiling units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with existing SpectrAlert products
- Compatible with MDL sync module

The SpectrAlert Advance series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry. With white and red plastic housings, wall and ceiling mounting options, and plain and FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement.

Like the entire SpectrAlert Advance product line, horns, strobes, and horn strobes include a variety of features that increase their application versatility while simplifying installation. All devices feature plug-in designs with minimal intrusion into the back box, which make installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. Furthermore, a universal mounting plate with an onboard shorting spring tests wiring continuity before the device is installed, protecting devices from damage.

In addition, field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with three volume selections enables installers to easily adapt devices to suit a wide range of application requirements.

Agency Listings

SIGNALING
UL LISTED
S4011 (chimes, horn strobes, horns)
S5512 (strobes)

FM APPROVED
3023572

MEA approved
MEA452-05-E

7125-1653:186 (indoor strobes)
7125-1653:188 (horn strobes, chime strobes)
7135-1653:189 (horns, chimes)

SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance horns, strobes, and horn strobes shall mount to a standard 4 × 4 × 1½-inch back box, 4-inch octagon back box, or double-gang back box. Two-wire products shall also mount to a single-gang 2 × 4 × 1⅞-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync·Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync·Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185.

Strobe

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

Horn Strobe Combination

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

Synchronization Module

The module shall be a System Sensor Sync·Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. The module shall mount to a 4¹¹/₁₆ × 4¹¹/₁₆ × 2⅛-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/Electrical Specifications

Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12 DC/FWR or regulated 24 DC/FWR[1]
Operating Voltage Range[2]	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Ceiling-Mount Dimensions (including lens)	6.8" diameter × 2.5" high (173 mm diameter × 64 mm high)
Wall-Mount Dimensions (including lens)	5.6" L × 4.7" W × 2.5" D (142 mm L × 119 mm W × 64 mm D)
Horn Dimensions	5.6" L × 4.7" W × 1.3" D (142 mm L × 119 mm W × 33 mm D)
Wall-Mount Back Box Skirt Dimensions (BBS-2, BBSW-2)	5.9" L × 5.0" W × 2.2" D (151 mm L × 128 mm W × 56 mm D)
Ceiling-Mount Back Box Skirt Dimensions (BBSC-2, BBSCW-2)	7.1" diameter × 2.2" high (180 mm diameter × 57 mm high)
Wall-Mount Trim Ring Dimensions (sold as a 5 pack) (TR-HS, TRW-HS)	5.7" L × 4.8" W × 0.35" D (145 mm L × 122 mm W × 9 mm D)
Ceiling-Mount Trim Ring Dimensions (sold as a 5 pack) (TRC-HS, TRCW-HS)	6.9" diameter × 0.35" high (175 mm diameter × 9 mm high)

Notes:

1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.

2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

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

UL Max. Horn Current Draw (mA RMS)

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

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

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

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

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

Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

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

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

A05-0395-007

SpectrAlert Advance Dimensions

Wall-mount horn strobes

Ceiling-mount horn strobes

Wall back box skirt

Ceiling back box skirt

SpectrAlert Advance Ordering Information

Model	Description
Wall Horn Strobes	
P2R*†	2-Wire Horn Strobe, Standard cd‡, Red
P2RH*	2-Wire Horn Strobe, High cd, Red
P2W*	2-Wire Horn Strobe, Standard cd, White
P2WH*	2-Wire Horn Strobe, High cd, White
P4R*	4-Wire Horn Strobe, Standard cd, Red
P4RH	4-Wire Horn Strobe, High cd, Red
P4W	4-Wire Horn Strobe, Standard cd, White
Wall Strobes	
SR*†	Strobe, Standard cd, Red
SRH*†	Strobe, High cd, Red
SW*	Strobe, Standard cd, White
SWH*	Strobe, High cd, White
Ceiling Horn Strobes	
PC2R*	2-Wire Horn Strobe, Standard cd, Red
PC2RH	2-Wire Horn Strobe, High cd, Red
PC2W*†	2-Wire Horn Strobe, Standard cd, White
PC2WH*	2-Wire Horn Strobe, High cd, White
PC4R	4-Wire Horn Strobe, Standard cd, Red
PC4RH	4-Wire Horn Strobe, High cd, Red
PC4W	4-Wire Horn Strobe, Standard cd, White

Model	Description
Ceiling Strobes	
SCR	Strobe, Standard cd, Red
SCRH	Strobe, High cd, Red
SCW*	Strobe, Standard cd, White
SCWH	Strobe, High cd, White
Horns	
HR	Horn, Red
HW	Horn, White
Accessories	
BBS-2	Back Box Skirt, Wall, Red
BBSW-2	Back Box Skirt, Wall, White
BBSC-2	Back Box Skirt, Ceiling, Red
BBSCW-2	Back Box Skirt, Ceiling, White
TR-HS	Trim Ring, Wall, Red
TRW-HS	Trim Ring, Wall White
TRC-HS	Trim Ring, Ceiling, Red
TRCW-HS	Trim Ring, Ceiling, White

Notes:

* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P.

† Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP.

‡ "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings.

SYSTEM SENSOR®

Selectable-Output Horns, Strobes, and Horn Strobes

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

SPECTRAlert
ADVANCE
from System Sensor

Features

- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Field-selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and three volume selections
- Universal mounting plate for wall and ceiling units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with existing SpectrAlert products
- Compatible with MDL sync module

The SpectrAlert Advance series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry. With white and red plastic housings, wall and ceiling mounting options, and plain and FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement.

Like the entire SpectrAlert Advance product line, horns, strobes, and horn strobes include a variety of features that increase their application versatility while simplifying installation. All devices feature plug-in designs with minimal intrusion into the back box, which make installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. Furthermore, a universal mounting plate with an onboard shorting spring tests wiring continuity before the device is installed, protecting devices from damage.

In addition, field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with three volume selections enables installers to easily adapt devices to suit a wide range of application requirements.

Agency Listings

SpectrAlert Advance Specifications

General

SpectrAlert Advance horns, strobes, and horn strobes shall mount to a standard 4 × 4 × 1½-inch back box, 4-inch octagon back box, or double-gang back box. Two-wire products shall also mount to a single-gang 2 × 4 × 1⅞-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185.

Strobe

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

Horn Strobe Combination

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

Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. The module shall mount to a 4¹¹⁄₁₆ × 4¹¹⁄₁₆ × 2⅛-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/Electrical Specifications	
Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12 DC/FWR or regulated 24 DC/FWR[1]
Operating Voltage Range[2]	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Ceiling-Mount Dimensions (including lens)	6.8″ diameter × 2.5″ high (173 mm diameter × 64 mm high)
Wall-Mount Dimensions (including lens)	5.6″ L × 4.7″ W × 2.5″ D (142 mm L × 119 mm W × 64 mm D)
Horn Dimensions	5.6″ L × 4.7″ W × 1.3″ D (142 mm L × 119 mm W × 33 mm D)
Wall-Mount Back Box Skirt Dimensions (BBS-2, BBSW-2)	5.9″ L × 5.0″ W × 2.2″ D (151 mm L × 128 mm W × 56 mm D)
Ceiling-Mount Back Box Skirt Dimensions (BBSC-2, BBSCW-2)	7.1″ diameter × 2.2″ high (180 mm diameter × 57 mm high)
Wall-Mount Trim Ring Dimensions (sold as a 5 pack) (TR-HS, TRW-HS)	5.7″ L × 4.8″ W × 0.35″ D (145 mm L × 122 mm W × 9 mm D)
Ceiling-Mount Trim Ring Dimensions (sold as a 5 pack) (TRC-HS, TRCW-HS)	6.9″ diameter × 0.35″ high (175 mm diameter × 9 mm high)

Notes:

1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.

2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

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

UL Max. Horn Current Draw (mA RMS)

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

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

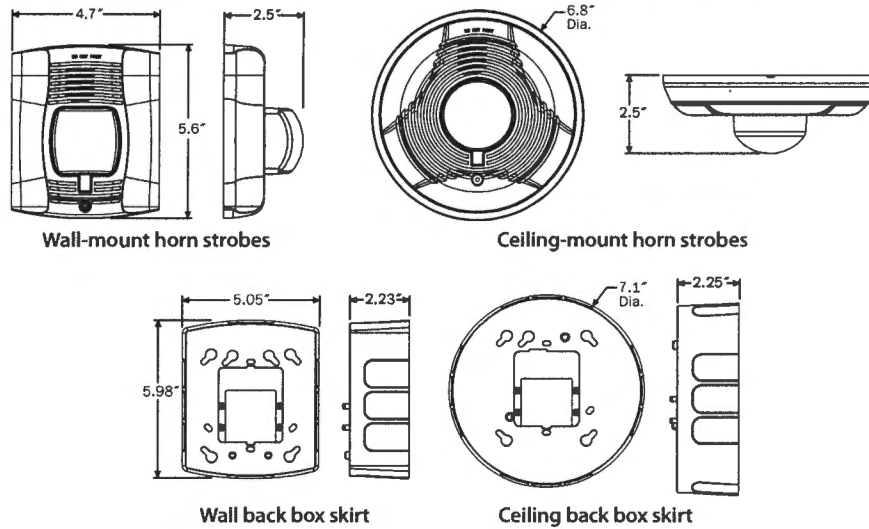| DC Input	8–17.5 Volts		16–33 Volts						
	15	15/75	15	15/75	30	75	95	110	115
Temporal High	137	147	79	90	107	176	194	212	218
Temporal Medium	132	144	69	80	97	157	182	201	210
Temporal Low	132	143	66	77	93	154	179	198	207
Non-Temporal High	141	152	91	100	116	176	201	221	229
Non-Temporal Medium	133	145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

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

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

Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

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

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

SpectrAlert Advance Dimensions

Wall-mount horn strobes

Ceiling-mount horn strobes

Wall back box skirt

Ceiling back box skirt

SpectrAlert Advance Ordering Information

Model	Description
Wall Horn Strobes	
P2R*†	2-Wire Horn Strobe, Standard cd‡, Red
P2RH*	2-Wire Horn Strobe, High cd, Red
P2W*	2-Wire Horn Strobe, Standard cd, White
P2WH*	2-Wire Horn Strobe, High cd, White
P4R*	4-Wire Horn Strobe, Standard cd, Red
P4RH	4-Wire Horn Strobe, High cd, Red
P4W	4-Wire Horn Strobe, Standard cd, White
Wall Strobes	
SR*†	Strobe, Standard cd, Red
SRH*†	Strobe, High cd, Red
SW*	Strobe, Standard cd, White
SWH*	Strobe, High cd, White
Ceiling Horn Strobes	
PC2R*	2-Wire Horn Strobe, Standard cd, Red
PC2RH	2-Wire Horn Strobe, High cd, Red
PC2W*†	2-Wire Horn Strobe, Standard cd, White
PC2WH*	2-Wire Horn Strobe, High cd, White
PC4R	4-Wire Horn Strobe, Standard cd, Red
PC4RH	4-Wire Horn Strobe, High cd, Red
PC4W	4-Wire Horn Strobe, Standard cd, White

Model	Description
Ceiling Strobes	
SCR	Strobe, Standard cd, Red
SCRH	Strobe, High cd, Red
SCW*	Strobe, Standard cd, White
SCWH	Strobe, High cd, White
Horns	
HR	Horn, Red
HW	Horn, White
Accessories	
BBS-2	Back Box Skirt, Wall, Red
BBSW-2	Back Box Skirt, Wall, White
BBSC-2	Back Box Skirt, Ceiling, Red
BBSCW-2	Back Box Skirt, Ceiling, White
TR-HS	Trim Ring, Wall, Red
TRW-HS	Trim Ring, Wall White
TRC-HS	Trim Ring, Ceiling, Red
TRCW-HS	Trim Ring, Ceiling, White

Notes:

* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P.

† Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP.

‡ "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings.

MMF-300(A) Series, MDF-300(A)

Addressable Monitor Modules

Addressable Devices

General

Four different monitor modules are available for Fire•Lite's intelligent control panels to suit a variety of applications. Monitor modules are used to supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (MMF-302(A)).

MMF-300(A) is a standard-sized module (typically mounts to a 4" [10.16 cm] square box) that supervises either a Style D (Class A) or Style B (Class B) circuit of dry-contact input devices.

MMF-301(A) is a miniature monitor module a mere 1.3" (3.302 cm) H x 2.75" (6.985 cm) W x 0.5" (1.270 cm) D used to supervise a Style B (Class B) circuit of dry-contact input devices. Its compact design allows the MMF-301(A) to be mounted in a single-gang box behind the device it monitors.

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

MDF-300(A) is a standard-sized dual monitor module used to monitor and supervise two independent two-wire Style B (Class B) dry-contact initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

LiteSpeed™ is a communication protocol developed by Fire•Lite Engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs. designs.

MMF-300(A) Monitor Module

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

The MMF-300(A) Monitor Module is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The MMF-300(A) can be used to replace M300(A) modules in existing systems.

MMF-300(A) APPLICATIONS

Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit
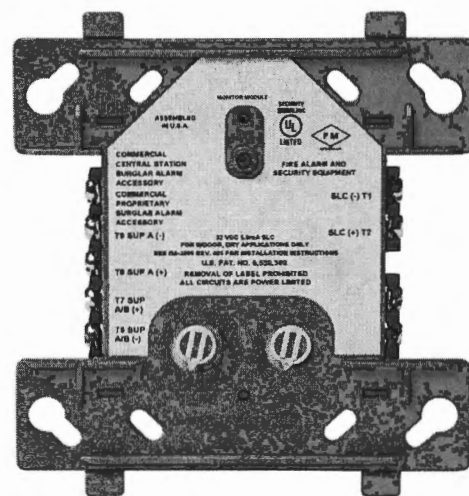
MMF-300(A) (Type H)

may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit.

MMF-300(A) OPERATION

Each MMF-300(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

MMF-300(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

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

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

EOL resistance: 47K ohms.

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

Humidity range: 10% to 93% noncondensing.

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

MMF-301(A) Mini Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address: 01 – 159 on MS-9600 series panels, 01 – 99 on other compatible systems
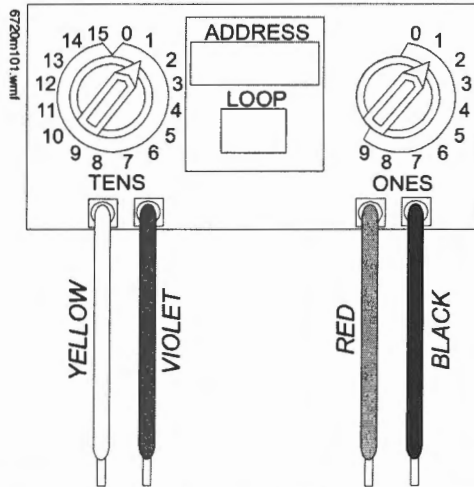
The MMF-301(A) Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The MMF-301(A) is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm devices. The MMF-301(A) can be used to replace M301(A) modules in existing systems.

MMF-301(A) APPLICATIONS

Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the circuit.

MMF-301(A) OPERATION

Each MMF-301(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

MMF-301(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

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

Maximum IDC wiring resistance: 40 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 400 μA.

EOL resistance: 47K ohms.

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

Humidity range: 10% to 93% noncondensing.

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

Wire length: 6" (15.24 cm) minimum.

MMF-302(A) Interface Module

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

The MMF-302(A) Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be UL compatible with the module. The MMF-302(A) can be used to replace M302(A) modules in existing systems.

MMF-302 (A) APPLICATIONS

Use the MMF-302(A) to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 3.9 K ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (class B or A) circuit (maximum IDC loop resistance is 25 ohms). Install ELR across terminals 8 and 9 for Style D application.

MMF-302(A) OPERATION

Each MMF-302(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

MMF-302(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 ohms.

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

EOL resistance: 3.9K ohms.

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

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

Humidity range: 10% to 93% noncondensing.

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

MDF-300(A) Dual Monitor Module

The MDF-300(A) Dual Monitor Module is intended for use in intelligent, two-wire systems. It provides two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open contact fire alarm and supervisory devices. The module has a single panel-controlled LED.

NOTE: The MDF-300(A) provides two Style B (Class B) IDC circuits ONLY. Style D (Class A) IDC circuits are NOT supported in any application.

MDF-300(A) SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

Average operating current: 750 µA (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 µA

EOL resistance: 47K ohms.

Maximum SLC Wiring resistance: 40 Ohms.

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

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

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

MDF-300(A) AUTOMATIC ADDRESSING

The MDF-300(A) automatically assigns itself to two addressable points, starting with the original address. For example, if the MDF-300(A) is set to address "26", then it will automatically assign itself to addresses "26" and "27".

NOTE: "Ones" addresses on the MDF-300(A) are 0, 2, 4, 6, or 8 only. Terminals 6 and 7 use the first address, and terminals 8 and 9 use the second address.

⚠️ **CAUTION:**
Avoid duplicating addresses on the system.

Installation

MMF-300(A), MMF-302(A), and MDF-300(A) modules mount directly to a standard 4" (10.16 cm) square, 2.125" (5.398 cm) deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

The MMF-301(A) module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations.

Agency Listings and Approvals

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

- **UL:** *S2424*
- **ULC:** *S2424*
- **FM Approved**
- **CSFM:** 7300-0075:0185
- **MEA:** 72-01-E

Product Line Information

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

MMF-300(A): Monitor module.

MMF-301(A): Monitor module, miniature.

MMF-302(A): Monitor module, two-wire detectors.

MDF-300(A): Monitor module, dual, two independent Class B circuits.

SMB500: Optional surface-mount backbox.

NOTE: See installation instructions and refer to the SLC Wiring Manual, PN 51309.

Architects'/Engineers' Specifications

Specifications of these devices and all FireLite products are available from FireLite.

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

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

Made in the U.S. A.

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