DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

# CITY OF PORTLAND

# BUILDING PERMIT

This is to certify that
CUNNINGHAM SECURITY
10 PRINCES POINT RD
YARMOUTH, ME 04096

For installation at
1844 FOREST AVE

Job ID: 2012-03-3512-FAFS

CBL: 327- B-004-001

has permission to install a supervised fire alarm system
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 closed-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 |

B Arnold (58)

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

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

# BUILDING PERMIT INSPECTION PROCEDURES

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

or email: buildinginspections@portlandmaine.gov

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

## Final Fire

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.

# PORTLAND MAINE

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Director of Planning and Urban Development
Penny St. Louis

**Job ID: 2012-03-3512-FAFS**
**install a supervised fire alarm system**

**For installation at:**
**1844 FOREST AVE**

**CBL: 327- B-004-001**

## Conditions of Approval:

### Fire

This fire alarm system is not designed to accommodate an occupant load exceeding 300 persons.

If a sprinkler system is installed it must be supervised in accordance with NFPA 101, *Life Safety Code*, and NFPA 72, *National Fire Alarm and Signaling Code*.

The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.

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

All smoke detectors and smoke alarms shall be photoelectric.

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

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

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

Installation of a Fire Alarm system requires a Knox Box to be installed per city ordinance.

The fire alarm system shall be certified by a master fire alarm company and have a new fire alarm inspection sticker.

System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

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.

## City of Portland, Maine - Building or Use Permit Application

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

| Job No: | Date Applied: | CBL: | |
|---|---|---|---|
| **2012-03-3512-FAFS** | **3/15/2012** | **327- B-004-001** | |
| Location of Construction: **1844 FOREST AVE** | Owner Name: **GABRIEL J ZAPPIA** | Owner Address: **18 COTTAGE LN**<br>**CAPE ELIZABETH, ME 04107** | Phone: |
| Business Name: | Contractor Name: **Cunningham Security Systems, Michael Major** | Contractor Address: **10 Princess Point Rd., Yarmouth ME 04096** | Phone: **207-846-3350** |
| Lessee/Buyer's Name: | Phone: | Permit Type: **FIRE ALARM - Fire Alarm** | Zone: **B-2** |
| Past Use: Basement & 1st floor – Karate Studio, 2nd floor vacant (#2100-06-1396) | Proposed Use: Same – Karate studio – install fire alarm | Cost of Work: **3000.00**<br>Fire Dept: ✓ Approved w/ conditions<br>___ Denied<br>___ N/A<br>Signature: BJ Cwalt (SE) | CEO District:<br>Inspection:<br>Use Group:<br>Type:<br>Signature: |
| Proposed Project Description: **Fire Alarm for Karate Studio** | | Pedestrian Activities District (P.A.D.) | |
| Permit Taken By: | | | |

**Zoning Approval**

| Special Zone or Reviews | Zoning Appeal | Historic Preservation |
|---|---|---|
| ___ Shoreland | ___ Variance | ✓ Not in Dist or Landmark |
| ___ Wetlands | ___ Miscellaneous | ___ Does not Require Review |
| ___ Flood Zone | ___ Conditional Use | ___ Requires Review |
| ___ Subdivision | ___ Interpretation | ___ Approved |
| ___ Site Plan | ___ Approved | ___ Approved w/Conditions |
| ___ Maj ___ Min ___ MM | ___ Denied | ___ Denied |
| Date: OK 3/19/12 ABM | Date: | Date: ABM |

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 electrial work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

**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 appication 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

B-2

Entered 3/15/12 (85)

# Fire Alarm Permit

FD # 2012-03-3512-FAFS

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: 1844 Forest Avenue CBL: 327 B004001

Exact location: (within structure) First floor office

Type of occupancy(s) (NFPA & ICC): Social/Fraternal Hall – Karate Studio

Building owner: Gabriel Zappia 18 Cottage Lane, Cape Elizabeth, ME 04107

System Designer (point of contact): Michael Major (Must be)

Designer phone: 207-846-3350 E-mail: mmajor@cunninghamsecurity.cc

Installing contractor: Cunningham Security Systems Certificate of Fitness No: 1004

Contractor phone: 207-846-3350 E-mail: mmajor@cunninghamsecurity

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
- [✓] Wiring diagram
- [✓] Annunciator details
- [✓] Input/ Output Matrix
- [✓] Equipment data sheets
- [✓] Electrical Permit Pulled (check alarm/com)
- [✓] Scope of Work
- [ ] 11 ½ x 17s
- [✓] pdf copy (may be e-mailed)
- [ ] Designer qualifications
- [✓] Battery/ voltage drop calcs

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

COST OF WORK: 3,000

PERMIT FEE: 50 ($10 PER $1,000 + $30 FOR THE FIRST $1,000)

RECEIVED
MAR 15 2012
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: Michelle Perkins on behalf of Michael Major Date: 3/12/12

# PORTLAND MAINE

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Receipts Details:

**Tender Information:** Check , Check Number: 48265
**Tender Amount:** 50.00

Receipt Header:

**Cashier Id:** bsaucier
**Receipt Date:** 3/15/2012
**Receipt Number:** 41767

Receipt Details:

| | | | |
|---|---|---|---|
| Referance ID: | 5626 | Fee Type: | BP-Constr |
| Receipt Number: | 0 | Payment Date: | |
| Transaction Amount: | 50.00 | Charge Amount: | 50.00 |
| Job ID: Job ID: 2012-03-3512-FAFS - Fire Alarm for Social/Fraternal Hall | | | |
| Additional Comments: 1844 Forest | | | |

Thank You for your Payment!

# CUNNINGHAM

## Security Systems

10 Princes Point Road • Yarmouth, Maine 04096
(207) 846-3350 • Fax (207) 846-6080 • (800) 210-0257


3/6/12

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

Dear Lieutenant Wallace:

Please find attached a permit application for the property located at 1844 Forest Avenue. An electrician had started to pre-wire for a fire alarm system in that space so there is already some rough wiring in place but no other work has been completed to our knowledge. We will be installing a new addressable fire alarm system with manual and automatic initiation devices as well as compliant occupant notification appliances throughout. As some of the devices are already wired in place and sheet rock is already hung we have placed the devices on the plan in the corresponding locations. Thank you and please feel free to call me if you have any questions.

Sincerely,

Michelle Perkins

Michelle Perkins, Operations Manager

# MS-9050UD(E)

## Fire Alarm Control Panel with DACT

FIRE-LITE ALARMS by Honeywell

**Addressable**

## 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.

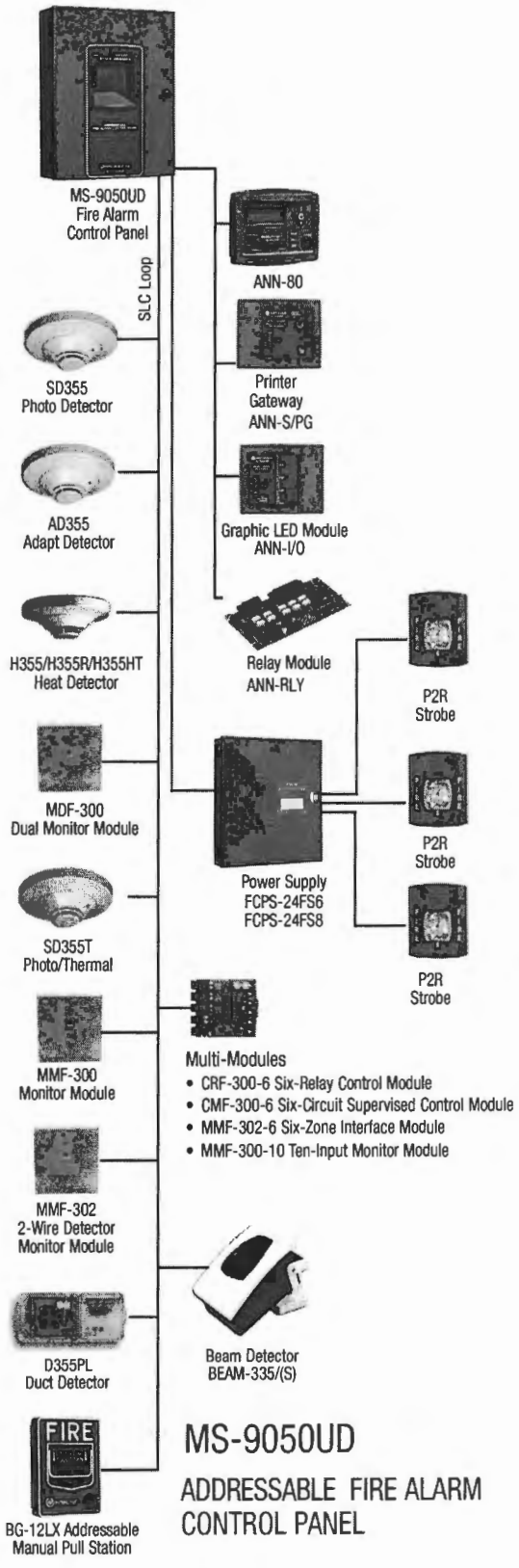
### *SLC COMMUNICATION LOOP*

- 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.*




### *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

**Annunciators**

## General

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

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

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


52417cov.jpg

## 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*

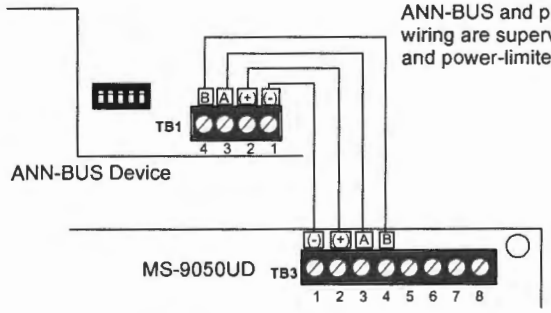
- 14 to 18 AWG (0.75 - 2.08 $mm^2$) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop form source to end of circuit.
- All connections are power-limited and supervised.
- A maximum of eight ANN-80 modules may be connected to this circuit.

**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.




**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.



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

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

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 4 11/16 × 4 11/16 × 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)**

| | | 8–17.5 Volts | | 16–33 Volts | |
|---|---|---|---|---|---|
| | Candela | 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)**

| | | 8–17.5 Volts | | 16–33 Volts | |
|---|---|---|---|---|---|
| Sound Pattern | dB | 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 |

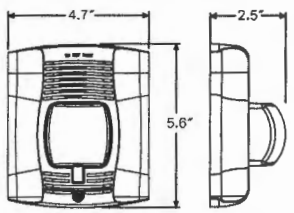
## Horn Tones and Sound Output Data

**Horn and Horn Strobe Output (dBA)**

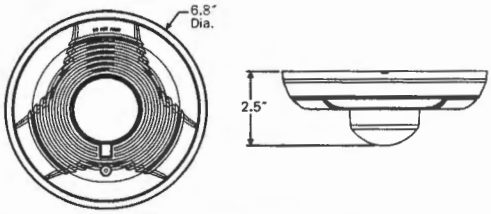
| | | | 8–17.5 Volts | | 16–33 Volts | | 24-Volt Nominal | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Reverberant | | Anechoic | |
| Switch Position | Sound Pattern | dB | DC | FWR | DC | FWR | DC | FWR | DC | FWR |
| 1 | Temporal | High | 78 | 78 | 84 | 84 | 88 | 88 | 99 | 98 |
| 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.

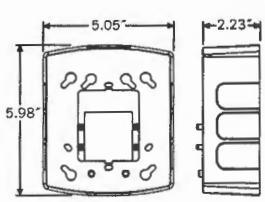
## SpectrAlert Advance Dimensions



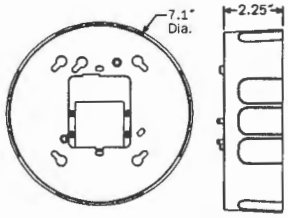

Wall-mount horn strobes




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.

SYSTEM SENSOR

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Phone: 800-SENSOR2 • Fax: 630-377-6495


A05-0395-007 • 4/09 • #2132

# BG-12LX

## Addressable Manual Pull Station

FIRE·LITE ALARMS by Honeywell

**Addressable Devices**

## 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.


FL-PullStation.jpg

## 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 backbox. 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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ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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

## Addressable Photoelectric Smoke Detectors



FIRE·LITE ALARMS by Honeywell

**Addressable Devices**

## 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.

**SD355 with B350LP base**

**SD355T with B350LP base**

## Features

***SLC loop:***

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

***Addressing:***

- Addressable by device.
- Direct Decade entry of address: 01 – 99 with 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).

## 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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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.

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