ANN-80

80-Character LCD Serial Annunciator

FIRE·LITE by Honeywell

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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 cu
table specifies the maximum distanc
located from the FACP on a single wire
6.0 volts of line drop maximum. In gener
ited by resistance, but for heavier wire
the limiting factor.

These cases are marked in the chart w
mum length can never be more than
regardless of gauge used. See table be

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

WIRE REQUIREMENTS: POWER C

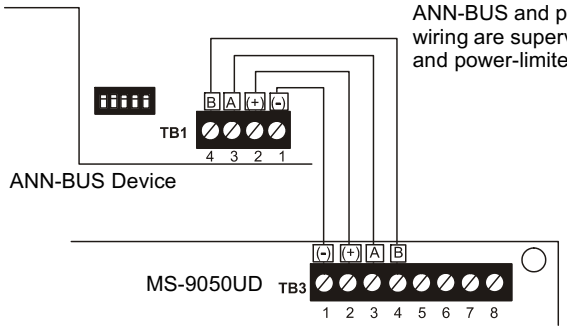
- 14 to 18 AWG (0.75 - 2.08 mm^2) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop form source to end of circuit.
- All connections are power-limited and supervised.
- A maximum of eight ANN-80 modules may be connected to this circuit.

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.

FireLite® is a registered trademark of Honeywell International Inc. ©2009 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

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

BG-12LX

Addressable Manual Pull Station

FIRE·LITE by Honeywell

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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.

FLPullStation.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 App

In some cases, certain modules or app
listed by certain approval agencies, or
cess. Consult factory for latest listing s

- **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.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

FIre·LIte is a registered trademark of Honeywell International Inc.
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

CO1224T and CO1224TR Carbon Monoxide Detectors

with RealTest® Technology

The System Sensor CO1224T and CO1224TR (round) Carbon Monoxide (CO) Detectors use a highly accurate and reliable electrochemical sensing cell to provide early warning of dangerous CO levels.

Features

- RealTest® enables a functional test using canned CO
- Full compliance with UL 2075
- A code-required trouble relay
- Wiring supervision with SEMS terminals
- A six-year end-of-life timer
- 12/24 VDC
- A low current draw of 20 mA in standby and 40 mA in alarm
- Versatile mounting for wall and ceiling
- Accurate and reliable electrochemical sensing technology
- Optional CO-PLATE CO Detector Replacement Plate to upgrade previously installed competitor detectors to the CO1224T

With RealTest® technology, the CO gas sensing cell used in the CO1224T and CO1224TR CO detectors can be tested using a CO gas agent, fully meeting the requirements of NFPA 720: 2009. Simply put the detector into RealTest mode, spray a small amount of CO into the detector per the installation instructions, and within seconds the detector will alarm, indicating successful gas entry. (See the reverse page or the user manual for complete instructions.)

When dangerous amounts of CO are detected, the CO1224T and CO1224TR detectors alert residents by sounding and flashing a temp 4 signal alarm. With 24/7 central station monitoring, residents are guaranteed protection whether they are away from home, sleeping, or already suffering from the effects of CO.

The CO1224T and CO1224TR are designed for system operation. These detectors are fully listed to UL 2075 and offer a code-required trouble relay to send a sensor failure or end-of-life signal to the control panel and the central station. The CO1224T and CO1224TR also use SEMS-type terminal Philips head screws for quicker and more positive wiring connections and code-required wiring supervision. With a low current draw, these detectors enable more devices to be connected to the panel, limiting the need to purchase extra power supplies or more expensive panels. As 12/24 VDC detectors, the CO1224T and CO1224TR will operate on most industry security and fire alarm control panels.

Agency Listings

UL LISTED E307195

E304075

ULC 5276-1653:0194

CO1224T and CO1224TR Carbon Monoxide Detector Specifications

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

Architectural/Engineering Specifications

Carbon monoxide (CO) detector shall be a system-connected System Sensor model number CO1224T or CO1224TF Laboratories UL 2075 for Gas and Vapor Detectors and Sensors. The detector shall be equipped with a sounder and detector's base shall be able to mount to a single-gang electrical box or direct (surface) mount to the wall or ceiling. V be made by means of SEMS screws. The detector shall provide dual-color LED indication that blinks to indicate norm end-of-life. When the sensor supervision is in a trouble condition, the detector shall send a trouble signal to the panel. a trouble or end-of-life signal, the detector shall be replaced. The detector shall provide a means to test CO gas entry cell. The detector shall provide this with a test mode that accepts CO gas from a test agent and alarms immediately upon sensing CO entry. The detector shall perform in the detection of CO up to 12,000 feet above sea level and alarm within the time specified by ANSI/UL 2034 for CO concentrations of 70, 150 and 400 parts per million (ppm), as verified by a Nationally Recognized Test Laboratory.

Electrical Specifications	
Operating Voltage	12/24 VDC
Audible Signal	85 dB in alarm
Standby Current	20 mA
Alarm Current	40 mA (75 mA test)
Alarm Contact Ratings	0.5 A @ 30 VDC
Trouble Contact Ratings	0.5 A @ 30 VDC

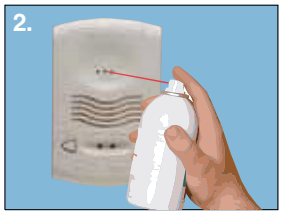
Physical Specifications	
Size: CO1224T	Length: 5.1 in, Width: 3.3 in, Height: 1.3 in
CO1224TR	Diameter: 6 in, Height: 1.3 in
Approximate Weight	CO1224T: 7 oz ; CO1224TR: 11 oz
Operating Temperature Range	32°F to 104° F (0°C to 40° C)
Operating Humidity Range	22 to 90% RH
Input Terminals	14 to 22 AWG
Mounting	Single-gang back box; surface mount to wall or ceiling

Operation Modes

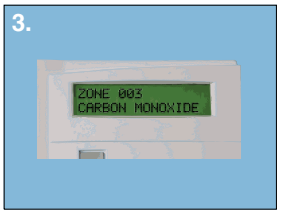
Operation Mode	Green LED	Red LED	Sounder
Normal (standby)	Blink 1 per minute	—	—
Alarm	—	Blink in temp 4 pattern	Sound in temp 4 pattern

RealTest® Feature: The System Sensor CO1224T and CO1224TR Carbon Monoxide Detectors with RealTest enable evaluation of the functionality of the CO sensing cell using a canned CO test agent.

Push and hold the Test/Hush button for two seconds to enter RealTest mode. The green LED will flash once every second to indicate RealTest mode has started.



Spray canned CO agent into the detector.



Verify CO sensing at the control panel. The detector will automatically exit RealTest alarm mode after about 20-60 seconds.

NOTE: Check with local codes and the AHJ to determine if a functional gas test is desired for an installation.

Hush Feature: Pushing the Test/Hush button will silence the sounder for 5 minutes (except in RealTest mode).

Trouble Feature: When the detector is in a trouble condition, it will send a trouble signal to the panel.

End-of-Life Timer: After the detector's internal sensor has reached the end of its life, a trouble signal will be sent to the panel to indicate it is time to replace the detector. An electrochemical CO detector lifespan is about six years. The detector must be replaced by the date marked on the inside of the product.

CO-PLATE: System Sensor also offers the CO-PLATE CO Detector Replacement Plate to cover the footprint (when necessary) of previously installed competitive carbon monoxide detectors that require replacement.

CO-PLATE

Ordering Information

Part No.	Description
CO1224T	12/24 volt, 4-wire system-monitored carbon monoxide detector with RealTest® Technology
CO1224TR	12/24 volt, 4-wire system-monitored round carbon monoxide detector with RealTest® Technology
CO-PLATE	CO detector replacement plate to cover the footprint of previously installed competitive detectors as necessary

SYSTEM SENSOR®
3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495
www.systemsensor.com

©2012 System Sensor.
Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.
SCDS00100 • 4/12

PORTLAND MA

Strengthening a Remarkable City, Building a Community for Life

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

Jeff Levine, AICP, Director
Director of Planning and Urban Development

Tammy Munson
Director, Inspections Division

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no permit application can be reviewed until payment of appropriate permit fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

Within 24-48 hours, upon receipt of an e-mailed invoice from Building Inspections, which signifies that my electronic permit application and corresponding paperwork have been received, determined complete, entered by an administrative representative, and assigned a permit number, I then have the following four (4) payment options:

- to provide an on-line electronic check or credit/debit card (we now accept American Express, Discover, VISA, and MasterCard) payment (along with applicable fees beginning July 1, 2014),
- call the Inspections Office at (207) 874-8703 and speak to an administrative representative to provide a credit/debit card payment over the phone,
- hand-deliver a payment method to the Inspections Office, Room 315, Portland City Hall,
- or deliver a payment method through the U.S. Postal Service, at the following address:

City of Portland
Inspections Division
389 Congress Street, Room 315
Portland, Maine 04101

Once my payment has been received, this then starts the review process of my permit. ***After all approvals have been met and completed, I will then be issued my permit via e-mail.*** No work shall be started until I have received my permit.

Applicant Signature: Michelle Perkins Date: 10/20/14

I have provided digital copies and sent them on: _____ Date: 10/20/14

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means ie; a thumb drive or CD to the office.

PORTLAND MA

Strengthening a Remarkable City, Building a Community for Life

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

Jeff Levine, AICP, Director
Director of Planning and Urban Development

Tammy Munson
Director, Inspections Division

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no permit application can be reviewed until payment of appropriate permit fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

Within 24-48 hours, upon receipt of an e-mailed invoice from Building Inspections, which signifies that my electronic permit application and corresponding paperwork have been received, determined complete, entered by an administrative representative, and assigned a permit number, I then have the following four (4) payment options:

- to provide an on-line electronic check or credit/debit card (we now accept American Express, Discover, VISA, and MasterCard) payment (along with applicable fees beginning July 1, 2014),
- call the Inspections Office at (207) 874-8703 and speak to an administrative representative to provide a credit/debit card payment over the phone,
- hand-deliver a payment method to the Inspections Office, Room 315, Portland City Hall,
- or deliver a payment method through the U.S. Postal Service, at the following address:

City of Portland
Inspections Division
389 Congress Street, Room 315
Portland, Maine 04101

Once my payment has been received, this then starts the review process of my permit. ***After all approvals have been met and completed, I will then be issued my permit via e-mail.*** No work shall be started until I have received my permit.

Applicant Signature: Michelle Perkins Date: 10/20/14

I have provided digital copies and sent them on: _____ Date: 10/20/14

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means ie; a thumb drive or CD to the office.

ELECTRICAL PERMIT

City of Portland, Maine

To the Electrical Inspector, Portland Maine:
The undersigned hereby applies for a permit to make electrical installations in accordance with the laws of Maine, the City of Portland's Electrical Ordinances, National Electrical Code and the following specifications:

Date: 10/20/14
Permit #:
CBL#: 57-J-5-

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

ADDRESS: 214 Danforth St. METER MAKE/MODEL # :
CMP Work Order #: OWNER: Shalom House Inc.
TENANT: PHONE #:

PLEASE HAVE YOUR PERMIT # (OR JOB ID) READY & CALL 874-8703 TO SCHEDULE AN INSPECTION!

								TOTAL EACH FEE	
OUTLETS:		Receptacles		Switches		Smoke Detector		0.20	
FIXTURES:		Incandescent		Flourescent		Strips		0.20	
SERVICES:	☐	Overhead	☐	Underground	☐	TTL Amps <800		15.00	
					☐	TTL Amps >800		25.00	
TEMPORARY SERVICE:		Overhead	☐	Underground		TTL Amps		25.00	
METERS:		(Number of)						1.00	
MOTORS:		(Number of)						2.00	
RESID/COMMER:		Electric Units						1.00	
HEATING:		Oil/Gas Units	☐	Interior	☐	Exterior		5.00	
APPLIANCES:		Ranges		Cook Tops		Wall Ovens		2.00	
		Insta-hot		Water Heaters		Fans		2.00	
		Dryers		Disposals		Dishwasher		2.00	
		Compactors		Spa		Washing Machine		2.00	
		Others (denote)						2.00	
MISC. (# of):		Air Cond (Window)						3.00	
		Air Cond (Central)				Pools		10.00	
		HVAC		EMS		Thermostat		5.00	
		Signs						10.00	
		Alarms/Resident						5.00	
	1	Alarms/Commer						15.00	1500
		Heavy Duty (CRKT)						2.00	
		Alterations						5.00	
		Fire Repairs						15.00	
		Emergency Lights						1.00	
		Emer Generators						20.00	
		Circus/Carnival						25.00	
PANELS:	☐	Service	☐	Remote	☐	Main		4.00	
TRANSFORMER:	☐	0-25 Kva						5.00	
	☐	25-200 Kva						8.00	
	☐	Over 200 Kva						10.00	

CBL: :

MINIMUM COMMERCIAL FEE: $55.00 *MINIMUM RESIDENTIAL FEE: $45.00*
TOTAL DUE: 5500

Brief Description of work:
Installation of an addressable fire alarm system

PLEASE HAVE YOUR PERMIT # (OR JOB ID) READY & CALL 874-8703 TO SCHEDULE AN INSPECTION!

CONTRACTOR INFORMATION:
Contractor Name: Michael Major / Cunningham Security **Master License #:** MS60008944
Address: 10 Princes Point Rd. Yarmouth **Limited License #:**
Telephone & E Mail: 846-3350 mperkins@cunninghamsecurity.com
Contractor Signature: Michelle Perkins

PLEASE HAVE YOUR PERMIT # (OR JOB ID) READY & CALL 874-8703 TO SCHEDULE AN INSPECTION!

Approved with Conditions
Date: 12/02/14

FCP Battery Calculation

10/16/2014

PROJECT NAME: SHALOM HOUSE – PORTLAND
Required Standby Time: 24 Hours
Required Alarm Time: 5 Minutes

Regulated Load in Standby

Device Type	Number of Devices		Current (Amps)		Total Current (Amps)
MS–9200UDLS Main Circuit Board	1	X	0.14500	=	0.14500
ANN–80 Remote Annunciator	1	X	0.01500	=	0.01500
SD355 Smoke Detectors	6	X	0.00030	=	0.00180
MMF–300 Monitor Modules	2	X	0.00040	=	0.00080
BG–12LX Pull Stations	5	X	0.00030	=	0.00150
TOTAL STANDBY LOAD					0.16410

Regulated Load in ALARM

Device Type	Number of Devices		Current (Amps)		Total Current (Amps)
MS–9200UDLS Main Circuit Board	1	X	0.27500	=	0.27500
ANN–80 Remote Annunciator	1	X	0.04000	=	0.04000
Max. Alarm Draw – All Addressable Devices	1	X	0.40000	=	0.40000
NAC–1 (See voltage drop calcs for device quantity)	1	X	0.75700	=	0.75700
NAC–2	1	X	0.30500	=	0.30500
NAC–3	1	X	0.30500	=	0.30500
TOTAL ALARM LOAD					2.08200

Battery Requirements

Standby Load			Required Standby Time in Hours		
Current (Amps)	0.16410	X	24.00000	=	3.93840
Alarm Load			Required Alarm Time in Hours		
Current (Amps)	2.08200	X	0.08333	=	0.17350
Total Ampere Hours (before derating factor)					4.11190
Derating Factor				X	1.2
TOTAL AMPERE HOURS REQUIRED				=	4.93428
BATTERIES TO BE PROVIDED (2 – 12v)					7 AH

NAC Circuit Voltage Drop Calculation — 10/16/2014

Project Name: SHALOM HOUSE – PORTLAND
Circuit Number: NAC–1

Nominal System Voltage: 20.4 volts
Minimum Device Voltage: 16 volts
Distance from source to 1st device: 5
Wire Gauge for balance of circuit

Wire Gauge	Resistance Per 1000
14	6.14
14	6.14

Max Output Current: 1.5 amps
Total Circuit Current: 0.757 amps

Circuit is within limits

	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.212		20.38	0.02	0%
Device 2	0.107	30	20.28	0.12	1%
Device 3	0.017	17	20.23	0.17	1%
Device 4	0.017	17	20.19	0.21	1%
Device 5	0.079	13	20.15	0.25	1%
Device 6	0.212	2	20.15	0.25	1%
Device 7	0.079	17	20.14	0.26	1%
Device 8	0.017	13	20.14	0.26	1%
Device 9	0.017	21	20.13	0.27	1%
Totals	0.757	135			

NAC Circuit Voltage Drop Calculation — 10/16/2014

Project Name: SHALOM HOUSE – PORTLAND
Circuit Number: NAC–2

Nominal System Voltage: 20.4 volts
Minimum Device Voltage: 16 volts
Distance from source to 1st device: 50
Wire Gauge for balance of circuit

Wire Gauge	Resistance Per 1000
14	6.14
14	6.14

Max Output Current: 1.5 amps
Total Circuit Current: 0.305 amps

Circuit is within limits

	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.017		20.31	0.09	0%
Device 2	0.017	21	20.27	0.13	1%
Device 3	0.079	14	20.25	0.15	1%
Device 4	0.079	14	20.23	0.17	1%
Device 5	0.079	14	20.22	0.18	1%
Device 6	0.017	14	20.22	0.18	1%
Device 7	0.017	21	20.21	0.19	1%
Totals	0.305	148			

NAC Circuit Voltage Drop Calculation — 10/16/2014

Project Name: SHALOM HOUSE – PORTLAND
Circuit Number: NAC–3

Nominal System Voltage: 20.4 volts
Minimum Device Voltage: 16 volts
Distance from source to 1st device: 60
Wire Gauge for balance of circuit

Wire Gauge	Resistance Per 1000
14	6.14
14	6.14

Max Output Current: 1.5 amps
Total Circuit Current: 0.305 amps

Circuit is within limits

	Device Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.017		20.29	0.11	1%
Device 2	0.017	8	20.27	0.13	1%
Device 3	0.079	19	20.24	0.16	1%
Device 4	0.079	9	20.23	0.17	1%
Device 5	0.079	9	20.23	0.17	1%
Device 6	0.017	20	20.22	0.18	1%
Device 7	0.017	8	20.22	0.18	1%
Totals	0.305	133			

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.
2. INSTALLATION SHALL COMPLY WITH NEC, NFPA 72 AND ALL OTHER APPLICABLE CODES AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
3. WIRING DEPICTED ON THESE PLANS IS SCHEMATIC – ACTUAL WIRE LOCATIONS MAY DIFFER FROM THESE PLANS. WIRING SHALL BE PERFORMED AS ACTUAL BUILDING CONSTRUCTION CONDITIONS ALLOW AND TO MINIMIZE PENETRATIONS THROUGH AREA SEPARATION WALLS AND FIRE WALLS. THE USE OF A RACEWAY IS PERMITTED AS LONG AS NO 110V OR HIGHER VOLTAGE CABLES ARE IN THE SAME RACEWAY.
4. FIRE RATINGS SHALL BE MAINTAINED FOR ALL PENETRATIONS THROUGH FIRE–RATED CONSTRUCTION.
5. POWER FOR ALL FIRE ALARM PANELS AND FIRE ALARM POWER SUPPLIES MUST BE PROVIDED BY A DEDICATED AC BRANCH CIRCUIT.
6. POWER–LIMITED AND NONPOWER–LIMITED CIRCUIT WIRING MUST REMAIN SEPARATED IN CABINET. ALL POWER–LIMITED CIRCUIT WIRING MUST REMAIN AT LEAST 0.25" AWAY FROM ANY NONPOWER–LIMITED CIRCUIT WIRING. FURTHERMORE, ALL POWER–LIMITED AND NONPOWER–LIMITED CIRCUIT WIRING MUST ENTER AND EXIT THE CABINET THROUGH DIFFERENT KNOCK OUTS AND/OR SEPARATE CONDUITS.
7. WHEN UTILIZING CLASS "A" CIRCUITS, SEPARATE OUTGOING AND RETURN CONDUCTORS OF CLASS "A" CIRCUITS BY A MINIMUM OF 12" WHERE RUN VERTICALLY AND 48" WHERE RUN HORIZONTALLY.
8. WHEN UTILIZING SHIELDED CABLE TIE SHIELDS THROUGH AND INSULATE AT EACH JUNCTION BOX. INSULATE AND TAPE BACK AT END.
9. ALL FIRE ALARM CABLING SHALL BE ACCEPTABLE TO THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE.
10. SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER CONSTRUCTION CLEAN–UP IS COMPLETED AND FINAL.
11. LOCATE SMOKE DETECTORS A MINIMUM OF THREE (3) FEET FROM MECHANICAL DIFFUSERS. WALL–MOUNTED SMOKE DETECTORS SHALL BE LOCATED A MINIMUM OF 4" AND A MAXIMUM OF 12" FROM CEILING. CEILING–MOUNTED SMOKE DETECTORS SHALL BE MOUNTED ON CEILINGS AND NOT ON THE BOTTOMS OF BEAMS OR JOISTS.
12. PROVIDE SYNCHRONIZATION OF ALL VISUAL NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ALL REQUIRED SYNC MODULES. PROVIDE A MULTI–SYNC MODE SLAVE CONNECTION BETWEEN ALL SYNC MODULES.
13. VERIFY ALL FIELD SELECTABLE AUDIBILITY SETTINGS OF NOTIFICATION APPLIANCES WITH FIRE ALARM CONTRACTOR.
14. UPON COMPLETION OF THE FIRE ALARM SYSTEM INSTALLATION AND PROGRAMMING, THE INSTALLING CONTRACTOR SHALL PERFORM FINAL TESTING OF THE ENTIRE SYSTEM, PER ALL APPLICABLE CODES, AND SHALL COORDINATE AND PERFORM A FINAL FIRE ALARM SYSTEM INSPECTION.
15. PROVIDE OFF–SITE MONITORING AS REQUIRED BY THE INTERNATIONAL FIRE CODE, SECTION 907.15 AND THE LOCAL AUTHORITY HAVING JURISDICTION.
16. INSTALLING CONTRACTOR SHALL, PHYSICALLY, LABEL ALL INITIATING DEVICES AND NOTIFICATION APPLIANCE CIRCUIT END OF LINE (WHEN WIRING CLASS "B"). THESE LABELS SHALL BE IN PLACE PRIOR TO START–UP AND TESTING.

FIRE ALARM SYMBOL LEGEND

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT

SYMBOL	DESCRIPTION	MOUNTING
FCP	FIRE ALARM CONTROL PANEL	WALL–TOP @ 66"
FPS	FIRE ALARM POWER SUPPLY	FIELD VERIFY
FSA	FIRE SYSTEM ANNUNCIATOR	WALL–TOP @ 66"
FSD	FIRE/SMOKE DAMPER	BY OTHERS
(S)	SMOKE DETECTOR	CEILING
(S)–	DUCT SMOKE DETECTOR	BY OTHERS
(H)	HEAT DETECTOR	CEILING
CM	ADDRESSABLE CONTROL MODULE	FIELD VERIFY
MM	ADDRESSABLE MONITOR MODULE	FIELD VERIFY
P	MANUAL PULL STATION	WALL @ 48"
R	CONTROL RELAY (MULTI–VOLTAGE)	FIELD VERIFY
RM	ADDRESSABLE RELAY MODULE	FIELD VERIFY
	MAGNETIC DOOR HOLDER	FIELD VERIFY
	WATER FLOW SWITCH	BY OTHERS
	VALVE TAMPER SWITCH	BY OTHERS
	BELL	BY OTHERS
	CEILING MOUNT STROBE	FIELD VERIFY
	CEILING MOUNT HORN / STROBE	FIELD VERIFY
	CEILING MOUNT SPEAKER / STROBE	FIELD VERIFY
	HORN	WALL @ 10'–0
	HORN / STROBE	WALL 80"–96"
SS	SPEAKER / STROBE	WALL 80"–96"
SP	SPEAKER	WALL @ 90"
	STROBE	WALL 80"–96"

ABBREVIATION	DESCRIPTION
E	EXISTING
G	WITH GUARD
P	PENDENT MOUNT
R	RESIDENTIAL (110V)
S	SOUNDER BASE
WP	WEATHER PROOF
EOL	END OF LINE RESISTOR
EOLR	END OF LINE RELAY
AWG	AMERICAN WIRE GAUGE
TWP	TWISTED PAIR
TWSP	TWISTED SHIELDED PAIR
FPLP	FIRE POWER LIMITED PLENUM
FPLR	FIRE POWER LIMITED RISER

SPEAKER WATTAGE (2W) 75 STROBE CANDELA 30

(S) L1D001 OR D01 (H) DEVICE ADDRESS
L – DENOTES LOOP #
(D or M – DENOTES DETECTOR OR MODULE #)

1–#16/2 TWP
WIRE TYPE ABBREVIATED
CONDUCTOR COUNT
WIRE SIZE
OF CABLES (IF OMITTED ONLY 1 CABLE NEEDED)

APPLICABLE CODES:

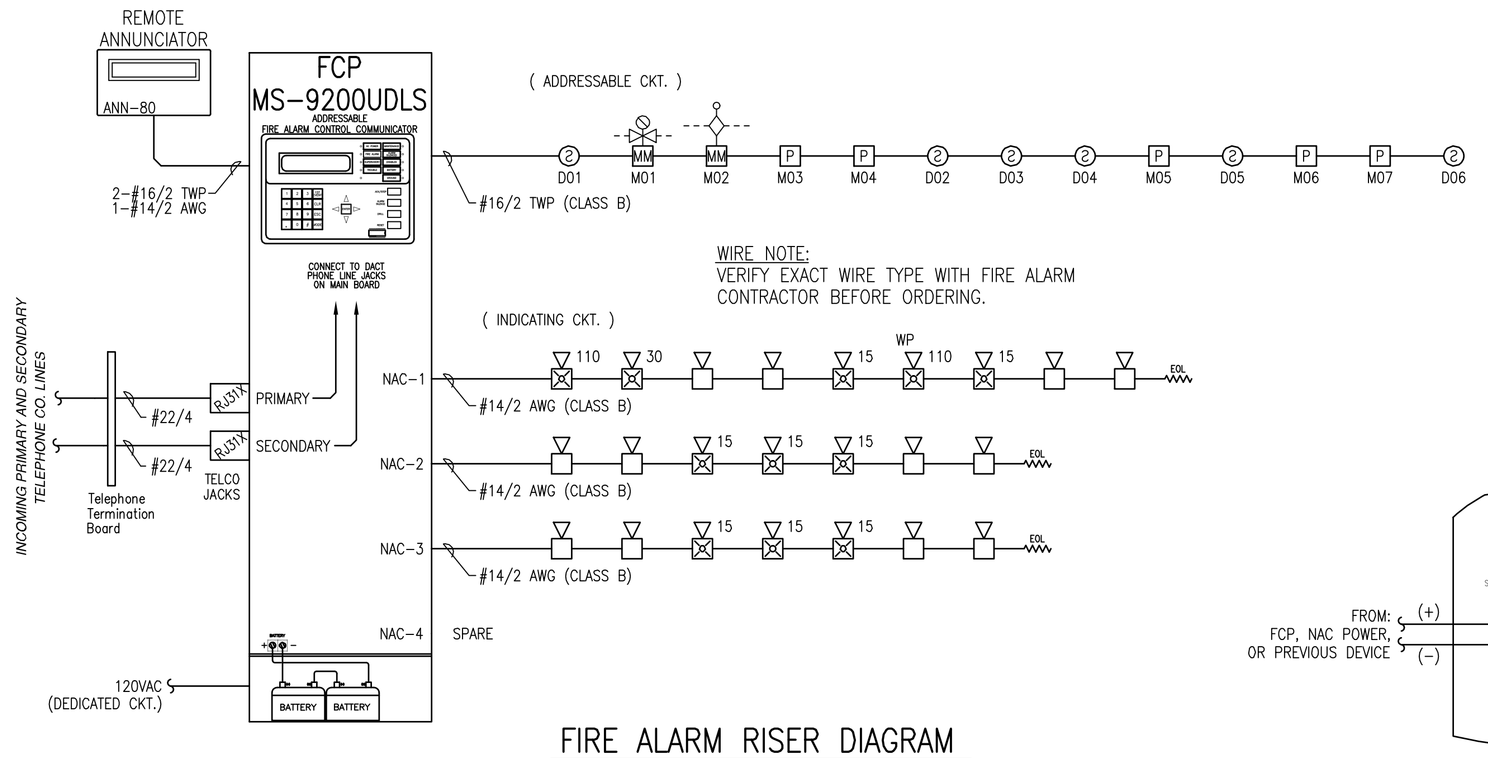
MAINE UNIFORM ENERGY & BUILDING CODE
PORTLAND CITY CODE, CHAPTER10, FIRE PREVENTION & PROTECTION
NFPA 1, FIRE CODE, & NFPA 101, LIFE SAFETY CODE

RESERVED FOR CITY STAMP

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	10/17/2014

CUNNINGHAM
Security Systems
10 Princes Point Road, Yarmouth, Maine 04096
Office: 207.846.3350 • Fax: 207.846.6080

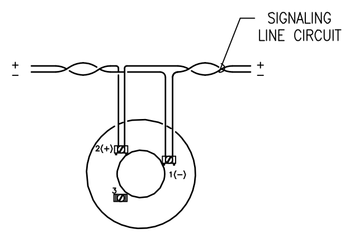
SHALOM HOUSE
214 DANFORTH STREET
PORTLAND, MAINE 04102
CALCS, DETAILS, LEGEND, MATRIX, NOTES



WIRE NOTE:
VERIFY EXACT WIRE TYPE WITH FIRE ALARM CONTRACTOR BEFORE ORDERING.

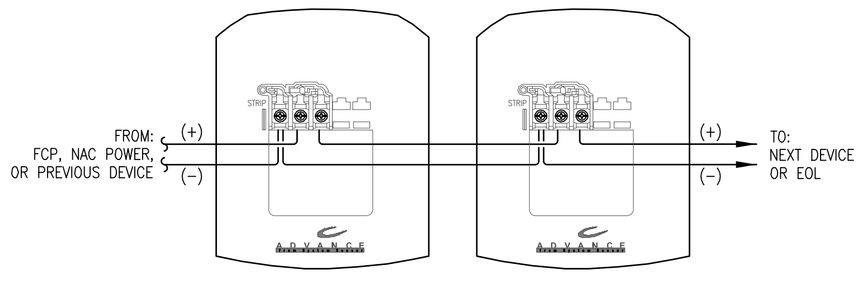
FIRE ALARM RISER DIAGRAM

SCHEMATIC: NO SCALE



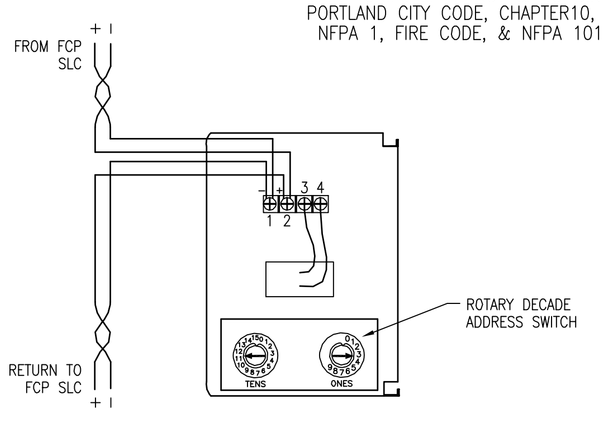
ADDRESSABLE SMOKE DETECTOR WIRING DETAIL

SCHEMATIC: NO SCALE



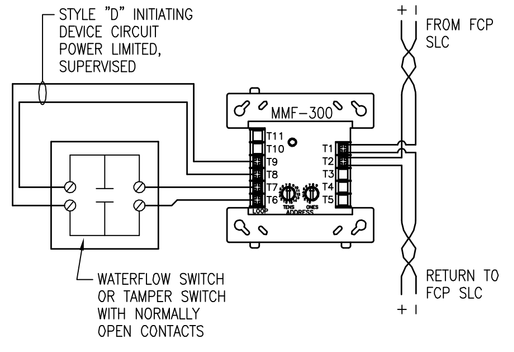
TYPICAL 2 WIRE STROBE WIRING DETAIL

SCHEMATIC: NO SCALE



MANUAL PULL STATION WIRING DETAIL

SCHEMATIC: NO SCALE



WATERFLOW / TAMPER WIRING DETAIL

SCHEMATIC: NO SCALE

OPERATIONS MATRIX

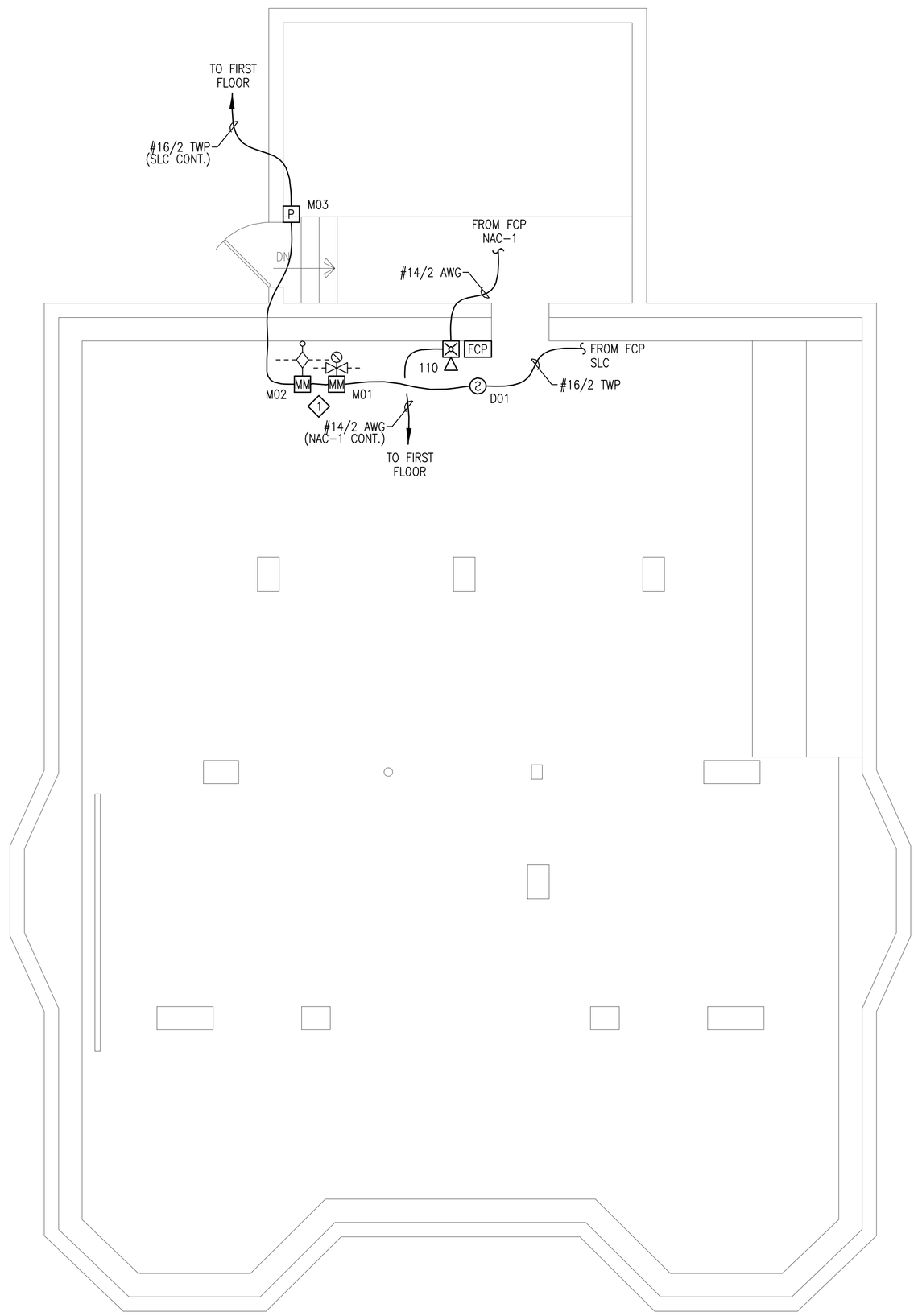
FIRE ALARM INPUT	FIRE ALARM OUTPUT	ACTIVATE ALARM INDICATOR	ACTIVATE AUDIBLE ALARM	ACTIVATE SUPERVISORY INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE TROUBLE INDICATOR	ACTIVATE AUDIBLE TROUBLE INDICATOR	TRANSMIT ALARM SIGNAL	TRANSMIT SUPERVISORY SIGNAL	TRANSMIT TROUBLE SIGNAL
SMOKE DETECTORS		●	●					●		
PULL STATIONS		●	●					●		
WATERFLOW SWITCHES		●	●					●		
VALVE TAMPER SWITCHES					●	●			●	
FIRE ALARM AC POWER FAIL						●	●			●
FIRE ALARM LOW BATTERY						●	●			●
OPEN CIRCUIT						●	●			●
GROUND FAULT						●	●			●
NAC SHORT CIRCUIT						●	●			●
LOSS OF AC TO BUILDING						●	●			●

DRAWN	JPB UNICAD JOB #14664
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	10/17/2014
REVISION	0
SCALE	NONE

shop drawings created by:
5794 W. 4600 So.
Hooper, UT 84315
Office: 801.985.0410
www.unicad.net
UNICAD Inc.
Fire Alarm Design & Drafting Services

FA-1

Reviewed for Code Compliance
Inspection Division
Approved with Conditions
Date: 12/02/14



BASEMENT FIRE ALARM PLAN
SCALE: 1/4"=1'-0"

RESERVED FOR CITY STAMP

SHEET NOTES:

1. ADDRESSABLE MONITOR MODULE(S) PROVIDED TO MONITOR ALL WATER FLOW, PRESSURE SWITCHES, TAMPER SWITCHES AND POST INDICATING VALVES ASSOCIATED WITH THE FIRE SPRINKLER SYSTEM. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY EXACT QUANTITY AND LOCATION(S).

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	10/17/2014

CUNNINGHAM
Security Systems
10 Princes Point Road, Yarmouth, Maine 04096
Office: 207.846.3350 • Fax: 207.846.6080

SHALOM HOUSE
214 DANFORTH STREET
PORTLAND, MAINE 04102
BASEMENT FIRE ALARM PLAN

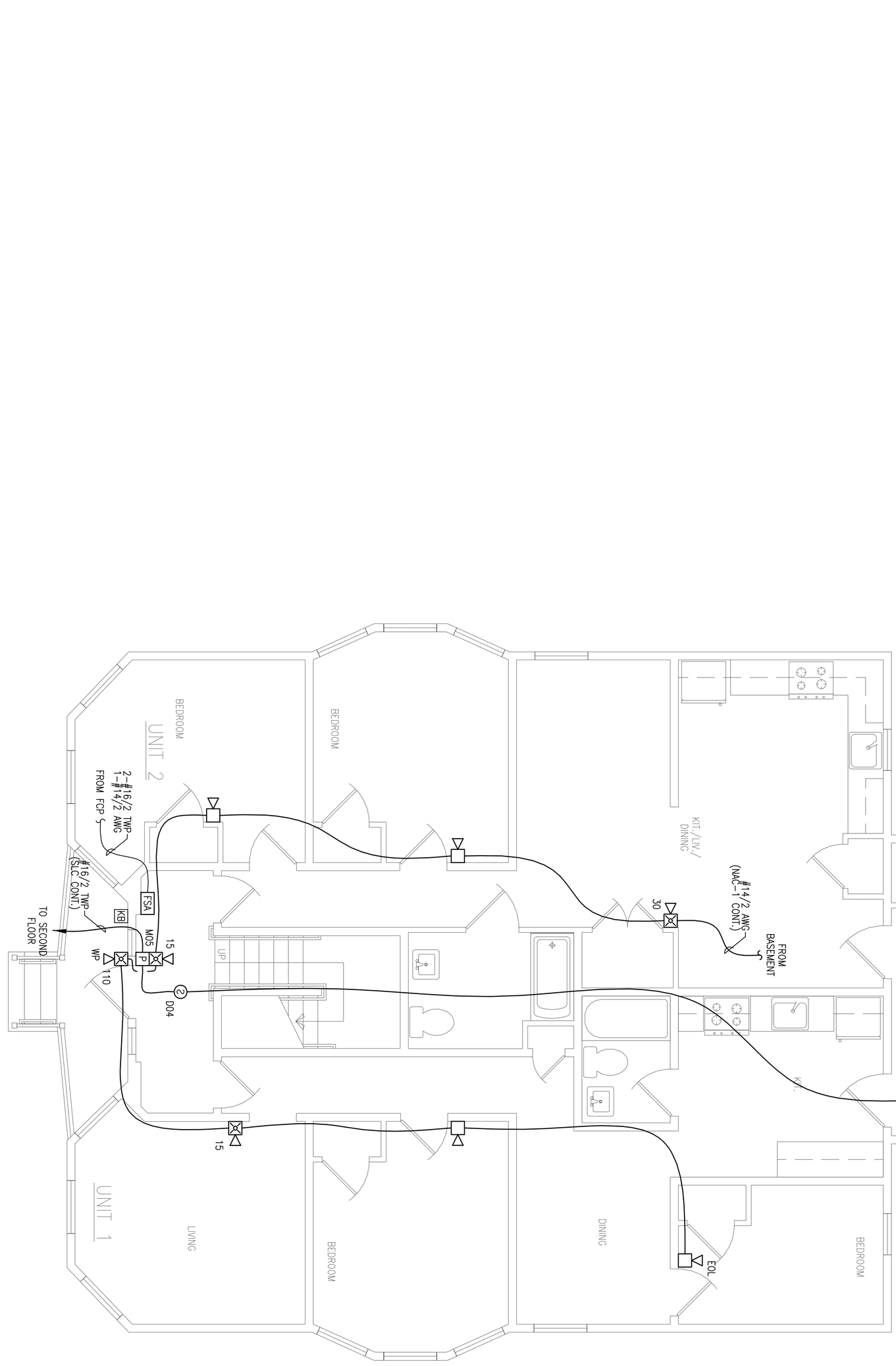
DRAWN	JPB UNICAD JOB #14664
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	10/17/2014
REVISION	0
SCALE	1/4"=1'-0"

shop drawings created by: 5794 W. 4600 So. Hooper, UT 84315 Office: 801.985.0410
www.unicad.net
UNICAD Inc.
Fire Alarm Design & Drafting Services

FA-2

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14



N

FIRST FLOOR FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

0 2' 4' 8'

RESERVED FOR CITY STAMP

shop drawings created by:
5794 W. 4600 So.
Hooper, UT 84315
Office: 801.985.0410
www.unicad.net

UNICAD Inc.
Fire Alarm Design & Drafting Services

DRAWN	JPB UNICAD JOB #14664
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	10/17/2014
REVISION	0
SCALE	1/4"=1'-0"

FA-3

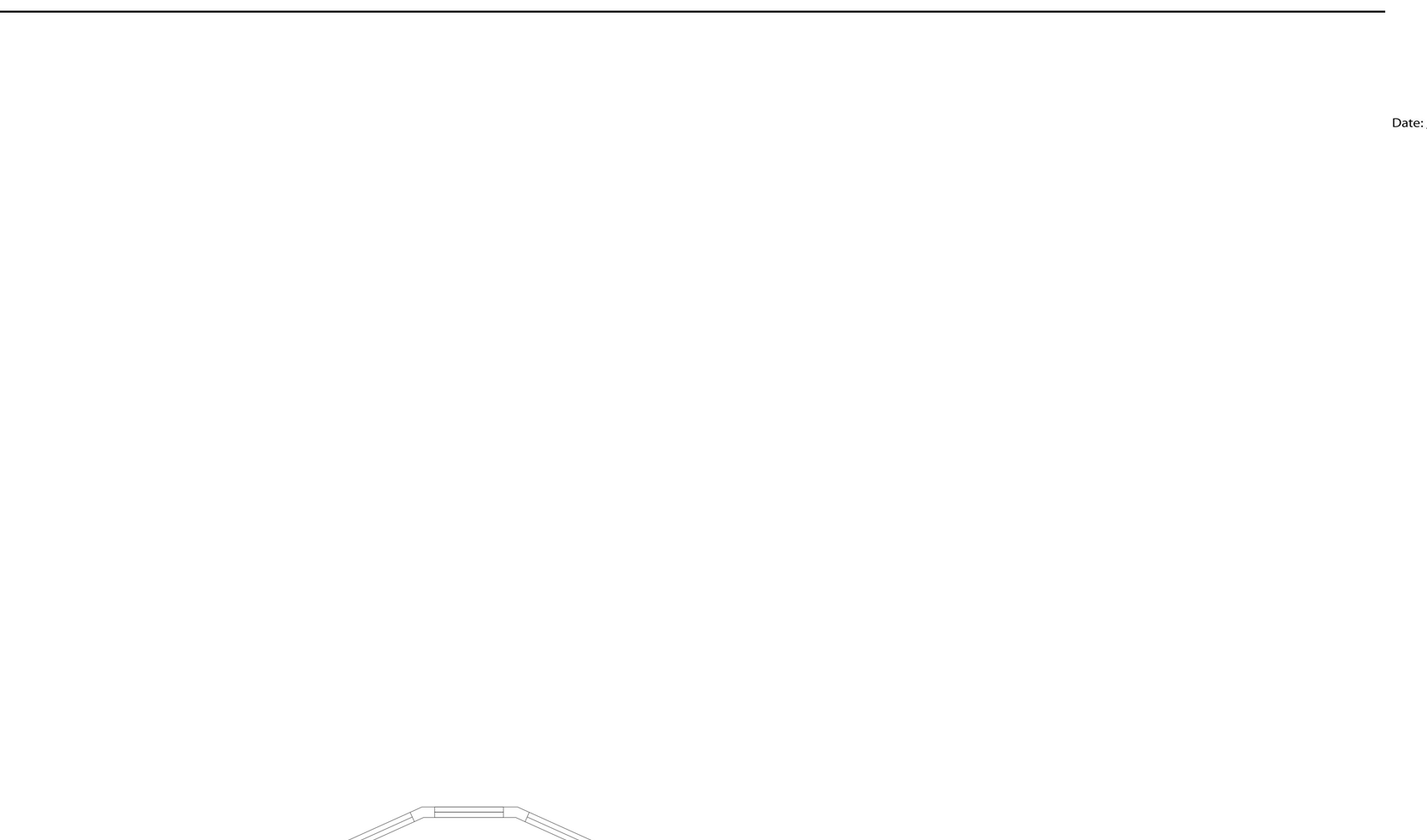
SHALOM HOUSE
214 DANFORTH STREET
PORTLAND, MAINE 04102
FIRST FLOOR FIRE ALARM PLAN

CUNNINGHAM
Security Systems
10 Princes Point Road, Yarmouth, Maine 04096
Office: 207.846.3350 • Fax: 207.846.6080

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	10/17/2014

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14



N

SCALE: 1/4"=1'-0"

0 2' 4' 8'

SECOND FLOOR FIRE ALARM PLAN

RESERVED FOR CITY STAMP

shop drawings created by:
5794 W. 4600 So.
Hooper, UT 84315
Office: 801.985.0410
www.unicad.net

UNICAD Inc.
Fire Alarm Design & Drafting Services

DRAWN	JPB UNICAD JOB #14664
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	10/17/2014
REVISION	0
SCALE	1/4"=1'-0"

FA-4

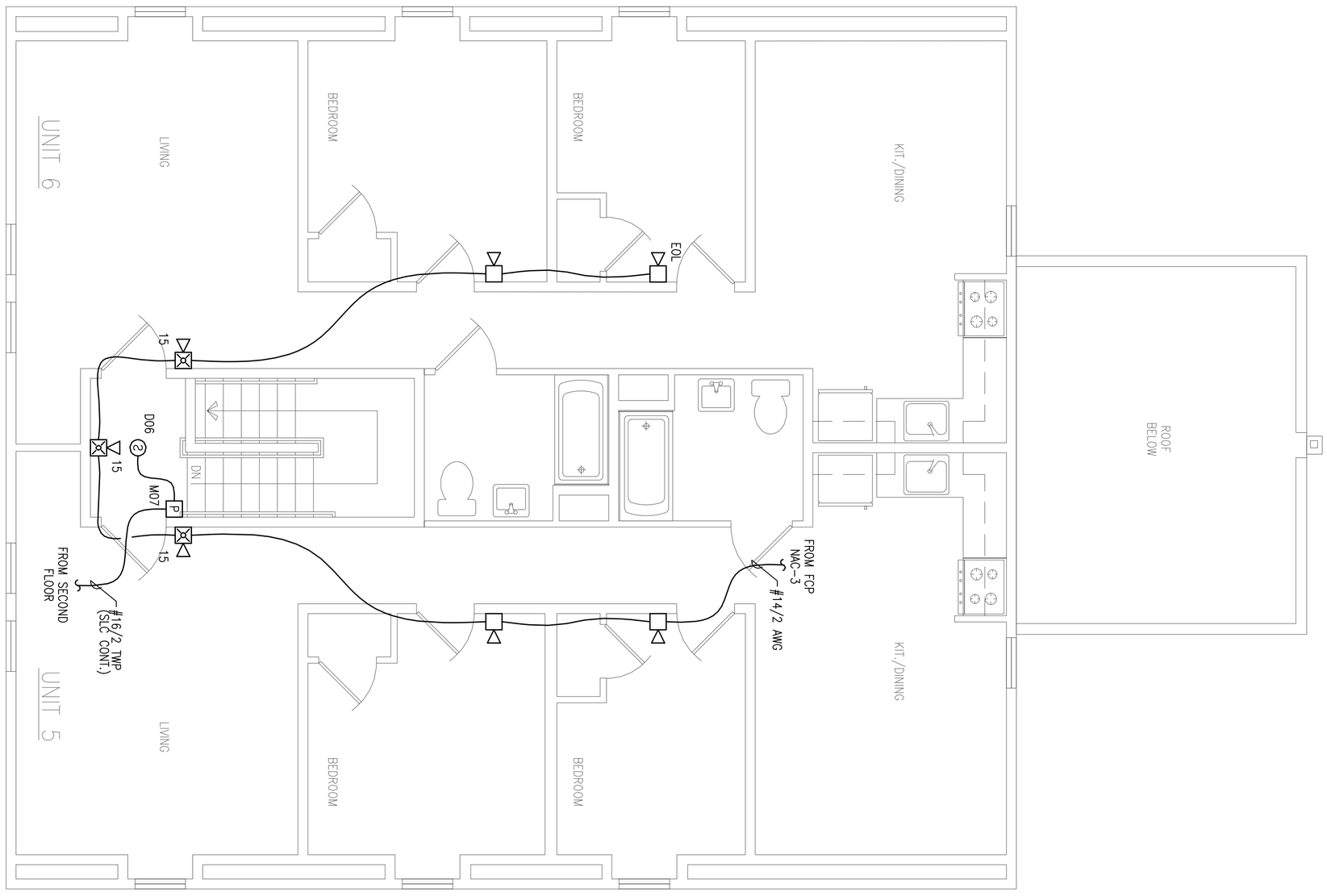
SHALOM HOUSE
214 DANFORTH STREET
PORTLAND, MAINE 04102
SECOND FLOOR FIRE ALARM PLAN

CUNNINGHAM
Security Systems
10 Princes Point Road, Yarmouth, Maine 04096
Office: 207.846.3350 • Fax: 207.846.6080

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	10/17/2014

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14



N

SCALE: 1/4"=1'-0"

0 2' 4' 8'

THIRD FLOOR FIRE ALARM PLAN

RESERVED FOR CITY STAMP

shop drawings created by:
5794 W. 4600 So.
Hooper, UT 84315
Office: 801.985.0410
www.unicad.net

UNICAD Inc.
Fire Alarm Design & Drafting Services

FA-5

DRAWN	JPB UNICAD JOB #14664
CHECKED	WAYNE B. HAWS NICET IV 90496
DATE	10/17/2014
REVISION	0
SCALE	1/4"=1'-0"

SHALOM HOUSE
214 DANFORTH STREET
PORTLAND, MAINE 04102
THIRD FLOOR FIRE ALARM PLAN

CUNNINGHAM
Security Systems
10 Princes Point Road, Yarmouth, Maine 04096
Office: 207.846.3350 • Fax: 207.846.6080

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	10/17/2014

Fire Alarm
Permit Application

If you or the property owner owes real estate or personal property taxes or user cha within the City, payment arrangements must be made before permits of any ki

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

Address/Location of Construction: 214 Danforth Street		
Total Square Footage of Proposed Structure:	4,452.	
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# 57-J-5-1	**Applicant Name:** Cunningham Security Address 10 Princes Point Rd. City, State & Zip Yarmouth, ME. 04096	Telephone: 846-3350 Email: mperkins@cunninghamsecurity.com
Lessee/Owner Name: (if different than applicant) Shalon House Inc. Address: 100 Gilman St. City, State & Zip: Portland, ME. 04102 Telephone & E-mail:	**Contractor Name:** (if different from Applicant) Address: City, State & Zip: Telephone & E-mail:	Cost Of Work: $ 14,000 Fees: first $1000 = $25 fee + $11 for every other $1,000 of Cost of work **Total Fees :** $ 168.

Current use (i.e. single family) Five to Ten Family

If vacant, what was the previous use? _____

Proposed Specific use: _____

Is property part of a subdivision? No If yes, please name _____

Project description:
Installation of an addressable fire alarm system.

Who should we contact when the permit is ready:	Michelle Perkins
Address:	10 Princes Point Rd.
City, State & Zip:	Yarmouth, ME. 04096
E-mail Address:	mperkins@cunninghamsecurity.com
Telephone:	207-846-3350

Please submit all of the information outlined on the applicable checklist. Failure to do so causes an automatic permit denial.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

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

Signature: Michelle Perkins Date: 10/20/14

This is not a permit; you may not commence ANY work until the permit is issued.

Fire Alarm
Permit Application Checklist

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

All of the following information is required and must be submitted. Checking off each item as you p application package will ensure your package is complete and will help to expedite the permitting process.

Complete and submit the following

- □ Design complies with City Code Ch. 10 and Fire Department Regulations Ch 5: _____
- □ Life Safety Code Occupancy Classification: _____
- □ A formal code analysis may be required depending on the complexity of the property: _____
- □ Is the top occupiable floor of the building greater than 75 ft. above the lowest level of fire department access (high-rise)? NO
- □ Is this new work or a renovation to an existing system? Renovations
- □ Name of company providing programming and certification of system Cunningham Security (see http://www.portlandmaine.gov/fireprevention/firealarmcompanies.asp for approved companies):
- □ Vectored pdf plans and documents included
- □ Accurate scalable floor plan(s)
- □ Reflected ceiling or electrical plans are not acceptable. The plans shall be represent only the fire alarm system
- □ Each plan shall have a graphic scale
- □ Each plan shall have a 3 in. x 3 in. space reserved in the top right hand corner for city approval stamp
- □ Each plan shall have FA and a sheet number and a descriptive tile on it
- □ Each sheet shall be saved as a separate file and named the sheet number and title (ex. *FA-01 First Floor*, *FA-04 Wiring Diagram*, etc.)
- □ In order to review revisions to previously submitted plans, each revision shall have the same file name as the previous version
- □ Each document shall be a separate file with a descriptive file name
- □ An example of one document and file is a four page data sheet for one smoke detector
- □ Designer qualifications (copy of NICET IV certificate or stamped plans and documents)
- □ Scope of work
- □ Wiring diagram(s)
- □ Annunciator details
- □ Operations matrix

Building Inspections Division • 389 Congress Street • Portland, Maine 04101 • (207) 874-8703 • FACSIMILE (207) 874-8716 • TTY (207) 874-8936

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

□ Battery and voltage calculations

□ Equipment data sheets

□ A city electrical permit has been pulled

Master Box Approval (complete all items for approval)

□ Is this check list applicable?

□ Will a master box be installed? _____

□ AES approved installing contractor? _____

□ Documentation of AES approval: _____

□ Property Owner? _____

□ Property Owner Billing Address? _____

□ Property common name: _____

□ E-911 Address for protected premises: _____

□ Life Safety Code Occupancy Classification: _____

□ Emergency contact name: _____

□ Emergency contact phone: (_____)_____-_____

□ Additional emergency contact phone: (_____)_____-_____

□ Number of stories protected? _____

□ Number of square feet of structure protected? _____

□ Is the building protected by a supervised, automatic sprinkler system? _____

* See Applicant Submittal Requirements for Electronic Plan Review.

Separate permits are required for internal and external plumbing, & electrical installations.
For questions on Fire Department requirements call the Fire Prevention Officer at (207) 874-8405. Please submit all of the information outlined in this application checklist. If the application is incomplete, the application may be refused.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

This is not a Permit; you may not commence any work until the Permit is issued.

FIRE·LITE® ALARMS

www.firelite.com

April 11, 2003

H355 Seri

Intelligent Addressable T
Detectors for MS-9600,

Section: Addressable D

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

Marshal
7270-0075:195

UL LISTED

ULC

FM APPROVED

GENERAL

The **Fire·Lite H355 Series** thermal detectors are addressable sensors that use a state-of-the-art thermistor sensing circuit for fast response. These sensors are designed to provide open-area protection and are intended for use with the **MS-9600** and **MS-9200UD** Fire Alarm Control Panels (FACPs).

Both the **H355** and **H355R** sensors provide fixed temperature alarm detection at 135°F. The **H355R** sensor responds to rate-of-rise conditions of greater than 15°F/8.3°C per minute. **H355HT** provides fixed high-temperature detection at 190°F/88°C. These thermal detectors provide cost effective, addressable property protection in a variety of applications.

Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (P/N **RA400Z**).

H355 in B350LP base

FEATURES

SLC loop:

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

Addressing:

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

Architecture:

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Integral communications and built-in device-type identification.
- Built-in tamper resistant feature.
- Built-in functional test switch activated by external magnet.

Operation:

- Factory preset at 135°F (57°C).
- Rate-of-rise model (H355R), 15°F (8.3°C) per minute.
- 360°-field viewing angle of the visual alarm indicators (two bicolor LEDs). LEDs blink green in Normal condition and turn on steady red in Alarm.
- Visible LEDs “blink” every time the unit is addressed.

Mechanicals:

- Sealed against back pressure.
- SEMS screws for wiring of the separate base.
- Designed for direct-surface or electrical-box mounting.
- Plugs into separate base for ease of installation and maintenance.
- Separate base allows interchange of photoelectric, ionization and thermal sensors.

Other system features:

- Remote test feature from the panel.
- Walk test with address display.
- Low standby current.
- 94-5V plastic flammability rating.

Options:

- Remote LED output connection to optional RA400Z remote LED annunciator.
- Recessed (**RMK400**) or surface (**SMK400**) base mounting kits.

APPLICATIONS

Use thermal detectors for protection of property.

CONSTRUCTION

These detectors are constructed of off-white Bayblend®.

The H355 Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Bayblend® is a registered trademark of Bayer Corporation.

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

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

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING

INSTALLATION

H355 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on box that is at least 1.5" (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box.
- 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
- Single-gang box (except relay or isolator base).

NOTE: *Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring only.*

OPERATION

Each H355 Series detector uses one of 159 (MS-9600) or 99 (MS-9200UD) possible addresses on a control panel SLC loop. It responds to regular polls from the control panel and reports its type and the status. If it receives a test command from the panel (or a local magnet test), it stimulates its electronics and reports an alarm. It blinks its LEDs when polled and turns the LEDs on when commanded by the panel. The H355 Series offers features and performance that represent the latest in thermal detector technology.

SPECIFICATIONS

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

Height: 2.1" (5.33 cm).

Weight: 4.8 oz. (137 g).

Installation temperature: –4°F to 100°F (–20°C to 38°C).

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

Voltage range: 15 to 32 VDC peak.

Standby current: 300 µA @ 24 VDC (one communication every 5 seconds with LED blink enabled).

LED current: 6.5 mA @ 24 VDC.

Mounting: B350LP flanged base, included.

Fixed-temperature setpoint: 135°F (57°C).

Rate-of-rise detection: responds to greater than 15°F/8.3°C per minute.

PRODUCT LINE INFORMAT

NOTE: *"A" suffix indicates ULC-Listed mod*

H355 Intelligent thermal sensor *cluded)*.

H355A Same as H355 but with UL(*base included)*.

H355R Same as H355 with ***rat*** *(B350LP base included)*.

H355RA Same as H355R but with ULC Listing *(B350LPA base included)*.

H355HT Intelligent ***high-temperature*** thermal detector *(B350LP base included)*.

H355HTA Same as H355HT but with ULC Listing *(B350LPA base included)*.

RA400Z(**A**) Remote LED. Mounts to a single-gang box.

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

M02-04-00 Test magnet.

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

B501BH(**A**) Plug-in System Sensor ***sounder*** detector base. ***Diameter:*** 6.0" (15.24 cm). ***Mounting:*** 4.0" (10.16 cm) square box with or without plastic ring. Mounting box has a minimum depth of 1.5" (3.81 cm).

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

SYSTEM SENSOR®

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

Mini-Horns

The SpectrAlert® Advance series of mini-horn sounders are designed to simplify installations to provide primary and secondary signaling for fire and security applications.

SPECTRAlert ADVANCE from System Sensor

Features

- 12 and 24V operation
- High and low volume settings
- Temporal and non-temporal tones
- Mounts to single gang back box
- Compatible with MDL sync module
- Mechanically and electrically compatible with PA400 series Mini-Alert™ sounders

The MHR and MHW mini-horns operate at 12 and 24 volts and are ideal for hotel, motel or residential fire system applications, where a smaller notification device is desired. The mini-horns offer high and low volume settings, and temporal or non-temporal tones. The horns can be mounted to single gang back boxes for aesthetically sensitive applications. Synchronization is also provided when using the MDL module.

The MHR and MHW mini-horns can operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified, unfiltered power supply. They are listed to Underwriter's Laboratories Standard UL 464 for fire protective signaling systems.

Agency Listings

UL LISTED S4011

FM APPROVED 3028007

MEA approved MEA7-07-E

7135-1653:196

SpectrAlert® Advance Mini-Horn Specifications

Architectural/Engineering Specifications
Mini-horns shall be a System Sensor Model MHR or MHW capable of operating at nominal 12 or 24VDC and shall mount to a deep si horn shall be listed to Underwriter's Laboratories Standard UL464 for fire protective signaling systems. Mini-horns shall operate betw Fahrenheit from a regulated DC, or full-wave rectified, unfiltered power supply. When used with the Sync•Circuit™ Module, 12-volt rat circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between

Physical Specifications	
Dimensions	4.6″L × 2.9″W × .45″D
Weight	2.67 oz.
Operating Temperature Range	32°F to 120°F (0°C to 49°C)
Mounting	Surface: deep single-gang back box (2¾″ deep) Flush: Standard 4″ × 4″ back box
Electrical Specifications	
Input Terminals	12 to 18 AWG
Nominal Voltage	Regulated 12DC/FWR or regulated 24DC/FWR
Operating Voltage	8–33
Operating Voltage with MDL	9–33

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

UL Sound Output and Current Draw Data

Sounder Output (dBA)								
Switch Setting	Pattern	Output Level	8–17.5 VDC	8–17.5 VFWR	Nominal 12 VDC	Nominal 12 VFWR	16–33 VDC	16–33 VFWR
1	Temporal	High	68	67	71	70	78	76
2	Temporal	Low	66	65	69	68	76	75
3	Non-temporal	High	72	71	75	74	80	79
4	Non-temporal	Low	70	69	73	72	78	77

Sounder Current Draw (mA RMS)						
			8–17.5 Volts		16–33 Volts	
Switch Position	Sound Pattern	Volume	DC	FWR	DC	FWR
1	Temporal	High	12	10	17	15
2	Temporal	Low	10	9	14	13
3	Non-temporal	High	22	17	29	25
4	Non-temporal	Low	17	13	21	19

Ordering Information

Part No.	Description
MHR	Mini-Horn, Red
MHW	Mini-Horn, White

SYSTEM SENSOR®
3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

©2009 System Sensor.
Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.
A05-0414-001 • 12/09 • #2266

MS-9200UDLS(E) Rev 3

Intelligent Addressable FACP with Built-In Communicator

FIRE·LITE by Honeywell

Addressable Fire Al

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

General

The Fire•Lite MS-9200UDLS Rev 3 with Version 5.0 firmware is a combination FACP (Fire Alarm Control Panel) and DACT (Digital Alarm Communicator/Transmitter) all on one circuit board. This compact intelligent addressable control panel has an extensive list of powerful features.

While the MS-9200UDLS Rev 3 may be used with an SLC configured in the CLIP (Classic Loop Interface Protocol) mode, it can also operate in LiteSpeed™ mode—Fire•Lite's latest polling technology—for a quicker device response time. LiteSpeed's patented technology polls 10 devices at a time. This improvement allows a fully-loaded panel with up to 198 devices to report an incident and activate the notification circuits in under 10 seconds. With Litespeed polling, devices can be wired on standard twisted, unshielded wire up to a distance of 10,000 feet.

The MS-9200UDLS Rev 3's quick-remove chassis protects the electronics during construction. The backbox can be installed allowing field wiring to be pulled. When construction is completed, the electronics can be quickly installed with just two bolts.

New features for Rev 3 with Version 5.0 firmware include removable terminal blocks, improved transient protection, additional secondary ANN-BUS, and increased power for the resettable and remote sync outputs.

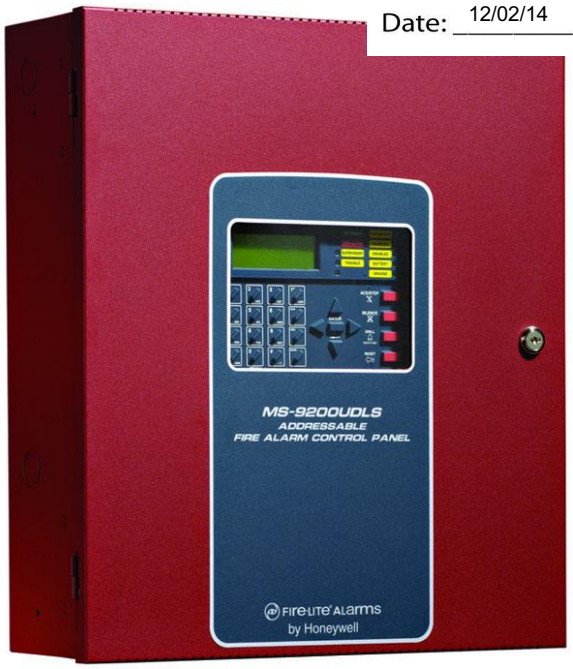
Available accessories include ANN-BUS devices as well as ACS LED, graphic and LCD annunciators, and reverse polarity/city box transmitter.

The integral DACT transmits system status (alarms, supervisories, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote and local programming of the control panel using the PS-Tools Upload/Download utility. In addition, the control panel may be programmed or interrogated off-site via the public switched telephone network. Any personal computer with Windows® XP or greater, a compatible modem, and PS-Tools—the Fire•Lite Upload/Download software kit—may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status and system voltages. The panel can also be programmed through the FACP's keypad or via a standard PS-2 computer keyboard, which can be plugged directly into the printed circuit board. This permits easy typing of address labels and other programming information.

Version 5.0 firmware supports the following: Primary and Secondary ANN-bus devices, AD355 (LiteSpeed), USB port, NAC circuit diagnostics, a new report has been added to the walktest that lists untested devices, new device types added: audio telephone type code for ACC 25/50ZST, Photo Supervisory and auto-resettable Drill (non-latching).

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

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



52422cov.jpg

Features

- Listed to UL standard 864, 9th edition.
- On-board DACT.
- Remote site or local USB port upload/download, using PS-Tools.
- Four (4) Style Y (Class B) NAC circuits, which can be converted to four (4) Style Z (Class A) circuits with optional ZNAC-92 converter module. (Up to 6.0 amps total NAC power when using optional XRM-24B.)
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules or LCD-80F, ANN-80 or Legacy ACS Annunciators.
- ANN-BUS for connection to following optional modules (cannot be used if ACS annunciators are used):
  - ANN-80(-W) Remote LCD Annunciator
  - ANN-I/O LED Driver
  - ANN-S/PG Printer Module
  - ANN-RLY Relay Module
  - ANN-LED Annunciator Module
  - ANN-RLED Annunciator Module alarms only
  - ROME Relay Option Module Enclosure
- ACS/TERM:
  - ACS Annunciators: Up to 32 Legacy ACM Series annunciators (ACM-16AT or ACM-32 series). Cannot be used if ANN-BUS devices are used.
  - Terminal-mode Annunciators: Up to 32 Legacy LCD-80F remote annunciators.

- EIA-232 printer/PC interface (variable baud rate) on main circuit board, for use with optional UL-listed printer PRN-6F.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- Detector sensitivity test capability (NFPA 72 compliant).
- History file with 1,000-event capacity.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- Automatic device type-code verification.
- One person audible or silent walk test with walk-test log and printout.
- Point trouble identification.
- Waterflow (nonsilenceable) selection per monitor point.
- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and presignal delay per point (NFPA 72 compliant).

NOTE: *Only detectors may participate in PAS.*

SLC LOOP:

- SLC can be configured for NFPA Style 4, 6, or 7 operation.
- SLC supports up to 198 addressable devices per loop (99 detectors and 99 monitor, control, or relay modules).
- SLC loop maximum length 10,000 ft. (3,000 m.). *See installation manual for wire tables.*

NOTIFICATION APPLIANCE CIRCUITS (NACS):

- Four onboard NACs with additional NAC capability using output control modules (CMF-300 or CMF-300-6). The four Class B NACs can be converted to four Class A NACs with optional ZNAC-92 converter module.
- Silence Inhibit and Auto Silence timer options.
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability.
- Selectable strobe synchronization per NAC.
- 2.5 amps maximum per each NAC circuit.

NOTE: *Maximum 24VDC system power output is shared among all NAC circuits and 24VDC special-application auxiliary power outputs. Total available output is 3.0 amps. Using the optional XRM-24B transformer increases 24VDC output to 6.0 amps.*

PROGRAMMING AND SOFTWARE:

- Autoprogram (learn mode) reduces installation time.
- Custom English labels (per point) may be manually entered or selected from an internal library file.
- Three Form-C relay outputs (two programmable).
- 99 software zones.
- Continuous fire protection during online programming at the front panel.
- Program Check automatically catches common errors not linked to any zone or input point.
- **OFFLINE PROGRAMMING:** Create the entire program in your office using a Windows®-based software package (order programming kit PS-Tools, separately). Upload/download system programming locally to the MS-9200UDLS Rev 3 in less than one minute.
- USB upload/download programming with standard Male-A to Male-B cable.

User Interface

LED INDICATORS

- AC Power (green)
- Fire Alarm (red)
- Supervisory (yellow)
- Alarm Silenced (yellow)
- System Trouble (yellow)
- Maintenance/Presignal (yellow)
- Disabled (yellow)
- Battery Fault (yellow)
- Ground Fault (yellow)

KEYPAD CONTROLS

- Acknowledge/Step
- Alarm Silence
- Drill
- System Reset (lamp test)
- 16-key alpha-numeric pad (similar to telephone keypad)
- 4 cursor keys
- Enter

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

Product Line Information

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

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

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

ZNAC-92: Optional converter module which converts four (4) Style Y (Class B) NAC circuits to four (4) Style Z (Class A) circuits.

PK-CD Programming software for Windows®-based PC computer (cable not included), available on www.firelite.com.

DP-9692: Optional dress panel for MS-9200UDLS Rev 3.

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

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

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

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

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

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

XRM-24B(E): Optional transformer. Increases system power output to 6.0 amps. Use XRM-24BE with MS-9200UDLS Rev 3(E).

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

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

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

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

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

COMPATIBLE ANNUNCIATORS

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

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

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

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

ROME: Relay Option Module Enclosure. Provides one **ANN-RLY** Relay Module already installed. The ROME Series provides mounting space for one additional Relay Module or one addressable Multi-module. *(See Installation Sheet PN 53530.)*

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

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

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

ACS-LED Zone Series: LED-type fire annunciators capable of providing up to 99 software zones of annunciation. Available in increments of 16 or 32 points to meet a variety of applications.

LDM Graphic Series: Lamp Driver Module series for use with custom graphic annunciators.

LCD-80F (Liquid Crystal Display) point annunciator: 80-character, backlit LCD-type fire annunciators capable of displaying English-language text.

NOTE: *For more information on Compatible Annunciators for use with the MS-9200UDLS Rev 3, see the following data sheets (document numbers) ACM-8RF (DF-51555), ACS/ACMSeries (DF-52378), LDM Series (DF-51384), LCD-80F (DF-52185).*

LITESPEED COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

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

SD355R: Addressable remote test capable detector for use with D355PL or DNR(W) duct smoke detector housings.

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

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

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

AD355(A): 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: Innovair Flex low-flow non-relay duct-detector housing. SD355R included.

DNRW: Innovair Flex low-flow non-re
ing, with NEMA-4 rating. Watertight.
rately.)

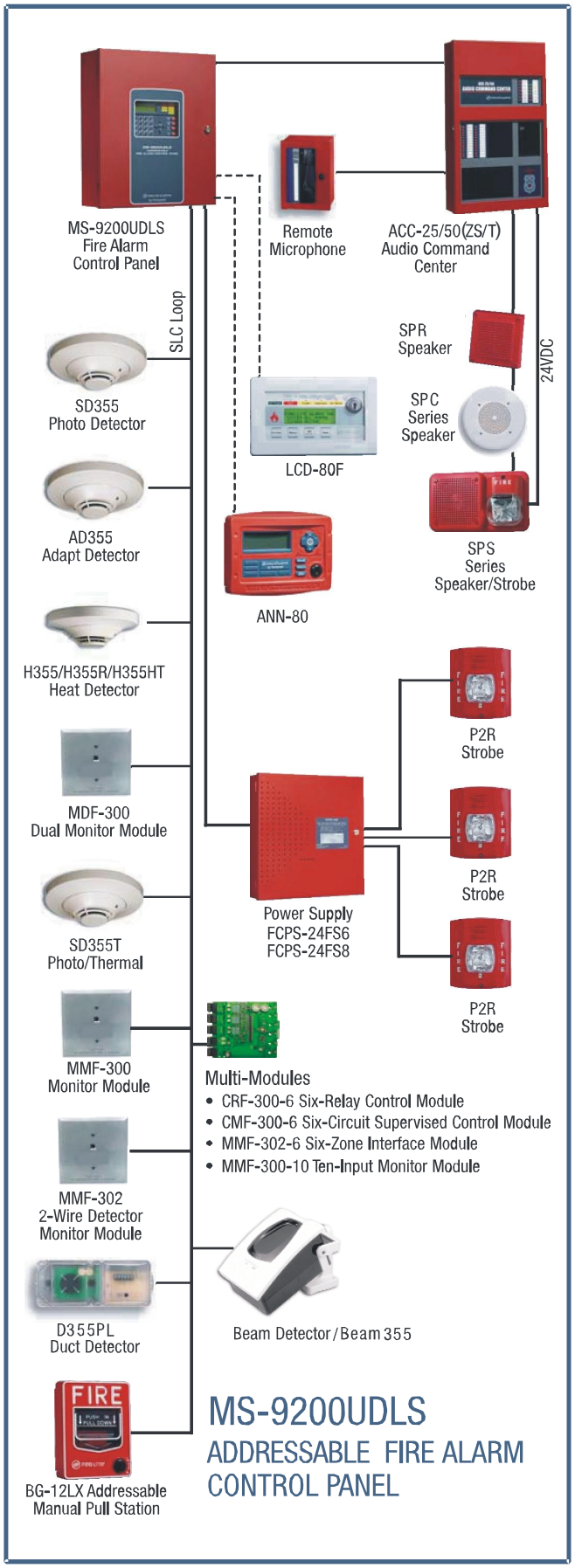
MMF-300: Addressable Monitor Modu
mally-open dry-contact initiating devic
4.0" (10.16 cm.) box. Includes plastic
line resistor. Module may be configur
(Class B) or Style D (Class A) IDC.

MDF-300: Dual Monitor Module. Sam
provides two Style B (Class B) only ID

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

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

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14



CMF-300: Addressable Control Mod (Class B/A) zone of supervised pola ances. Mounts directly to a 4.0" (10. Notification Appliance Circuit option re to power notification appliances.

CRF-300: Addressable relay module sets of Form-C contacts, which oper Mounts directly to a 4.0" (10.16 cm.) b the SMB500.

BG-12LX: Addressable manual pull sta ule mounted inside.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

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

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

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

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

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

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

NOTE: *1) For more information on Compatible Addressable Devices for use with the MS-9200UDLS Rev 3, see the following data sheets (document numbers): AD355 (DF-52324), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-60379), CMF/CRF Series (DF-52130), CP355 (DF-52383), D355PL (DF-52398), H355 Series (DF-52385), I300 (DF-52389), MMF-300 Series/MDF-300 (DF-52121), MMF-300-10 (DF-52347), MMF-302-6 (DF-52356), SD355/SD355T (DF-52384). 2) Legacy 300 Series detection devices such as the CP300/CP350, SD300(T)/SD350(T) and older modules such as the M300, M301, M302, C304, and BG-10LX are* ***not compatible*** *with LiteSpeed polling. If the SLC contains one of these devices, polling must be set for standard LiteSpeed protocol. Please consult factory for further information on previous 300 Series devices.*

Wiring Requirements

While shielded wire is not required, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Wire size should be no smaller than 18 AWG (0.78 mm²) and no larger than 12 AWG (3.1 mm²). The wire size depends on the length of the SLC circuit. Refer to the panel manual for wiring details.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

SYSTEM SPECIFICATIONS

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

System Capacity

- Intelligent Signalling Line Circuits 1
- Addressable device capacity 198
- Programmable software zones 99
- ACS Annunciators 32
- ANN-bus devices 16

Electrical Specifications

AC Power: MS-9200UDLS Rev 3: 120 VAC, 60 Hz, 3.0 amps. MS-9200UDLS Rev 3E: 240 VAC, 5 0 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

Battery charger capacity: 7 AH - 18 AH batteries. Up to two 18 Ah batteries can be housed in the FACP cabinet. Larger batteries require an external battery charger such as the CHG-75 or CHG-120, and a separate battery cabinet such as the BB-26 or NFS-LBB.

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Each terminal block provides connections for two Style Y (Class B) for a total of four Style Y (Class B) or with an optional ZNAC-92 module converts to four Style Z (Class A) NACs. Maximum signaling current per circuit: 2.5 amps. End-of-Line Resistor: 4.7K ohm, 1/2 watt (P/N 71252 UL listed) for Style Y (Class B) NAC. Refer to panel documentation and *Fire•Lite Device Compatibility Document* for listed compatible devices.

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

Special Application Non-resettable Power (24 VDC Nominal): Jumper selectable (JP4) for conversion to resettable power output. Up to 1.0 amp total DC current available from each output. Power-limited.

Special Application Resettable Power (24 VDC nominal): Jumper selectable (JP6) for conversion to non-resettable power. Up to 1.0 amp total DC current available. Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

Remote Sync Output: Remote power supply synchronization output. Nominal special application power: 24 VDC. Maximum current: 300 mA. End-of-Line Resistor: 4.7K ohm. Output linked to NAC 1 control. Supervised and power-limited.

Telephone Interface: Unless used with Teldat VISORALARM, requires dedicated business telephone number with a minimum of 5 volts DC (off-hook voltage). Obtain dedicated phone line directly from your local phone company. Do not use shared phone lines or PBX (digital) type phone line extensions.

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.20" (13.3
(TR-CE): 22.00" (55.88 cm.) high x 19

Shipping Specifications

Weight: 26.9 lbs. (12.20 kg.) **Dimensi**
high x 22.5" (57.15 cm.) wide x 8.5" (2

Temperature and Humidity Ranges

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

NFPA Standards

The MS-9200UDLS Rev 3 complies with the following NFPA 72 Fire Alarm Systems requirements:

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

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9200UDLS Rev 3 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 Listed:** S624
- **FM approved**
- **CSFM:** 7165-0075:0208
- **MEA:** 120-06-E

For ULC-listed version, see DF-60599.

FireLite® Alarms® is a registered trademark of Honeywell International Inc. Wheelock® is a registered trademark of and Exceder™ is a trademark of Cooper Notification.
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

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.

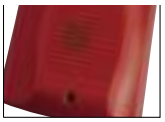
Made in the U.S. A.

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

RESURGAM CITY OF PORTLAND, MAINE

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

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, 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 m wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance pr the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts, 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.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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 Volt			
Sound Pattern	dB	DC	F		
Temporal	High	57	5		
Temporal	Medium	44	4		
Temporal	Low	38	4		
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

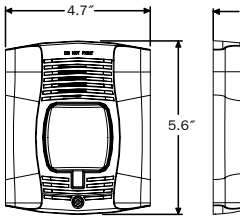
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

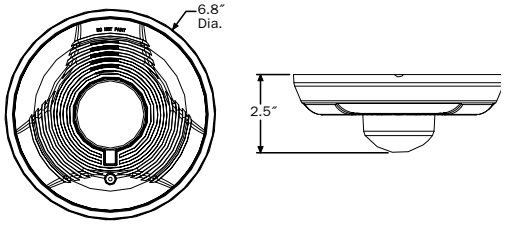
			8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
Switch Position	Sound Pattern	dB	DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	89
4	Non-Temporal	High	82	82	88	88	93	92	100	100
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.

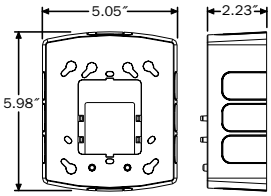
SpectrAlert Advance Dimensions



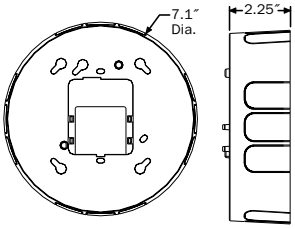
Wall-mount horn strobes



Ceiling-mount horn strobes



Wall back box skirt



Ceiling back box skirt

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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®

3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

©2009 System Sensor.
Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.
A05-0395-007 • 4/09 • #2132

CUNNINGHAM

Security Systems

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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

10/20/14

Portland Fire Department
380 Congress Street
Portland Maine 04101

Please find attached a permit application for the property located at 214 Danforth Street. This is an installation of an addressable fire alarm system in a 6 unit apartment building and is a fully sprinkled building.

Thank you,

Michelle Perkins

Michelle Perkins, Operations Manager

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

Addressable Photoelectric Smoke Detectors

FIRE·LITE by Honeywell

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

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 m*

SD355: Adressable photoelectric d included.

SD355A: Sames as SD355 with ULC included).

SD355T: Same as SD355 but with ***th*** 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 .

FlashScan® registered trademark of Honeywell International Inc. Bayblend® is a registered trademark of Bayer Corporation.
©2010 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS

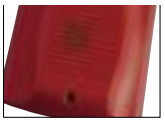
This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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

RESURGAM CITY OF PORTLAND, MAINE

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 12/02/14

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, 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 m wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance pr the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts, 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.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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 Volt			
Sound Pattern	dB	DC	F		
Temporal	High	57	5		
Temporal	Medium	44	4		
Temporal	Low	38	4		
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

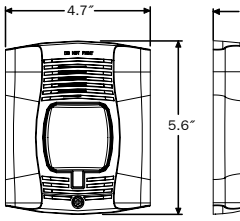
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

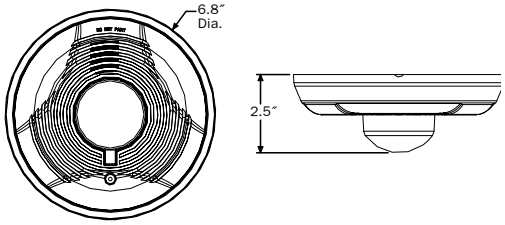
			8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
Switch Position	Sound Pattern	dB	DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	89
4	Non-Temporal	High	82	82	88	88	93	92	100	100
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.

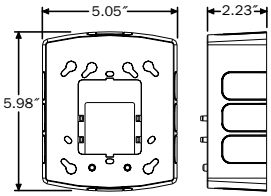
SpectrAlert Advance Dimensions



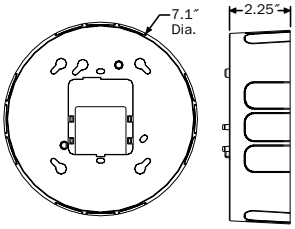
Wall-mount horn strobes



Ceiling-mount horn strobes



Wall back box skirt



Ceiling back box skirt

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 12/02/14

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®

3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

©2009 System Sensor.
Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.
A05-0395-007 • 4/09 • #2132