

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND BUILDING PERMIT

This is to certify that
ADT SECURITY SYSTEMS
15 PLEASANT HILL RD
SCARBOROUGH, ME 04074

For installation at
202 WOODFORD ST
Woodfords Congregational Church

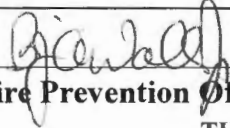
Job ID: 2012-03-3471-ALTCOMM

CBL: 124- J-005-001

has permission to install master box fire alarm with voice evac
provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of
the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of
the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured
before this building or part thereof is lathed or otherwise
closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner
before this building or part thereof is occupied. If a
certificate of occupancy is required, it must be

 (58)
Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

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

BUILDING PERMIT INSPECTION PROCEDURES

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

or email: buildinginspections@portlandmaine.gov

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

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

Final Fire

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

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



PORTLAND MAINE

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Director of Planning and Urban Development
Penny St. Louis

Job ID: 2012-03-3471-ALTCOMM
install master box fire alarm with voice evac

For installation at:
202 WOODFORD ST
Woodfords Congregational Church

CBL: 124- J-005-001

Conditions of Approval:

Fire

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

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

All smoke detectors and smoke alarms shall be photoelectric.

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

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

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

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

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

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

Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.

A master box connection and drill switch is required. AES Zones shall be:

1. Water flow
2. City Disconnect: Water flow
3. Pull stations and detectors
4. City Disconnect: Pull stations and detectors
5. Not assigned
6. Not assigned
7. Not assigned
8. AES tamper switch

Master Box Approval

Applicant: ADT Security

App Phone #: 207-396-5723

Building Name: Woodfords Congregational Church

Building Address: 202 Woodford St

Occupancy: Assembly

Assembly OL>300, 20 unit apartment building, etc.

Emergency Contact: Alan Bingham

Emergency phone #: 207-730-0317

Date of Application: 5/7/12

Billing Address: 202 Woodford Street
Portland, ME 04103

Comments:

Applicant completes red box and submits with Fire Alarm Permit

1

FIRE PREVENTION:

☒ Approved

☐ Denied

5 / 7 / 12
Date

B. J. W. [Signature]
Fire Prevention Officer

Zone 1: Water flow

Zone 2: City disconnect – Water Flow

Zone 3: Pulls and detectors

Zone 4: City disconnect – Pulls and Detectors

Zone 5: Unassigned

Zone 6: Unassigned

Zone 7: Unassigned

Zone 8: AES Tamper switch

Modify City Box response to alarm sounding in CAD: ☐ YES ☒ NO

2

FIRE ALARM:

Box #: _____

ELECTRICAL DIVISION: ☐ Approved

☐ Denied

Box Type: AES Radio Box /
New

Other

Test Date: ____ / ____ / ____ In Service Date: ____ / ____ / ____

Fire Alarm Technician

AES / Circuit if applicable: _____

3

FIRE ALARM: Same Running Assignment As Box: _____

Notifications: ☐ All Stations ☐ Run Books ☐ Digitizer ☐ Computer ☐ Cad Box Test

☐ South Portland

☐ _____

Other

Dispatcher

4

BILLING: ☐ Entered

Financial Officer

5

City of Portland, Maine - Building or Use Permit Application

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

Job No: 2012-03-3471-ALTCOMM 2012-42940 FAFS	Date Applied: 4/17/2012	CBL: 124-J-005-001	
Location of Construction: 202 WOODFORD ST	Owner Name: WOODFORDS CONGREGATIONAL CHURCH	Owner Address: 202 WOODFORDS ST PORTLAND, ME 04103	Phone:
Business Name:	Contractor Name: ADT	Contractor Address: 15 Pleasant Hill RD, Scarborough, ME 04074	Phone: 396-5723
Lessee/Buyer's Name:	Phone:	Permit Type: FAFS	Zone: B-2 & B-1 & R-5
Past Use: Woodfords Congregational Church and Portland Conservatory of Music	Proposed Use: Same: Woodfords Congregational Church & Portland Conservatory of Music - To install a fire alarm	Cost of Work: \$32,000.00 Fire Dept: 5/7/12 <input checked="" type="checkbox"/> Approved w/ conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A Signature: <i>[Signature]</i> (58)	CEO District: Inspection: Use Group: Type: Signature:
Proposed Project Description: Install fire alarm		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Brad		Zoning Approval	

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building Permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

Special Zone or Reviews

- ☐ Shoreland
☐ Wetlands
☐ Flood Zone
☐ Subdivision
☐ Site Plan

___ Maj ___ Min ___ MM
Date: *GK 4/17/12*

CERTIFICATION**Zoning Appeal**

- ☐ Variance
☐ Miscellaneous
☐ Conditional Use
☐ Interpretation
☐ Approved
☐ Denied

Date:

Historic Preservation

- ☒ Not in Dist or Landmark
☐ Does not Require Review
☐ Requires Review
☐ Approved
☐ Approved w/Conditions
☐ Denied

Date: *[Signature]*

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

SIGNATURE OF APPLICANT

ADDRESS

DATE

PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE

DATE

PHONE



Fire Alarm Permit

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

Entered 4/17/12 (B3)

2012-42940
2012-03-3471 Altcomp

B-2/B1/
R-5

Installation address: 202 Woodford ST CBL: 124-J-5
Exact location: (within structure) 20 Feet Post Main entrance door new FACP
Type of occupancy(s) (NFPA & ICC): Mixed use
Building owner: Woodfords Congregational Church & Portland Conservatory of Music
System Designer (point of contact): Eric Colby
Designer phone: 207-712-4089 E-mail: ecolby@ADT.com
Installing contractor: ADT Certificate of Fitness No: _____
Contractor phone: 207-396-5723 E-mail: ggladstone@ADT.com
This is a new application: YES ☒ NO ☐ New AES Master Box: YES ☒ NO ☐
(Include Master Box approval form)
Amendment to an existing permit: YES ☐ NO ☐ Permit no: _____

The following documents shall be provided with this application:

- | | |
|---------------------------------------------------------------------|-----------------------------------------------------------------|
| <input checked="" type="checkbox"/> Floor plans | <input type="checkbox"/> Scope of Work |
| <input checked="" type="checkbox"/> Wiring diagram | <input type="checkbox"/> 11 1/2 x 17s |
| <input type="checkbox"/> Annunciator details | <input type="checkbox"/> pdf copy (may be e-mailed) |
| <input type="checkbox"/> Input/ Output Matrix | <input checked="" type="checkbox"/> Designer qualifications |
| <input checked="" type="checkbox"/> Equipment data sheets | <input checked="" type="checkbox"/> Battery/ voltage drop calcs |
| <input type="checkbox"/> Electrical Permit Pulled (check alarm/com) | |

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

COST OF WORK: \$32,000
\$31,969
PERMIT FEE: \$340
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

APR 17 2012

Dept. of Building Inspections
City of Portland Maine

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to readable 11 1/2 x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

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

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

Applicant signature: _____

Date: _____

4-17-12

100

100

100

100

100

100

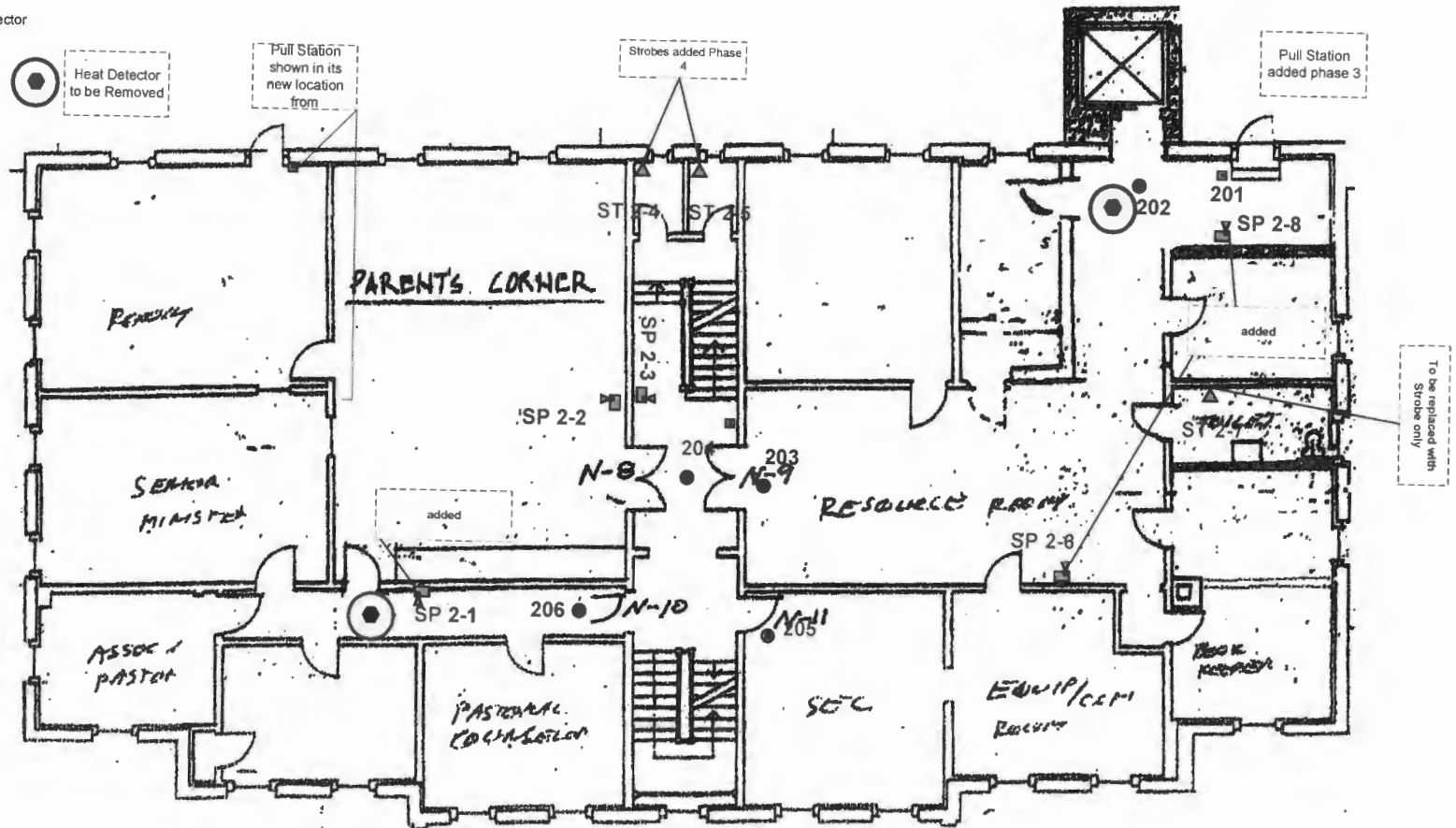


Woodfords Congregational Church Fire Alarm Upgrade Plan

ADT will upgrade the existing fire alarm system. This design has been formulated according to local ordinances, NFPA guidelines, and best practices within the industry. The system upgrade project will include the following:

- Replace the existing fire alarm control panel with a new UL-listed, addressable commercial 198-zone unit, a voice evacuation unit, and an auxiliary power supply for the enhanced alarm notification circuits.
- Replace all existing manual pull stations with addressable units
- Replace existing smoke and heat detectors with addressable units in the elevator control room and at recall points in all elevator lobby areas.
- Replace existing heat detectors located in the unsprinkled sanctuary end of the building with smoke detectors.
- Replace existing heat detectors located in the sanctuary attic, third floor attic, and the sub-basement boiler room with new addressable heat detectors.
- Add one smoke detector above the new control panel.
- Add one beam-type smoke detector to protect the sanctuary.
- Remove all existing heat detectors with the exception of those mentioned above which will be replaced with new addressable units.
- Move sprinkler flow connection to new control with addressable monitor modules (6) and add one monitor module for kitchen suppression system monitoring.
- Move existing room temperature device to a remote location to be determined.
- Replace existing horn/strobe units with speaker/strobes and add new units as per plan to extend voice evacuation throughout the building.
- Add ADA strobe-only units in all rest rooms.
- Add AES Portland Master Box.
- Add the 16 additional door holders to the new fire doors and smoke detectors as needed.

- ◼ Horn/Strobe
- Smoke Detector
- Heat Detector
- ◼ Pull Station
- ◼ Speaker/Strobe
- ◀ Strobe
- ⊙ Heat Detector to be Removed



NODNARDS CONGR. CHURCH
PARISH HOUSE
WINDOW REPLACEMENT
CONTRACT 2008-01
2nd FLOOR

070611-3



Eric Colby, Certified Engineering Technician, NICET Level III Cert. # 116800

15 Pleasant Hill Rd Scarborough ME 04074

Input Device ↓	Output ⇒	1	2	3	4	5	6	7	8	9	10
SMOKE DETECTOR		X	X		X	X	X				
HEAT DETECTOR		X	X		X	X	X				
MANUAL PULL STATION		X	X		X	X	X				
SPRINKLER FLOW SWITCH		X	X		X	X	X				
SPRINKLER TAMPER SWITCH								X			
KITCHEN HOOD SUPPRESSION		X	X								
DOOR RELEASE SMOKE DETECTORS		X	X		X						
ELEVATOR RECALL SMOKE DETECTORS		X	X			X	X				
BEAM SMOKE DETECTOR		X	X		X						

Output Column No.

1. Sound general building alarm through Notification Appliance Circuit.
2. Notify Fire Department.
3. Initiate supervisory signal to a 24-hour manned point for immediate response.
4. Close smoke barrier doors on the floor.
5. Recall elevator.
6. Initiate elevator shut down and disconnect elevator power.
7. Sends supervisory signal to central Station



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Receipts Details:

Tender Information: Check , Check Number: 3527576

Tender Amount: 250.00

Receipt Header:

Cashier Id: bsaucier

Receipt Date: 4/17/2012

Receipt Number: 42941

Receipt Details:

Reference ID:	6117	Fee Type:	BP-FIRE
Receipt Number:	0	Payment Date:	
Transaction Amount:	250.00	Charge Amount:	340.00
Job ID: Job ID: 2012-03-3471-ALTCOMM - Install fire doors			
Additional Comments: 202 Woodford			

Thank You for your Payment!



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Receipts Details:

Tender Information: Check , Check Number: 3527575

Tender Amount: 100.00

Receipt Header:

Cashier Id: bsaucier

Receipt Date: 4/17/2012

Receipt Number: 42942

Receipt Details:

Reference ID:	6117	Fee Type:	BP-FIRE
Receipt Number:	0	Payment Date:	
Transaction Amount:	90.00	Charge Amount:	90.00
Job ID: Job ID: 2012-03-3471-ALTCOMM - Install fire doors			
Additional Comments: 202 Woodford			

Thank You for your Payment!

ACC-25/50 & ACC-25/50ZS Battery Calculation

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

Regulated Load in Standby

Page 1

Device Type	Number of Devices		Current (Amps)		Total Current (Amps)
ACC-25/50 consisting of: Main Circuit Board and one ACC-AAM25 Audio Amplifier (1 max)	1	X	0.285	=	0.285
or					
ACC-25/50ZS consisting of: Main Circuit Board, one ACC-AAM25 Audio Amplifier, one ACC-ZPMK Zone Page Module, and one ACC-ZSM Zone Splitter Module (1 max)	0	X	0.440	=	0.000
ACC-AAM25 Audio Amplifier Module (1 max)	1	X	0.065	=	0.065
FC-RM Remote Microphone with FC-MIM Microphone Interface Module (1 max)	0	X	0.006	=	0.000
ACC-ZPMK Zone Page Module	0	X	0.059	=	0.000
ACC-ZSM Zone Splitter Module	0	X	0.005	=	0.000
ACC-EPM External Page Module	0	X	0.005	=	0.000
Additional Current drawn from TB4 Auxiliary Power Output (0.035 amps maximum)				=	0.000
SUM COLUMN FOR STANDBY LOAD			0.350	=	AMPS

ACC-25/50 & ACC-25/50ZS Battery Calculation

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

Entries only to be made in the Yellow cells

Regulated Load in ALARM

Page 2

Device Type	Number of Devices		Current (Amps)		Total Current (Amps)
ACC-25/50 consisting of: Main Circuit Board and one ACC-AAM25 Audio Amplifier	1	X	2.385	=	2.385
or					
ACC-25/50ZS consisting of: Main Circuit Board, one ACC-AAM25 Audio Amplifier, one ACC-ZPMK Zone Page Module, and one ACC-ZSM Zone Splitter Module	0		2.505	=	0.000
ACC-AAM25 Audio Amplifier Module (1 max)	1	X	2.000	=	2.000
FC-RM Remote Microphone with FC-MIM Microphone Interface Module (1 max)	0	X	0.030	=	0.000
ACC-ZPMK Zone Page Module	0	X	0.059	=	0.000
ACC-ZSM Zone Splitter Module	0	X	0.063	=	0.000
ACC-EPM External Page Module	0	X	0.005	=	0.000
Additional Current drawn from TB4 Auxiliary Power Output (0.035 amps maximum)					0.000
SUM COLUMN FOR LOAD IN ALARM			4.385	=	AMPS

Note 1. The FC-XRM70 Transformer Module draws no current in standby or alarm.

Note 2. The FC-LPS Local Playback Speaker Module draws no current in standby or alarm.

Note 3. In backup configurations, the optional ACC-AAM25 draws no current in alarm.

Note 4. The ACC-25/50 will turn off the background music in the event AC power is lost in order to preserve battery power.

ACC-25/50 & ACC-25/50ZS Battery Calculation

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

Entries only to be made in the yellow calculation area

Calculation in Total Sheet

Page 3

Use the total standby and alarm load currents calculated in tables A-2A and A-2B for the following battery calculations

Standby Load Current (Amps)	0.350	X	Required Standby Time in Hours (24 or 60 Hrs.)	
			24	=
				8.4
Alarm Load Current (Amps)	4.385	X	Required Alarm Time in Hours (5 minutes = 0.084)	
			0.084	=
				0.36834
Add Standby and Alarm Load for Required Ampere Hour Battery				8.76834
Multiply by the Derating Factor of 1.2				
Total Ampere Hours Required		=		10.522008

MS-9200UDLS Rev.3 Battery Calculation

Secondary Power Source Requirements

Device Type	Standby Current (amps)				Secondary Alarm Current (amps)			
	Qty		Current Draw	Total	Qty		Current Draw	Total
Main Circuit Board	1	x	0.145000	= 0.145000	1	x	0.275000	= 0.275000
XRM-24B	0	x	0.000000	=	0	x	0.000000	=
4XTMF	1	x	0.005000	= 0.005000	1	x	0.011000	= 0.011000
IPDACT-2	0	x	0.093000	=	0	x	0.136000	=
IPDACT-2/2UD	0	x	0.098000	=	0	x	0.155000	=
ANN-BUS Devices								
ANN-80(-W)	0	x	0.015000	=	0	x	0.040000	=
ANN-LED	0	x	0.028000	=	0	x	0.068000	=
ANN-RLED	0	x	0.028000	=	0	x	0.068000	=
ANN-RLY	0	x	0.015000	=	0	x	0.075000	=
ANN-I/O	0	x	0.035000	=	0	x	0.200000	=
ANN-S/PG	0	x	0.045000	=	0	x	0.045000	=
ACS Annunciators								
ACM-8RF	0	x	0.030000	=	0	x	0.158000	=
ACM-16ATF	0	x	0.040000	=	0	x	0.056000	=
ACM-32AF	0	x	0.040000	=	0	x	0.056000	=
AEM-16ATF	0	x	0.002000	=	0	x	0.018000	=
AEM-32AF	0	x	0.002000	=	0	x	0.018000	=
AFM-16ATF	0	x	0.040000	=	0	x	0.056000	=
AFM-32AF	0	x	0.040000	=	0	x	0.056000	=
AFM-16AF	0	x	0.025000	=	0	x	0.065000	=
LDM-32F	0	x	0.040000	=	0	x	0.056000	=
LDM-E32F	0	x	0.002000	=	0	x	0.018000	=
LCD-80F	0	x	0.025000	=	0	x	0.064000	=
Resettable Power								
4-Wire Smoke Detectors	0	x	0.000000	=	0	x	0.000000	=
Addressable Devices								
BEAM355	0	x	0.002000	=				
BEAM355S	1	x	0.002000	= 0.002000				
BEAM1224	0	x	0.017000	=				
CP355	0	x	0.000300	=				
SD355	24	x	0.000300	= 0.007200				
SD355T	0	x	0.000300	=				
AD355	0	x	0.000300	=				
H355	0	x	0.000300	=				
H355R	13	x	0.000300	= 0.003900				
H355HT	0	x	0.000300	=				
D350P	0	x	0.000300	=				
D350RP	0	x	0.000300	=				
D350PL	0	x	0.000300	=				
D350RPL	0	x	0.000300	=				
D355PL	0	x	0.000300	=				
MMF-300	0	x	0.000400	=				
MMF-300-10	0	x	0.003500	=				
MDF-300	0	x	0.000750	=				
MMF-301	7	x	0.000375	= 0.002625				
MMF-302	0	x	0.000270	=				
MMF-302-6	0	x	0.002000	=				
BG-12LX	22	x	0.000230	= 0.005060				
CMF-300	0	x	0.000390	=				
CMF-300-6	0	x	0.002250	=				
CRF-300	0	x	0.000270	=				
CRF-300-6	0	x	0.001450	=				
I300	0	x	0.000400	=				
B501BH-2	0	x	0.001000	=				
B501BHT-2	0	x	0.001000	=				
B224RB	0	x	0.000500	=				
B224BI	0	x	0.000450	=				

B200SR	0	x	0.000500	=				
Maximum alarm draw for all Addressable devices ----->								0.400000
EOLR-1	0	x	0.020000	=		0	x	0.020000
FCPS (Remote Sync)						0	x	0.021700
Miscellaneous Device 1	0	x	0.000000	=		0	x	0.000000
Miscellaneous Device 2	0	x	0.000000	=		0	x	0.000000
Miscellaneous Device 3	0	x	0.000000	=		0	x	0.000000
Miscellaneous Device 4	0	x	0.000000	=		0	x	0.000000
Miscellaneous Device 5	0	x	0.000000	=		0	x	0.000000
NAC 1						0	x	1.628000
NAC 2						0	x	1.932000
NAC 3						0	x	0.000000
NAC 4						0	x	0.000000
Current Draw from TB3			0.000000	=				0.000000
Total Standby Load					0.170785	Total Alarm Load		0.686000



Fire-Lite Alarms
by Honeywell

MS-9200UDLS Rev.3 Battery Calculation

Calculation in Total Sheet

		Required Standby Time in Hours		
		24 Hours		
Standby Load Current	0.17079 Amps	x	24	= 4.099 AH
		Required Alarm Time in Minutes		
		5 Minutes		
Alarm Load Current (Amps)	0.68600 Amps	x	0.084	= 0.058 AH
		Total Current Load		
		4.156 AH		
		Multiply by the Derating Factor		
		1.2		
		= x 1.20		
		Total Ampere Hours Required		
		4.99 AH		

Recommended Batteries:	BAT-1270 - 7AH Batteries
-------------------------------	---------------------------------

Battery Check	
The batteries can be charged by the MS-9200UDLS Charger.	
The batteries can be housed in the MS-9200UDLS Cabinet.	

Current Draw Check	
NAC#1 current is within the limitations of the circuit.	
NAC#2 current is within the limitations of the circuit.	
NAC#3 current is within the limitations of the circuit.	
NAC#4 current is within the limitations of the circuit.	
MS 9200UDLS Control Panel:	
The output current is within the panel's limitations.	

Voltage Drop Analysis

Notification Appliances

FireLite APS-6RF Power Supply (S2000, S200: 2.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>Woodfords Congregational Church</u>					Date: <u>3/30/12</u>				
Address: <u>202 Woodford Street</u>					City: <u>Portland</u>				
State: <u>ME</u>			Zip: <u>04101</u>		Note:				
Prepared By: <u>Eric Colby</u>					Phone: <u>207-396-5741</u>				
Address: <u>15 Pleasant Hill Rd</u>					City: <u>Scarborough</u>				
State: <u>ME</u>			Zip: <u>04074</u>						

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device				
			Between	Total			14 AWG		
1	SPSR75	0.1580	45	45			19.95		
2	SPSR75	0.1580	37	82			19.62		
3	SPSR15	0.0660	21	103			19.45		
4	SPSR30	0.0940	21	124			19.29		
5	SPSR30	0.0940	15	139			19.18		
6	SR15	0.0660	15	154			19.08		
7	SR15	0.0660	10	164			19.02		
8	SR15	0.0660	13	177			18.95		
9	SR15	0.0660	23	200			18.83		
10	SPSR75	0.1580	26	226			18.70		
11	SPSR30	0.0940	29	255			18.59		
12	SR15	0.0660	27	282			18.50		
13	SR15	0.0660	22	304			18.43		
14	SPSR30	0.0940	19	323			18.38		
15	SPSR75	0.1580	38	361			18.31		
16	SPSR75	0.1580	24	385			18.29		
Total Current:		1.6280	% Voltage Drop:				10.35		
							Go		

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge.

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

Notification Appliances

FireLite APS-6RF Power Supply (S2000, S200: 2.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>Woodfords Congregational Church</u>					Date: <u>3/30/12</u>				
Address: <u>202 Woodford Street</u>					City: <u>Portland</u>				
State: <u>ME</u>			Zip: <u>04101</u>		Note:				
Prepared By: <u>Eric Colby</u>					Phone: <u>207-396-5741</u>				
Address: <u>15 Pleasant Hill Rd</u>					City: <u>Scarborough</u>				
State: <u>ME</u>			Zip: <u>04074</u>						

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device				
			Between	Total			14 AWG		
1	SPSR75	0.1580	23	23			20.13		
2	SPSR30	0.0940	28	51			19.82		
3	SPSR30	0.0940	18	69			19.64		
4	SPSR75	0.1580	20	89			19.44		
5	SPSR75	0.1580	16	105			19.30		
6	SPSR75	0.1580	35	140			19.03		
7	SPSR75	0.1580	8	148			18.97		
8	SPSR75	0.1580	26	174			18.82		
9	SPSR30	0.0940	37	211			18.64		
10	SPSR75	0.1580	29	240			18.52		
11	SPSR30	0.0940	7	247			18.49		
12	SR15	0.0660	17	264			18.45		
13	SR15	0.0660	6	270			18.43		
14	SPSR75	0.1580	31	301			18.37		
15	SR15	0.0660	21	322			18.35		
16	SPSR30	0.0940	18	340			18.34		
Total Current:		1.9320	% Voltage Drop:				10.10		
							Go		

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge.

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.



www.firelite.com

March 17, 2005

DF-51410 • I-100

FM Series Electromagnetic Door Holders

Section: Miscellaneous

GENERAL

FM Series electromagnetic door holders are designed for virtually any remote door release application. They are primarily used to hold fire and smoke barrier doors open until released by a remote smoke detector or other switching device. The complete assembly consists of: an armature contact plate with adjustable pivot mounting for installation in the door, and a heavy-duty electromagnet, in a durable plastic enclosure, mounted on the wall or floor behind the door. A separate closing device is required.

FEATURES

- All models support 12 VDC, 24 VAC/VDC, or 120 VAC.
- Improperly applied voltage does not damage the unit.
- Spacing kit for odd angles.
- 25 to 40 pounds (11.3 kg) holding power.
- Magnet protected against transients and surges up to 600 volts (AC models).
- Fail-safe operation; power failure releases door to close.
- Positive release button initiates closing motion.
- Two-year warranty.
- Floor- and wall-mount models.

INSTALLATION

- Used in hospitals, schools, offices, nursing homes, and public buildings.
- Install where required by code, where doors may be used to confine smoke or fire, or wherever remote control or automatic closing doors are required.
- Ensure that door hardware and trim projections are compatible with total projection of door release.
- Anchor the electromagnet firmly, as the wall portion will function as a doorstop.
- Locate magnet approximately 6" (15.24 cm) in from the lock stile at the door. Wall magnets should be mounted approximately two to four feet (0.61 to 1.22 meters) above the floor for optimum performance.
- Door-mounted contact plate includes hardware for thru-bolting or concealed mounting.
- Spotting template included with unit assures correct alignment.
- 14 AWG (2.0 mm²) maximum wire size.



BSA
750-76-SA
(FM980, FM998)

MEA
447-00-E



California
State Fire
Marshal
3550-0075:173



ORDERING INFORMATION

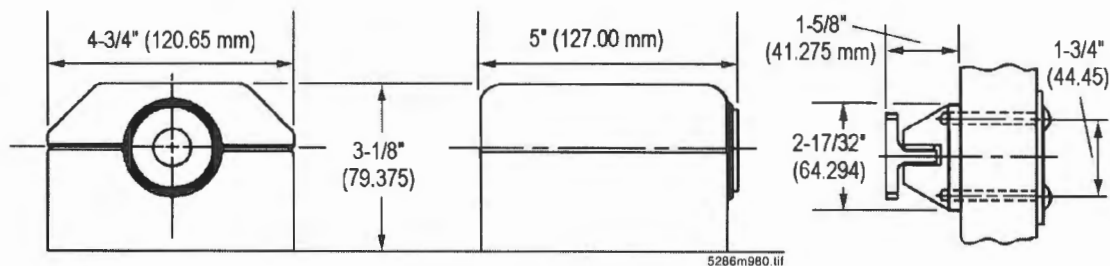
FM980	Surface floor-mount model for single door; 12 VDC, 24 VAC/VDC, 120 VAC.
FM996	Surface wall-mount model; 12 VDC, 24 VAC/VDC, 120 VAC.
FM998	Flush wall-mount model; 12 VDC, 24 VAC/VDC, 120 VAC.
FM900	Extension kit.
FM900-Z	Extension kit, 90°.
FM900-50	Spacer, 1/2" (1.27 cm).
FM900-75	Spacer, 3/4" (1.905 cm).
FM-900-100	Spacer, 1" (2.54 cm).

Fire-Lite® Alarms is a Honeywell company.

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.

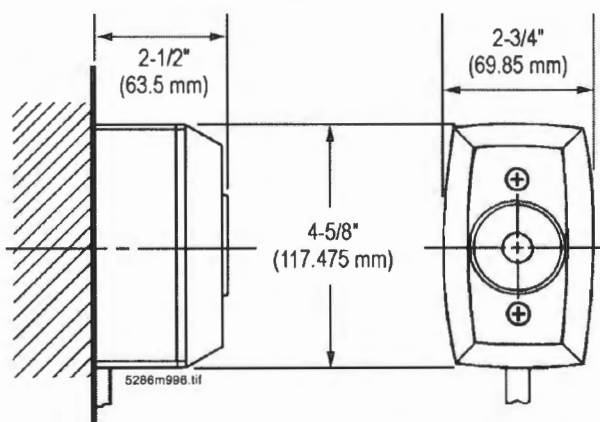
For more information, contact Fire-Lite Alarms, One Fire-Lite Place, Northford, Connecticut 06472. Phone: (800) 627-3473, Toll-Free FAX: (877) 699-4105.

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING
QUALITY SYSTEMS



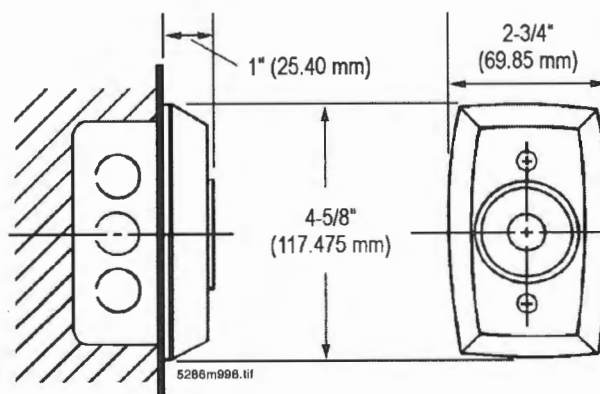
MODEL 980 Floor-Mount Single Door

- Concealed wiring.
- Total floor space required: 6-5/8" (168 mm).
- Mounting requirements: Conduit connects directly to floor plate.
- UL-Listed door holder.
- Voltage/current: 120 VAC, 60 Hz, 0.020 amp. 24 VAC/VDC, 60 Hz, 0.020 amp. 12 VDC, 0.040 amp.
- Shipping weight: 4 lbs. (1.8 kg).



MODEL 996 Wall-Mount Surface Wiring

- Total projection: 4-1/8" (105 mm).
- Mounting requirements: 1-1/2" (38 mm) deep adapter housing.
- UL-Listed door holder.
- Voltage/current: 120 VAC, 60 Hz, 0.020 amp. 24 VAC/VDC, 60 Hz, 0.020 amp. 12 VDC, 0.040 amp.
- Shipping weight: 3 lbs. (1.4 kg).



MODEL 998 Wall-Mount Standard Doors Concealed Wiring

- Total projection: 3-5/8" (92 mm).
- Mounting requirements: 2" x 4" x 1-3/4" (51 x 102 x 45 mm) outlet box.
- Wall must be properly reinforced and outlet box adequately fastened.
- UL-Listed door holder.
- Voltage/current: 120 VAC, 60 Hz, 0.020 amp. 24 VAC/VDC, 60 Hz, 0.020 amp. 12 VDC, 0.040 amp.
- Shipping weight: 2-1/2 lbs. (1.1 kg).

MS-9200UDLS(E) Rev 2

Intelligent Addressable FACP with Built-In Communicator



Addressable

General

The Fire-Lite MS-9200UDLS Rev 2 with Version 4.0 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 2 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 2'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.

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, supervisorys, 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 4.0 firmware supports the following: ANN-bus devices, AD355 (LiteSpeed), USB port, NAC circuit diagnostics, a new report has been added to the walk-test 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) FACP's (Fire Alarm Control Panels).



Features

- Listed to UL standard 864, 9th edition.
- On-board DACT.
- Remote site or local USB port upload/download, using PS-Tools.
- Four Style Y (Class B) or two Class A (Style Z) NAC circuits. (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 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
- ACS/TERM:
 - ACS Annunciators: Up to 32 ACM Series annunciators (ACM-16AT or ACM-32 series). Cannot be used if ANN-BUS devices are used.
 - Terminal-mode Annunciators: Up to 32 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 two Class A NACs with NACKEY (included).
- 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(E) Rev 2 in less than one minute.
- USB 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

Product Line Information

MS-9200UDLS Rev 2: 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 Rev 2: Same as MS-9200UDLS Rev 2, except with 240 VAC operation.

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

PK-CD: Contains PS-Tools Programming software for Windows®-based PC computer (cable not included).

DP-9692: Optional dress panel for MS-9200UDLS Rev 2.

TR-CE: 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 2(E).

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

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 dis-

play. Recommended wire type is un-shielded. (Basic model is red; order -W version for white; see 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.)

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 2, 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.

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.

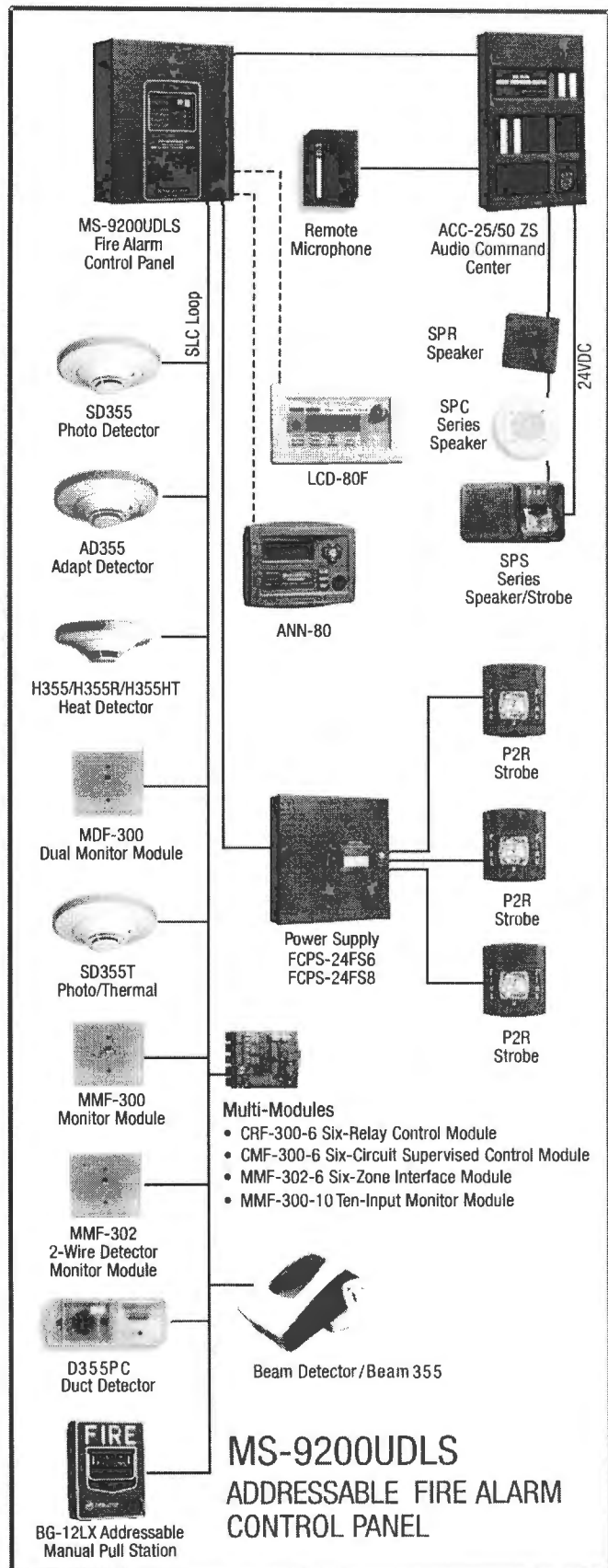
BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D350PL: Photoelectric low-flow duct smoke detector.

D350RPL: Photoelectric low-flow duct smoke detector with relay option.

DNR(A): Innovair Flex low-flow non-relay duct-detector housing. (Order SD355 separately.)

DNRW: Innovair Flex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355 separately.)



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

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

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

MMF-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.

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

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

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

I300: 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 2, see the following data sheets (document numbers): AD355 (DF-52386), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-52374), CMF/CRF Series (DF-52130), CP355 (DF-52383), D350PL/D350RPL (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.

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signalling Line Circuits..... 1
- Addressable device capacity 198
- Programmable software zones 99
- ACS Annunciators 32
- ANN-bus devices 8

Electrical Specifications

AC Power: MS-9200UDLS Rev 2: 120 VAC, 60 Hz, 3.0 amps.
MS-9200UDLS Rev 2E: 240 VAC, 50 Hz, 1.5 amps. Wire size:
minimum 14 AWG (2.00 mm²) with 600 V insulation.

Battery: Two 12 V 18AH lead-acid batteries.

Battery charger capacity: 7 – 18 AH. MS-9200UDLS Rev 2 cabinet holds maximum of two 18 AH batteries.

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Each terminal block provides connections for two Style Y (Class B) or one Style Z (Class A) for a total of four Style Y (Class B) or two 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 Power (24 VDC Nominal): Jumper selectable (JP4) for conversion to resettable power output. Up to 0.3 amps total DC current available from each output. Power-limited.

Four-Wire Resettable Special Application Smoke Detector Power (24 VDC nominal): Up to 0.3 amps for powering four-wire smoke detectors. Power-limited. 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: 40 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" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (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 2 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 2 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S624
- **FM approved**
- **CSFM:** 7165-0075:208
- **MEA:** 120-06-E

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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

H355(A) Series

Intelligent Addressable Thermal Detectors



Addressable Devices

General

The Fire-Lite Alarms 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 Fire-Lite's addressable Fire Alarm Control Panels (FACPs).

The H355(A) and H355R(A) sensors provide fixed temperature alarm detection at 135°F (57°C). The H355R(A) sensor also responds to rate-of-rise conditions of greater than 15°F (8.3°C) per minute. The H355HT(A) is a fixed high-temperature detector that activates 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).

Features

SLC loop:

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

Addressing:

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

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:

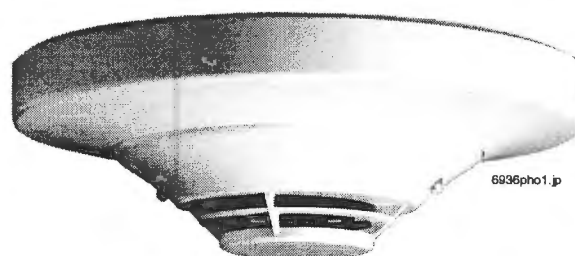
- Factory preset at 135°F (57°C) for the H355(A) and H355R(A); 190°F (88°C) for the H355HT(A).
- Rate-of-rise triggers at 15°F (8.3°C) per minute for the H355R(A).
- 360°-field viewing angle of the visual alarm indicators (two bicolor LEDs). LEDs blink green in Normal condition and turn on steady red 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.



H355 with B350LP base

- 94-5V plastic flammability rating.

Options:

- Remote LED output connection to optional RA400Z remote LED annunciator.
- Recessed (RMK400) or surface (SMK400E) base mounting kits.

Installation

H355(A) 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.

Applications

Use thermal detectors for protection of property.

Construction

These detectors are constructed of off-white Bayblend®. The H355(A) Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each H355(A) 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(A) Series offers features and performance that represent the latest in thermal detector technology.

Specifications

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

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 (noncondensing).

Voltage range: 15 to 32 VDC peak.

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

LED current: 6.5 mA @ 24 VDC.

Mounting: B350LP(A) flanged base, included.

Fixed-temperature setpoint: 135°F (57°C) for the H355(A) and H355R(A); 190°F (88°C) for the H355HT(A).

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

Listings and Approvals

Listings and approvals below apply to the H355(A) Series 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.

- MEA approved: file 387-02-E
- UL Listed, file S2517
- ULC Listed (models H355A, H355RA, H355HTA)
- CSFM approved: file 7270-0075:195
- FM approved

Product Line Information

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

H355: Intelligent thermal sensor; B350LP base included.

H355A: Same as H355 but with ULC Listing (B350LPA base included).

H355R: Same as H355 with *rate-of-rise* feature; B350LP base included.

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

H355HT: Intelligent fixed high-temperature thermal detector; B350LP base included.

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

B350LP(A): Plug-in detector base (included). **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).

B501BH-2(A): Plug-in System Sensor standard *sounder* base. **Diameter:** 6.0" (15.24 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring. Mounting boxes have a minimum depth of 1.5" (3.81 cm).

B501BHT-2(A): Plug-in System Sensor *temporal tone* sounder base.

ACCESSORIES:

RA400Z(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.

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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

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

Addressable Monitor Modules



Addressable Devices

General

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

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

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

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

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

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

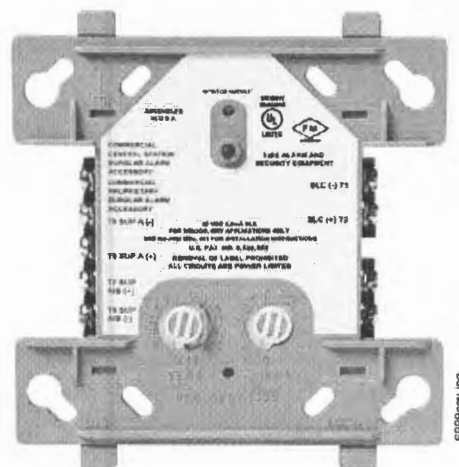
MMF-300 Monitor Module

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

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

MMF-300 APPLICATIONS

Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class



MMF-300 (Type H)

A) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit.

MMF-300 OPERATION

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

MMF-300 SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

Maximum operating current: 375 μ A (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

EOL resistance: 47K ohms.

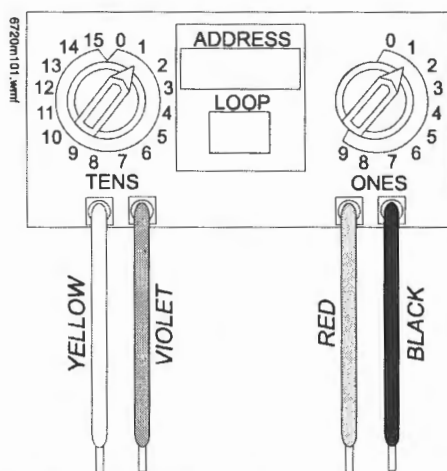
Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

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

MMF-301 Mini Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address: 01 – 159 on MS-9600 series panels, 01 – 99 on other compatible systems.



The MMF-301 Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The MMF-301 is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm devices. The MMF-301 can be used to replace M301 modules in existing systems.

MMF-301 APPLICATIONS

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

MMF-301 OPERATION

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

MMF-301 SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum operating current: 375 μ A.

Maximum IDC wiring resistance: 1,500 ohms.

EOL resistance: 47K ohms.

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

Humidity range: 10% to 93% noncondensing.

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

Wire length: 6" (15.24 cm) minimum.

MMF-302 Interface Module

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

- LED latches steady to indicate alarm on command from control panel.

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

MMF-302 APPLICATIONS

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

MMF-302 OPERATION

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

MMF-302 SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 ohms.

Maximum operating current: 270 μ A (LED flashing).

EOL resistance: 3.9K ohms.

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

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

Humidity range: 10% to 93% noncondensing.

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

MDF-300 Dual Monitor Module

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

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

MDF-300 SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

Maximum operating current: 750 μ A (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

EOL resistance: 47K ohms.

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

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

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

MDF-300 AUTOMATIC ADDRESSING

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

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



CAUTION:

Avoid duplicating addresses on the system.

Installation

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

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

Agency Listings and Approvals

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

- **UL:** S2424
- **ULC:** S3705 ("A" suffix models)
- **FM Approved**
- **CSFM:** 7300-0075-185
- **MEA:** 72-01-E

Product Line Information

NOTE: "A" suffix indicates ULC Listed model.

MMF-300(A): Monitor module.

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

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

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

SMB500: Optional surface-mount backbox.

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

Architects'/Engineers' Specifications

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

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All specifications are subject to change without notice.



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

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

Addressable Photoelectric Smoke Detectors

df-52384:b • E-160

 **Fire-Lite Alarms**
by Honeywell

Addressable Devices

General

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

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 μ A @ 24 VDC.

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

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

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

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

Weight: 3.6 oz. (102 g).

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

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

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

Listings

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

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

Product Line Information

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

SD355: Addressable photoelectric detector; B350LP base included.

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

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

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

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

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

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

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

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

ACCESSORIES:

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

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

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

M02-04-00: Test magnet.

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

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

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

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

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

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

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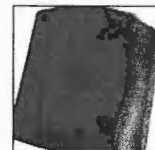
This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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



Selectable-Output Horns, Strobes, and Horn Strobes

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



SPECTRAlert
ADVANCE
from System Sensor

Features

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

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

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

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

Agency Listings



S4011 (chimes, horn strobes, horns)
S5512 (strobes)



ME4452-05-E



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

SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

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

Strobe

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

Horn Strobe Combination

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

Synchronization Module

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

Physical/Electrical Specifications

Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
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 x 2.5" high (173 mm diameter x 64 mm high)
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 2.5" D (142 mm L x 119 mm W x 64 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.3" D (142 mm L x 119 mm W x 33 mm D)
Wall-Mount Back Box Skirt Dimensions (BBS-2, BBSW-2)	5.9" L x 5.0" W x 2.2" D (151 mm L x 128 mm W x 56 mm D)
Ceiling-Mount Back Box Skirt Dimensions (BBSC-2, BBSCW-2)	7.1" diameter x 2.2" high (180 mm diameter x 57 mm high)
Wall-Mount Trim Ring Dimensions (sold as a 5 pack) (TR-HS, TRW-HS)	5.7" L x 4.8" W x 0.35" D (145 mm L x 122 mm W x 9 mm D)
Ceiling-Mount Trim Ring Dimensions (sold as a 5 pack) (TRC-HS, TRCW-HS)	6.9" diameter x 0.35" high (175 mm diameter x 9 mm high)

Notes:

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

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)						UL Max. Horn Current Draw (mA RMS)					
	Candela	8–17.5 Volts		16–33 Volts		Sound Pattern	dB	8–17.5 Volts		16–33 Volts	
		DC	FWR	DC	FWR			DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71	Temporal	High	57	55	69	75
	15/75	142	148	77	81	Temporal	Medium	44	49	58	69
	30	NA	NA	94	96	Temporal	Low	38	44	44	48
	75	NA	NA	158	153	Non-temporal	High	57	56	69	75
	95	NA	NA	181	176	Non-temporal	Medium	42	50	60	69
	110	NA	NA	202	195	Non-temporal	Low	41	44	50	50
	115	NA	NA	210	205	Coded	High	57	55	69	75
High Candela Range	135	NA	NA	228	207	Coded	Medium	44	51	56	69
	150	NA	NA	246	220	Coded	Low	40	46	52	50
	177	NA	NA	281	251						
	185	NA	NA	286	258						

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)									
DC Input	8–17.5 Volts		16–33 Volts						
	15	15/75	15	15/75					
Temporal High	137	147	79	90	107	176	194	212	218
Temporal Medium	132	144	69	80	97	157	182	201	210
Temporal Low	132	143	66	77	93	154	179	198	207
Non-Temporal High	141	152	91	100	116	176	201	221	229
Non-Temporal Medium	133	145	75	85	102	163	187	207	216
Non-Temporal Low	131	144	68	79	96	156	182	201	210
FWR Input									
Temporal High	136	155	88	97	112	168	190	210	218
Temporal Medium	129	152	78	88	103	160	184	202	206
Temporal Low	129	151	76	86	101	160	184	194	201
Non-Temporal High	142	161	103	112	126	181	203	221	229
Non-Temporal Medium	134	155	85	95	110	166	189	208	216
Non-Temporal Low	132	154	80	90	105	161	184	202	211

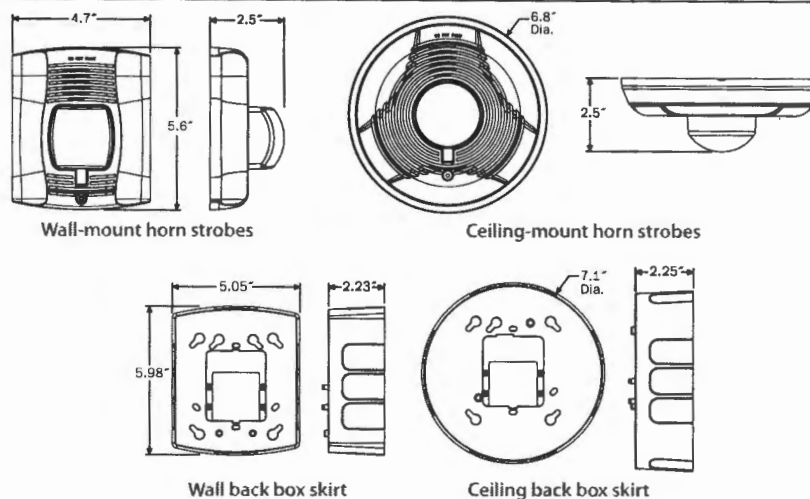
UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, High Candela Range (135–185 cd)									
DC Input	16–33 Volts				FWR Input	16–33 Volts			
	135	150	177	185		135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

Horn Tones and Sound Output Data

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

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

SpectrAlert Advance Dimensions



SpectrAlert Advance Ordering Information

Model	Description
Wall Horn Strobes	
P2R*†	2-Wire Horn Strobe, Standard cd†, Red
P2RH*	2-Wire Horn Strobe, High cd, Red
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.



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ADS-0395-007 • 4/09 • #2132



Indoor Selectable Output Speaker Strobes and Dual Voltage Evacuation Speakers

The new SpectrAlert® Advance selectable output speaker strobes and dual evacuation speakers can reduce ground faults and allow faster installation.



SPECTRAlert
ADVANCE
from System Sensor

Features

- Plug-in design
- Protective cover isolates speaker components, reduces ground faults
- Electrical compatibility with existing SpectrAlert products
- Field selectable candela settings on wall and ceiling units:
Standard: 15, 15/75, 30, 75, 95, 110, 115
High: 135, 150, 177, 185
- Shorting spring on mounting plate tests continuity before installation
- Rotary switch simplifies field selection of speaker voltage (25 and 70.7 Vrms) and power settings (¼, ½, 1 and 2 watts)
- Universal mounting plate for wall- and ceiling-mount units
- Compatible with System Sensor synchronization protocol
- SP speakers offer high fidelity sound output
- SPV speakers offer high volume sound output
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- No extension ring required
- Ceiling and wall mount application
- Optional tamper resistant Torx head screw included

Agency Listings



54048



7320-1653-201



10-08-E

The SpectrAlert Advance Series of speakers and speaker strobes is designed to reduce ground faults. The plug-in design allows the installer to pre-wire mounting plates and dress the wires before plugging in the speakers. The plastic cover prevents nicked wires by covering exposed speaker components.

This design also allows faster installations with instant feedback to ensure that wiring is properly connected, rotary switches to select voltage and power settings, and 11 field selectable candela settings for wall and ceiling speaker strobes.

The low total harmonic distortion of the SP speaker offers high fidelity sound output while the SPV speaker offers high volume sound output for use in high ambient noise applications.

SpectrAlert Advance makes installation easy

- Attach a universal mounting plate to a 4 × 4 × 2½ inch back box. Flush mount applications are achievable without the need for an extension ring.
- Connect the notification appliance circuit or speaker wiring to the terminals on the mounting plate.
- Attach the speaker or speaker strobe to the mounting plate by inserting the product tabs into the mounting plate grooves. Rotate the device into position to lock the product pins into the mounting plate terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

SpectrAlert Advance Speaker and Speaker Strobe Specifications

Architectural/Engineering Specifications

General

SpectrAlert Advance speaker and speaker strobes shall mount to a 4 × 4 × 2 1/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance speaker strobes, when used with the Sync-Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync-Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32°F and 120°F from a regulated DC, or full-wave rectified, unfiltered power supply. Speaker strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

Speaker

The speaker shall be a System Sensor SpectrAlert Advance model _____ dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. It should be listed to UL 1480 and shall be approved for fire protective service. The speaker shall have a frequency range of 400 to 4000 Hz and shall have an operating temperature between 32°F and 120°F. Speaker shall have power taps and voltage that are selected by rotary switches.

Speaker Strobe combination

The speaker strobe shall be a System Sensor SpectrAlert Advance model _____ listed to UL1480 and UL 1971 and be approved for fire protective signaling systems. Speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms selected via rotary switch, and shall have a frequency range of 400 to 4000 Hz. Speaker shall have power taps which are selected by rotary switch. The strobe shall comply with the NFPA72 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.

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 1Hz. The module shall mount to a 4 1/16 × 4 1/16 × 2 1/8-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 Specifications

Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Dimensions, Wall-Mount	
SPS Speaker Strobe	6.0 in L × 5.0 in W × 4.7 in D (including lens and speaker)
SPSV Speaker Strobe	6.0 in L × 5.0 in W × 4.9 in D (including lens and speaker)
SP Speaker	6.0 in L × 5.0 in W × 2.8 in D
SPSV Speaker	6.0 in L × 5.0 in W × 2.9 in D
Dimensions, Ceiling-Mount	
SPS Speaker Strobe	6.8 in Dia. × 4.7 in D (including lens and speaker)
SPSV Speaker Strobe	6.8 in Dia. × 4.8 in D (including lens and speaker)
SP Speaker	6.8 in Dia. × 2.8 in D
SPV Speaker	6.8 in Dia. × 2.9 in D

Electrical/Operating Specifications

Nominal Voltage (speakers)	25 Volts or 70.7 Volts (nominal)
Maximum Supervisory Voltage (speakers)	50 VDC
Strobe Flash Rate	1 flash per second
Nominal Voltage (strobes)	Regulated 12 VDC/FWR or regulated 24 DC/FWR
Operating Voltage Range (includes fire alarm panels with built in sync)	8 to 17.5 V (12 V nominal) or 16 to 33V (24 V nominal)
Operating Voltage with MDL Sync Module	9 to 17.5 V (12 V nominal) or 17 to 33V (24 V nominal)
Frequency Range	400 to 4000 Hz
Power	1/4, 1/2, 1, 2 watts

UL Current Draw Data

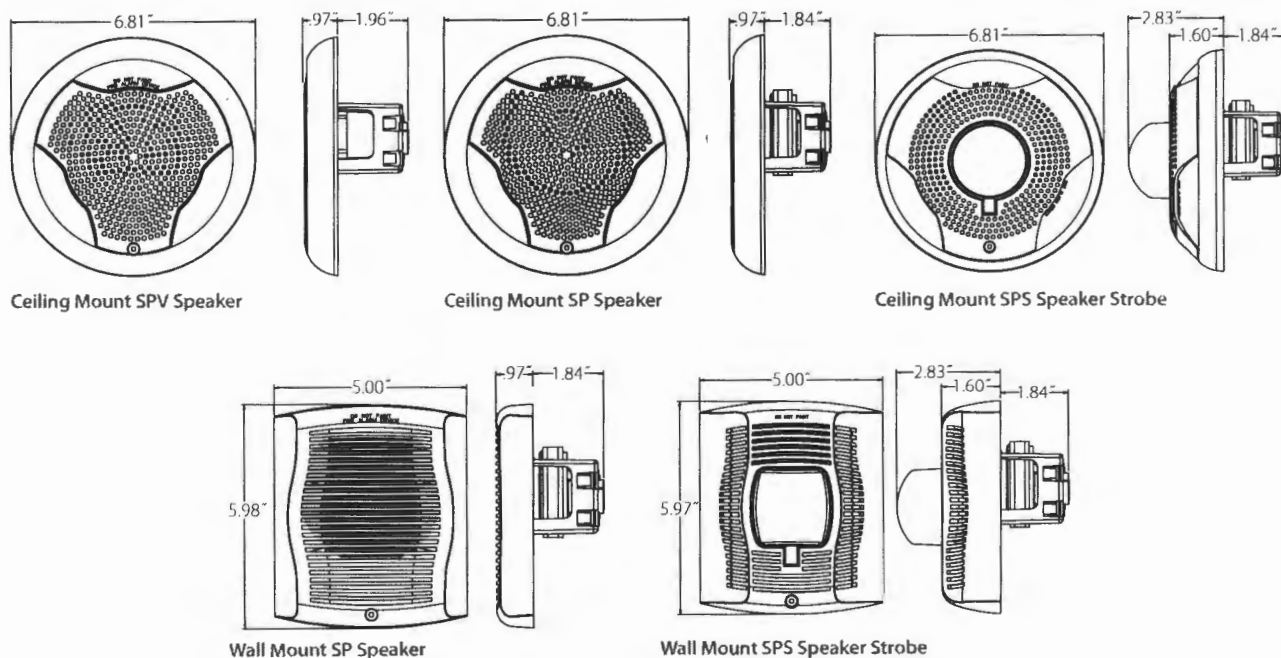
UL Max. Strobe Current Draw (mA RMS)

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

Sound Output

UL Reverberant (dBA @ 10 ft.)	2W	1W	½ W	¼ W
Wall-Mount SP Series	86	83	80	77
Wall-Mount SPV Series	90	87	84	81
Ceiling-Mount SPC Series	86	83	80	77
Ceiling-Mount SPCV Series	90	87	84	81
Wall-Mount SPS Series	85	82	79	76
Wall-Mount SPSV Series	89	86	83	80
Ceiling-Mount SPSC Series	85	82	79	76
Ceiling-Mount SPSCV Series	89	86	83	80

Dimensions



BG-12LX

Addressable Manual Pull Station



Addressable Devices

General

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

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 μ A.
- **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



FL-PullStation.jpg

usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

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

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

Architectural/Engineering Specifications

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

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

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

Product Line Information

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

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17003: Keys, set of two.

Agency Listings and Approvals

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

- **UL Listed:** S711
- **MEA:** 67-02-E
- **CSFM:** 7150-0075:184
- **FM Approved**

Patented:

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

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We try to keep our product information up-to-date and accurate.
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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

FCPS-24FS8

8-Amp, 24-Volt Power Supply



Power Supplies/Accessories

General

The Fire-Lite FCPS-24FS8(C/E) is a compact, cost-effective, 8-amp remote power supplies with battery charger. The FCPS-24FS8(C/E) may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may stand-alone. Primary applications include notification appliance (bell) circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS provides *regulated and filtered* 24 VDC power to four notification appliance circuits configured as either two Class B (Style Y) and Class A (Style Z, with ZNAC-4 option module) or four class B only. Alternately, the four outputs may be configured as any combination of resettable/non-resettable power outputs (optimal for powering four-wire smoke detectors). The FCPS-24FS8(C/E) also contains a battery charger capable of charging up to 18.0 Amp hour batteries. FCPS-24FS8(C/E) is ULC-listed.

NOTE: Unless otherwise specified, the term FCPS-24FS8 used in this document refers to the standard FCPS-24FS8, FCPS-24FS8C, FCPS-24FS8E

Features

- UL-Listed Notification Appliance Circuit (NAC) synchronization using System Sensor, Wheelock, or Gentex "Commander²" appliances.
- Operates as a "sync-follower" or as a "sync-generator" (default). See note on page 2.
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode).
- Two Class B (Style Y) or Class A (Style Z, with ZNAC-4 module) NACs (circuits 1 & 3)
- 8-amp full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864).
- 6-amp continuous output in stand-alone mode (UL 1481).
- Compatible with coded inputs; signals passed through.
- Optional power-supervision relay (EOLR-1).
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two.
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power.
- Power-limiting technology meets UL power-limiting requirements.
- Form-C normally-closed trouble relay.
- Fully supervised power supply, battery, and NACs.
- Selectable earth fault detection.
- AC trouble report selectable for immediate 2-hour delay.
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power).
- Requires input trigger voltage of 9 - 32 VDC.
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D).



- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries.
- Battery charger may be disabled via DIP switch for applications requiring larger batteries.
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire.

Specifications

Primary (AC) Power:

- FCPS-24FS8: 120 VAC, 60 Hz, 3.2A maximum.
- FCPS-24FS8/E: 240 VAC, 50 Hz, 1.6A maximum.
- Wire Size: minimum #14 AWG (2.0mm²) with 600 V insulation.

Control Input Circuit:

- **Trigger Input Voltage:** 9 to 32 VDC.
- **Trigger Current:** 2.0 mA (16 - 32 V); Per Input: 1.0 mA (9 - 16 V).

Trouble Contact Rating: 5 A at 24 VDC.

Auxiliary Power Output: Specific application power 500 mA maximum.

Output Circuits:

- +24 VDC filtered, regulated.
- 3.0 A maximum for any one circuit.
- Total continuous current for all outputs (stand-alone mode):
– FCPS-24FS8: 6.0 A maximum.
- Total short-term current for all outputs (NAC expander mode):
– FCPS-24FS8: 8.0 A maximum.

Secondary Power (Battery) Charging Circuit:

- Supports lead-acid batteries only.
- Float-charge voltage: 27.6 VDC.
- Maximum current charge: 250 mA.
- Maximum battery capacity: 7.0 AH.

Applications

Example 1: Expand notification appliance power an additional 8.0 A. Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 6.0 A. Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

Example 3: Use addressable control modules to activate the FCPS instead of activating it through the FACP notification appliance circuits. This typically allows for mounting the FCPS at greater distances* away from the FACP while expanding system architecture in various applications.

For example, an addressable control module is used to activate the FCPS, and an addressable monitor module is used to sense FCPS trouble conditions. Local auxiliary power output from the FCPS provides power to the addressable control module.

**NOTE: Addressable FACP's are capable of locating control and monitor modules at distances of up to 10,000 feet (3,046 meters) .*

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24FS8 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24FS8 is configured (via DIP switch settings) as a "sync follower," the FCPS's NAC outputs track the strobe synchronization pulses present at the FCPS's sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24FS8 is configured (via DIP switch settings) as a "sync generator," the FCPS's sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS's NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24FS8 complies with the following standards:

- **NFPA 72** National Fire Alarm Code.
- **UL 864** Standard for Control Units for Fire Alarm Systems (NAC expander mode).
- **UL 1481** Power Supplies for Fire Alarm Systems.

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S2424
- **ULC Listed:** S2424
- **CSFM Approved:** 7315-0075:206
- **MEA:** 219-02E
- **FM Listed**

Ordering Information

FCPS-24FS8: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

FCPS-24FS8 is ULC-listed.

FCPS-24FS8E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions.

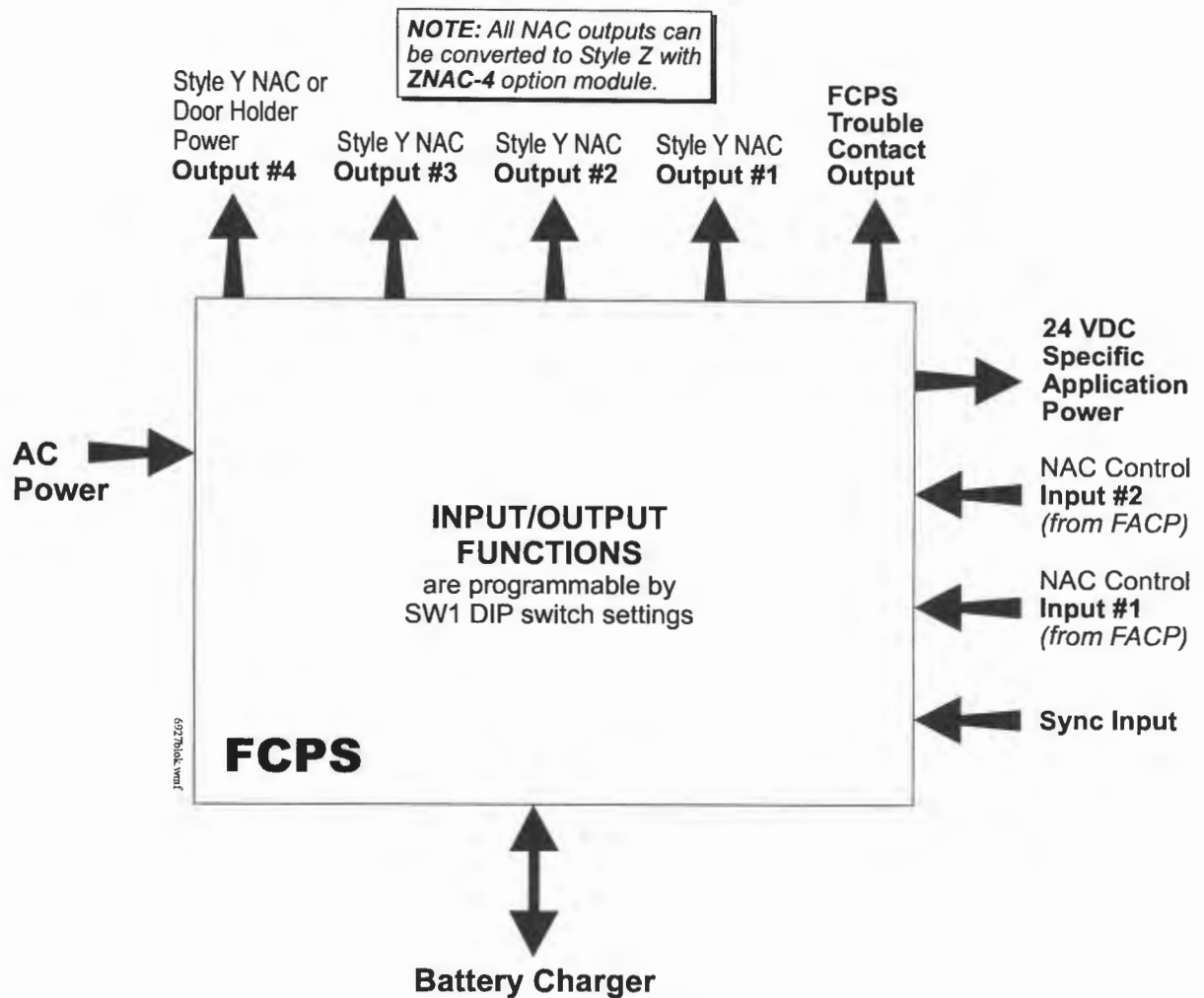
ZNAC-4: Class A (Style Y) NAC option module.

EOLR-1: 12/24 VDC end-of-line relay for monitoring four-wire smoke detector power.

BAT-1270: Battery, 12-volt, 7.0 AH (two required).

PS-1270: Battery, 12-volt, 7.0 AH (two required).

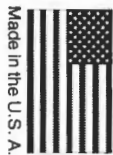
90286: Optional module mounting kit, is required to install an addressable module on the power supply main circuit board.



Simplified Block Diagram

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.fire-lite.com



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Board Layout

