

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0110841

Site Address: 1501 16TH ST SAC

Insp Area: 1

Parcel No: 006-0234-003 #100

Thos Bros:

Sub-Type: COM

Housing (Y/N): N

CONTRACTOR

SACRAMENTO CONTROL SYSTEMS
11249 SUNCO DR #3
RANCHO CORDOVA CA 95742

OWNER

HUKALA GRILL
1501 16TH ST
SACRAMENTO CA 95814

ARCHITECT

Nature of Work: TIE IN HOOD SYS TO EXISTING ALARM SYS

CONSTRUCTION LENDING AGENCY : I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

X License Class C10 License Number 408126 Date 7-01-02 Contractor Signature David W. Hoefl

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

____ I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

____ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

____ I am exempt under Sec. _____ B & PC for this reason: _____

Date _____ Owner Signature _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

X Date 8-23-01 Applicant/Agent Signature David W. Hoefl

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

____ I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

X ____ I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier ZENITH INSURANCE COMPANY Policy Number Z046748701 Exp Date 01/01/2002

____ (This section need not be completed if the permit is for \$1000 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

X Date 8-23-01 Applicant Signature David W. Hoefl

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

This set of plans and specifications shall be kept on the job at all times and shall not be altered or changed without written permission from the Building Inspection Division. The approval of this plan and specification shall not be held to permit or authorize any violation of any City Ordinance or Code.

SACRAMENTO CONTROL SYSTEMS

ISSUED
AUG 23 2001
Sacramento Building Division

**11249 SUNCO DRIVE, STE #3
RANCHO CORDOVA, CA 95742
(916) 638-0788
FAX (916) 638-0893
e-mail: cadservice@saccontrols.com**

WINDOW CLEAR OPENING DIMENSION REVISIONS

REVISION 1
DATE 11/15/01
BY [Signature]

FOR ALL OR RESCUE WINDOWS FROM SLEEPING
WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENING
HEIGHT DIMENSION SHALL BE 24 INCHES.
MINIMUM NET CLEAR OPENING WIDTH DIMENSION
SHALL BE 20 INCHES. WHERE WINDOWS ARE PROVIDED
FOR EGRESS OR RESCUE THEY SHALL HAVE
FINISHED SILL HEIGHT NOT MORE THAN 44 INCHES
ABOVE THE FLOOR.



FIRE-LITE® Alarms

www.firelite.com

July 17, 2001

DF-51276 A1-100

MS-9200(C/E) Addressable Fire Alarm Control Panel

Section: Addressable

GENERAL

The Fire-Lite MS-9200 is a compact, cost-effective, addressable fire alarm control panel with a capacity of 198 Fire-Lite 300 Series devices. A single Signaling Line Circuit (SLC) loop supports up to 99 smoke detectors and 99 control or monitor modules. The panel uses surface-mount technology and is designed for ease of installation and programming. It features the latest in fire protection technology, including maintenance alert and automatic detector test. Its new, larger enclosure is capable of housing 12.0 AH batteries.

FEATURES

SLC Loop

- SLC can be configured for NFPA Style 4, 6, or 7 operation.
- SLC supports up to 198 addressable devices [99 detectors and 99 monitor or control modules], including new addressable dual monitor module.
- SLC loop max. length 10,000 ft. (3,048 m) @ 12 AWG (3.25 mm²).

Notification Appliance Circuits (NAC's)

- Dual Integral NACs, Style Y or Z (Class B or A).
- Silence Inhibit and Auto Silence timer options.
- Alarm, trouble and supervisory relays, standard.
- May be programmed for Steady, March Time, Temporal or California code (*requires software P/N 73750 or greater*).
- 3.0 amp NAC power, expandable to 6.0 amps.

Programming and Software

- Autoprogram and Walk Test features identify two or more devices set to same address.
- Keypad programmable on panel, with two user-defined passwords, plus an Autoprogram feature.
- Custom English labels per point may be manually entered or selected from an internal library file.
- Remote Acknowledge, Silence, Reset and Drill via MMF-300 modules.

User Interface

- Integral 40-character LCD display with backlighting.
- Real-time clock/calendar.
- History file with 500-event capacity.

Advanced Fire Technology

- Maintenance alert warns when smoke detector dust accumulation is excessive.
- Battery charger for up to 60 hours of standby power.
- Waterflow or supervisory selection per monitor point.
- System alarm verification selection, smoke only.
- Fuseless, power-limited technology meets UL power-limiting requirements, effective May 1, 1995.



S624
(MS-9200, MS-9200E)

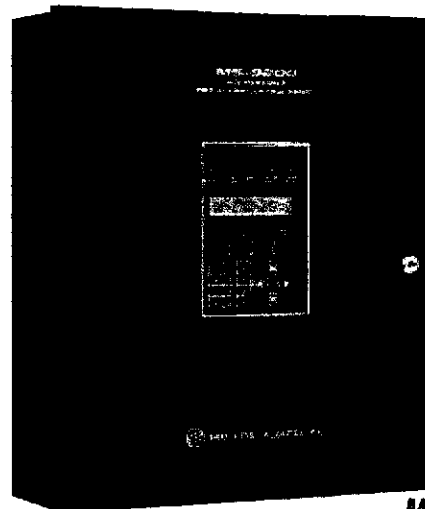


California
State Fire
Marshal
7165-0075:158
(MS-9200)



CS68
(MS-9200C)

MEA
16-94-E
(MS-9200)



MS-9200

MS9200.tif

- Detector sensitivity printout.
- Presignal delay option per NFPA 72.
- Rapid poll algorithm for manual stations. Responds to alarm/activation in less than two seconds.
- Operates with untwisted, unshielded wire (up to 1,000 ft./304.8 m) for retrofit applications (U.S. Patent 5,210,523).
- 300 Series addressable devices feature decimal address selection. Address of each device can be easily set in the field by use of a screwdriver.

Options

- UDACT-F Digital Alarm Communicator reports 56 zones or 198 points to a Central Station.
- Printer interface - UL listed for permanent attachment.
- LCD-40 Series alphanumeric, 40-character, backlit remote serial annunciators operate over high-speed EIA-485 port. Up to 32 may be supported by MS-9200 (*requires software P/N 73750 or greater*).

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, FAX Back:(888) 388-3299.

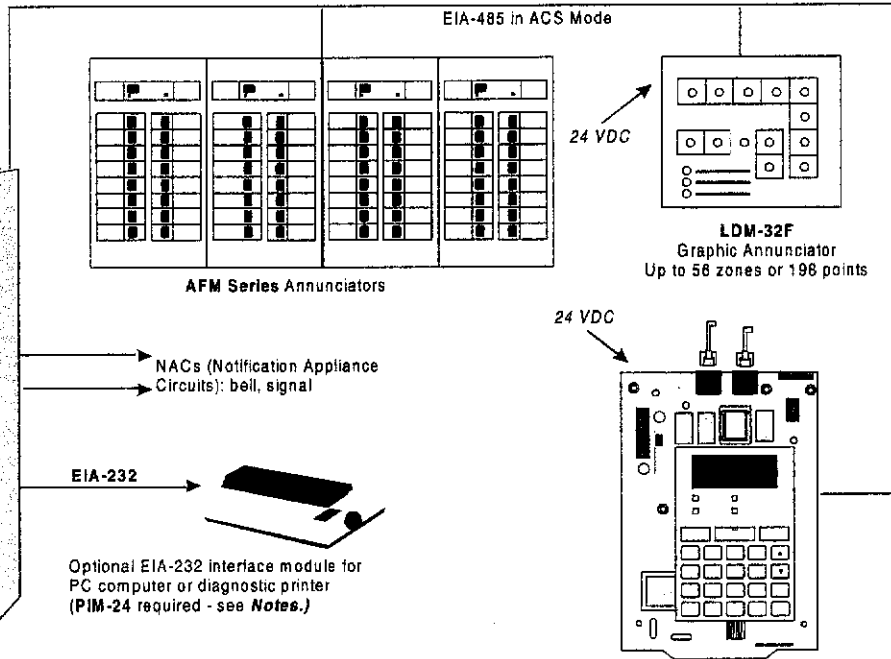
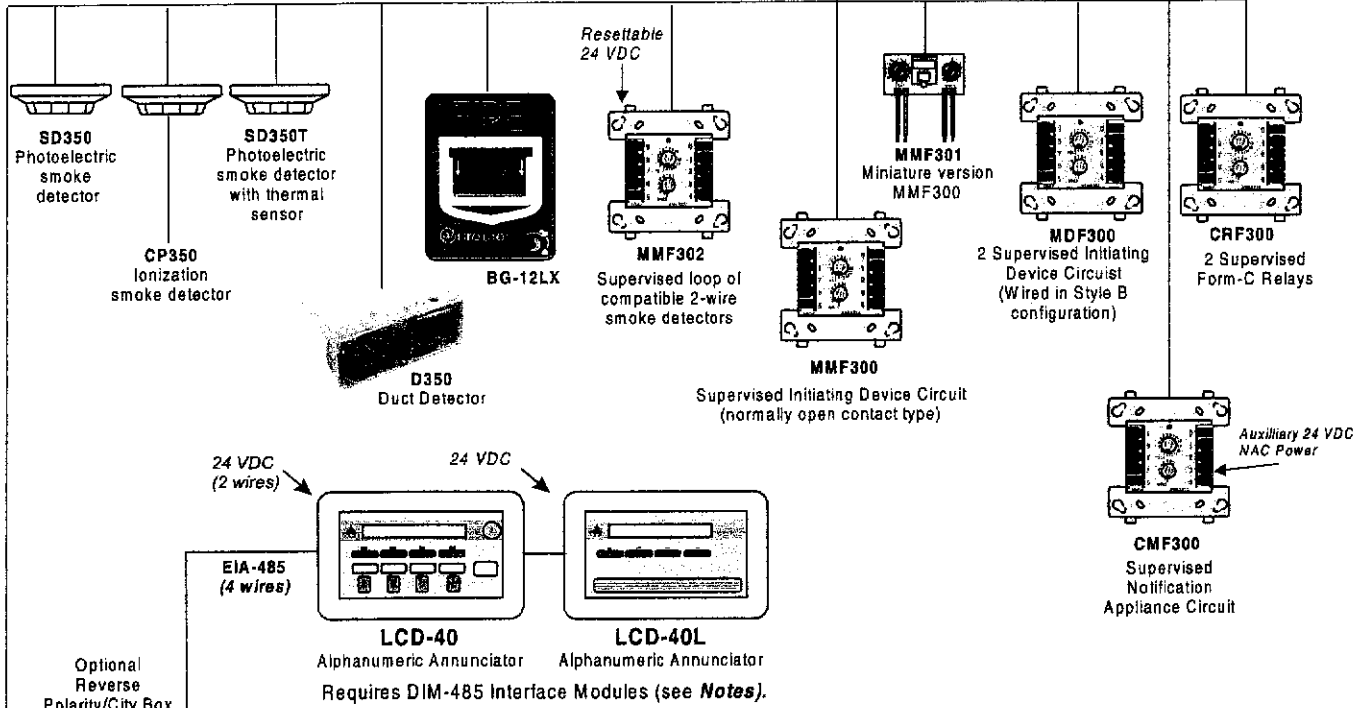
ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING



Made in the U.S.A.

SYSTEM PERIPHERALS

SLC Loop (2 wires) supports 198 devices (99 Detectors/99 Modules)



MS-9200(C)

8 Optional Form-C 5 Amp Relays (order ACM-8RF)

Notes: 1) "A" suffix should be included when ordering Canadian version 300 Series devices.
 2) "C" suffix designates Canadian version MS-9200.
 3) LCD-40 and printer option cannot be used simultaneously.

COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary address switches.

- CP350** Addressable Ionization Smoke Detector.
SD350 Addressable Photoelectric Smoke Detector.
SD350(T) Addressable Photoelectric Smoke Detector with Thermal Sensor.
D350 Addressable Duct Detector.
MMF-300 Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 4" (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) initiating device circuit.
MDF-300 Dual Monitor Module. Same as MMF-300 except it operates in Style B (Class B) only.
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 external 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" (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" (10.16 cm) box, surface mount using the SMB500.
BG-12LX Addressable manual pull station with interface module mounted inside.
I300 This module isolates the SLC loop from short circuit conditions (required for Style 7 operation).

Compatible with legacy Fire•Lite 300 Series devices. Please consult factory for further information on all the 300 series devices: CP300, SD300, SD300(T), C304, M300, M301, M302, C304, and BG-10LX.

NOTES: 1) "A" suffix should be included only when ordering ULC listed units (e.g. SD350A, MMF-300A). 2) For more on MS-9200 Compatible Addressable Devices, please see the following data sheets (document numbers): SD350/SD350T (DF-52149), CP350 (DF-52158), MMF-300 Series/MDF-300 Monitor Modules (DF-52121) and BG-12LX (DF-52013).

EIA-232 PORT

- PIM-24** Printer/PC Interface Module, Cable, DB9F Connector and 9-pin male to 25-pin female adapter.
DIM-485 LCD-40 Display Interface Module.

NOTE: PIM-24 and DIM-485 options are not available simultaneously.

COMPATIBLE ANNUNCIATORS/ DEVICES USING EIA-485 PORT

LCD-40 Series: 40-character, backlit LCD-type fire annunciators capable of displaying English-language text (requires one DIM-485 per MS-9200 panel to interface with up to 32 LCD-40 annunciators). Requires software P/N 73750 or greater - contact Fire•Lite Technical Services about software compatibility questions.

AFM/AFM-X Series: LED-type fire annunciators capable of providing up to 56 software zones of annunciation. Available in increments of 16 or 32 with expandable (AFM-X Series) and non-expandable (AFM Series) configurations to meet a variety of applications.

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

UDACT-F: Digital Alarm Communicator Transmitter.

NOTE: For more on MS-9200 Compatible Annunciators and Compatible EIA-485 Port Devices, please see the following data sheets (document numbers): LCD-40 (DF-51474), AFM/AFM-X (DF-51465), and LDM Series (DF-51384).

FIELD-PROGRAMMING FEATURES

Off-Line Programming: Create entire program in your office using a Windows®-based PC computer (order programming kit PK-9200W separately). Upload/Download system programming locally to the MS-9200 in less than one minute.

Auto-Programming: Command the MS-9200 to program itself (takes less than 30 seconds). In the Auto-Program mode, the MS-9200 scans for all possible devices at all addresses, stores the device types, and addresses found, and then loads default values for all options (General Alarm). It also checks for two or more devices set to the same address.

On-Line Edit: While still providing fire protection, the MS-9200 may be programmed from the front panel. Simple menu trees displayed on the LCD allow the trained user to perform all functions without referring back to the programming manual.

English Label Library: Quickly select labels from a standard library of more than 50 adjectives/nouns, such as "FLR 3 HALLWAY," or enter custom labels letter-by-letter. Use recall function to repeat previously used label.

Program Check: Automatically catch common errors, such as relays not linked to any zone or point.

MAINTENANCE ALERT

The MS-9200 continually monitors each smoke detector and responds to a reading of 80% of the detectors alarm threshold. If the detector continually reports an 80% threshold reading (8/10 of what is required to be an alarm condition) for 24 hours, a trouble condition is created. This reduces the risk of false alarms due to dust and dirt by alerting a trouble (maintenance) condition rather than initiating a false alarm.

AUTOMATIC TEST OPERATION

The MS-9200 performs an automatic test of each detector every two hours. Failure to meet the test limits causes an AUTO TEST FAIL trouble type. System Reset clears this trouble.

NFPA STANDARDS

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

- **LOCAL** (Automatic, Manual, Waterflow, and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual, and Waterflow) (requires RTM-8F).
- **REMOTE STATION** (Automatic, Manual, and Waterflow) (requires RTM-8F or UDACT-F).
- **PROPRIETARY** (Automatic, Manual, and Waterflow).
- **CENTRAL STATION** (Automatic, Manual, and Waterflow) (requires UDACT-F).

CABINET SPECIFICATIONS

Door: 17.11" (43.46 cm) high x 14.71" (37.36 cm) wide x 0.375" (0.95 cm) deep. **Backbox:** 16.90" (42.93 cm) high x 14.50" (36.83 cm) wide x 4.50" (11.43 cm) deep. **Trim Ring (part # TR-4-R):** 20.02" (50.85 cm) high x 17.62" (44.75 cm) wide.

SPECIFICATIONS

- **Primary input power for MS-9200 and MS-9200C:** 120 VAC, 50/60 Hz, 2.3 Amps. **Primary input power for MS-9200E:** 220/240 VAC, 50 Hz.
 - **Total 24 V system power:** 3.6 A (expandable to 6.6 A).
 - **Standard Notification Circuits:** 2 (Style Y or Z).
 - **Expansion Notification Circuits:** up to 99 (using CMF300 module).
 - **Notification Appliance Power:** 3.0 A (expandable to 6.0A with XRM-24).
 - **Four-wire detector power:** 300 mA.*
 - **Non-resettable regulated power:** 300 mA.*
 - **Non-regulated power:** 2.5 Amps maximum.*
- *NOTE: Subtract from total 24 VDC source.*
- **Battery charger range:** 7 AH - 18 AH (BB-17F battery cabinet for 18 AH batteries).
 - **Remote charger** (panel charger disabled, requires MS-9200 circuit board #71741, available June 1, 1998): 25-120 AH (use CHG-120F).
 - **Charge float rate:** 27.6 V.
 - **Charger current:** limited to 0.8 A.
 - **Control panel Alarm, Trouble, Supervisory Relay contact ratings:** 2.0 A @ 30 VDC.

CONTROLS AND INDICATORS

LED INDICATORS

1. AC POWER (green).
2. FIRE ALARM (red).
3. SUPERVISORY (yellow).
4. ALARM SILENCE (yellow).
5. SYSTEM TROUBLE (yellow).

MEMBRANE SWITCH CONTROLS

1. ACKNOWLEDGE/STEP
2. ALARM SILENCE
3. DRILL
4. SYSTEM RESET (lamp test)
- 5 — 16. 12-key pad with full alphabet
- 17 — 20. 4 cursor keys
21. ENTER

LCD DISPLAY

40 characters (2 x 20) with long-life LCD display, backlit.

PRODUCT LINE INFORMATION

- MS-9200** Addressable Fire Alarm Control Panel. Includes LCD display, single printed circuit board and cabinet.
- MS-9200C** Same as above with ULC listing and DP-1-B dead-front panel.
- MS-9200E** Same as MS-9200 with 220/240 VAC, 50 Hz transformer (UL listed).
- RTM-8F** Plug-in Relay Transmitter Option Module. Provides eight Form-C relays, plus municipal box and remote station connections.
- DP-1-B** Full-length internal dress panel (required for FM applications; included when ordering MS-9200C).
- UDACT-F** Digital Alarm Communicator Transmitter.
- XRM-24** 120 VAC, 100 VA Transformer. Expands system power supply. Expands Notification Appliance power from 3.0 amps to 6.0 amps.
- PIM-24** Printer Interface Module required to connect a 40- or 80-column printer.
- DIM-485** LCD-40 Display Interface Module required to convert EIA-232 to EIA-485 for use with the LCD-40 Series annunciators.
- PK-9200W** Programming Kit for Windows®-based PC computer (requires PIM-24 and associated hardware).
- TR-4-R** Trim Ring for semi-flush mounting.
- BB-17F** Battery box, required to mount PS-12180 batteries.
- BB-55F** Battery box, required to house two (2) PS-12250 batteries and one (1) CHG-120F battery charger. For batteries greater than 25 AH, consult factory for housing/mounting arrangements.
- CHG-120F** Remote battery charging system. Required for charging 25 to 120 AH batteries (can only be used in conjunction with MS-9200 circuit board #71741).
- PS-1270** Battery, 12 volt, 7.0 AH, (two required).
- PS-12120** Battery, 12 volt, 12.0 AH, (two required).
- PS-12180** Battery, 12 volt, 18.0 AH, (two required).
- PS-12250** Battery, 12 volt, 25 AH, (two required; requires CHG-120F).
- PS-12550** Battery, 12 volt, 55 AH, (two required; requires CHG-120F).
- FCPS-24F** Remote Power Supply expands NAC outputs by 6 Amps or total system power by 4 Amps.

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CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

LISTING SERVICE

LISTING No. 7165-0075:158

Page 1 of 1

CATEGORY: Control Unit (Non High-Rise)

LISTEE: Fire-Lite Alarms, Inc., One Fire-Lite Place, Northford CT 06472-1653
Contact: Larry Flood (203) 484-1200

DESIGN: Models MS-9200, MS-9200E* and AMS-9200* fire alarm control unit. Local, auxiliary, remote station, proprietary service. Refer to listee's data sheet for detailed product description and operational considerations. System components:

MS-9200	Control Unit
RTM-8F	Relay Module
ZDM-16F	Annunciator Driver
PIM-24	Printer/PC Interface Module
LCD-40, LCD-40L	Remote LCD Annunciator
DIM-485	Display interface module
XRM-24	Transformer

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

MARKING: Listee's name, model number, electrical rating and UL label.

APPROVAL: Listed as fire alarm control units for use with separately listed compatible initiating and indicating devices.

This control unit can generate the temporal code pattern fire alarm signal as required per NFPA 72, 1993 Edition. Refer to manufacturer's Installation Manual for details.

NOTE: For adjusted to 30 sec. or less. **Fire Alarm Verification** feature, the retard/reset/restart must be

*Rev. 02-19-99



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other suitable information sources.

Date Issued: **MAY 14, 2001**

Listing Expires June 30, 2002

Authorized By: **BEN HO, Supervising Deputy
Program Manager**



www.firelite.com

April 23, 2001

DF-52121 E-325

MMF-300 Series/MDF-300 Addressable Monitor Modules

Section: Addressable Devices

GENERAL

Four different monitor modules are available for Fire-Lite Alarm's MS-9200 and MS-9600 intelligent fire alarm 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 (Replaces M300) — The MMF-300 Monitor Module is a standard-sized module (typically mounts to a 4" [101.6 mm] square box) that supervises either a Class A (Style D) or Class B (Style B) circuit of dry-contact input devices.

MMF-301 (Replaces M301) — The MMF-301 is a Miniature Monitor Module (a mere 1.3" (33.02 mm) H x 2.75" (69.85 mm) W x 0.5" (12.70 mm) D) used to supervise a Class B (Style B) circuit. Its compact design allows the MMF-301 to be mounted in a single-gang box behind the device it is monitoring.

MMF-302 (Replaces M302) — The MMF-302 Interface Module 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 (New) — The MDF-300 Dual Monitor Module is a standard-sized module (typically mounts to a 4" [101.6 mm] square box) that supervises two Class B (Style B) circuits of dry-contact input devices.

MMF-300 MONITOR MODULE

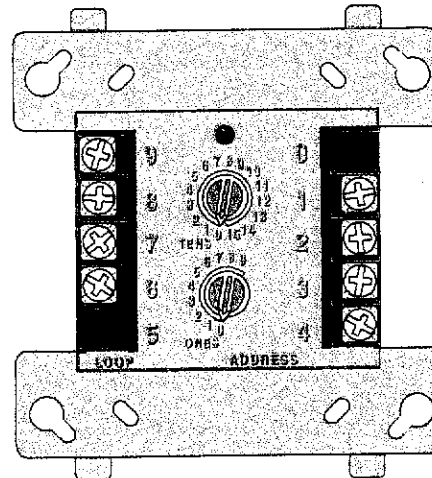
- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct Decade 01 – 99 (MS-9200) and 01-159 (MS-9600) entry of address.
- LED flashes green during normal operation and latches on steady red 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 Class A or Class B 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 D) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided)



7300-0075:185



MMF-300, MMF-302 and MDF-300

terminates the Style B circuit. No resistor is required for supervision of the Style D circuit. Maximum IDC resistance is 1,500 ohms.

MMF-300 Operation — Each MMF-300 uses one of 99 (MS-9200) or 159 (MS-9600) 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: 5.1 mA (LED on).

Average operating current: 400 µA (LED flashing).

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" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

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ENGINEERING & MANUFACTURING

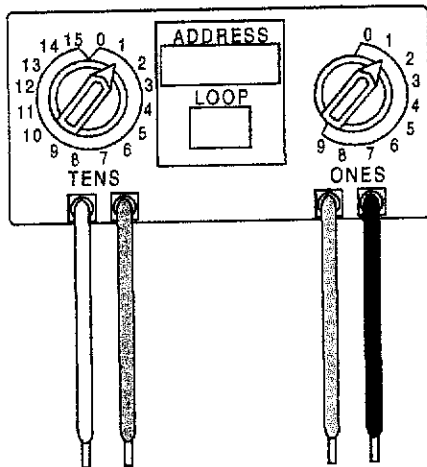


Made in the U.S.A.

MMF-301 MINI MONITOR MODULE

- Built-in type identification automatically identifies this device as a monitor module to the MS-9200.
- 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 (01-99).

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 and security devices. The MMF-301 can be used to replace M301 module in existing systems.



MMF101-wired.wmt

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 159 (MS-9600 only) 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.
- Average operating current:** 375 μ A maximum.
- 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" (33.02 mm) high x 2.75" (69.85 mm) wide x 0.5" (12.70 mm) deep.
- Wire length:** 6" (152.4 mm) minimum.

MMF-302 INTERFACE MODULE

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source (resettable).
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address (01-99).
- LED flashes during normal operation (this is a programmable option).
- 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.

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 159 (MS-9600 only) 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).
- Average operating current:** 270 μ A (LED flashing).
- EOL resistance:** 3.9K ohms.
- External supply voltage** (between Terminals T3 and T4): **DC voltage:** 18 to 28 volts power limited. **Ripple voltage:** 0.1 V_{RMS} 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" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

MDF-300 DUAL MONITOR MODULE

- Built-in type identification automatically identifies this device as two monitor modules to the control panel.
- Powered directly by the 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 the MS-9600.
- LED flashes green during normal operation and latches on steady red to indicate alarm.

The **MDF-300 Dual 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 two independent two-wire fault-tolerant Initiating Device Circuits (IDCs) at two separate, consecutive ad-

dresses. It is capable of monitoring normally open-contact fire alarm and supervisory devices, or either normally open or normally closed security devices. The module has a single panel-controlled red LED indicator.

MDF-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) Initiating Device Circuit. The 47K ohm End-of-Line Resistors (provided) terminate the Style B circuit. Maximum IDC resistance is 1,500 ohms.

MDF-300 Operation - Each MDF-300 uses two of 99 (MS-9200) or 159 (MS-9600) 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).

MDF-300 Specifications

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

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

EOL resistance: 47K ohms.

Maximum IDC wire resistance: 1,500 Ohms.

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

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 electrical box.

INSTALLATION

MMF-300, MMF-302 and **MDF-300** modules mount directly to a standard 4" (101.6 mm) square, 2.125" (53.975 mm) 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.

ARCHITECTS'/ENGINEERS' SPECIFICATIONS

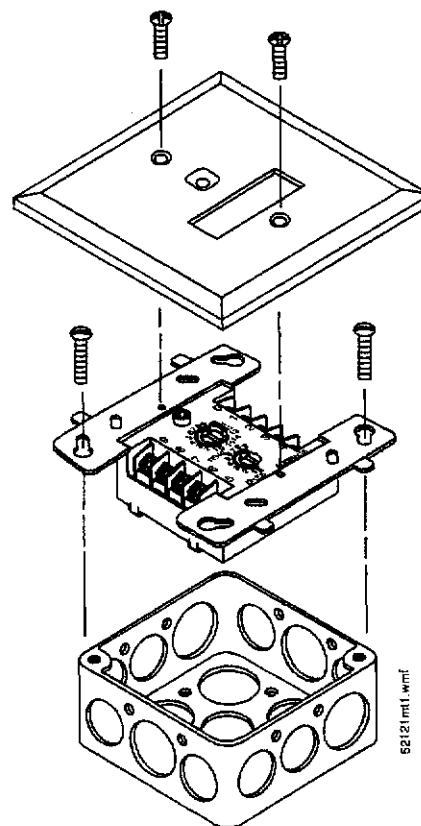
Specifications of these and all Fire•Lite Alarms products are available from Fire•Lite Alarms.

PRODUCT LINE INFORMATION

MMF-300	Monitor Module.
MMF-301	Mini Monitor Module.
MMF-302	Two-Wire Detector Monitor Module.
MDF-300	Dual Monitor Module.
SMB500	Optional Surface-Mount Backbox.

MOUNTING DIAGRAMS

for standard-sized modules



CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

LISTING SERVICE

LISTING No. 7300-0075:185

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CATEGORY: Misc. Devices/Control Unit Accessories

LISTEE: Fire-Lite Alarms, Inc., One Fire-Lite Place, Northford, CT 06472-1653
Contact: Larry Flood (203) 484-1200

DESIGN: Models MDF-300, MMF-301, MMF-300, MMF-302, MCF-300 monitor modules and Models CRF-300 and CMF-300 control modules. Refer to listee's data sheet for additional detailed product description and operational considerations.

RATING: 15-32 VDC

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

MARKING: Listee's name, model designation, electrical rating, and UL label.

APPROVAL: Listed as control unit accessories for use with listee's separately listed electrically compatible fire alarm control units.

08-21-2000



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other suitable information sources.

Date Issued: **MAY 14, 2001**

Listing Expires June 30, 2002

Authorized By: **BEN HO**, Supervising Deputy
Program Manager