MS-9600LS(E)/MS-9600UDLS(E)

Intelligent Addressable FACP with Optional 2nd Loop

FIRE·LITE ALARMS by Honeywell

Addressable

General

Fire•Lite's MS-9600LS(E) and MS-9600UDLS(E) are compact, cost effective, intelligent addressable FACPs (Fire Alarm Control Panels) with an extensive list of powerful features. The combination of Fire•Lite's newer series devices and legacy 300 Series devices, along with the MS-9600LS(E) or MS-9600UDLSE FACP, offer the latest in fire protection technology. LiteSpeed™ is a patented technology that polls 10 devices at a time looking for new or different information. When new information is found at a specific address, the system polls that device several times for any new data. This improvement allows a fully loaded panel with up to 636 devices to report an incident and activate the notification circuits in under 10 seconds. With this new polling scheme, devices can be wired on standard twisted, unshielded wire up to a distance of 10,000 feet per loop. Each Signaling Line Circuit (SLC) loop supports up to 159 addressable detectors including photoelectric, photoelectric with heat, beam, ionization, photoelectric duct, fixed heat, fixed heat with rate-of-rise, and fixed high-heat detectors. It also supports up to 159 addressable modules including monitor (two-wire detector, normally open devices), dual-monitor functions (two monitor circuits from one module, two addresses used), multimonitor (multiple monitor circuits from one module, multiple addresses used), control (for Notification Appliance Circuits), and relay (two Form-C) modules.

The FLPS-7 power supply is a separate board while all other electronics are contained on a single main circuit board. Both boards are mounted to a quick-removable chassis and housed in a metal cabinet. The backbox can be installed allowing field wiring to be pulled. When construction is completed, the chassis with the electronics can be quickly installed with two bolts.

The MS-9600UDLS(E) includes a factory-installed DACT-UD2 Digital Alarm Communicator Transmitter. The DACT transmits system status (alarm, troubles, AC loss, etc.) to a Central Station via internet (optional IPDACT installed) or the public switched telephone network.

Optional modules, which plug into the main circuit board, are available for special functions. Available accessories include LED, graphic and LCD annunciators, reverse polarity/city box transmitter, digital alarm communicator/transmitter, SLC expansion module, local and remote upload/download software and remote power expansion.

FM APPROVED to UL ANSI 864.

Controls And Indicators

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)

52412cov.jpg

MEMBRANE SWITCH CONTROLS

- ACKNOWLEDGE/STEP
- ALARM SILENCE
- DRILL
- SYSTEM RESET (lamp test)
- 12-key pad with full alphabet
- 4 cursor keys
- ENTER

Special Features

- Easy mount chassis.
- 7 amp switching power supply.
- Large enclosure allows 18 amp-hour batteries
- DACT-UD2 plug-in communicator standard with MS-9600UDLS/E.
- Optional IPDACT Internet Protocol Digital Alarm Communicator/Transmitter
- Four Style Y (Class B) or two Style Z (Class A) NAC circuits.
- Selectable strobe synchronization per NAC for System Sensor, Wheelock, and Gentex devices.
- Automated control of ACC-25/50(ZS/T) audio speaker circuits
- ANN-BUS for connection to following optional modules Note: cannot be used if ACS annunciators are used.
  - ANN-80(-W) Remote LCD Annunciator
  - ANN-I/O LED Driver Module
  - ANN-S/PG Serial/Parallel Printer Module
  - ANN-RLY Relay Module
  - ANN-LED Annunciator Module
  - ANN-RLED Annunciator Module (alarms only)

Standard Features

SLC LOOP

- SLC can be configured for NFPA Style 4, 6, or 7 operation.
- SLC supports up to 318 addressable devices per loop (159 detectors and 159 monitor, control, or relay modules).
- SLC loop maximum length 10,000 ft. (3,048 m) @ 12 AWG (3.1 mm²) using twisted, unshielded wire (see Wire Table on page 5).

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 the 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.
- 3.0 amps maximum per each NAC circuit
  Note: *Maximum 24 VDC system power output is shared among all NAC circuits and 24 VDC special application auxiliary power outputs. Total available output is 7.0 amps.*

ADVANCED FIRE TECHNOLOGY:

- Sensitivity testing with printable results, onsite or offsite.
- Automatic drift compensation.

PROGRAMMING AND SOFTWARE:

- Autoprogram (learn mode) reduces installation time.
- Fully programmable from local keypad, local PS/2 keyboard or PC (using the standard PS-TOOLS Windows® utility).
- Two-level user-programmable passwords.
- 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.

USER INTERFACE:

- Optional plug-in DACT-UD2 communicator (standard with MS-9600UDLS(E) with USB port for local upload/download.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules, ACS Series annunciators, LCD-80F remote annunciator, or ANN-80 Series Annunciators.
- EIA-232 printer/PC interface (variable baud rate) on main circuit board.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings adjustments.
- History file with 1,000-event capacity.
- EIA-485/ANN-BUS supporting up to 8 ANN Series Annunciators or 32 ACS Series annunciators.
- EIA-485 supporting up to 32 ACS annunciators.
- 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.
- Local piezo sounder.
- 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).
- Optional 4XTMF module (conventional reverse polarity/city box transmitter).

Field-programming Features

Off-line Programming: Create the entire program in your office using a Windows®-based software package (order programming kit PK-CD, containing PS-TOOLS, separately). Upload/download system programming locally to the MS-9600LS/E in less than one minute.

Autoprogramming: Command the MS-9600LS(E) to program itself (takes less than 30 seconds). In the Auto-Program mode, the MS-9600LS(E) 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.

Online Editing: While still providing fire protection, the MS-9600LS/E 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 control modules not linked to any zone or input point.

Maintenance Alert

The MS-9600LS(E) continuously monitors each smoke detector and is capable of reporting maintenance conditions. This reduces the risk of false alarms due to dust accumulation. Refer to the control panel installation manual for more information.

Automatic Test Operation

The MS-9600LS(E) 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.

Terminal Blocks

AC Power – TB1: 120 VAC, 60 Hz, 3.0 amps or 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

Battery (lead acid only) – TB2: Maximum charging circuit: Normal flat charge 27.6 VDC @ 1.0 amp. Maximum battery charger capacity: 26 AH. Minimum battery 12 AH. MS-9600LS(E) cabinet holds maximum of two 18 AH batteries. For 26 – 120 AH batteries, use the CHG-120F or CHG-75 Battery Charger and BB-55F Battery Box.

NOTE: *Jumper JP3, on the FACP main circuit board, must be cut to disable the FACP battery charger when using the CHG-120F or CHG-75.*

Communication Loop – (standard) TB8: 24 VDC nominal, 27.6 VDC maximum. Maximum length: 10,000 ft. (3048 m) total twisted, unshielded pair length. Maximum loop current: 400 mA (short circuit) or 100 mA (normal). Maximum loop resistance: 40 ohms. Supervised and power-limited.

Notification Appliance Circuits – TB4: Power-limited circuitry. Nominal operating voltage: 24 VDC. Current limit: fuseless, electronic, power-limited circuitry. Maximum signaling current per circuit: 3.0 amps. End-of-Line Resistor: 4.7K ohm, 1/2 watt (P/N 71252 UL listed) for NACs. Refer to *Fire•Lite Device Compatibility Document* for listed compatible devices.

Programmable and Trouble Output Relays – TB5: Contact rating: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive). Form-C relays.

Four-Wire Resettable Smoke Detector Power (24 VDC nominal) – TB3, Terminals 1(+) & 2(–): Maximum ripple voltage: 10 mVRMS. Up to 1.5 amps for powering four-wire smoke detectors. Power-limited circuit. Refer to *Fire•Lite Device Compatibility Document* for listed compatible devices.

Nonresettable Power #1 (24 VDC Nominal) –TB3, Terminals 3 (+) & 4 (–): Maximum ripple voltage: 10 mVRMS. Up to 1.5 amps total DC current available from each output. Power-limited circuit. TB3, Terminals 5 (+) & 6 (–): non-resettable power #2.

Nonresettable Special Application Power #2 (24 VDC Nominal) - TB3, Terminals 5 (+) & 6 (-): Maximum ripple voltage: 10mVRMS. Total DC current available from each output is up to 1.5 amps. Power-limited circuit, nonsupervised.

EIA-485 (ACS/ANN) – TB6: Annunciator connector, programmable for type ANN or ACS. Terminal 1 (+) and Terminal 2 (–).

EIA-485 (TERM) – TB7: Terminal mode annunciator connector, Terminal 1 (Out +), 2 (In +), 3 (Out –), 4 (In –).

EIA-232 – TB8: PC/printer connector, Terminal 1 (Transmit), 2 (Receive), 3 (DTR), 4 (Ground).

Ordering Options

MS-9600LS(E): 318-point addressable Fire Alarm Control Panel, one SLC loop. Includes 80-character LCD display, single printed circuit board, and cabinet.

MS-9600UDLS(E): 318-point addressable Fire Alarm Control Panel, one SLC loop. Includes DACT-UD2, 80-character LCD display, single printed circuit board, and cabinet.

DACT-UD2: Optional communicator for remote monitoring (standard with MS-9600UDLS).

4XTMF: Optional Transmitter Module provides a supervised output for local energy municipal box transmitter, alarm and trouble reverse polarity. It includes a disable switch and disable trouble.

IPDACT-2/2UD, IPDACT Internet Monitoring Module: Mounts in bottom of enclosure with optional mounting kit (P/N: 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 additional information.

IPBRKT: Optional mounting bracket kit consisting of screws and battery shield with standoffs required when mounting the IPDACT in lower enclosure section of FACP.

IPSPLT: Optional Y-Adaptor which allows connection of both panel dialer outputs to one cable input to IPDACT (sold separately).

ACM-8RF: Optional plug-in relay module provides 8 Form-C 5.0 amp relays.

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

SLC-2LS: Optional expander module, enables second SLC loop.

DP-9692: Optional dress panel for MS-9600LS(E).

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

BB-55F: Battery box, required to house two 25 AH batteries and one CHG-120F battery charger. For batteries greater than 25 AH, consult factory for housing/mounting arrangements.

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

CHG-120F: Remote battery charging system for lead-acid batteries with a rating of 25 to 120 AH. CHG-120F or CHG-75 required for charging greater than 25 AH batteries.

CHG-75: Battery charger for lead-acid batteries with a rating of 25 to 75 AH. CHG-120F or CHG-75 required for charging greater than 25 AH batteries.

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

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

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

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: Fast-response, low-profile heat detector that activates at190° F (88°C).

AD355: Low-profile, intelligent, “Adapt” multi-sensor detector; B350LP base included.

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D350PL: Photoelectric low-flow duct smoke detector.

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

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.

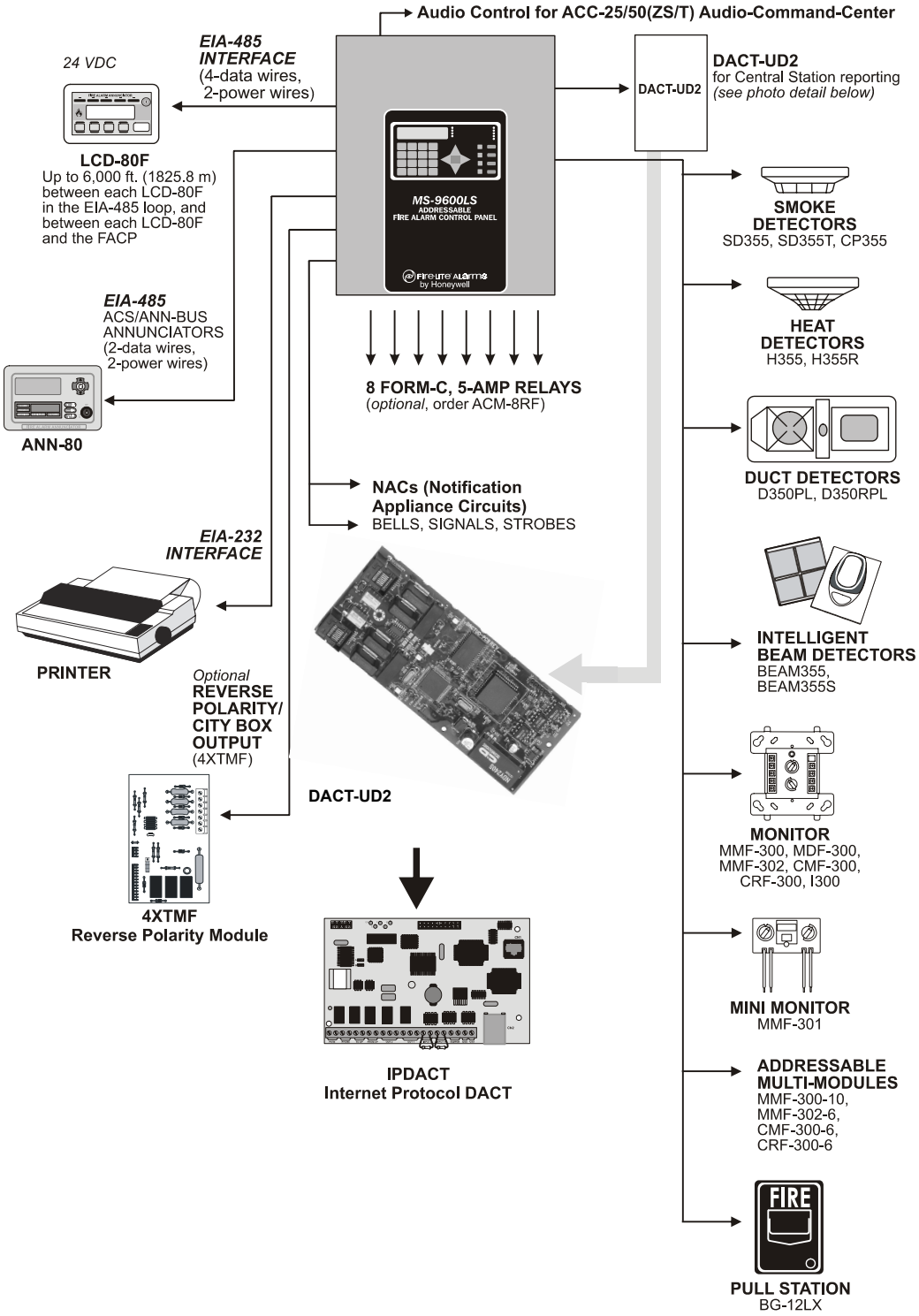
CMF-300: Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

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: 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.


Audio Control for ACC-25/50(ZS/T) Audio-Command-Center
EIA-485 INTERFACE
(4-data wires, 2-power wires)
24 VDC
LCD-80F
Up to 6,000 ft. (1825.8 m) between each LCD-80F in the EIA-485 loop, and between each LCD-80F and the FACP
MS-9600LS
ADDRESSABLE FIRE ALARM CONTROL PANEL
DACT-UD2
DACT-UD2
for Central Station reporting
(see photo detail below)
SMOKE DETECTORS
SD355, SD355T, CP355
HEAT DETECTORS
H355, H355R
DUCT DETECTORS
D350PL, D350RPL
INTELLIGENT BEAM DETECTORS
BEAM355, BEAM355S
MONITOR
MMF-300, MDF-300, MMF-302, CMF-300, CRF-300, I300
MINI MONITOR
MMF-301
ADDRESSABLE MULTI-MODULES
MMF-300-10, MMF-302-6, CMF-300-6, CRF-300-6
FIRE
PULL STATION
BG-12LX
EIA-485
ACS/ANN-BUS ANNUNCIATORS
(2-data wires, 2-power wires)
ANN-80
8 FORM-C, 5-AMP RELAYS
(optional, order ACM-8RF)
NACs (Notification Appliance Circuits)
BELLS, SIGNALS, STROBES
EIA-232 INTERFACE
PRINTER
Optional
REVERSE POLARITY/ CITY BOX OUTPUT
(4XTMF)
4XTMF
Reverse Polarity Module
DACT-UD2
IPDACT
Internet Protocol DACT

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. 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.

Compatible Annunciators

ANN-80(-W): Remote LCD annunciator that mimics the information displayed on the FACP's LCD display. Recommended wire type is unshielded. (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: I/O Driver Module provides connections to a user supplied graphic annunciator *(see DF-52430)*.

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.

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

TERM MODE LCD-80F (Liquid Crystal Display) point annunciator: 80-character, backlit LCD-type fire annunciators capable of displaying English-language text. Up to 32 LCD-80F annunciators may be connected to the EIA-485 terminal mode serial interface on the MS-9600LS(E) motherboard.

NOTE: *For more information on* ***Compatible Annunciators*** *for use with the MS-9600LS(E), see the following data sheets (document numbers) ACM-8RF (DF-51555), ACS/ACM Series (DF-52378), LDM Series (DF-51384), LCD-80F (DF-52185).*

Wiring Requirements

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

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signalling Line Circuits.....1 expandable to 2
- Intelligent detectors ..... 159 per loop
- Addressable monitor/control modules ..... 159 per loop
- Programmable software zones 99
- ANN-BUS devices 8
- ACS Annunciators 32
- LCD Annunciators 32

Electrical Specifications

- Primary input power:
  120 VAC, 50/60 Hz, 3.0 A.
  240 VAC, 50 Hz, 1.5 A.
- Battery: 27.6 VDC @ 1.0 A (max).
  Maximum battery charger capacity: 26 AH.
  Minimum battery: 12 AH.
  MS-9600LS cabinet holds maximum of two 18 AH batteries.
- Communication Loop: 24 VDC nominal, supervised and power-limited.
- Notification Appliance Circuits: terminal block provides connections for four Style Y (Class B) or two Style Z (Class A) NACs.
  Maximum signaling current per circuit: 3.0 A.
  End-of-Line Resistor: 4.7 K ohms, ½ watt (P/N 71252 UL listed) for Style Y (Class B) NAC.
  Supervised and power-limited.
  Refer to panel documentation and *Fire-Lite Device Compatibility Document* for listed compatible devices.
- Two Programmable Form-C Relays and One Fixed Trouble Form-C Relay: Contact rating: 2.0 A @ 30 VDC (resistive) 0.5 A @ 30 VAC (resistive).
- Four-wire Resettable Special Application Power (24 VDC nominal): Up to 1.5 A for powering four-wire smoke detectors. Power-Limited, nonsupervised.
  Refer to *Fire-Lite Device Compatibility Document* for listed compatible devices.
- Nonresettable Special Application Power #1 (24VDC nominal) TB3, Terminals 3 (+) & 4 (-):
  Maximum ripple voltage: 10 mV_{RMS}
  Total DC current available from each output is up to 1.5 A.
  Power-limited, nonsupervised.
- Nonresettable Special Application Power #2 (24VDC nominal) TB3, Terminals 5 (+) & 6 (-):
  Maximum ripple voltage: 10 mV_{RMS}
  Total DC current available from each output is up to 1.5 A.
  Power-limited, nonsupervised.

NOTE: *Although each Special Application power output can deliver 1.5 A individually, the total power output from these circuits cannot exceed 1.5 A in standby. The total Alarm output for all Special Application power and NAC circuits cannot exceed 7 A.*

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.67" (1.70 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.21" (13.23 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

Dimensions: 20.00” (50.80 cm) high, 22.5” (57.15 cm) wide, 8.5” (21.59 cm) deep. **Weight:** 27.3 lbs (12.38 kg).

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.

Agency Listings and Approvals

The listings and approvals below apply to the MS-9600LS(E) and MS-9600UDLS(E) control panels. 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.

- **ULC: S624** (MS-9600LSC only; see DF-60438)
- **FM APPROVED:** to UL ANSI 864
- **CSFM:** 7170-0075:217
- **MEA:** 87-08-E

NFPA Standards

The MS-9600LS(E) and MS-9600UDLS(E) control panels comply with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Requires 4XTMF where DACT-UD2 is not accepted.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **OT (Other Technologies-PSDN)** For use with IPDACT.

LiteSpeed™ is a trademark; and **FireLite® Alarms** is a registered trademark of Honeywell International Inc.
©2009 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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

Made in the U.S. A.

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