SPRINKLER AND FIRE ALARM PROJECT
FMS#1 MAINE ARMY NATIONAL GUARD
STEVENS AVE
PORTLAND, MAINE
PROJECT NO. 23SR10-479D

HEWETT & WHITNEY ENGINEERS DESIGNERS
161 MAIN STREET
WINTHROP, MAINE

ABJ GENERAL CONTRACTORS
25 ABJ DRIVE
GARDINER, MAINE

SEACOAST SECURITY INC
290 WEST STREET
ROCKPORT, MAINE

SUBMITTAL INDEX

COVER PAGE

SUBMITTAL INDEX

EQUIPMENT LIST

FIRE ALARM CONTROL PANEL

FIRE ALARM LCD ANNUNCIATOR

ADDRESSABLE SMOKE DETECTOR

ADDRESSABLE HEAT DETECTOR

EXPLOSION PROOF HEAT DETECTOR

ADDRESSABLE CURRENT LIMITED MONITOR MODULE

ADDRESSABLE MONITOR MODULE

ADDRESSABLE CONTROL RELAY MODULE

ADDRESSABLE PULL STATION

AUDIO VISUAL DEVICE

STROBE ONLY DEVICE

AUDIO VISUAL POWER EXTENDER

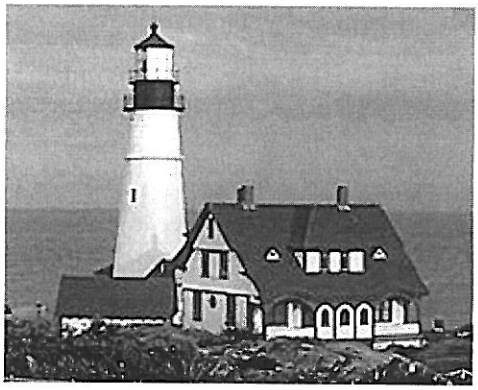
CONTROL PANEL BATTERY BACKUP

FIRE ALARM WIRE

NAC CIRCUIT CURRENT CALCULATIONS

Seacoast Security

P.O. Box A
Route 90
Rockport Me. 04865
207-236-4876
1-800-432-1795 (in State) 1-800-654-8800 (out of state)
Fax 207-236-8517



FMS#1
MAINE ARMY NATIONAL GUARD
STEVENS AVE.
PORTLAND, MAINE

A.B.J. GENERAL CONTRACTING
25 ABJ DRIVE
GARDINER, MAINE
BILL LOVELY
588-2499

Sales Quotation

Project:

Questions? Please call

Quote #: RSS000589 **Date** 7/8/2010 **Quote Expires on:** 8/7/2010

Manufacturer	Description	Qty
FL-MS9600UDLS	FIRE-LITE ADDRESSABLE FIRE ALARM CONTROL PANEL	1
FL-ANN80	FIRE-LITE 80 CHARACTER LCD ANNUNCIATOR	1
FL-SD355	FIRE-LITE ADDRESSABLE SMOKE DETECTOR	21
FL-H355	FIRE-LITE ADDRESSABLE HEAT DETECTOR	3
FL-302EPM135	FIRE-LITE EXPLOSION PROOF HEAT DETECTOR	1
FL-MMF302	FIRE-LITE ADDRESSABLE CURRENT LIMITED MONITOR MODULE	4
FL-MDF300	FIRE-LITE ADDRESSABLE MONITOR MODULE	6
FL-CRF300	FIRE-LITE ADDRESSABLE CONTROL RELAY MODULE	2
FL-BG12LX	FIRE-LITE ADRESSABLE PULL STATION	5
BK-P2R	AUDIO VISUAL DEVICE	11
BK-SR	STROBE ONLY DEVICE	2
AX-AL802ULADA	AUDIO VISUAL POWER EXTENDER	1
PS-1208	CONTROL PANEL BATTERY BACKUP	4
WG-45115004	FIRE ALARM WIRE	1
	CONDUIT	1
	SUBMITTALS AND CAD	1

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.

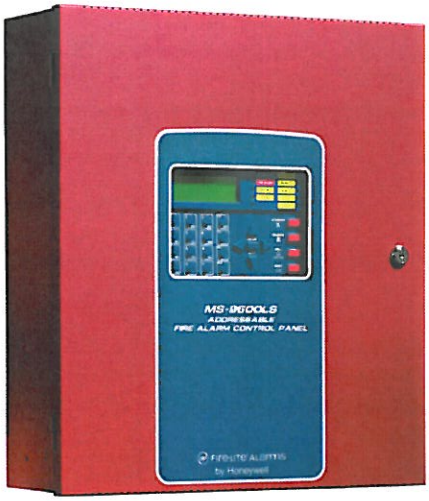
Optional modules, which plug into the main circuit board, are available for special functions. Available accessories include LED, graphic and LCD annunciators, reverse polarity/city box transmitter, digital alarm communicator/transmitter, SLC expansion module, local and remote upload/download software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



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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.

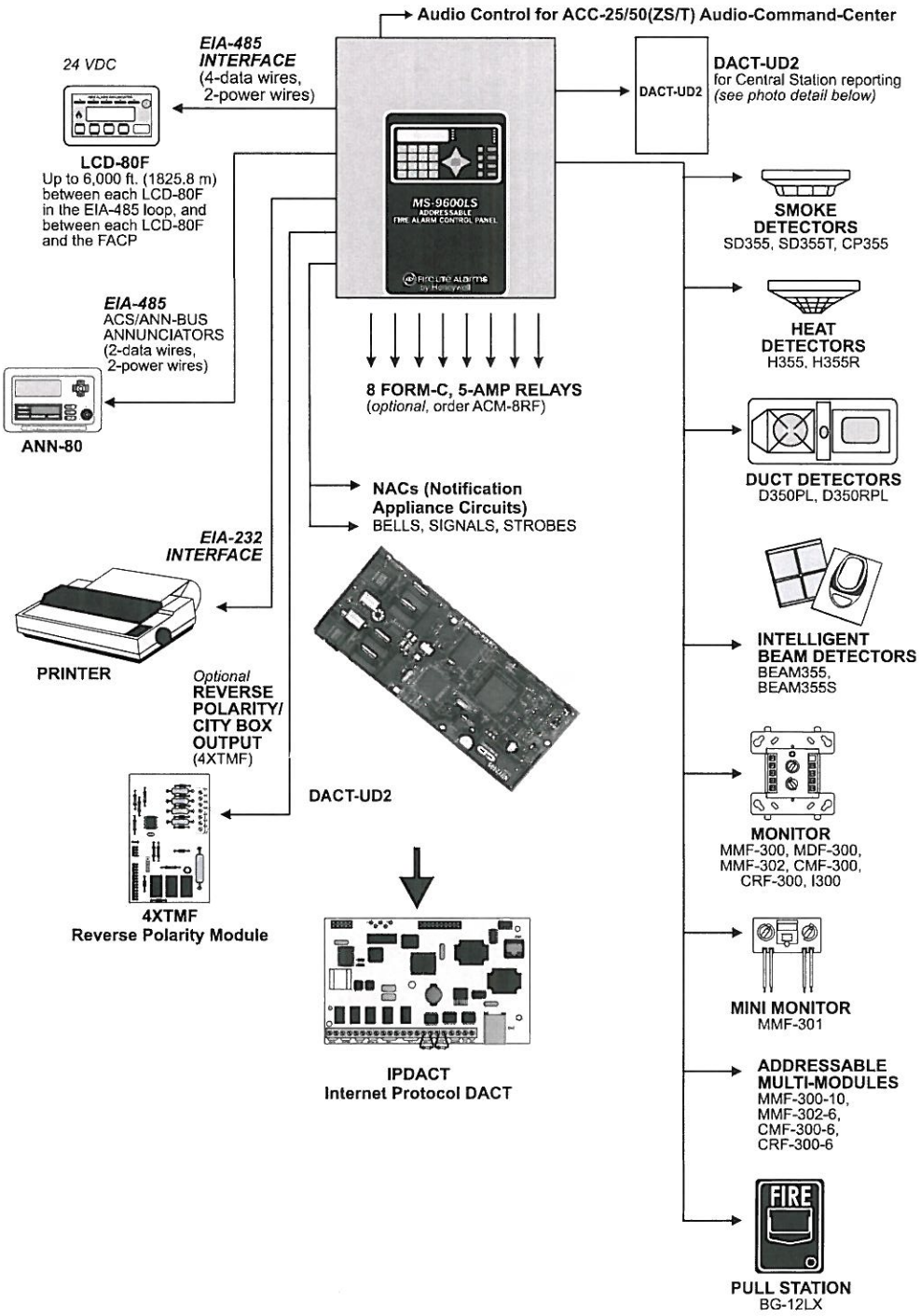
CMF-300: Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

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
24 VDC
EIA-485 INTERFACE
(4-data wires, 2-power wires)
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
EIA-485
ACS/ANN-BUS ANNUNCIATORS
(2-data wires, 2-power wires)
ANN-80
EIA-232 INTERFACE
PRINTER
Optional
REVERSE POLARITY/ CITY BOX OUTPUT
(4XTMF)
4XTMF
Reverse Polarity Module
DACT-UD2
DACT-UD2
for Central Station reporting
(see photo detail below)
MS-9600LS
ADDRESSABLE FIRE ALARM CONTROL PANEL
8 FORM-C, 5-AMP RELAYS
(optional, order ACM-8RF)
NACs (Notification Appliance Circuits)
BELLS, SIGNALS, STROBES
IPDACT
Internet Protocol DACT
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

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.

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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.

ANN-80

80-Character LCD Serial Annunciator

FIRE·LITE® ALARMS by Honeywell

Annunciators

General

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

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

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

52417cov.jpg

Features

- Listed to UL Standard 864, 9th Edition.
- Backlit 80-character LCD display (20 characters x 4 lines).
- Mimics all display information from the host panel.
- Control switches for System Acknowledge, Signal Silence, Drill, and Reset.
- Control switches can be independently enabled or disabled at the FACP.
- Keyswitch enables/disables control switches and mechanically locks annunciator enclosure
- Keyswitch can be enabled or disabled at the FACP.
- Enclosure supervised for tamper.
- System status LEDs for AC Power, Alarm, Trouble, Supervisory, and Alarm Silence.
- Local sounder can be enabled or disabled at the FACP.
- ANN-80 connects to the ANN-BUS terminal on the FACP and requires minimal panel programming.
- Displays device type identifiers, individual point alarm, trouble, supervisory, zone, and custom alpha labels.
- Time-and date display field.
- Surface mount directly to wall or to single, double, or 4" square electrical box.
- Semi-flush mount to single, double, or 4" square electrical box. Use ANN-SB80KIT for angled view mounting.
- Can be remotely located up to 6,000 feet (1,800 m) from the panel.
- Backlight turns off during AC loss to conserve battery power but will turn back on if an alarm condition occurs.
- May be powered by 24 VDC from the host FACP or by remote power supply (requires 24 VDC).
- Up to eight ANN-80s can be connected on the ANN-BUS.

Controls and Indicators

- AC Power
- Alarm
- Trouble
- Supervisory
- Alarm Silenced

Specifications

- **Operating voltage range:** 18 VDC to 28 VDC.
- **Current consumption @** 24 VDC nominal (filtered and non-resettable): 40 mA maximum.
- **Ambient temperature:** 32°F to 120°F (0°C to 49°C).
- **Relative humidity:** 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F).
- 5.375" (13.65 cm.) high x 6.875" (17.46 cm.) wide x 1.375" (3.49 cm.) deep.
- For use indoors in a dry location.
- All connections are power-limited and supervised.

Agency Listings and Approvals

The listings and approvals below apply to the ANN-80. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S2424
- **FM approved**
- **CSFM:** 7120-0075:211
- **MEA:** 442-06-E

The ANN-BUS

POWERING THE DEVICES ON THE ANN-BUS FROM AUXILIARY POWER SUPPLY

The ANN-BUS can be powered by an auxiliary power supply when the maximum number of ANN-BUS devices exceeds the ANN-BUS power requirements. See the FACP manual for more information.

ANN-BUS DEVICE ADDRESSING

Each ANN-BUS device requires a unique address (ID Number) in order to communicate with the FACP. A maximum of 8 devices can be connected to the FACP ANN-BUS communication circuit. See the FACP manual for more information.

WIRE REQUIREMENTS: COMMUNICATIONS CIRCUIT

The ANN-80 connects to the FACP ANN-BUS communications circuit. To determine the type of wire and the maximum wiring distance that can be used with FACP ANN-BUS accessory modules, it is necessary to calculate the total worst case current draw for all modules on a single 4-conductor bus. The total worst case current draw is calculated by adding the individual worst case currents for each module.

NOTE: *For total worst case current draw on a single ANN-BUS refer to appropriate FACP manual.*

After calculating the total worst case current draw, the following table specifies the maximum distance the modules can be located from the FACP on a single wire run. The table ensures 6.0 volts of line drop maximum. In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor.

These cases are marked in the chart with an asterisk (*). Maximum length can never be more than 6,000 feet (1,800 m), regardless of gauge used. See table below.

WIRE REQUIREMENTS: POWER CIRCUIT

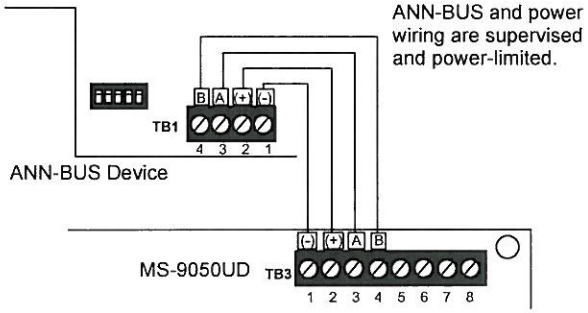
- 14 to 18 AWG (0.75 - 2.08 mm^2) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop form source to end of circuit.
- All connections are power-limited and supervised.
- A maximum of eight ANN-80 modules may be connected to this circuit.

Communication Pair Wiring Distance: FACP to Last ANN-BUS Module

Total Worst Case Current Draw (amps)	22 Gauge	18 Gauge	16 Gauge	14 Gauge
0.100	1,852 ft.	4,688 ft.	* 6,000 ft.	*6,000 ft.
0.200	926 ft.	2,344 ft.	3,731 ft.	5,906 ft.
0.300	617 ft.	1,563 ft.	2,488 ft.	3,937 ft.
0.400	463 ft.	1,172 ft.	1,866 ft.	2,953 ft.
0.500	370 ft.	938 ft.	1,493 ft.	2,362 ft.
0.600	309 ft.	781 ft.	1,244 ft.	1,969 ft.
0.700	265 ft.	670 ft.	1,066 ft.	1,687 ft.
0.800	231 ft.	586 ft.	933 ft.	1,476 ft.
0.900	206 ft.	521 ft.	829 ft.	1,312 ft.
1.000 (max.)	185 ft.	469 ft.	746 ft.	1,181 ft.

WIRING CONFIGURATION

The following figure illustrates the wiring between the FACP and ANN-BUS devices.



FACP Wiring to ANN-BUS Device

ORDERING OPTIONS:

ANN-80: Red 80 character LCD Annunciator.

ANN-80-W: White, 80 character LCD Annunciator.

ANN-SB80KIT-R: Red surface mount backbox with angled wedge.

ANN-SB80KIT-W: White surface mount backbox with angled wedge.

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ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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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

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

Addressable Photoelectric Smoke Detectors

FIRE·LITE ALARMS by Honeywell

Addressable Devices

General

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

Features

SLC loop:

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

Addressing:

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

Architecture:

- Unique single-source, dual-chamber design to respond quickly and dependably to a broad range of fires.
- Sleek, low-profile design.
- Integral communications and built-in type identification.
- Built-in tamper-resistant feature.
- Removable cover and insect-resistant screen for simple field cleaning.

Operation:

- Withstands air velocities up to 4,000 feet-per-minute (20 m/sec.) without triggering a false alarm.
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level.
- Visible LED "blinks" when the unit is addressed (communicating with the fire panel) and latches on in alarm.

Mechanicals:

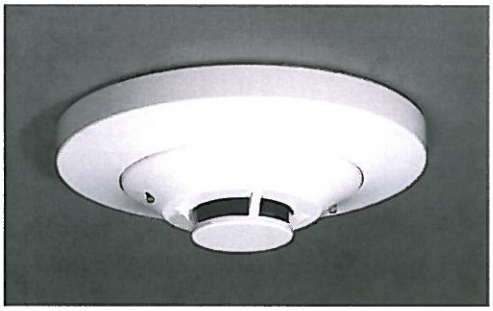
- Sealed against back pressure.
- Direct surface mounting or electrical box mounting.
- Mounts to: single-gang box, 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or 4.0" (10.16 cm) square electrical box *(using a plaster ring — included).*

Other system features:

- Fully coated circuit boards and superior RF/transient protection.
- 94-V0 plastic flammability rating.
- Low standby current.

Options:

- Remote LED output connection (P/N RA100Z).



SD355 with B350LP base

SD355T with B350LP base

Applications

Use photoelectric detectors in life-safety applications to provide a broad range of fire-sensing capability, especially where smoldering fires are anticipated. Ionization detectors are often better than photoelectric detectors at sensing fast, flaming fires.

Construction

These detectors are constructed of off-white LEXAN®. SD355(T) plug-in, low-profile smoke detectors are designed to commercial standards and offer an attractive appearance.

Installation

SD355(T) plug-in detectors use a detachable mounting base to simplify installation, service and maintenance. Mount base on box which is at least 1.5 inches (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box with plaster ring.
- 4.0" (10.16 cm) octagonal box.
- 3.5" (8.89 cm) octagonal box.
- Single-gang box.

NOTE: *Because of the inherent supervision provided by the SLC loop,* ***end-of-line resistors*** *are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class B) wiring. SD355R mounts in a D355PL or DNR(W) duct detector housing.*

Operation

Each SD355/T/R uses one of 99 possible addresses on the MS-9200 series and up to 318 (159 on each loop) on the MS-9600 series Signaling Line Circuit (SLC). It responds to regular polls from the system and reports its type and status.

The SD355/T/R addressable photoelectric sensor's unique unipolar chamber responds quickly and uniformly to a broad range of smoke conditions and can withstand wind gusts up to 4,000 feet-per-minute (20 m/sec.) without sending an alarm level signal. Because of its unipolar chamber, the SD355/T/R is approximately two times more responsive than most photoelectric sensors. This makes it a more stable detector.

Detector Sensitivity Test

Each detector can have its sensitivity tested (required per NFPA 72, Chapter 14 on *Inspection, Testing and Maintenance*) when installed/connected to a MS-9200 series or MS-9600 series addressable fire alarm control panel. The results of the sensitivity test can be printed off the MS-9200 series or MS-9600 series for record keeping.

Specification

Voltage range: 15 – 32 VDC (peak).

Standby current: 300 µA @ 24 VDC.

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

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

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

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

Weight: 3.6 oz. (102 g).

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

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

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

Listings

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

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

Product Line Information

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

SD355: Adressable photoelectric detector; B350LP base included.

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

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

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

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

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

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

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

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

ACCESSORIES:

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

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

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

M02-04-00: Test magnet.

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

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

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

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

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

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

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www.firelite.com

H355(A) Series

Intelligent Addressable Thermal Detectors

FIRE·LITE ALARMS by Honeywell

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** addresable 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**).

H355 with B350LP base

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.
- 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.

Specifations

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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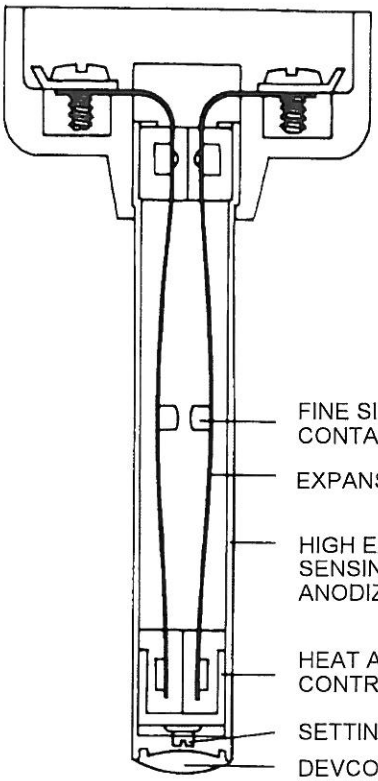
www.firelite.com

PRODUCT LINE INFORMATION

Thermotech Model 302 Series Rate-Anticipation Heat Detectors		
MODEL NUMBER	**DESCRIPTION**	**REFER TO**
302-135	135°F Interior Vertical Mounting, FM and UL.	Note 1 below.
302-194	194°F Interior Vertical Mounting, FM and UL.	
302-AW-135	135°F All-Weather Vertical Mounting, FM and UL.	Note 2 below.
302-AW-194	194°F All-Weather Vertical Mounting, FM and UL.	
302-ET-135	135°F All-Weather Vertical Mounting, FM and UL.	Note 3 below.
302-ET-194	194°F All-Weather Vertical Mounting, FM and UL.	
302-H-135	135°F Interior Horizontal Mounting, FM and UL.	Note 4 below.
302-H-194	194°F Interior Horizontal Mounting, FM and UL.	
302-EPM-135	135°F Explosion-Proof Mounting, UL..	Note 5 below.
302-EPM-194	194°F Explosion-Proof Mounting, UL.	
AP-P	Decorative white plastic adaptor plate for mounting 302 and 302-AW to 4" outlet box.	



Cut-Away View, ACTUAL SIZE

Note 1: For interior mounting in any atmosphere that is compatible with terminal screw type connections. UL rating 50' x 50' (15.24 x 15.24 meters).

Note 2: Humitically sealed for moisture-proof or dust-proof installations. Requires no special backbox when the all-weather leads are properly spliced to 'THW' or equivalent type wire.

Note 3: Humitically sealed for moisture-proof or dust-proof installations. Requires no special backbox. Has plastic hexagonal wrench grip bushing with 1/2" (1.27 cm) conduit threads for attachment to threaded hub cover, or any outlet box.

Note 4: Same as model 302 except designed for horizontal mounting. UL rating 40' x 40' (12.19 x 12.19 meters).

Note 5: Explosion-proof for installation in hazardous locations. Has hexagonal wrench grip bushing with 1/2" (1.27 cm) conduit threads for attachment to threaded hub cover of Series JL fixture fitting as manufactured by Killark Electric Co., or equal.

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

Addressable Monitor Modules

FIRE·LITE ALARMS by Honeywell

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.

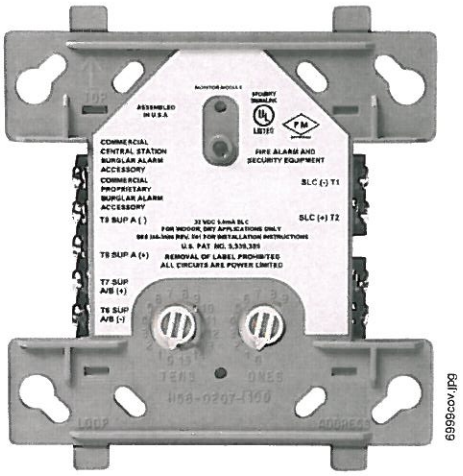
MMF-300 Monitor Module

- 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 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 (Type H)

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 µA (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

EOL resistance: 47K ohms.

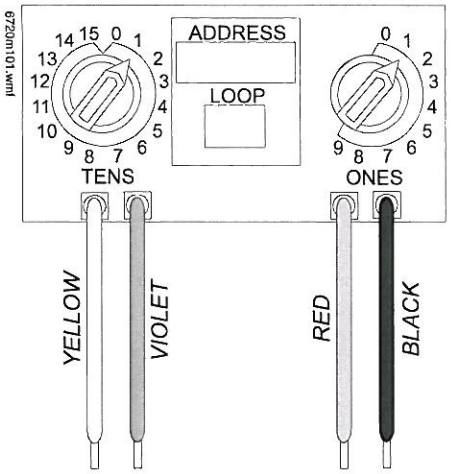
Temperature range: 32°F to 120°F (0°C to 49°C).

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 µA.

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

CRF-300(A)

Relay Module

FIRE·LITE ALARMS by Honeywell

Addressable Devices

General

The **CRF-300(A)** Addressable Relay Module provides the system with a dry-contact output for activating a variety of auxiliary devices, such as fans, door holders, dampers, control equipment, etc. Addressability allows the dry contact to be activated through panel programming, on a select basis.

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.

Features

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop.
- Integral LED "blinks" green each time a communication is received from the control panel and turns on in steady red when activated.
- High noise immunity (EMF/RFI).
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct-dial entry of address: 01– 159 for MS-9600(A) series panels, 01 – 99 on MS-9200UDLS(A) and MS-9050UD(A).

Applications

The CRF-300(A) may be programmed to operate dry contacts for door holders, Air Handling Unit shutdown, etc., and to reset four-wire smoke detector power.

Construction

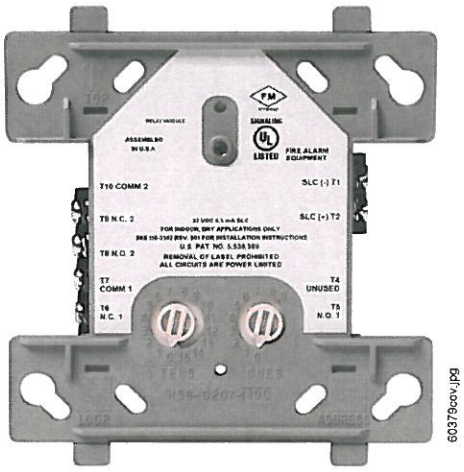
- The face plate is made of off-white heat-resistant plastic.
- Controls include two rotary switches for direct-dial entry of address setting.
- The CRF-300(A) is configured for a single Class B (Style Y) or Class A (Style Z) Notification Appliance Circuit.
- The CRF-300(A) provides two Form-C dry contacts that switch together.

Operation

Each CRF-300(A) uses one of the addresses on a SLC loop. It responds to regular polls from the control panel and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay.

***NOTE:** Open/short supervision is suspended with the CRF-300.*

Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a control module and a relay module.



CRF-300(A)

Specifications

Normal operating voltage: 15 to 32 VDC.

Maximum SLC current draw: 6.5 mA (LED on).

Average operating current: 230 µA direct poll (CLIP mode), 255 µA group poll (LiteSpeed mode) with LED flashing.

EOL resistance: not used.

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

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

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 mm) deep box.

Relay Contact Ratings

Load Description	Application	Maximum Voltage	Current Rating
Resistive	Non-Coded	30 VDC	3.0 A
Resistive	Coded	30 VDC	2.0 A
Resistive	Non-Coded	110 VDC	0.9 A
Resistive	Non-Coded	125 VAC	0.9 A
Inductive (L/R=5ms)	Coded	30 VDC	0.5 A
Inductive (L/R=2ms)	Coded	30 VDC	1.0 A
Inductive (PF=0.35)	Non-Coded	125 VAC	0.5 A

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:** S2424
- **FM approved**
- **CSFM:** 7300-0075:185
- **MEA:** 72-01-E

Product Line Information

CRF-300(A): Intelligent addressable relay module.

: Intelligent addressable relay module, ULC listed model.

SMB500: Optional surface-mount backbox.

NOTE: *For installation instructions, see document I56-1190-005 and refer to the SLC Wiring Manual, document 51309.*

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www.firelite.com

BG-12LX

Addressable Manual Pull Station

FIRE·LITE ALARMS by Honeywell

Addressable Devices

General

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

FLPullStation.jpg

Features

- Maintenance personnel can open station for inspection and address setting without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word "ACTIVATED" appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC loop current:** 230 µA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

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

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

Architectural/Engineering Specifications

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

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

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

Product Line Information

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

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17003: Keys, set of two.

Agency Listings and Approvals

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

- **UL Listed:** S711
- **MEA:** 67-02-E
- **CSFM:** 7150-0075:0184
- **FDNY:**
- **FM** Approved

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

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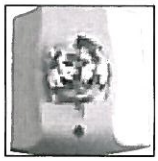
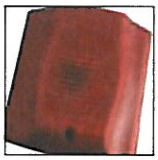
Selectable-Output Horns, Strobes, and Horn Strobes





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

Features

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

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

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

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

Agency Listings

SIGNALING UL LISTED
S4011 (chimes, horn strobes, horns)
S5512 (strobes)

FM APPROVED
3023572

MEA approved
MEA452-05-E

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

SpectrAlert Advance Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance horns, strobes, and horn strobes shall mount to a standard 4 × 4 × 1½-inch back box, 4-inch octagon back box, or double-gang back box. Two-wire products shall also mount to a single-gang 2 × 4 × 1⅞-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt-rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32 and 120 degrees Fahrenheit from a regulated DC or full-wave rectified unfiltered power supply. Strobes and horn strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185.

Strobe

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

Horn Strobe Combination

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

Synchronization Module

The module shall be a System Sensor Sync•Circuit model MDL listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at temporal three. Also, while operating the strobes, the module shall silence the horns on horn strobe models over a single pair of wires. The module shall mount to a 4 11/16 × 4 11/16 × 2⅛-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/Electrical Specifications

Standard Operating Temperature	32°F to 120°F (0°C to 49°C)
Humidity Range	10 to 93% non-condensing
Strobe Flash Rate	1 flash per second
Nominal Voltage	Regulated 12 DC/FWR or regulated 24 DC/FWR[1]
Operating Voltage Range[2]	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Ceiling-Mount Dimensions (including lens)	6.8″ diameter × 2.5″ high (173 mm diameter × 64 mm high)
Wall-Mount Dimensions (including lens)	5.6″ L × 4.7″ W × 2.5″ D (142 mm L × 119 mm W × 64 mm D)
Horn Dimensions	5.6″ L × 4.7″ W × 1.3″ D (142 mm L × 119 mm W × 33 mm D)
Wall-Mount Back Box Skirt Dimensions (BBS-2, BBSW-2)	5.9″ L × 5.0″ W × 2.2″ D (151 mm L × 128 mm W × 56 mm D)
Ceiling-Mount Back Box Skirt Dimensions (BBSC-2, BBSCW-2)	7.1″ diameter × 2.2″ high (180 mm diameter × 57 mm high)
Wall-Mount Trim Ring Dimensions (sold as a 5 pack) (TR-HS, TRW-HS)	5.7″ L × 4.8″ W × 0.35″ D (145 mm L × 122 mm W × 9 mm D)
Ceiling-Mount Trim Ring Dimensions (sold as a 5 pack) (TRC-HS, TRCW-HS)	6.9″ diameter × 0.35″ high (175 mm diameter × 9 mm high)

Notes:

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

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)

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

UL Max. Horn Current Draw (mA RMS)

		8–17.5 Volts		16–33 Volts	
Sound Pattern	dB	DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-temporal	High	57	56	69	75
Non-temporal	Medium	42	50	60	69
Non-temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)

	8–17.5 Volts		16–33 Volts						
DC Input	15	15/75	15	15/75	30	75	95	110	115
Temporal High	137	147	79	90	107	176	194	212	218
Temporal Medium	132	144	69	80	97	157	182	201	210
Temporal Low	132	143	66	77	93	154	179	198	207
Non-Temporal High	141	152	91	100	116	176	201	221	229
Non-Temporal Medium	133	145	75	85	102	163	187	207	216
Non-Temporal Low	131	144	68	79	96	156	182	201	210
FWR Input									
Temporal High	136	155	88	97	112	168	190	210	218
Temporal Medium	129	152	78	88	103	160	184	202	206
Temporal Low	129	151	76	86	101	160	184	194	201
Non-Temporal High	142	161	103	112	126	181	203	221	229
Non-Temporal Medium	134	155	85	95	110	166	189	208	216
Non-Temporal Low	132	154	80	90	105	161	184	202	211

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, High Candela Range (135–185 cd)

	16–33 Volts					16–33 Volts			
DC Input	135	150	177	185	FWR Input	135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

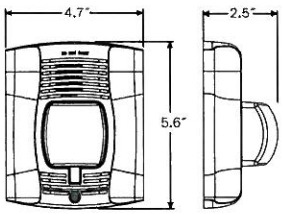
Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)

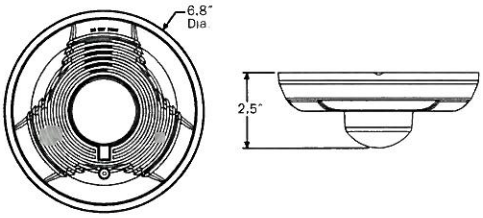
			8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
Switch Position	Sound Pattern	dB	DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	89
4	Non-Temporal	High	82	82	88	88	93	92	100	100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

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

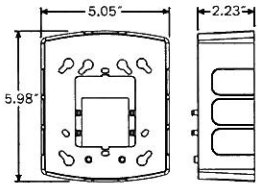
SpectrAlert Advance Dimensions



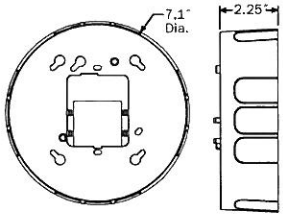
Wall-mount horn strobes



Ceiling-mount horn strobes



Wall back box skirt



Ceiling back box skirt

SpectrAlert Advance Ordering Information

Model	Description
Wall Horn Strobes	
P2R*†	2-Wire Horn Strobe, Standard cd‡, Red
P2RH*	2-Wire Horn Strobe, High cd, Red
P2W*	2-Wire Horn Strobe, Standard cd, White
P2WH*	2-Wire Horn Strobe, High cd, White
P4R*	4-Wire Horn Strobe, Standard cd, Red
P4RH	4-Wire Horn Strobe, High cd, Red
P4W	4-Wire Horn Strobe, Standard cd, White
Wall Strobes	
SR*†	Strobe, Standard cd, Red
SRH*†	Strobe, High cd, Red
SW*	Strobe, Standard cd, White
SWH*	Strobe, High cd, White
Ceiling Horn Strobes	
PC2R*	2-Wire Horn Strobe, Standard cd, Red
PC2RH	2-Wire Horn Strobe, High cd, Red
PC2W*†	2-Wire Horn Strobe, Standard cd, White
PC2WH*	2-Wire Horn Strobe, High cd, White
PC4R	4-Wire Horn Strobe, Standard cd, Red
PC4RH	4-Wire Horn Strobe, High cd, Red
PC4W	4-Wire Horn Strobe, Standard cd, White

Model	Description
Ceiling Strobes	
SCR	Strobe, Standard cd, Red
SCRH	Strobe, High cd, Red
SCW*	Strobe, Standard cd, White
SCWH	Strobe, High cd, White
Horns	
HR	Horn, Red
HW	Horn, White
Accessories	
BBS-2	Back Box Skirt, Wall, Red
BBSW-2	Back Box Skirt, Wall, White
BBSC-2	Back Box Skirt, Ceiling, Red
BBSCW-2	Back Box Skirt, Ceiling, White
TR-HS	Trim Ring, Wall, Red
TRW-HS	Trim Ring, Wall White
TRC-HS	Trim Ring, Ceiling, Red
TRCW-HS	Trim Ring, Ceiling, White

Notes:

* Add "-P" to model number for plain housing (no "FIRE" marking on cover), e.g., P2R-P.

† Add "-SP" to model number for "FUEGO" marking on cover, e.g., P2R-SP.

‡ "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings. "High cd" refers to strobes that include 135, 150, 177, and 185 candela settings.

SYSTEM SENSOR®

3825 Ohio Avenue • St. Charles, IL 60174
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A05-0395-007 • 4/09 • #2132

AL602ULADA, AL802ULADA, AL1002ULADA NAC Power Extenders

Rev. AL602/802/1002ULADA- A05I

Overview

The AL602ULADA, AL802ULADA and AL1002ULADA are extremely cost effective voltage regulated remote NAC Power Extenders. They may be connected to any 12 or 24 volt Fire Alarm Control Panel (FACP). Primary applications include Notification Appliance Circuit (NAC) expansion (supports ADA requirements) and will provide auxiliary power to support system accessories.

AL602ULADA
- 24VDC or 12VDC rated @ 6.5 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL602ULADAJ
- Larger enclosure.

AL802ULADA
- 24VDC or 12VDC rated @ 8 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL802ULADAJ
- Larger enclosure.

AL1002ULADA
- 24VDC rated @ 10 amp max.
- Two (2) Class A or four (4) Class B outputs.

AL1002ULADAJ
- Larger enclosure.

Specifications

- Two (2) Class A or two (2) Class B FACP inputs.
- Two (2) NC dry contact trigger inputs (AL802ULADA and AL1002ULADA only)
- Two (2) Class A or four (4) Class B indicating circuits.
- Two (2) Class B outputs may be paralleled for more power on an indicating circuit.
- One (1) Aux. Power Output @ 1 amp supply current (w/battery back up).
- Signal Circuit Trouble Memory - facilitates quickly locating intermittent system trouble and eliminates costly and unnecessary service calls. LED's indicate a prior fault (short, open, ground) has occurred on one or more signaling circuit outputs.
- 2-wire Horn/Strobe Sync mode allows audible notification appliances (Horns) to be silenced while visual notification appliances (Strobes) continue to operate.
- Horn/Strobe sync protocols include: Gentex®, System Sensor®, Faraday, Amseco.
- Temporal Code 3 Mode.
- Steady Mode.
- Input to Output Follower Mode (maintains synchronization of notification appliance circuits).
- March Time.
- Compatible with 24VDC or 12VDC fire panels.
- Common trouble inputs and outputs.
- Ground fault detection.
- Input 115VAC.
- AC fail supervision (form "C" contacts).
- Low battery supervision (form "C" contacts).
- Battery presence supervision (form "C" contacts).
- Power supply, logic board, red enclosure, cam lock, transformer & battery leads.
- Enclosure:
  - Combination knockouts re 1/2" and 3/4"
  - Accommodates up to two (2) 12VDC/12AH batteries.

Agency Approvals

UL Listed Control Units and Accessories for Fire Alarm Systems (UL 864), UL Listed Standard for Safety for Fire Protective Signaling Systems (UL 1481).

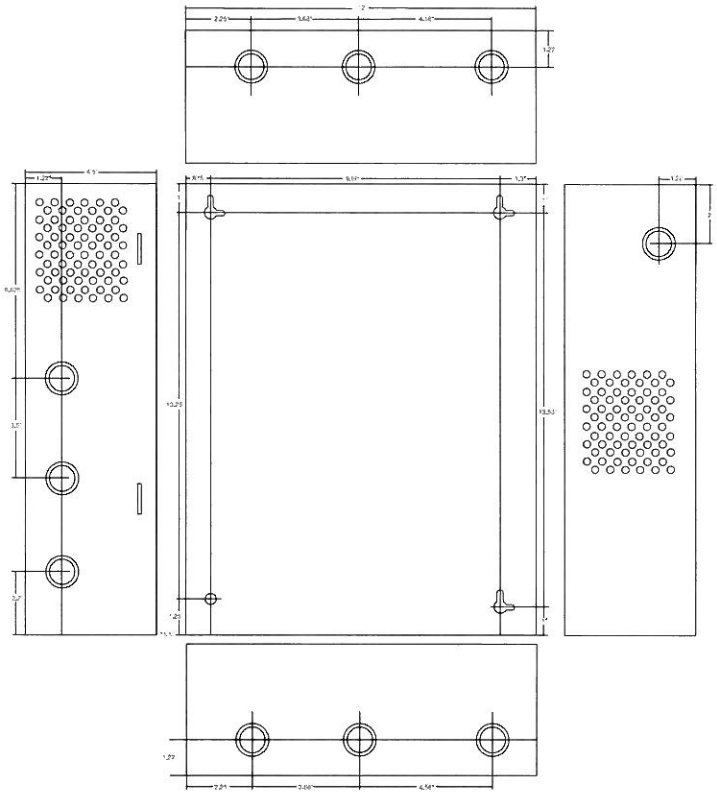
MEA Approved — NYC Department of Buildings Approved.

California State Fire Marshal Approved.

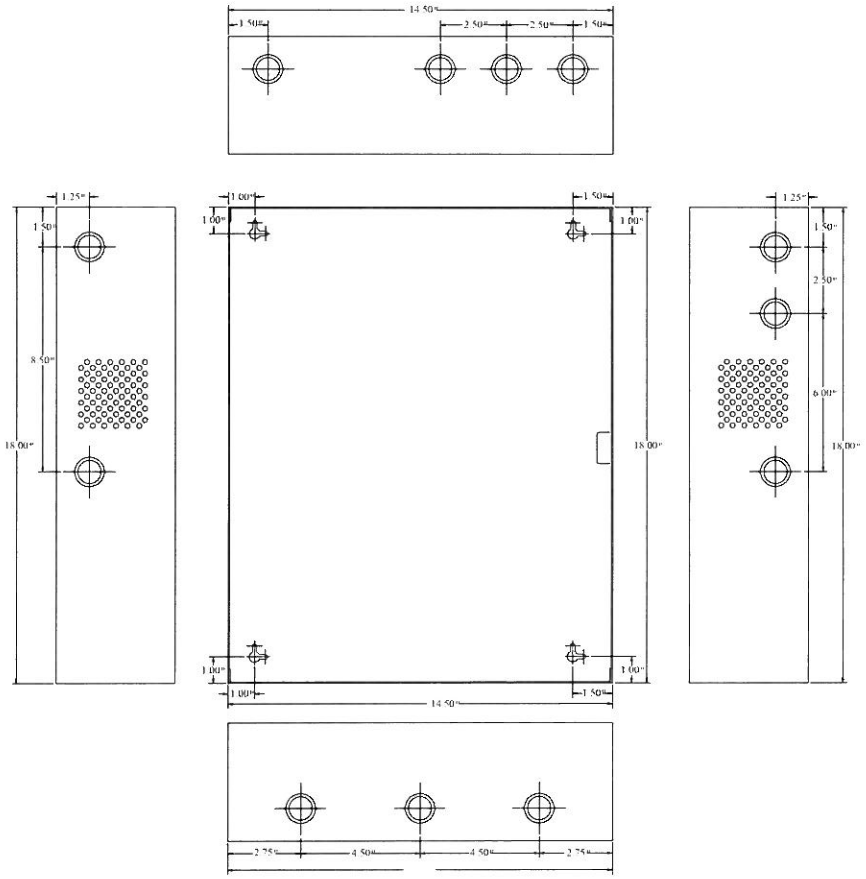
FM APPROVED — Factory Mutual Approved.

Enclosure Dimensions

AL602ULADA, AL802ULADA and AL1002ULADA: 15.5"H x 12"W x 4.5"D



AL602ULADAJ, AL802ULADAJ and AL1002ULADAJ: 18"H x 14.5"W x 4.625"D



POWER-SONIC

RECHARGEABLE VRLA BATTERIES AND BATTERY CHARGERS

Engineered With Vision. Built With Care.

Providing our customers with reliable, yet economical, products is the corner stone of the Power-Sonic mission. The Power-Sonic Corporation has been a leading force since 1970 in the supply of high quality cost effective batteries. Power-Sonic markets an extensive range of rechargeable sealed lead acid batteries worldwide. These batteries envelop a broad spectrum of electronic and industrial applications, either as the prime or standby power source. Engineers and buyers continue to insist on Power-Sonic batteries, wherever reliable and cost effective DC power is required.

Power-Sonic is dedicated to continual product development to improve the performance and reliability of our product range. New batteries are constantly being introduced to meet the ever evolving needs of industry. We strive to produce batteries with superior performance characteristics and value, through advanced engineering and state-of-the art manufacturing processes, coupled with the use of premium raw materials.

We've Got The Power.™

CE BTS EMC tested Germany
Certificate of CE

Certificate of ISO9001

MH20845
Certificate of UL

BSI REGISTERED

PS & PSG-SERIES: General Purpose Batteries

* FR: UL94 V-0 flame retardant case & cover

Model	Nominal Voltage V	Nominal Capacity A.H.	Current @ 20-hr. rate mA	Length		Width		Height		Ht. Over Terminal		Weight		Standard Terminals
				in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	
PS-260	2	6.0	300	1.97	50	1.34	34	3.94	100	4.13	105	0.89	0.40	F1
PS-445	4	4.5	225	1.89	48	2.09	53	3.70	94	3.86	98	1.30	0.59	F2
PSG-450	4	5.0	250	3.54	90	1.94	49	2.87	73	2.87	73	1.40	0.64	F2
PSG-480	4	8.0	400	3.54	90	1.94	49	4.00	102	4.00	102	2.09	0.95	F2
PS-490	4	9.0	450	4.01	102	1.73	44	3.74	95	4.02	102	2.20	1.00	F2
PS-4100	4	10.0	500	4.01	102	1.97	50	3.70	94	3.85	98	2.50	1.13	F1
PS-605	6	0.5	25	2.24	57	0.55	14	1.97	50	1.97	50	0.20	0.09	WL
PS-610	6	1.1	55	2.00	51	1.65	42	2.00	51	2.20	56	0.44	0.20	F1
PS-612	6	1.4	70	3.82	97	0.94	24	2.00	51	2.20	56	0.66	0.30	F1
PSG-625	6	2.5	125	4.15	105	1.63	41	2.70	69	2.70	69	1.17	0.53	F1
PS-628	6	2.9	145	2.60	66	1.30	33	3.86	98	4.06	103	1.30	0.59	F1
PS-630	6	3.5	175	5.28	134	1.34	34	2.35	60	2.56	65	1.37	0.62	F1
PS-632	6	3.5	175	2.60	66	1.30	33	4.65	118	4.80	122	1.37	0.62	F1
PS-640	6	4.5	225	2.76	70	1.86	47	3.94	100	4.25	108	1.60	0.73	F1
PS-650LS & LF	6	5.0	250	2.64	67	2.64	67	3.94	100	4.64	118	1.80	0.82	F1 or SP
PSG-650	6	5.0	250	5.28	134	1.94	49	3.00	76	3.00	76	2.15	0.98	F2
PS-665	6	6.5	325	3.86	98	2.20	56	3.78	96	4.02	102	2.70	1.22	FP
PS-670	6	7.0	350	5.95	151	1.34	34	3.70	94	3.94	100	2.42	1.10	F1
PSG-680	6	8.0	400	5.28	134	1.94	49	3.98	101	3.98	101	3.19	1.45	F2
PS-682	6	9.0	450	3.86	98	2.20	56	4.65	118	4.72	120	3.20	1.45	F1
PS-6100	6	12.0	600	5.95	151	2.00	51	3.70	94	3.86	98	4.30	1.95	F1 or F2
PS-6120FP	6	13.0	650	4.25	108	2.80	71	5.55	141	5.55	141	4.80	2.18	FP
PS-6120 Toy	6	13.0	650	4.25	108	2.80	71	5.55	141	5.55	141	4.80	2.18	TH or TS
PS-6200	6	20.0	1000	6.18	157	3.27	83	4.92	125	4.92	125	7.10	3.22	NB1
PS-6360	6	36.0	1800	6.25	159	3.35	85	6.50	165	6.93	176	12.10	5.49	F2 or NB1
PS-6580	6	58.0	2900	7.28	185	4.41	112	8.07	205	8.07	205	19.50	8.85	F2
PS-62000	6	210.0	10500	12.05	306	6.65	169	8.65	220	8.96	228	63.93	29.00	T8
PS-832	8	3.2	160	5.29	134	1.42	36	2.49	63	2.70	69	1.65	0.75	F1
PS-1208	12	0.8	40	3.78	96	0.98	25	2.44	62	n/a	n/a	0.77	0.35	WL
PS-1212	12	1.4	70	3.78	96	1.69	43	2.04	52	2.28	58	1.20	0.54	F1
PS-1220	12	2.5	125	7.00	178	1.38	35	2.36	60	2.56	65	2.10	0.95	F1
PS-1221	12	2.0	100	5.63	143	0.94	24	2.56	65	2.56	65	1.30	0.59	PC
PS-1221S	12	2.0	100	5.91	150	0.80	20	3.52	89	n/a	n/a	1.50	0.68	F1/0
PS-1223	12	2.3	115	7.17	182	0.94	24	2.40	61	2.40	61	1.70	0.77	PC
PS-1227	12	2.9	145	3.11	79	2.20	56	3.90	99	4.13	105	2.40	1.09	F1
PS-1228	12	2.8	140	5.24	133	1.30	33	3.82	97	4.09	104	2.60	1.18	F1
PS-1229	12	2.9	145	7.00	178	1.38	35	2.36	60	2.60	66	2.30	1.04	F1
PS-1230	12	3.4	170	5.24	133	2.64	67	2.36	60	2.60	66	2.90	1.32	F1
PS-1238	12	3.8	190	7.68	195	1.85	47	2.91	74	2.99	76	3.50	1.59	F1
PS-1250	12	5.0	250	3.54	90	2.76	70	3.98	101	4.21	107	3.50	1.59	F1 or F2
PS-1251FP	12	5.4	270	5.50	140	1.90	48	4.00	102	4.06	103	4.10	1.86	FP
PS-1270	12	7.0	350	5.95	151	2.56	65	3.70	94	3.86	98	4.80	2.18	F1 or F2
PS-1272	12	7.2	360	5.95	151	2.56	65	3.70	94	3.86	98	5.80	2.63	F1 or F2
PS-1282L	12	9.0	450	7.72	196	2.20	56	4.65	118	4.65	118	6.90	3.13	F1
PS-1282S	12	9.0	450	3.86	98	4.40	112	4.65	118	4.65	118	6.90	3.13	F1
PS-1290	12	9.0	450	5.95	151	2.56	65	3.70	94	3.86	98	6.00	2.72	F2
PS-12100	12	12.0	600	5.95	151	4.00	102	3.70	94	3.86	98	8.14	3.69	F1 or F2
PS-12120	12	12.0	600	5.95	151	3.86	98	3.70	94	3.94	100	7.92	3.59	F2
PS-12120L	12	12.0	600	8.45	215	2.75	70	5.75	146	5.75	146	8.80	3.99	FP
PS-12140	12	14.0	700	5.95	151	3.86	98	3.70	94	3.94	100	9.25	4.20	F2
PS-12180	12	18.0	900	7.13	181	3.00	76	6.59	167	6.59	167	12.60	5.72	F2 or NB2
PS-12260	12	26.0	1300	6.56	167	6.97	177	4.92	125	4.92	125	17.00	7.71	F2 or NB2
PS-12280	12	28.0	1400	6.50	165	4.92	125	6.97	177	6.97	177	20.70	9.39	NB1
PS-12330	12	33.0	1650	7.72	196	5.14	131	6.22	158	7.00	178	23.10	10.50	NB3
PS-12350	12	35.0	1750	7.72	196	5.14	131	6.22	158	7.00	178	24.70	11.20	NB3

PS & PSG-SERIES: General Purpose Batteries *(continued)*

* FR: UL94 V-0 flame retardant case & cover

Model	Nominal Voltage V	Nominal Capacity A.H.	Current @ 20-hr. rate mA	Length		Width		Height		Ht. Over Terminal		Weight		Standard Terminals
				in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	
PS-12400	12	40.0	2000	7.76	197	6.50	165	6.69	170	6.69	170	29.10	13.20	NB4
PS-12550	12	55.0	2750	9.04	230	5.45	138	8.15	207	8.98	228	36.00	16.33	U
PS-12750	12	75.0	3750	10.25	260	6.60	168	8.15	207	8.98	228	50.60	22.95	U
PS-121000	12	100.0	5000	12.00	305	6.60	168	8.15	207	8.98	228	68.00	30.84	U
PS-1211000	12	110.0	5500	13.00	330	6.73	171	8.35	212	8.66	220	69.50	31.52	T11
PS-121400FR*	12	140.0	7000	13.50	343	6.73	171	10.80	274	11.15	283	99.00	44.91	T11

PSH-SERIES: High-Rate Discharge Batteries

* FR: UL94 V-0 flame retardant case & cover

PSH-655FR*	6	5.5	275	2.76	70	1.85	47	3.94	100	4.17	106	2.10	0.95	F1
PSH-1255FR*	12	6.0	300	3.54	90	2.76	70	3.98	101	4.21	107	4.00	1.81	F2
PSH-1280FR*	12	8.5	425	5.94	151	2.56	65	3.70	94	3.86	98	6.00	2.72	F2
PSH-12100FR*	12	10.5	525	5.94	151	2.56	65	4.37	111	4.61	117	7.00	3.18	F2
PSH-12180FR*	12	21.0	1050	7.14	181	3.03	77	6.59	167	6.59	167	13.20	5.99	NB2

PG-SERIES: Long Life Batteries

* FR: UL94 V-0 flame retardant case & cover

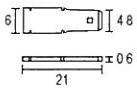
Model	Nominal Voltage (V)	Rated Capacity (A.H.)			Length		Width		Height		Ht. Over Terminal		Weight		Standard Terminals
		10-hr.	5-hr.	1-hr.	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	
PG-6V210FR*	6	210.0	180.5	126.0	12.70	323	7.00	178	8.98	228	9.21	234	71.6	32.5	T11
PG-12V28FR*	12	28.0	25.5	18.6	6.56	167	6.96	177	4.92	125	4.92	125	18.5	8.4	T12
PG-12V35FR*	12	35.0	32.5	27.0	7.72	196	5.10	130	6.22	158	6.97	177	24.5	11.1	T6
PG-12V42FR*	12	42.0	36.0	25.2	7.76	197	6.50	165	6.69	170	6.14	156	32.0	14.5	T6
PG-12V55FR*	12	56.0	47.5	33.0	8.98	228	5.39	137	8.27	210	8.50	216	36.0	16.3	T6
PG-12V65FR*	12	65.0	56.0	39.0	13.70	348	6.57	167	7.00	178	6.26	159	47.0	21.3	T6
PG-12V75FR*	12	75.0	64.5	45.0	13.70	348	6.57	167	7.00	178	6.46	164	51.0	23.1	T6
PG-12V75TFR*	12	75.0	64.5	45.0	10.24	260	6.61	168	8.27	210	8.51	216	55.0	25.0	T6
PG-12V92FR*	12	92.0	79.0	55.2	12.05	306	6.61	168	8.27	210	8.51	216	61.0	27.7	T6
PG-12V103FR*	12	103.0	88.5	61.8	13.00	330	6.80	173	8.35	212	8.66	220	70.0	31.8	T11
PG-12V120FR*	12	124.0	106.5	74.4	16.14	410	6.97	177	8.30	211	8.86	225	82.0	37.2	T11
PG-12V140FR*	12	144.0	120.5	84.0	13.50	343	6.73	171	10.79	274	11.02	280	99.0	44.9	T11
PG-12V150FR*	12	153.0	131.5	91.8	19.10	485	6.70	170	9.53	242	8.82	224	103.0	46.7	T11
PG-12V200FR*	12	210.0	180.5	126.0	20.55	522	9.45	240	8.58	218	8.82	224	144.0	65.3	T11

Terminal Options

F1
FASTON
0.187" x 0.032"
quick disconnect tabs.

F2
FASTON
0.250" x 0.032"
quick disconnect tabs

FP
FASTON POLARIZED
Positive: "F2", Negative: "F1"

F1/0 

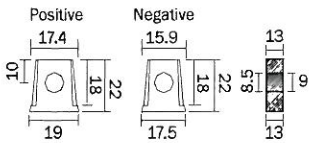
SP
SPRING TERMINALS
Fully collapsible positive and negative contacts

WL **INSULATED WIRE LEADS**
- Molex Housing 5264-02 & 5263-PBT plug on PS-605
- AMP Housing 1-480318-0 & 8116-1 on PS-1208

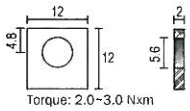
PC **PRESSURE CONTACTS**

TH
TOY BATTERY CONNECTORS
H-connector PS-6120 TH

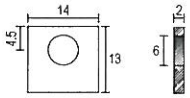
TS
TOY BATTERY CONNECTORS
S-connector PS-6120 TS

U 

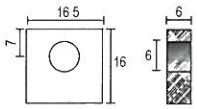
Torque 11.0~14.7 Nxm

NB1 

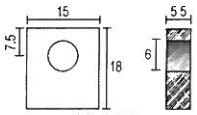
Torque: 2.0~3.0 Nxm

NB2 

Torque: 3.9~5.4 Nxm

NB3 

Torque: 3.9~5.4 Nxm

NB4 

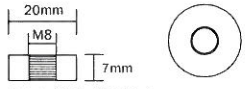
Torque: 3.9~5.4 Nxm

B, T6 **THREADED INSERT - 6mm STUD**

Torque: 3.9~5.4 Nxm

T8 **THREADED INSERT - 6mm STUD**

Torque: 3.9~5.4 Nxm

T11 **THREADED INSERT - 8mm STUD**


Torque: 11.0~14.7 Nxm

T12 **THREADED INSERT - 5mm STUD**

Torque: 2.0~3.0 Nxm

SLA CHARGERS: Automatic Switch-Mode and Float Chargers

"A-C" Series:

Automatic chargers are "switching" type devices which operate without the use of transformers. I.C.'s control and regulate current and voltage and automatically switch from the higher fast charge voltage to the lower float voltage when batteries are very close to being fully charged. At the float voltage it is safe to leave the battery connected to the charger indefinitely, making charging pretty much fool-proof. This type of charger is ideal for cyclic applications where recharge time is critical and timely charge termination cannot be counted on. This type of charger ensures optimum battery performance & service life.

"F-C" Series:

Float chargers are designed to provide optimum life for batteries used in standby applications where charging is continuous. The chargers deliver a constant voltage of 2.25 to 2.30 volts per cell which allow the battery to seek its own current level and maintain itself in a fully charged condition. This series is best suited for burglar and fire alarm equipment, emergency lighting, memory protection, or UPS systems where the battery serves as back-up power to the AC source.

Model	Nominal Voltage	Output Voltage Float/Fast Charge	Output Current mA	Type Automatic	Dimensions: in. (mm)			Weight		Charger Design
					Length	Width	Height	lbs.	kgs.	
PSC-6300A-C*	6	6.75 / 7.35	300	Dual Rate	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-6300F-C*	6	5.0 / 6.95	300	Float	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-6500A-C*	6	6.75 / 7.35	500	Dual Rate	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-6500F-C*	6	5.0 / 6.95	500	Float	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-61000A-C*	6	6.75 / 7.35	1000	Dual Rate	2.24 (57)	1.73 (44)	3.23 (82)	0.30	0.14	Plug-in
PSC-64000A-C	6	6.75 / 7.35	4000	Dual Rate	5.43 (138)	2.83 (72)	1.65 (42)	0.90	0.41	Desk Top
PSC-12300A-C*	12	13.50 / 14.70	300	Dual Rate	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-12300F-C*	12	10.0 / 13.8	300	Float	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-12500A-C*	12	13.50 / 14.70	500	Dual Rate	2.24 (57)	1.73 (44)	3.23 (82)	0.30	0.14	Plug-in
PSC-12500F-C*	12	10.0 / 13.8	500	Float	2.05 (52)	1.57 (40)	2.64 (67)	0.21	0.10	Plug-in
PSC-12800A-C*	12	13.50 / 14.70	800	Dual Rate	2.24 (57)	1.73 (44)	3.23 (82)	0.30	0.14	Plug-in
PSC-122000A-C	12	13.50 / 14.70	1800	Dual Rate	5.43 (138)	2.83 (72)	1.65 (42)	0.90	0.41	Desk Top
PSC-124000A-C	12	13.50 / 14.70	4000	Dual Rate	5.43 (138)	2.83 (72)	1.65 (42)	0.90	0.41	Desk Top
PSC-1210000A-C**	12	13.50 / 14.70	10000	Dual Rate	8.80 (224)	5.17 (131)	3.33 (85)	4.30	1.95	Desk Top
PSC-241000A-C	24	27.00 / 29.40	1000	Dual Rate	5.43 (138)	2.83 (72)	1.65 (42)	0.90	0.41	Desk Top

* Note. All plug-in design have 39" (1m) leads. All desktop design have 59" (1.5m) input leads and 39" (1m) output leads. Connectors to the battery are alligator clips with insulated sleeves.

** Note. PSC-1210000A-C is only available for use with input voltages of 90-132V 60 Hz. This charger is ideally suited for batteries from 40-100AH. The charger may also be used for charging batteries from 100-140AH, but the charging time will be increased.

Power-Sonic does not offer chargers for batteries with capacities higher than 100 AH. If you have any queries or difficulties locating a suitable charger for batteries above 100 AH, our Technical Department will be happy to assist you.

All data subject to change without notice.

Further Information

Please refer to our website www.power-sonic.com for a complete range of useful downloads, such as product catalogs, specification sheets, technical manual, material safety data sheets (MSDS), ISO certification, etc.

Contact Information

www.power-sonic.com

DOMESTIC SALES
Tel: +1-619-661-2020
Fax: +1-619-661-3650
national-sales@power-sonic.com

CUSTOMER SERVICE
Tel: +1-619-661-2030
Fax: +1-619-661-3648
customer-service@power-sonic.com

TECHNICAL SUPPORT
Tel: +1-619-661-2020
Fax: +1-619-661-3648
support@power-sonic.com

INTERNATIONAL SALES
Tel: +1-650-364-5001
Fax: +1-650-366-3662
battery@power-sonic.com

CORPORATE OFFICE • 7550 Panasonic Way • San Diego, CA 92154 • USA • Tel: +1-619-661-2020 • Fax: +1-619-661-3650

0109 1M

Honeywell

GENESIS SERIES CABLE

Power Limited Fire Alarm Cable
Part No. 4511

Description:	16 AWG 2/C SOL FPLP
Compliance:	UL Standard 1424; NEC Article 760

Construction:

Conductor	16 AWG Solid Bare Copper
No. of Conductors	2
Assembly	Tubed jacket over twisted insulated conductors

	Insulation
Type	Plenum PVC
Color	Blk, Red
Thickness	0.007" nom.
Diameter	0.064" nom.
Lay Length	2.5" nom.

	Jacket
Type	Plenum PVC
Color	Red
Thickness	0.015" nom.
Diameter	0.154" nom.
Legend (Ink Print)	

HONEYWELL 16 AWG 2/C (ETL) FPLP/CL2P 3038058 75C W/O# XXXXXX-XXX C(ETL) FT6 XXXXFT DEVICE/ZONE A B C D E F 1 2 3 4 5 6 7 8 9

Properties

Temperature Rating	-20 to 75 °C
Operating Voltage	300 Volts max.
Capacitance	27 pf/ft nom
Impedance	60 Ohms nom.
DC Resistance	4.05 Ohms/M' at 20°C
Flame Rating	UL 910, CSA FT6

Premises:
FMS#1
STEVENS AVE
PORTLAND, ME

Prepared By:
STEPHEN SPEARIN
SEACOAST SECURITY INC
PO BOX A
ROCKPORT, ME 04865
236-4876

Circuit:
Class A @ 16 AWG
Filtered (DC) 24-volt Supply (2.5 amp circuit)
Starting Voltage = 20.4

Notes:
THIS NAC CIRCUIT INCLUDES PASSAGE BT STORAGE, WEST MAINTENANCE BAY, BOILER ROOM, WEIGHT ROOM, AND CENTER MAINTENENCE BAY.

Type and Model	Candela	Current	Next	Total	12	14	16	18
Wall Horn/Strobe (2 Wire) P2R	15	0.069	30	30	19.18	18.47	17.32	*
Wall Horn/Strobe (2 Wire) P2R	15	0.069	30	60	19.19	18.48	17.34	*
Wall Horn/Strobe (2 Wire) P2R	95	0.182	50	110	19.22	18.52	17.41	*
Wall Horn/Strobe (2 Wire) P2R	95	0.182	50	160	19.28	18.63	17.58	*
Wall Horn/Strobe (2 Wire) P2R	95	0.182	50	210	19.38	18.79	17.83	*
Wall Horn/Strobe (2 Wire) P2R	75	0.157	50	260	19.52	19.00	18.18	*
Total current/amps 0.841				**vdc loss**	**1.22**	**1.93**	**3.08**	*

Premises:
FMS#1
STEVENS AVE
PORTLAND, ME

Prepared By:
STEPHEN SPEARIN
SEACOAST SECURITY INC
PO BOX A
ROCKPORT, ME 04865
236-4876

Circuit:
Class A @ 16 AWG
Filtered (DC) 24-volt Supply (2.5 amp circuit)
Starting Voltage = 20.4

Notes:
THIS NAC CIRCUIT INCLUDES 2ND FLR DEVICES, EAST MAINTENANCE BAY, OFFICE HALL, LOCKER ROOM, AND WASH ROOM.

Type and Model	Candela	Current	Next	Total	12	14	16	18
Wall Horn/Strobe (2 Wire) P2R	30	0.097	50	50	19.29	18.64	17.60	*
Wall Horn/Strobe (2 Wire) P2R	15	0.069	30	80	19.30	18.66	17.63	*
Wall Horn/Strobe (2 Wire) P2R	15	0.069	30	110	19.32	18.69	17.68	*
Wall Horn/Strobe (2 Wire) P2R	95	0.182	50	160	19.37	18.77	17.80	*
Wall Horn/Strobe (2 Wire) P2R	95	0.182	50	210	19.45	18.90	18.01	*
Wall Strobe SR	15	0.066	30	240	19.53	19.01	18.19	*
Wall Strobe SR	15	0.066	30	270	19.61	19.14	18.39	*
Total current/amps 0.731				**vdc loss**	**1.11**	**1.76**	**2.80**	*